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ARCADIS GERAGHTY & MILLER

ARCADIS G&M Inc
126 North Jefferson Street
Suite 400
Milwaukee
Wisconsin 53202
Tel 414 276 7742
Fax 414 276 7603

Todd Bence
Bence Family Limited Partnership
W200 N9356 Woodside Lane
Menomonee Falls, Wisconsin 53051

ENVIRONMENT

Subject:
Proposal for Site Investigation Services, Former Dry Cleaning Facility, N89 W16744-46 Appleton Avenue, Menomonee Falls, Wisconsin.

Dear Mr. Bence:

Milwaukee
January 3, 2002

Contacts:
Ed Buc
James Drought

Phone Number:
(414) 276-7742

ARCADIS is pleased to present you with this proposal for investigation services for the subject property. The proposal was prepared in response to our December 28, 2001 telephone conversation and in accordance with your written Request for Proposal (RFP). The scope of work was developed based on the history of dry cleaning activities at the site, previous investigations, and our knowledge of dry cleaning operations. This proposal presents a brief summary of the project background and a discussion of the proposed investigation activities.

This proposal has been prepared in accordance with the requirements of the Dry Cleaners Environmental Response Program (DERP) established in NR 169. Information required by NR 169 is also included. The enclosed scope of work and cost estimate has been prepared in conformance with NR 169.

Project Background

The subject property is located at N89 W16744-46 Appleton Avenue in Menomonee Falls, Wisconsin. The property is developed with a two-story commercial building divided into two storefronts. The west storefront is currently occupied by the Academy of Music, a retail store selling musical instruments. The east storefront is currently vacant, but was previously occupied by a dry cleaner. A parking lot and below-grade loading dock is located on the north side of the building. The property is bordered to the south by Appleton Avenue, to the north by an alley, to the west by a Chinese restaurant (Harvey Moy's), and to the east by a Village of Menomonee Falls public parking lot.

Based on conversations with you and Jim Rose of Maxim Technologies, Inc., Phase I and Phase II Environmental Site Assessments have been completed at the property. It is understood that three soil borings were advanced in the parking lot on the north side of the building. One boring (GP-1) was advanced at the base of the loading dock, near a drain. The base of the loading dock is approximately 5 feet below the surrounding ground surface. The remaining borings were advanced at the top of the

ramp (GP-2) and near a dumpster storage area at the northeast corner of the property (GP-3).

Boring GP-1 was advanced to a depth of 1 to 2 feet; auger refusal was encountered due to the presence of weathered bedrock. According to Mr. Rose, soil conditions at GP-2 and GP-3 consisted of 7 feet of unconsolidated fine-grained soil overlying fractured bedrock. Mr. Rose indicated that the Geoprobe drilling unit was able to advance GP-2 and GP-3 approximately 7 feet into the bedrock, indicating a high degree of weathering.

One sample was collected from each boring for laboratory analysis of volatile organic compounds (VOCs). Samples were collected from the soil located above the bedrock interface. The samples from GP-2 and GP-3 contained low to nondetectable concentrations of VOCs. The sample collected from GP-1, located at the base of the loading dock, contained detectable concentrations of chlorinated and petroleum VOCs, including tetrachloroethene (PCE), cis-1,2-dichloroethene, xylene, and trimethylbenzene. PCE is a common dry cleaning solvent. Cis-1,2-dichlorethene is formed through the biological degradation of PCE. The detected petroleum VOCs, including xylene and trimethylbenzene, are components of a petroleum-based dry cleaning solvent, stoddard solvent.

Scope of Work

The results of the Phase II ESA suggest that the presence of VOCs within the unconsolidated soil may be limited in extent. However, the close proximity of the weathered bedrock interface to the identified impacted soil suggests that impacts may extend downward into the bedrock. ARCADIS has developed a scope of work to evaluate the extent of impacts at the property and to collect data that will guide the development of a remediation and site closure strategy. Site-specific information will be used to identify and evaluate potential remedial options.

Because the extent of impacts at the property may be limited, a phased approach has been developed. The scope of work for the initial phase of the site investigation will consist of the following tasks:

- Notification to the Wisconsin Department of Natural Resources (WDNR) of consultant selection for completion of site investigation activities at the subject property, and submittal of the DERP Potential Claim Notification form.
- Preparation and submittal of a site investigation work plan to the WDNR.
- Obtain competitive bids for subcontracted services.
- Completion of two soil borings inside the existing structure and three Geoprobe borings at exterior sampling locations.

- Installation, development, and sampling of one monitoring well.

- Preparation of an investigation report. This report will also include a Remedial Action Options Report (RAOR) prepared in accordance with NR 169.

The presence of bedrock in close proximity to the identified soil impacts suggests that the impacts have the potential to migrate downward into groundwater located within the bedrock. If groundwater impacts are not encountered in the one proposed monitoring well, additional investigation may not be warranted. However, if groundwater impacts are identified, the following provisional tasks may be completed:

- Installation of one piezometer and three additional groundwater monitoring wells.

- Completion of a survey of the property and the locations and elevations of the wells.

The following sections present a brief summary of the proposed investigation activities.

WDNR Notification, DERP Potential Claim Form, and Work Plan

ARCADIS will notify the WDNR of the selection of our firm to complete site investigation activities immediately upon receipt of authorization from you to proceed. The DERP Notification of Potential Claim Form will be completed and forwarded to the WDNR with the consultant notification of selection notice. In accordance with the DERP regulations (NR 169), a draft site investigation work plan will be completed and forwarded to you for review. Comments received will be incorporated into the final copy of the work plan and forwarded to the WDNR. In accordance with DERP requirements, field activities will not be initiated until written approval to proceed has been received from WDNR.

Subcontractor Procurement

In accordance with NR 169, three written contractor bids will be obtained by ARCADIS for all subcontracted services (drillers, laboratories, surveyors). Service providers will be selected on a competitive (i.e., low-cost) basis.

Advancement of Geoprobe Soil Borings

The purpose of this phase of the investigation is to evaluate soil conditions in and around potential sources areas and to define the extent of impacts in the unconsolidated soil. A total of five Geoprobe soil borings are proposed for this

initial phase of investigation. Two borings are proposed for the interior of the building to assess soil conditions adjacent to potential source areas, such as former dry cleaning equipment. These borings will also be used to define the extent of impacts south of the loading dock. An additional three Geoprobe borings will be advanced on the exterior of the building, to the north, east, and west of the loading dock.

Based on a site visit completed on December 31, 2001, an overhead door is located at the bottom of the loading dock. Thus, the interior of the building may be accessible to a small, truck-mounted Geoprobe rig. The borings will be advanced to a depth of 2 to 8 feet below grade, depending on the competency of the bedrock beneath the building. Soil samples will be collected at continuous 2-foot intervals and screened in the field with a photoionization detector (PID). Each soil sample will be classified in accordance with American Society of Testing and Materials (ASTM) standards. Logs will be prepared for each soil boring and will present both the classification and engineering properties of the materials encountered. One sample will be selected from each of the borings for analysis of VOCs. Sample selection will be based on PID readings and field observations.

Three Geoprobe borings will be advanced around the perimeter of the loading dock to define the extent of soil impacts. The borings will be advanced using a Geoprobe drilling unit to a depth of approximately 7 to 14 feet. The final boring depths will be determined in the field, based on soil / bedrock conditions. As described above, soil samples will be collected from each soil boring, field screened with a PID, and classified. One sample from each boring will be collected for VOC analysis.

The loading dock is in close proximity to the western property boundary. As a condition of obtaining closure, the WDNR will require that the extent of impacts be fully defined. Consequently, one of the exterior borings may be advanced on the adjacent property to the west. ARCADIS will contact the owner of the adjacent restaurant to obtain an access agreement for advancing a soil boring. However, the necessity of this boring will be further discussed with you prior to the start of the investigation. The pursuit of an off-site access agreement will be made in consultation with you before any adjacent property owner is contacted.

Samples collected for laboratory analysis will be placed into clean, laboratory supplied containers and preserved in accordance with the selected analytical methodology. The samples will be placed in coolers with ice and shipped to a Wisconsin-certified laboratory in accordance with standard chain-of-custody procedures.

Installation of Monitoring Well

The Phase II ESA identified soil impacts in close proximity to a shallow bedrock interface on the property. Groundwater is located within the bedrock. Based on the

elevation of the property and the proximity of the Menomonee River, groundwater is likely present at a depth of approximately 30 to 40 feet below grade. The Phase II ESA results suggest that the bedrock is highly weathered, which could allow the downward migration of constituents. During this phase of investigation, ARCADIS will install one groundwater monitoring well to assess groundwater conditions. The well will be installed to the east of the loading dock to reduce the potential for infiltration of precipitation accumulating in the base of the loading dock.

The well will be installed using rotosonic drilling techniques. This drilling method is quicker and produces less drilling waste than traditional air rotary or cable tool techniques. As the borehole is advanced, soil and rock samples will be collected at 2-½ foot vertical intervals to provide a relatively continuous profile of the subsurface materials at the boring location.

The soil boring will be converted to a groundwater monitoring well installed to an estimated depth of 30 to 40 feet, based on the location of groundwater. The monitoring well will consist of a 2-inch diameter Schedule 40 PVC riser and a 10-foot length of 2-inch diameter Schedule 40 PVC well screen. Upon positioning the screen and riser within the borehole, the annular space between the well screen and borehole will be filled with a silica sand filter pack and filter pack seal. The remainder of the annular space will be sealed with bentonite, and a flush-mount well vault will be installed at the ground surface.

After construction, the monitoring well will be developed in accordance with Chapter NR 141 of the Wisconsin Administrative Code. Development will consist of removing 10 well volumes of water. Development water will be placed into 55-gallon steel drums and stored at the Site pending disposal at a later date. A WDNR Monitoring Well Development form (Form 4400-113B) will be completed for the new monitoring well.

Following installation and development, the water level will be measured in the new well using a decontaminated electronic water level probe. Groundwater samples will then be collected. Conventional bailer sampling methods can alter sensitive biological parameters such as dissolved oxygen. To obtain more representative groundwater samples, low-flow sampling techniques will be utilized. A downhole probe will be lowered down the well to measure aquifer parameters such as temperature, pH, dissolved oxygen, and oxidation-reduction potential (ORP). Water will be pumped from the aquifer at a low flow rate (less than 150 milliliters per minute [ml / min]) until the probe readings stabilize. Samples will then be collected in clean, laboratory-supplied sample containers, and placed in a cooler filled with ice.

The groundwater samples will be submitted to a WDNR-certified laboratory for the analysis of VOCs, dissolved light hydrocarbon gases (ethene, ethane, methane), and dissolved organic carbon (DOC) using appropriate chain-of-custody procedures.

Supplemental Investigation

Additional investigation will not likely be necessary if the Geoprobe soil samples define the extent of soil impacts and if the groundwater sample from the monitoring well does not contain constituents at concentrations above the NR 140 limits. However, additional investigation will be required by the WDNR if groundwater is impacted at the property.

Under this provisional task, three additional groundwater monitoring wells and one piezometer will be installed. The monitoring wells will be used to define the lateral extent of groundwater impacts. The piezometer will be used to define the vertical extent of impacts. The wells will be installed, developed and sampled following the methods described earlier. Each monitoring well will be installed to a depth of 30 to 40 feet, based on the depth of groundwater. The piezometer will be installed to a depth of 60 to 70 feet. The locations and elevations of the wells will be surveyed to determine the direction of groundwater flow and evaluate horizontal and vertical gradients.

Project Reporting and DERP Claim

After each phase of investigation, ARCADIS will schedule a meeting with you to discuss the analytical results, determine whether additional investigation is warranted, and present potential remedial options. Following the completion of the investigation, ARCADIS will prepare a written report in accordance with NR 716. The report will present a summary of the geologic conditions, contaminant distribution, and an assessment of whether contaminants are naturally degrading. The report will also present an evaluation of remedial action options in accordance with NR 169.

All documents will initially be prepared in draft format for review by you. Comments regarding the draft report will be incorporated into the final report, which will be submitted to the WDNR.

As indicated earlier, costs associated with the site investigation may be eligible for reimbursement through the DERP. After the investigation is completed, ARCADIS will prepare a reimbursement claim of eligible project costs for submittal to the WDNR.

In addition to the site investigation report, ARCADIS will provide periodic status reports. These reports will consist of periodic conference calls to coordinate field activities and discuss the investigative data. The purpose of these discussions will be to amend the investigation as necessary and to begin the development of a remedial strategy consistent with the long-term plans for the property.

Project Schedule

ARCADIS will begin work immediately following receipt of authorization to proceed. The DERP work plan and notification will be submitted to you for review within two weeks of authorization. The initial Geoprobe investigation will commence within one week after approval from the WDNR.

Estimated Costs

ARCADIS will conduct the scope of work for the initial investigative phase described above for an estimated cost of $17,955. The estimated cost for completion of the supplemental investigation, if warranted, is $20,075. Table 1 includes a break down of the project costs. These costs include all labor and subcontractor services. Please note that this cost estimate does not include the cost for the disposal of the auger cuttings and development water generated during well installation and sampling. The proposed scope of work will be invoiced on a time and materials basis in accordance with the Fee Schedule presented in Appendix A.

Project Team

The project team members assigned to implement the outlined scope of work were selected because of their experience in the following areas:

- Demonstrated successful experience in projects reimbursed by various funding programs in Wisconsin.
- Knowledge of the DERP and the evolving administrative rules.
- Experience in conducting site investigation activities at existing and former dry cleaning facilities.
- Technical expertise and experience with chlorinated and petroleum (i.e., stoddard solvent) hydrocarbons in soil and groundwater.
- Experience with in-situ remediation and ex-situ remediation of chlorinated solvents.

The project team was selected to satisfy the requirements of NR 169.21(2)(c). The project team members will work under the direction of Mr. James Drought, P.H., Project Advisor, and Mr. Edmund Buc, P.E., Senior Engineer, who are both thoroughly familiar with technical and administrative issues associated with investigation and remediation aspects of dry cleaning projects, as well as the DERP. Supporting Mr. Drought and Mr. Buc in the coordination and implementation of field activities will be Ms. Dawn Gabardi, Staff Hydrogeologist. Resumes for all key personnel involved in the project are presented in Appendix B.

Certification

This proposal has been prepared in accordance with the requirements of NR 169.21. In accordance with NR 169.21(6), ARCADIS certifies the following:

- If selected to complete the scope of work described herein, ARCADIS will comply with the applicable requirements of Chapters NR 169 and Chapters NR 700 to NR 728 of the Wisconsin Administrative Code.

- ARCADIS will make available to the WDNR upon request, for inspection and copying, all of the documents and records related to the contract services.

Also in accordance with NR 169.21(6), ARCADIS' Certificate of Insurance is presented in Appendix C.

Qualifications

ARCADIS is a full-service environmental consulting company with over 40 years of experience in assessing soil and groundwater quality and developing remedies. An intraoffice electronic mail system provides ready access to corporate resources and technical experts in ARCADIS offices across the world. A company-wide project management system has been implemented to provide project managers and team members with tools to manage client communications, track budgets, and select personnel for executing project work. The Milwaukee office employs a staff of over 35 geologists, engineers and scientists. We are thoroughly experienced in assessing and remediating chlorinated compounds and implementing cost effective remedial solutions, including natural attenuation.

Case study information for investigation and remediation activities on dry cleaning projects completed or currently in-progress by ARCADIS is included in Appendix D. Among the remedial techniques utilized by ARCADIS to address dry cleaner releases is a patented process that enhances the biological degradation of constituents. The Phase II ESA results indicate that some degree of natural biodegradation is occurring. ARCADIS has also employed natural attenuation as a remedy for chlorinated hydrocarbons. The dissolved gas, organic carbon, and dissolved oxygen data collected during the investigation can be used to assess whether natural attenuation or enhanced biodegradation are feasible remedial methods.

The experience and administrative systems described above will enable the ARCADIS project team to meet and exceed the following criteria established in Section NR 169.21(2)(c) 1 through 4:

- Be fully informed about this project's scope and services, and have the experience and ability to analyze alternatives and design the most suitable

response action consistent with technical and economic feasibility, environmental statutes and rules, restoration timeframes, and the latest technical advances.

- Provide necessary staff and facilities for all phases of planning, investigation, design, construction and operation

- Retain and confer with specialists on unusual matters; provide qualified technical reviewers, who will keep the owners advised on technical and regulatory matters and work toward planned remediation goals.

- Perform all services in an ethical, professional and timely manner.

References

A list of client references is included in Appendix E.

Closing

ARCADIS appreciates the opportunity to submit this proposal to you and looks forward to working with you on this project. Should you have any questions relating to the information presented herein, please feel free to call us at your convenience.

Sincerely,

ARCADIS G&M, Inc.

Edmund A. Buc, PE
Senior Engineer

James F. Drought, PH
Principal Hydrogeologist

Attachments

ARCADIS

Table 1. Cost Estimate for Site Investigation Services, Former Dry Cleaning Facility, N89 W16744-46 Appleton Avenue, Menomonee Falls, Wisconsin.

Initial Investigation Phase

ARCADIS Services

Preparation of WDNR Work Plan, Notification			
Staff Scientist I	8 hours @ $95/hr		$760
		Subtotal	$760
Subcontractor Procurement			
Staff Scientist I	4 hours @ $95/hr		$380
		Subtotal	$380
Advancement of Geoprobe Borings			
Staff Scientist I	4 hours @ $95/hr		$380
Scientist II	14 hours @ $80/hr		$1,120
Mileage, Equipment, and Field Expenses			$500
		Subtotal	$2,000
Installation/Development of Monitoring Well			
Staff Scientist I	4 hours @ $95/hr		$380
Scientist II	16 hours @ $80/hr		$1,280
Mileage, Equipment, and Field Expenses			$500
		Subtotal	$2,160
Groundwater Sampling			
Staff Scientist I	2 hours @ $95/hr		$190
Scientist II	6 hours @ $80/hr		$480
Mileage, Equipment, and Field Expenses			$500
		Subtotal	$1,170
Project Meeting and Reporting			
Senior Scientist	4 hours @ $127/hr		$508
Staff Scientist I	40 hours @ $95/hr		$3,800
Word Processing	8 hours @ $56/hr		$448
Draftsperson	10 hours @ $81/hr		$810
		Subtotal	$5,566

ARCADIS

Table 1. Cost Estimate for Site Investigation Services, Former Dry Cleaning Facility, N89 W16744-46 Appleton Avenue, Menomonee Falls, Wisconsin.

Preparation of DERP Claim			
Staff Scientist I	2 hours @ $95/hr		$190
Scientist II	8 hours @ $80/hr		$640
Word Processing	2 hours @ $56/hr		$112
		Subtotal	$942
		Subtotal, ARCADIS Services for Initial Investigation Phase	$12,978

Subcontractor Services

Subcontracted Drilling Services - Geoprobe Services			
Mobilization			$250
Soil Borings	58 feet @ $14/each		$812
Decontamination			$100
		Subtotal	$1,162
Subcontracted Drilling Services - Well Installation Services			
Mobilization			$300
Well Installation	40 feet @$60/foot		$2,400
Well Covers	1 @ $110/each		$110
DOT Drums	6 @ $35/each		$210
Decontamination			$175
		Subtotal	$3,195
Subcontracted Analytical Testing Services			
Soil Laboratory Analysis			
VOCs	5 samples @ $85/each		$425
Groundwater Laboratory Analysis			
VOCs	1 sample @ $85/each		$85
Organic Carbon	1 sample @ $30/each		$30
Ethene, Ethane, Methane	1 sample @ $80/each		$80
		Subtotal	$620
		Subtotal, Subcontractor Services for Initial Investigation Phase	$4,977
		Subtotal, Initial Investigation Phase	**$17,955**

ARCADIS

Table 1. Cost Estimate for Site Investigation Services, Former Dry Cleaning Facility, N89 W16744-46 Appleton Avenue, Menomonee Falls, Wisconsin.

Supplemental Investigation Phase

ARCADIS Services

Installation/Development of Monitoring Wells			
Staff Scientist I	4 hours @ $95/hr		$380
Scientist II	30 hours @ $80/hr		$2,400
Mileage, Equipment, and Field Expenses			$750
		Subtotal	$3,530
Groundwater Sampling			
Staff Scientist I	4 hours @ $95/hr		$380
Scientist II	10 hours @ $80/hr		$800
Mileage, Equipment, and Field Expenses			$750
		Subtotal	$1,930
		Subtotal, ARCADIS Services for Supplemental Investigation Activities	$5,460

Subcontractor Services

Subcontracted Drilling Services - Well Installation Services			
Mobilization			$300
Well Installation	190 feet @$60/foot		$11,400
Well Covers	4 @ $110/each		$440
DOT Drums	12 @ $35/each		$420
Decontamination			$175
		Subtotal	$12,735
Subcontracted Surveying			$1,100

Table 1. Cost Estimate for Site Investigation Services, Former Dry Cleaning Facility, N89 W16744-46 Appleton Avenue, Menomonee Falls, Wisconsin.

Subcontracted Analytical Testing Services

Groundwater Laboratory Analysis

VOCs	4 samples @ $85/each	$340
Organic Carbon	4 samples @ $30/each	$120
Ethene, Ethane, Methane	4 samples @ $80/each	$320
	Subtotal	$780
	Subtotal Subcontractor Costs for Supplemental Investigation Phase	$14,615
	Subtotal, Supplemental Investigation Phase	**$20,075**

Note: Services provided by Principal Hydrogeologist (James F. Drought) and/or Principal Engineer (Michael S. Maierle) will be performed at no cost.

ARCADIS G&M, INC.
FEE SCHEDULE FOR PROFESSIONAL SERVICES

Invoices for services provided by ARCADIS G&M, Inc. consist of: (1) hourly rate professional services fees; (2) material and equipment expenditures and usage; (3) subcontractor costs; (4) travel, shipping, and communications charges; and (5) sales or gross receipt taxes, as applicable.

Subject to periodic revisions, hourly rate fees for ARCADIS G&M, Inc. professional services are indicated below:

STAFF CATEGORIES	HOURLY RATES
ENGINEERS & SCIENTISTS	
Scientist II	$80
Staff Scientist I	$95
Senior Scientist	$127
OFFICE SUPPORT STAFF	
Word Processing	$56
Draftsperson	$81

INVOICING & PAYMENT: Progress invoices will be issued monthly and payment is due within thirty (30) days of invoice date. Invoices for subcontractor charges are payable upon presentation. Non-standard, client-requested invoice formats and supporting documentation will be invoiced at $49.00 per hour plus expenses. A finance charge of 1.5% per month will be payable on past-due account balances.

ARCADIS G&M, INC.
FEE SCHEDULE FOR PROFESSIONAL SERVICES

ADDITIONAL TERMS

PROJECT MATERIALS AND EQUIPMENT: All project-related expenses, materials, field supplies, equipment charges; premiums for insurance, bonds, and letters of credit required by the client in addition to normal coverage; project-required permits and licenses; et. will be invoiced at cost plus 15%.

PROJECT COMMUNICATION AND SHIPPING EXPENSES: Charges for long-distance telephone, photocopying, blueprints, express and regular shipping, and postage will be invoiced at cost plus 15%.

TRAVEL AND RELATED EXPENSES: Charges for rental vehicles, meals, travel, and lodging will be invoiced at actual cost plus 15%. Personal vehicles will be charged at $0.40/mile.

SUBCONTRACTS: Subcontractor (drillers, analytical laboratories, etc.) charges will be invoiced at cost plus 15%.

LEGAL PROCEEDINGS: A surcharge of 50% will be added to the professional services rates for actual sequestered preparation time and for actual time spent in depositions, public testimony, court, and/or hearings.

PROJECT ADVISORS AND SENIOR EXPERTS: Rates for Project Advisors are $230/hour. Rates for Senior Experts are a function of the individual and are quoted upon request.

GERAGHTY & MILLER EQUIPMENT AND MATERIALS: Geraghty & Miller-owned equipment, vehicles, and materials will be invoiced at fixed unit rates. A summary of these rates will be provided upon request.

GERAGHTY & MILLER TREATABILITY LAB ANALYSES: Routine Treatability Laboratory analyses will be invoiced at a fixed price per test. Rates will be available upon request.

ARCADIS

James F. Drought, P.H.

Vice President
Principal Hydrogeologist

Mr. Drought has been employed with ARCADIS G&M, Inc. since 1995. As Vice President and Principal Hydrogeologist, Mr. Drought is responsible for the development, management and completion of brownfield remediation and redevelopment, real property due diligence, Guaranteed Property Remediation™, peer review, and litigation support services. Mr. Drought provides these services to clients throughout the United States. Mr. Drought's Project Director responsibilities include client and regulatory agency coordination, project scope and budget development and control, development and execution of investigation and remediation work plans, analytical and feasibility data review, and report technical review.

Mr. Drought's business development responsibilities within the Great Lakes Region of ARCADIS G&M include professional seminar presentations to attorneys, financial institutions, realtors, and contractors, and proposal preparation and execution. Mr. Drought serves as a regulatory compliance specialist by tracking and commenting on proposed regulations at the state and federal level. Mr. Drought is also responsible for litigation support projects relating to remedial investigations, remediation, regulatory compliance, cost recovery, and geologic and hydrogeologic issues.

Prior to joining ARCADIS G&M, Inc., Mr. Drought was the Assistant Environmental Manager at a national environmental and geotechnical consulting firm from 1989 through 1994 and was responsible for the development, management and completion of soil and groundwater remedial investigations, feasibility studies and remedial design. Mr. Drought was also responsible for the supervision of professional and technical staff and the coordination of an analytical laboratory certified under Chapter NR 149 of the Wisconsin Administrative Code. In addition, Mr. Drought was responsible for the completion and report preparation of Phase I and Phase II environmental site assessments, asbestos identification surveys, and environmental monitoring relating to soil and groundwater.

Mr. Drought also served as an Assistant Environmental Planner at the Bay-Lake Regional Planning Commission (BLRPC) and the Southeastern Wisconsin Regional Planning Commission (SEWRPC) from 1985 through 1988. Mr. Drought's responsibilities included the preparation of resource management and environmental planning reports, and serving as a regulatory agency liaison between USEPA, WDNR, WDOA, and local and county units and agencies of government.

Education

Master of Contaminant Hydrogeology and Geosciences, University of Wisconsin-Milwaukee, June 1999

Graduate Coursework in Biological and Chemical Sciences, University of Wisconsin-Milwaukee, 1983-1985

Bachelor of Physical Geography and Biology, Carroll College, May 1982

Professional Registrations

Wisconsin Professional Hydrogeologist (No. 45-111)

NR 712 Hydrogeologist

WDHSS Asbestos Inspector (Certification No. AII-04259)

WDILHR UST Site Assessor

WDILHR PECFA Consultant

Professional Associations

American Society for Testing and Materials

Federation of Environmental Technologists

National Ground Water Association

Wisconsin Fabricare Institute

Wisconsin Ground Water Association

Professional Training

- ARCADIS Advanced Management Programme Training, October 2000 (The Netherlands); January 2001 (Los Angeles, CA); April 2001 (The Netherlands)
- Wisconsin Department of Commerce Brownfield Seminar, 2000
- 8-Hour Health and Safety Refresher Training Completed in 1991-2000
- In-Situ and On-Site Bioremediation: The Fifth International Symposium, Sponsored by Batelle, San Diego, California, 1999
- Wisconsin Ground Water Association Fall Conference, 1998 and 1999
- National Ground Water Association Soil and Groundwater Modeling for Soil Clean-up Level Evaluation and Risk Assessment Seminar, 1996
- Symposium of Natural Attenuation of Chlorinated Organics in Groundwater, Sponsored by USEPA, Dallas, Texas, 1996
- UWEX and WDNR Environmental Clean-Ups Under NR 700 Seminar, 1994
- Nuclear Density Gauge Operation and Radiation Safety Training, 1993
- UWEX and WDNR Remediation Technologies for Environmental Contamination Clean-Ups Seminar, 1993
- 40-Hour Health and Safety Training for CERCLA and RCRA Remediation, 1990
- USEPA AHERA Asbestos Building Inspection Course, 1989. AHERA update courses completed in 1990-2000
- Microscopic Identification of Asbestos, McCrone Research Institute, 1989
- Federation of Environmental Technologist (FET) Programs:

  FET Annual Conference and Exhibition, 1990-2001

  RCRA Update, 2000

  Environmental Update, 1998

  Solid and Hazardous Waste Committee, 1996-Present

  Legal Committee, 1995-Present

  NR 700 Update Seminar, 1994

  Soil Remediation Issues in Wisconsin, 1992

  Current and Future Wastewater Concerns, 1992

  Criminal Enforcement of Environmental Law, 1992

James F. Drought, P.H.

Vice President
Principal Hydrogeologist

Fields of Specialization

- Brownfield remediation, redevelopment, and financing
- Real property due diligence and Guaranteed Property Remediation™ services
- Petroleum and chlorinated hydrocarbon (NR 700), hazardous waste (NR 600), and PCB remedial investigations, feasibility studies, and remedial design
- Underground storage tank (UST) closure assessments, and leaking underground storage tank (LUST) remedial investigations
- Commingled petroleum aromatic and chlorinated aliphatic hydrocarbon remedial investigations and remedial design
- Ex-situ remedial design and monitoring utilizing thermal desorption, passive aeration, and bioremediation technologies
- Petroleum Environmental Clean-up Fund Act (PECFA) reimbursement guidance
- Dry cleaning solvent (PCE and stoddard solvent) investigation, remedial design, and remediation cost recovery under the Drycleaner Environmental Response Program (DERP)
- Computer fate and transport modeling utilizing the USEPA SESOIL model
- Abiotic and biotic degradation of chlorinated and petroleum hydrocarbons
- Subsurface explorations utilizing Geoprobe, truck and track-mounted, portable and low clearance, and all-terrain drilling equipment
- Feasibility evaluations including vapor extraction and air sparging, aquifer studies, and in-situ hydraulic conductivity determinations
- State and Federal regulatory compliance

Committee Representation

- WDNR Consultant Focus Group
- WDNR Brownfields Committee
- COMM 47 Advisory Committee
- River Revitalization Committee (Board Member)

Key Projects

- Project advisor for PCE-impacted soil and groundwater investigation and remediation activities at the former Crestwood Shopping Center brownfield site located in Glendale, Wisconsin. A dry cleaning facility had operated within the mall, two different locations, from the early

1960s to 2000. A plume of PCE-impacted soils and groundwater existed on and off the seven acre shopping center.

A combination of aggressive in-situ soil and groundwater treatment and institutional controls were selected, approved by the Wisconsin Department of Natural Resources (WDNR), and completed within six months of contract execution. Demolition of the existing mall and construction of new retail and commercial buildings were completed concurrently with treatment activities. Investigation and remediation activities were completed under a guaranteed maximum price contract.

- Project advisor for the completion of a remedial investigation and an in-situ remedial pilot test at a existing industrial facility located in Oconomowoc, Wisconsin. A spill of TCE occurred at this site in 1994 within a former vapor degreasing system. The spill resulted in the release of TCE to soils and groundwater. The TCE migrated in saturated coarse alluvial deposits in a long and narrow groundwater plume ("core") off-site in the direction of the Oconomowoc River.

  The remedial investigation consisted of the advancement and sampling of 52 Geoprobe borings, eight groundwater monitoring wells, and four piezometers on and off the property. In addition, five seepage meters were installed in the Oconomowoc River to determine rates of contaminant and water fluxes. The in-situ pilot test included injection and recirculation of a natural carbon supplement to enhance anaerobic conditions and promote reductive dechlorination of TCE as an electron donor. The in-situ pilot test was completed over the course of six months and demonstrated to the WDNR that the injection of natural carbon represented a feasible and cost effective remedial alternative.

  A risk assessment was also completed as part of the pilot test activities to determine "threshold" levels for the chlorinated hydrocarbons venting to the Oconomowoc River. The "threshold" levels determined by the risk assessment demonstrated that active remediation was not warranted adjacent to the Oconomowoc River. The project was managed under Chapter NR 700 of the Wisconsin Administrative Code.

- Project advisor for a PCE impacted soil and groundwater investigation and remediation project at the Washington Square Mall brownfield site located in Germantown, Wisconsin. A dry cleaning facility operated within the retail mall over the period from 1980 to 1997. The remedial investigation consisted of the advancement and sampling of Geoprobe borings, monitoring wells, and piezometers within and adjacent to the retail mall. Soil remediation consisted of the

excavation and off-site disposal (at a RCRA subtitle C landfill in Michigan) of approximately 3,500 tons of PCE impacted soils. Groundwater remediation consisted of the extraction and treatment of approximately 80,000 gallons of PCE-impacted groundwater from the resulting excavation, and the injection of a natural carbon solution as an electron donor to promote the reductive dechlorination of PCE.

This project was completed under the Wisconsin Brownfields Program (Wisconsin Act 453) and Chapters NR 700 and 600 of the Wisconsin Administrative Code. In addition, all investigation and remediation activities were completed under a guaranteed maximum price contract. The Washington Square Mall project was closed by the WDNR in January 2001, approximately 2-1/2 years after the initiation of remediation activities.

- Project advisor for a commingled polychlorinated biphenyl (PCB) and tetrachloroethylene (PCE) impacted soil and groundwater project at an existing die casting facility located in Milwaukee, Wisconsin. Prior to 1981, some of the die casting machines within the facility used phosphate ester oil (PEO) hydraulic oils that contained PCBs. PCE was utilized during the die casting process as a vapor degreaser.

  Investigation activities included an evaluation of the extent of PCB and PCE impacted soils and groundwater by advancing and sampling Geoprobe borings and monitoring wells. Groundwater samples were collected using low-flow sampling methods. Soil and groundwater remedial alternatives were evaluated in accordance with Chapter NR722 of the Wisconsin Administrative Code. A performance standard consisting of a engineered cap and long-term monitoring was selected as the final remedial alternative.

- Project manager for the assessment and remedial design of commingled petroleum aromatic and chlorinated aliphatic hydrocarbon impacted soil and groundwater at two existing dry cleaning/former gasoline service station facilities located in Milwaukee, Wisconsin. Projects were initiated by completing closure assessments on the former USTs that remained from the former gasoline service station operations. Investigation activities identified the presence of petroleum (BTEX) and chlorinated (PCE, TCE) hydrocarbons within the groundwater in exceedance of Chapter NR 140 regulatory levels. The assessment and remedial design activities were completed in accordance with Chapters NR 600 and 700 of the Wisconsin Administrative Code. Feasibility studies completed at these sites included soil vapor extraction, air sparging and aquifer testing. A dual phase vapor and groundwater extraction system was designed and installed for treatment of the commingled plumes at one site; a

program to monitor the degradation of PCE was approved by the WDNR for the other site. The cost for the assessment and remediation of the petroleum and chlorinated hydrocarbons were eligible for reimbursement under the PECFA and DERF programs, respectively.

- Project manager for site investigation, remediation, and risk assessment activities completed at a former retail gasoline service station located in northern Illinois. The site operated as a retail gasoline service station over the period from about 1935 to 1985. ARCADIS G&M was retained in March 1996 to review ten years of groundwater gauging, analytical testing, and remedial system performance data, and to implement a strategy for site closure. A risk assessment was completed in accordance with the Illinois Environmental Protection Agency (IEPA) Tiered Approach for Clean-up Objectives (TACO) for the dissolved phase hydrocarbons. An evaluation of the historical groundwater gauging data indicated that the mass of the separate phase product, both on and off the site, had been reduced by approximately ninety percent from the mass that was present in the mid-1980s.

  ARCADIS G&M met with representatives from the IEPA in Springfield, Illinois in June 1996. The meeting was held to discuss the site investigation and remediation activities that were previously completed on the site, the TACO risk assessment, and a request for no further action. The representatives from the IEPA indicated at the meeting that the groundwater SSLs developed for the risk assessment were generated correctly and, since the maximum analyte levels were below the site-specific levels, further remediation of dissolved phase hydrocarbons was not necessary. The risk assessment developed for this project was the first TACO Tier III risk assessment approved by the IEPA.

- Project manager for a reactive cyanide impacted soil (F listed hazardous waste) assessment and remediation project at a construction project adjacent to the Fox River in Waukesha, Wisconsin. Project was completed in accordance with Chapter NR 600 of the Wisconsin Administrative Code. As the Project Manager, Mr. Drought designed and supervised the installation of a containment system to protect worker and public welfare during construction activities, and to prevent the migration of exposed cyanide wastes from entering the Fox River. Following completion of the investigation activities, remedial alternatives were evaluated including excavation and off-site stabilization and treatment, which was implemented and completed at the CWM facility in Lake Charles, Louisiana.

- Project manager for the investigation and remediation of petroleum and chlorinated hydrocarbon-impacted soil and groundwater on active and former gasoline service stations, dry cleaning facilities, and commercial and industrial sites. Most projects were completed under the PECFA or DERP reimbursement programs to maximize claimant eligibility for recovery of eligible costs. Soil remediation technologies included development of direct contact and groundwater pathway residual contaminant levels (RCLs), and performance standards, low temperature thermal desorbtion, passive aeration, landfill disposal, and vapor extraction. Groundwater remediation technologies included natural attenuation, air sparging, and groundwater extraction and treatment.

- Project manager for Phase I and Phase II Environmental Site Assessments completed in South America, Western Europe, and The United Kingdom. All Phase I environmental site assessments were completed in accordance with ASTM 1527. All Phase II environmental site assessments were completed in accordance with national or international regulatory guidelines.

Selected Presentations

Crestwood Shopping Center Brownfield Case Study, Wisconsin Department of Natural Resources, Bureau for Remediation and Redevelopment In-House Conference, Wisconsin Dells, Wisconsin, November 9, 2000.

Natural Attenuation of a Mixed Hydrocarbon Plume, Summer Intern Program, University of Wisconsin-Milwaukee Great Lakes Water Institute, July 19, 1999.

Development and Implementation of a Better Mouse Trap! Technical Update - Trends and Developments in Site Investigation, Remediation, and Institutional Controls, 1999 Environmental Law Update, Sheraton Hotel, Brookfield, Wisconsin; May 4, 1999.

Fate of Tetrachloroethene and Benzene at a Dry Cleaning Facility, In-Situ and On-Site Bioremediation - The Fifth International Symposium, Sheraton San Diego Hotel and Marina, San Diego, California; April 22, 1999.

A Case Study of Natural Attenuation at a Dry Cleaning Facility, American Water Resources Association Annual Meeting, Radisson Hotel, La Crosse, Wisconsin; March 25, 1999.

Controlling and Managing Investigation and Remediation Activities and Costs, Wisconsin Fabricare Institute Fall Convention, Devil's Head Resort, Merrimac, Wisconsin; September 20, 1998.

James F. Drought, P.H.

Vice President
Principal Hydrogeologist

Natural Attenuation of Petroleum and Chlorinated Hydrocarbons, Graduate Student Groundwater Seminar, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin; March 31, 1997.

Natural Attenuation and the Wisconsin Groundwater Reform Policy, Wisconsin Fabricare Institute Winter Convention, Radisson Hotel, Green Bay, Wisconsin; February 8, 1997.

Fate, Transport, and In-Situ Remediation of Hazardous Wastes, Registered Environmental Manager Training, University of Wisconsin - Extension, Madison, Wisconsin; April 22, 1996.

Public Comments, Proposed Wisconsin Department of Natural Resources Groundwater Reform Policy, Havenswood State Forest Auditorium, Milwaukee, Wisconsin, March 21, 1996.

The Petroleum Environmental Clean-up Fund Act: Proposed Changes and a Consultants Perspective on the Future of the Program, The Milwaukee Bar Association, Milwaukee, Wisconsin; December 14, 1995.

Fate and Transport of Tetrachloroethylene, Wisconsin Fabricare Institute Fall Convention, Pioneer Inn, Oshkosh, Wisconsin; September 17, 1995.

Overview: Environmental Site Assessments, Registered Environmental Manager Training Seminar, University of Wisconsin - Extension, Madison, Wisconsin; August 28, 1995.

The Petroleum Environmental Clean-Up Fund Act (PECFA) and Recent Updates, Milwaukee Bar Association, Milwaukee, WI; October 24, 1994.

Environmental Consultant's Perspective - Practice Under the New NR 700 Rule Series, State Bar of Wisconsin 1994 Annual Convention, Milwaukee, WI; June 23, 1994.

Wetlands: Features, Functions, and Regulations, Commercial Real Estate Issues Seminar sponsored by Hiller and Frank S.C., Marriott Hotel, Brookfield, WI; March 17, 1994.

USTs and Petroleum-Impacted Soil: Concerns and Solutions, Wisconsin Mortgage Banker's Association meeting, Midway Hotel, Brookfield, WI; January 18, 1994.

Environmental Assessments and Remediation Alternatives, Upper Midwest Fabricare Exposition sponsored by the Wisconsin Fabricare Institute, Waukesha Exposition Center, Waukesha, WI; October 17, 1992.

Multi-Phased Approach to Environmental Assessments, Hazardous Contamination and Environmental Protection Seminar sponsored by the Metropolitan Builders Association of Greater Milwaukee, Milwaukee Athletic Club, Milwaukee, WI; November 13, 1990.

Environmental Liabilities in Real Property Transactions, CECO Exchange Club meeting, Sheraton Inn-Mayfair, Wauwatosa, WI; March 13, 1990.

Featured on PBS "Outdoor Wisconsin" (1987, 1989, & 1990).

Organizer of ARCADIS G&M In-House Training Seminars

Dry Cleaning Initiatives Training Seminar for the Great Lakes Region, April 17-18, 1998.

Great Lakes Region Real Estate Training Seminar, July 14-15, 2000.

James F. Drought, P.H.

Vice President
Principal Hydrogeologist

Peer Review and Litigation Support Services

Cook & Franke – Milwaukee, WI

Davis & Kuelthau – Milwaukee, WI

Foley & Lardner – Milwaukee, WI

Fox, O'Neill & Shannon – Milwaukee, WI

Leonard, Street & Deinard – Minneapolis, MN

McCarter & English – Newark, NJ

Michael Best & Friedrich – Milwaukee, WI

Reinhart Boerner Van Deuren Norris & Rieselbach – Milwaukee, WI

Whyte Hirschboeck Dudek – Milwaukee, WI

ARCADIS

Edmund A. Buc, P.E.

Senior Engineer

Mr. Buc is a senior engineer in the Milwaukee office of ARCADIS G&M, Inc. and is experienced in the investigation, design, construction, and operation of multi-disciplinary environmental projects. He has performed work involving remedial action at a variety of contaminated sites, environmental permitting and reporting. In addition, Mr. Buc's responsibilities include managing project personnel and budgets, preparing technical reports, design plans and specifications, and performing field tests and construction management.

Fields of Specialization

- Soil and groundwater remedial systems design, construction and operation
- Soil and groundwater contamination investigation
- Environmental site assessments
- Hazardous waste management
- Regulatory compliance/permitting

Key Projects

- Project Manager for a former manufactured gas plant (MGP) site in southern Wisconsin. Based on site conditions and redevelopment plans, a remedial strategy consisting of natural attenuation, limited source removal at a former tar well, and engineered barriers has been approved by the Wisconsin Department of Natural Resources (WDNR). The barriers will consist of future buildings, parking areas, and vegetative cover. A partnership has been developed between the owner, developers, and ARCADIS G&M to integrate the redevelopment plan with the site remedy.
- Project Manager for soil and groundwater investigation and remediation projects in Wisconsin involving leaking underground storage tanks. Responsibilities included analysis of investigation data, remedial alternatives evaluation, remedial action cost analysis, performing pilot tests and data analyses, preparing and coordinating construction and discharge permits, and overseeing system construction and operation.
- Project Manager for the investigation and remediation of contamination resulting from releases from a pentachlorophenol (PCP) dip tank at a facility in Wisconsin. Responsibilities included analysis of investigative data, preparing a site closure plan in accordance with Wisconsin Administrative Code Chapter NR 600, coordinating contractor and disposal services, and report preparation following the completion of remediation activities.

Education

Master of Civil/Environmental Engineering, Marquette University, 1995

Bachelor of Chemistry, Michigan State University, 1987

Professional Registrations

Professional Engineer in Wisconsin

Certified Hazardous Material Manager

Health and Safety Training for Superfund and RCRA Site Personnel (U.S. EPA/OSHA approved)

Professional Associations

American Chemical Society

American Society of Civil Engineers

Institute of Hazardous Materials Management

- Project Manager for services assisting clients to achieve and maintain compliance with state and federal environmental and health and safety regulations. Responsibilities included conducting facility compliance audits, preparing facility hazard communication programs, assisting with the completion of annual air emission inventory reports, and reviewing facility waste management practices.

- Project Manager for five fast-track Phase I environmental site assessments in three states (two sites in Wisconsin). Reports were delivered in two weeks. Transactions were completed within three weeks of ARCADIS G&M's authorization date.

- Project Engineer for the investigation and remediation of a former gasoline service station/existing dry cleaner. Constituents of concern included petroleum hydrocarbons, chlorinated compounds, and potential dense non-aqueous phase liquid (DNAPL). The selected remedial alternative is natural attenuation. A two year monitoring program has been approved by the WDNR.

- Project Manager for sites where remediation has been shifted from active remediation to natural attenuation. Completed an analysis of remedial system and groundwater monitoring data to demonstrate that the remedial system had reached its limit of effectiveness and that further operation was not resulting in significant additional removal of mass. Acted as a client advocate in negotiating with WDNR to shut down these systems and institute a lower-cost, natural attenuation monitoring program. The strategy at these sites is to gather sufficient data for obtaining closure under the WDNR Flexible Closure Policy.

- Project Manager for a client operating a hazardous waste storage and recycling facility. A corrective action program is being developed in accordance with the Recourse Conservation and Recovery Act (RCRA) and Chapter NR 635. Activities have also included addressing various permit issues and preparation of a spill prevention, containment and countermeasures (SPCC) plan.

- Project Manager for investigation and remediation activities at a site enrolled in the Wisconsin Land Recycling Program. Activities have focused on eliminating areas of environmental concern identified during a Phase I assessment, to obtain a Certificate of Completion from the WDNR under the Act 453 program.

- Member of the subcommittee which was formed in May 1997 at the request of the Wisconsin Department of Commerce COMM to revise Chapter ILHR 47 of the Wisconsin

Administrative Code. Assisted with the development of a priority ranking system to be used in assessing whether sufficient risk at a site exists to warrant active remediation. Prepared process flow charts to graphically illustrate how sites would be investigated and remediated under the revised code. The ranking system and flow charts were used by the full ILHR Code Committee for discussions and drafting of regulatory code.

Dawn M. Gabardi

Staff Hydrogeologist

Ms. Gabardi is a Geologist/Hydrogeologist in the Milwaukee office of ARCADIS G&M, Inc., with experience in coordinating and conducting complex soil and groundwater site investigations, and implementing remedial actions. Her primary responsibilities include project management and coordination of Phase I and Phase II Environmental Site Assessments (ESAs), preparation of technical reports, data management and interpretation, supervision of drilling operations, and collection of soil and groundwater samples.

Professional Training

- OSHA 40 Hour Safety Training Certification (29 CFR 1910.120); 8 Hour Refresher Training
- Wisconsin Certified PECFA Consultant
- Hazardous Materials Transportation Skills Training
- Bilingual English/Spanish

Fields of Specialization

- Implementation of field investigations involving drilling, well installation, and sampling to assess soil and groundwater contamination
- Phase I and Phase II Environmental Site Assessments
- Coordination and supervision of remedial soil excavations
- Geological mapping and stratigraphic interpretation
- Preparation of technical reports
- Aquifer testing including hydraulic conductivity and pump tests

Key Projects

- Conducted Phase I and Phase II ESA on 60-acre railway yard with history dating back to 1866. Responsibilities included preparation of Phase I and Phase II ESA report, historical records review, site reconnaissance, coordination of field activities, collection of soil and groundwater samples, and data analysis and reduction. Inspection of areas of concern focused on frog shop, roundhouse, engine house, rail mill, car repair shop, and oil store house. Additional uses of leased portions of the rail yard property included three bulk petroleum product storage facilities, a lumber and coal supply company, warehouses and grain elevators for feed and fertilizer storage, and concrete product manufacturing.
- Conducted Phase I ESA on 23-acre parcel that included a former foundry and six city blocks of commercial, industrial, and residential properties.

Education

Bachelor of Science, Geology, (Hydrogeology emphasis) University of Wisconsin - Eau Claire, 1993

Professional Associations

Federation of Environmental Technologists

Responsibilities included preparation of Phase I ESA report, historical records review, interview of individuals knowledgeable about the property history, and regulatory agency file reviews.

- Provided task management and field oversight of several remedial excavations on a 4.5-acre brownfield site. Approximately 6,000 tons of soil impacted by chlorinated and petroleum hydrocarbons were excavated to achieve site-specific cleanup levels developed for the property using fate and transport modeling. Redevelopment of the site has since been completed through construction of a medical complex.

- Project Manager for a site impacted by petroleum hydrocarbons in soil and groundwater. Implemented remediation utilizing soil excavation, natural attenuation, and the development of site specific soil cleanup levels. Responsibilities included remedial alternatives evaluation, budget development and tracking, formulation and oversight of groundwater monitoring program, and data collection and analysis. Site was successfully closed after one year of natural attenuation monitoring.

- Served as project geologist for the investigation of a former disposal site. Responsibilities included evaluation of complex groundwater flow patterns within an aquifer system impacted by metals leaching into groundwater, and hydraulic conductivity testing of monitoring wells and piezometers.

- Provided task management of diverse environmental compliance activities in accordance with local and state regulations for gear manufacturing and metal heat treating facilities. Responsibilities included Tier I and Tier II stormwater discharge monitoring and reporting, quarterly sampling of industrial wastewater discharged to the Milwaukee Metropolitan Sewerage District (MMSD), preparation of Periodic Compliance Reports in accordance with facility's discharge permit issued by the MMSD, and client/regulatory agency interface.

- Managed various phases of petroleum remediation projects under Wisconsin's PECFA program. Four years of task management experience, including formulation of work plans, solicitation of competitive bids in accordance with PECFA rules, site investigations, remedial option evaluations, and client and regulatory consultation.

- Project manager for Phase I ESAs conducted on parcels with various industrial or commercial uses. Responsibilities included site/facility inspection, regulatory database review, historical records search, and report preparation.

MARSH USA INC. — CERTIFICATE OF INSURANCE

CERTIFICATE NUMBER: SEA-000084466-02

PRODUCER
MARSH USA INC
1225 17TH STREET, SUITE 2100
DENVER, CO 80202-5534

ATTN: SHARON TIMMONS
303-308-4680
33320 -12345-5/20-00-01 ARC

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE POLICY. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES DESCRIBED HEREIN.

INSURED
ARCADIS GERAGHTY & MILLER, INC.
ATTN: KRISTA SCHELHAAS
630 PLAZA DRIVE SUITE 200
HIGHLANDS RANCH, CO 80129-2377

COMPANIES AFFORDING COVERAGE

COMPANY A: LUMBERMENS MUTUAL CASUALTY CO
COMPANY B: HARTFORD INSURANCE CO OF MW
COMPANY C: NATIONAL UNION FIRE INSURANCE CO
COMPANY D: INDIAN HARBOR INSURANCE COMPANY

COVERAGES — This certificate supersedes and replaces any previously issued certificate for the policy period noted below.

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

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY [X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS MADE [X] OCCUR OWNER'S & CONTRACTOR'S PROT	4LS000012-02	01/01/01	01/01/02	GENERAL AGGREGATE PRODUCTS - COMP/OP AGG PERSONAL & ADV INJURY EACH OCCURRENCE FIRE DAMAGE (Any one fire) MED EXP (Any one person)	$ 2,000,000 $ 2,000,000 $ 2,000,000 $ 2,000,000 $ 1,000,000 $ 10,000
B	AUTOMOBILE LIABILITY [X] ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS HIRED AUTOS NON-OWNED AUTOS	46UENGY8026 (AOS) 46UENGY8664 (TX)	01/01/01 01/01/01	01/01/02 01/01/02	COMBINED SINGLE LIMIT BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE	$ 1,000,000 $ $ $
	GARAGE LIABILITY ANY AUTO				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EACH ACCIDENT AGGREGATE	$ $ $
C	EXCESS LIABILITY [X] UMBRELLA FORM OTHER THAN UMBRELLA FORM	BE7406689	01/01/01	01/01/02	EACH OCCURRENCE AGGREGATE 	$ 5,000,000 $ $
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY THE PROPRIETOR/ PARTNERS/EXECUTIVE OFFICERS ARE: [X] INCL [ ] EXCL	46WBDX2536	01/01/01	01/01/02	[X] WC STATUTORY LIMITS [ ] OTHER EL EACH ACCIDENT EL DISEASE-POLICY LIMIT EL DISEASE-EACH EMPLOYEE	 $ 1,000,000 $ 1,000,000 $ 1,000,000
D	OTHER CLAIMS-MADE PROFESSIONAL LIABILITY AND CONTRACTORS POLLUTION LIABILITY	PEC0008763	03/14/01	03/14/02		10,000,000

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS (LIMITS MAY BE SUBJECT TO DEDUCTIBLES OR RETENTIONS)

CERTIFICATE HOLDER

SPECIMEN

CANCELLATION

SHOULD ANY OF THE POLICIES DESCRIBED HEREIN BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE INSURER AFFORDING COVERAGE WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED HEREIN, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER AFFORDING COVERAGE, ITS AGENTS OR REPRESENTATIVES.

MARSH USA INC.
BY: Dorothy A. Stevens

ARCADIS

Guaranteed Remediation, Crestwood Shopping Center

Glendale, Wisconsin

Client
Financial Institution

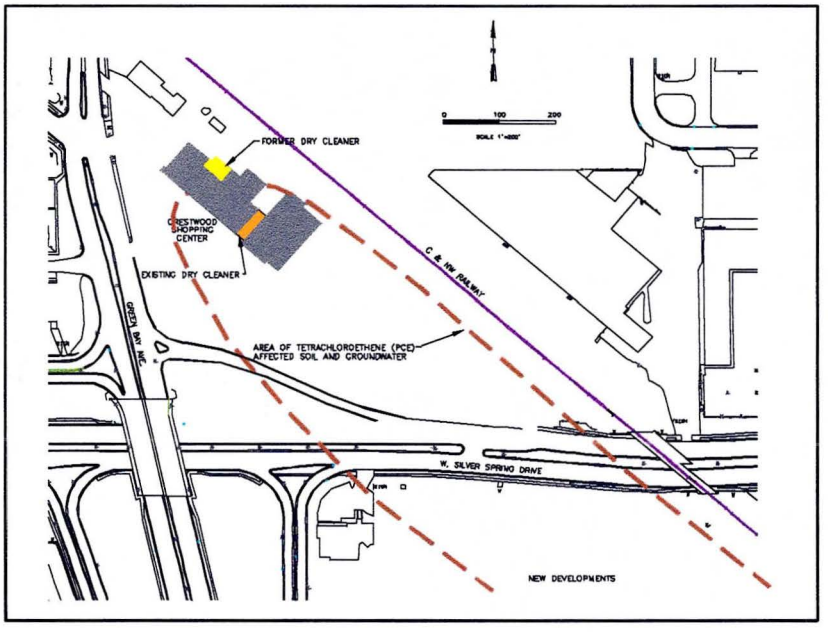
Scope of Services
Soil Remediation Using Enhanced Soil Vapor Extraction
Groundwater Remediation Using Carbon-Enhanced Reductive Dechlorination
Natural Attenuation
Risk Assessment Monitoring
Guaranteed Remediation Program™

Background

Prior to 2000, the Crestwood Shopping Center was an underused and dilapidated 27,000 square foot strip mall. Chlorinated hydrocarbons, including tetrachloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE) and vinyl chloride (VC) were present in soils and groundwater on and off the seven acre Crestwood site. A groundwater plume of dissolved chlorinated solvents had migrated off-site approximately 5,000 feet in the direction of a residential subdivision and the Milwaukee River. The chlorinated hydrocarbons were released during dry cleaning operations, which had been ongoing at the shopping center at one of two locations since the early 1960s. Initial redevelopment efforts for the site were unsuccessful due to regulatory and financial uncertainties associated with the contamination at, and emanating from, the site.

Guaranteed Remediation Program™ (GRiP™)

To address these uncertainties, ARCADIS was able to work with the land owners, local municipality, Wisconsin Department of Natural Resources (WDNR), and the site developer to formulate a guaranteed, fixed-price remediation agreement. Under this agreement, ARCADIS is responsible for all remediation work necessary to obtain regulatory closure and for coordinating remediation work with site redevelopment activities. The ARCADIS guaranteed, fixed-price remediation agreement was instrumental in getting all parties to agree to the terms for this successful property redevelopment project. To minimize the liability of the various parties involved with this redevelopment project, remediation stop-loss and pollution legal liability insurance policies were obtained



in conjunction with the ARCADIS guaranteed, fixed-price remediation agreement.

Remedial Program

The remedial program developed by ARCADIS consists of comprehensive in-situ treatment of impacted soil and groundwater to reduce contaminant mass within the source areas. Enhanced soil vapor extraction (SVE) using an injection and extraction system with horizontal and vertical wells is being used to treat the soils. The SVE system installation began in December 2000 and the system startup began in August 2001. The groundwater remediation program, which was initiated in June 2000, involves the periodic injection of an organic carbon solution to promote the biological degradation of the groundwater contaminants (i.e., an in-situ bioremediation process).

Once the source area treatment has been accomplished, groundwater monitoring will be completed to confirm that natural attenuation will reduce contaminant mass over time within the downgradient plume.

Engineered barriers will be used to prevent infiltration into the vadose zone and prevent exposure to any residual soil contamination remaining across the site. A risk assessment has also been conducted to assess whether current and future constituent concentrations, on-site and downgradient of the site, pose any unacceptable risks to human health or

the environment. Supplemental remedial actions may be necessary if constituent concentrations are found to exceed the threshold levels established in the risk assessment.

Proposed Redevelopment

Concurrent with the installation of the soil vapor extraction system and groundwater treatment activities, the former shopping center was demolished in June/July 2000. Construction of the proposed redevelopment at the site will likely be initiated in Fall 2001. The proposed development was used to create a Tax Incremental Financing (TIF) district to finance a portion of the property redevelopment.

ARCADIS

Guaranteed Remediation Program, Washington Square Mall Proiect

Germantown, Wisconsin

Client
General Capital

Scope of Services
Excavation/Off-Site Disposal of RCRA F-Listed Soils
Enhanced Biodegration of Impacted Groundwater
Guaranteed Property Remediation and Insurance Program

Background

Prior to 1998, the Washington Square Mall in Germantown, Wisconsin was a dilapidated retail center that was over 80 percent vacant. Initial attempts to redevelop the property were unsuccessful due to uncertainties associated with contamination at the site. This contamination resulted from the release of tetrachloroethylene (PCE), a common dry cleaning solvent, from a dry cleaning facility that operated within the former shopping mall.

On behalf of General Capital the site developer, ARCADIS was able to formulate a cost-effective remedial strategy with a ***fixed-price remediation guarantee*** for site closure. In addition, ARCADIS was able to obtain several supplemental insurance policies for minimizing the developer's long-term liability associated with this project. The ***fixed-price remediation guarantee*** and associated insurance policies effectively minimized the risks associated with developing the contaminated property and were instrumental in obtaining the financing necessary for this successful property redevelopment.

Remedial Program

The soil remediation program, which was conducted over the period of August through September 1998, consisted of excavation and off-site disposal of unsaturated soils (RCRA F-listed soils) that contained PCE at levels above the soil cleanup objective approved by the Wisconsin Department of Natural Resources (WDNR). The groundwater remediation program, involved the periodic injection of an organic carbon solution to promote the biological degradation of the groundwater contaminants (i.e., an in-situ bioremediation process).

Photo Above: Vacant shopping mall prior to initiating site remediation and redevelopment activities

Photo Below:
Initial carbon injection within partially backfilled excavation

ARCADIS

Guaranteed Remediation Program, Washington Square Mall Proiect

Germantown, Wisconsin

Financial/Liability Protection Highlights

- ***Guaranteed Fixed-Price Remediation Contract*** (for a guaranteed fixed-price, ARCADIS is responsible for all remediation work necessary to obtain regulatory closure)
- Tax Incremental Financing (TIF) district established to pay for remediation and site development costs
- Cleanup activities conducted under WDNR's purchaser liability exemption program
- Remediation stop-loss insurance policy
- Pollution legal liability insurance policy

Project Accomplishments

- Design and implementation of the site remedy within a 10 week time frame
- Excavation and off-site disposal of approximately 3,125 tons of contaminated soil
- Completion of an initial carbon injection event using 182 temporary injection wells
- Installation of permanent carbon injection system
- Average PCE concentration within the groundwater plume decreased from 1,600 ppb to 23 ppb within a 9 month time frame
- Site closure letter received from the WDNR in January 2001, less than 30 months following initiation of site remediation

Photos:
Completed site development

Client References

1. Donald Gallo, Esq.
   Mark Treter, Esq.
   Reinhart Boerner Van Deuren Norris & Rieselbach, S.C.
   1000 North Water Street
   P.O. Box 514000
   Milwaukee, Wisconsin 53203-3400
   (414) 298-8355

2. Charles Cass
   Past President, Wisconsin Fabricare Insitute
   One Hour Martinizing
   N42 W27251 Highway JJ
   Pewaukee, Wisconsin 53207
   (414) 691-4135

3. Dennis Schmitt
   President, Wisconsin Fabricare Institute
   Lindeman's Cleaning
   1231 South Monroe
   Green Bay, Wisconsin 54301
   (920) 435-5345

4. Michael Weiss
   General Capital Management, Inc.
   10532 North Port Washington Road
   Mequon, Wisconsin 53092-5563
   (414) 240-4400