WSB

A Proposal for a

Remediation Master Contract

FOR THE MINNESOTA POLLUTION CONTROL AGENCY







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TECHNICAL PROPOSAL

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701 Xenia Avenue South, Suite 300 | Minneapolis, MN 55416 | (763) 541-4800

April 11, 2018

Ms. Mary Heininger
Minnesota Pollution Control Agency Contract Specialist
520 Lafayette Road North
St. Paul, MN 55155-4194

RE: Proposal for Category B – Petroleum Only Environmental Services
Minnesota Pollution Control Agency Remediation Master Contract

Dear Ms. Heininger:

WSB & Associates, Inc. (WSB) appreciates the opportunity to submit this proposal in response to the Minnesota Pollution Control Agency's (MPCA) Request for Proposal (RFP), dated February 28, 2018. Attached is WSB's proposal to perform Category B – Petroleum Only Environmental Services as presented in the RFP.

WSB has reviewed the Contract and makes no exceptions and accepts the classifications, levels and rates (Schedules 1 and 2). We also accept the equipment and supplies lists pricing with the understanding that the pricing is inclusive of applicable taxes, fees, insurance costs, direct costs, overhead and profit. In addition, we have reviewed and accept the RFP Addendum dated March 19, 2018. A signed copy of this Addendum is included with our submittal.

WSB's growing staff of over 400 includes 25 Principals, 32 Associates, 85 registered Professional Engineers, and three Minnesota Professional Geologists. In total, WSB has over 125 registered professionals. In the last few years, we have welcomed over 100 new staff members to the firm, each joining to support the evolving needs of our government, commercial, and energy clients. With this growth, WSB can support the innovation and technical excellence you would expect from a national firm, while maintaining the trusting and meaningful relationships found with a local firm.

WSB's corporate headquarters is in Minneapolis (Golden Valley), MN. WSB has 11 offices located throughout Minnesota (6), North Dakota (2), Colorado (1), and Texas (2). Staffing for services covered under this contract will be conducted from the Minneapolis, St. Paul, and Rochester, MN offices. The personnel classifications outlined in the RFP embody our staff's expertise and skill level. Thirteen of our team members assigned to this project are located in the Minneapolis office, four in St. Paul, and seven in Rochester. WSB's environmental team has experience investigating and closing numerous leak sites through the MPCA Petroleum Remediation Program. The majority of WSB's staff designated for this project work within a single group at WSB – Environmental Planning and Natural Resources (EPNR).

The EPNR group provides services that include environmental investigation and remediation, environmental planning and review, regulations assistance, and natural resources. The EPNR group is managed by Andi Moffatt, an industry veteran with over 20 years of experience. WSB provides environmental services in all areas specified in the RFP and has additional capabilities that may serve as an added value. Some of these additional capabilities include drilling services (WSB has two drill rigs in-house), regulated materials (i.e., asbestos, lead) surveying, water/wastewater, materials testing, environmental compliance, wetland delineation, environmental review, regulation assistance and planning, and regulatory permitting.

WSB's experience with environmental projects includes conducting file reviews; Phase I Environmental Site Assessments (Phase I ESAs); Phase II Environmental Site Assessments (Phase II ESAs); soil, soil vapor, and groundwater contaminant investigations; and managing environmental liabilities, response action and corrective action plan development, oversight, and implementation, including the installation and monitoring of vapor mitigation systems. We are qualified to provide all services listed under Category B: Petroleum Only Environmental Services Scope. In collaboration with the MPCA, WSB will investigate, identify, and remediate releases of contaminants that pose a threat to the state's environment and the public's health and safety.

Jeffrey Rice will serve as WSB's main contact for the contract and will answer questions regarding this proposal. Jeffrey has over 17 years of experience managing, investigating, and remediating contaminated properties. Jeffrey is a Minnesota licensed Professional Geologist, a Certified Hazardous Materials Manager, MDH Certified Asbestos Project Designer, MDH Certified Asbestos Site Supervisor, MDH Certified Asbestos Building Inspector, and MDH Lead Risk Assessor. Jeffrey's contact information is as follows:

Jeffrey Rice PG, CHMM
Project Manager
701 Xenia Ave South, Suite 300
Minneapolis, Minnesota 55416
Office: (763) 270-3471
Mobile: (612) 916-7067
Fax: (763) 541-1700
jrice@wsbeng.com
www.wsbeng.com

Throughout Jeffrey's program management of the MPCA contract, he will organize services and oversee all operations related to the Contract. WSB has also established the following team members as supporting contacts for the Contract:

Peter Moore, PG | Senior Project Manager | (612) 599-4940

Andi Moffatt | Principal/EPNR Group Manager | (763) 287-7196

We appreciate the opportunity to provide services under this Contract and are confident that we can provide excellent environmental consulting services to the State of Minnesota. We look forward to continuing our relationship with the MPCA. If you have any questions, please contact Jeffrey at jrice@wsbeng.com.

Sincerely,

WSB & Associates, Inc.

Jeffrey Rice, PG, CHMM
Project Manager/Primary Contact

Andi Moffatt
Principal/EPNR Group Manager

Qualifications and Capabilities

General Qualifications

WSB & Associates, Inc. (WSB) was founded in 1995 with the desire of building a great company through culture. Since then, we have remained dedicated to creating a culture of relationship building, forward thinking, and collaboration that enables technically advanced, thoughtful, and creative engineering and solutions. By inspiring each other to look beyond solutions for today, and capitalizing on the opportunities of tomorrow, WSB has seen steady growth in staffing and professional service areas. The firm's investment in staff and client education supports the collaborative, knowledge-driven, and inspiring environment that delivers results.

WSB Way

WSB team members embody a set of staff-developed principles called the *WSB Way*. This defines the firm's culture and value system as well as the way we serve each other and our clients. These values challenge staff to strive for the following:

- Over-the-top customer service
- Integrity
- Technical excellence

Volunteer Event with Metro Blooms to Install Raingardens in Minneapolis

Employee engagement and satisfaction are key components of WSB's culture. Staff members are empowered to make decisions and are given the resources they need to reach their full potential.

As a result, the Star Tribune has named WSB a Top Workplace in Minnesota every year since 2013. This award recognizes progressive companies in Minnesota based on employee opinions regarding organizational health, job expectations, and management. WSB sees this award as an honor and strives to create an environment where staff members feel challenged, excited, and appreciated.

Additionally, as part of the Top Workplace evaluation, in 2016 WSB was recognized as the top firm for 'New Ideas.' The firm has been recognized by several industry organizations and media outlets for a number of project awards, listed as a Zweig Hot Firm, and has seen an upward trend in ENR's Top 500 Design Firms - ranked at #441 in 2014, #288 in 2015, #248 in 2016, and #209 in 2017.

Successful innovation requires continued education and collaboration. WSB University offers staff members and clients educational opportunities and programs to refine their skills, explore emerging ideas in the industry, and, most importantly, an environment that supports collaborative thinking and connections. With a vibrant space specifically designed to encourage innovation through the access to the latest technology. WSB University leads the industry in staff and client education. While originally intended to act as a support system for innovation, WSB University has evolved into a programmatic educational center. This resource supports the firm's view that by learning, we teach. By teaching, we collaborate. Together, we build a legacy. Learn more about WSB University at https://www.wsbeng.com/wsbuniversity/. As part of a culture that shares expertise with colleagues and clients, WSB promotes the development of articles of interest and relevance to their expertise. These articles are made available through the WSBPedia tab at WSB University.

We will approach this project as a trusted partner and work collaboratively with the MPCA. WSB has substantial experience working with MPCA for over five years, with many members of our team having direct experience working with MPCA personnel for over 20 years. WSB has partnered with private companies and many public entities including MPCA, the Minnesota Department of Transportation (MnDOT), Metro Transit, and numerous cities and counties across Minnesota to complete environmental investigations and remediation projects. The majority of the team assigned to this project work within WSB's EPNR group. The work under this contract falls perfectly within our expertise. The EPNR group has completed hundreds of Phase I ESAs, Phase II ESAs, Limited Site Investigations (LSIs), UST removals, Remedial Investigations (RIs), Response Action Plans/Construction Contingency Plans (RAP/CCP), RAP Implementation oversight, construction excavation monitoring, regulatory assistance (i.e., MPCA assurance letters, environmental covenants, affidavits, site specific beneficial use determinations, etc.), and documentation and reporting along with other environmental services in Minnesota and across North America.

WSB offers services in over 25 areas to seamlessly provide integrated delivery:

- Asset Management Systems
- Community Planning
- Construction Administration
- Design-Build
- Economic Development
- Energy
- Environmental Compliance
- Environmental Planning and Natural Resources
- Geographic Information Systems
- Geohazard Risk Assessments
- Geotechnical Engineering
- Intelligent Transportation Systems
- Landscape Architecture
- Land Development Services
- Management Analysis and Development
- Materials Testing
- Municipal Engineering
- Pavement Management/Forensics
- Project Controls
- Project Funding
- Right of Way
- Site Validation
- Structures
- Surveying
- Transportation/Traffic
- Visualization
- Water Resources
- Water/Wastewater

WSB provides environmental solutions for a variety of contaminated sites ranging from simple sites (small localized releases) to complex sites (industrial sites with many types of contaminants in multiple media). Our professionals work diligently to assist clients through the identification, risk management, and cleanup process and can support in investigation/cleanup grant and reimbursement applications.

Determining if an environmental liability exists is the first of many steps in an environmental investigation and remediation process. Whether your project is located in an urban or rural setting, our environmental specialists can provide the services and expertise necessary to keep projects moving forward efficiently and safely. Regardless of the issue, WSB will prioritize the MPCA's interests to move forward in a timely and professional manner. WSB will work ensure that these investigations, cleanups, and closures occur as quickly as possible without compromising our shared mandate to protect human health and the environment. Our staff have the experience and training to fully implement a risk-based approach to investigation and remediation.

WSB's professionals have completed many projects throughout Minnesota and beyond and have the resources, knowledge, and technical expertise to deliver creative and effective solutions to unique problems. Some of our staff have national and global experience that often results in new ideas on best management practices, risk management, and how to address environmental obligations.

WSB is committed to staying informed of MPCA guidance and practices. WSB's staff who specialize in petroleum projects attend "Consultant Days" offered by the MPCA to learn about program updates, regulatory changes, policy changes, and best management practices. These staff are subscribed to electronic MPCA updates and notifications on news, regulatory changes/updates, and best management practices. These updates are shared amongst staff and discussed at frequent team sessions.

In addition to WSB's vast experience completing petroleum release investigations and remediation, we also have significant experience providing: contaminated property redevelopment assistance; underground storage tank (UST) compliance and training, air, water, and waste streams compliance and permitting; National Environmental Protection Act (NEPA) services such as Environmental Impact Statements; and Environmental Assessment Worksheets (EAW) assessments. The varied and extensive knowledge and experience amongst staff provides turn key service to the MPCA and the Petroleum Remediation Program.

WSB staff are knowledgeable of the MPCA Petroleum Remediation Program guidance for UST/AST release investigation and cleanup and the Petroleum Release Cleanup Statutes, Minn. Stat. § 115C.01 – 115C.13. These documents provide guidance and best management practices for notifying, investigating, remediating, and reporting UST and AST release sites in Minnesota.

WSB staff use their experience and document guidance to provide a risk-based approach to corrective action at petroleum release sites to evaluate and eliminate risks to human health and the environment. We are experienced in preparing Conceptual Site Models to ensure appropriate site management decisions are made. WSB staff are engaged in learning about program updates and policy changes. Some of our staff have over 20 years of experience working with the Petroleum Remediation Program. Recently, we have witnessed a shift in the focus of investigations and remediation towards vapor intrusion and addressing this pathway. We are committed to staying informed of the evolving processes and educating others on MPCA guidance and best management practices.

Goals include identifying and evaluating the pathways to receptors so that prompt and appropriate action is taken. These investigations, cleanups, and closures need to occur as quickly as possible without compromising the mandate to protect human health and the environment. WSB fully understands the steps, tasks, requirements, and procedures necessary to move forward. This process will ensure that each site can be evaluated, that low-risk sites are quickly closed, and high-risk sites are mitigated to lower the risk to receptors. WSB can provide cost-effective services to the MPCA to properly evaluate and address risks. We understand the process to implement a risk-based approach for managing petroleum releases based upon land use and exposure pathways. When an exposure pathway is complete to receptors, we take corrective actions to reduce those risks. We also understand where risks to receptors are low, the program relies on natural attenuation for long-term risk reduction. WSB staff have vast experience with Petrofund and the reimbursement process and requirements. We have completed numerous property redevelopment projects through the Petroleum Brownfields Program, working with the MPCA staff to investigate, address risks, and obtain certain assurance letters for owners, operators, and other parties.

WSB has substantial experience working with the MPCA Petroleum Remediation Program as a company for over five years. We have partnered with private companies and many public entities including MPCA, MCES, MnDOT, Hennepin County, and over 15 cities across Minnesota to complete petroleum investigations and remediation projects. Our EPNR group has completed hundreds of Phase I ESAs, Phase II ESA, LSIs, UST removals, and remedial investigations here in Minnesota and across North America. Accordingly, we have been one of the leaders in helping our clients address the vapor intrusion pathway and have successfully investigated and, if necessary, installed vapor mitigations systems.

WSB staff have partnered with MPCA on many of these investigations and remediation projects and have completed dozens of Petroleum Brownfield Program projects and the issuance of certain assurance letters. In addition, WSB staff have completed various projects including large corridor Phase I ESA projects (currently completing due diligence work on the Gold Line for Metro Transit) and brownfield redevelopment projects which have involved multiple sites and coordination within various programs, including the MPCA Petroleum Brownfield Program, the Voluntary Investigation Cleanup (VIC) Program, and the Solid Waste Program.

WSB Key Staff Resumes and Staff Matrix

WSB's staff for the MPCA Contract include technicians, CADD/GIS specialists, soil scientists, geologists, QA/QC specialists, engineers, environmental scientists, regulatory compliance specialists, and project managers. Because we have over 400 staff in Minnesota, we are able to support a varying scale of environmental projects as well as other technical needs that may arise. Resumes of key staff are included in Appendix A. WSB has a pool of 24 staff that are available and qualified to perform services under this Contract. The following three pages provide a summary of staff, job classifications, and qualifications.

Key staff members included in this proposal have been performing petroleum release investigations and due diligence investigations for many years, some for over three decades. Petroleum release investigations and petroleum remediation are core service areas in our Minneapolis, St. Paul, and Rochester offices. In the past five years, WSB has completed over 250 Phase I ESAs, 50 Phase II ESAs, and 25 tank removal projects. We have successfully closed over 50 MPCA petroleum leak sites and are currently investigating eight open petroleum release sites. Our current petroleum projects are in various stages, ranging from LSIs, Phase II ESA, RIs, to corrective actions including installing vapor mitigation systems.

Our team of experts has a wide range of capabilities, including petroleum and non-petroleum site investigations and remediation, environmental due diligence, training, and compliance auditing for all environmental programs.

WSB will provide one primary contact for this contract: Jeffrey Rice, PG, CHMM and one supporting contact, Peter Moore, PG. Together they offer 47 years of experience conducting petroleum investigations and remediation.

Jeffrey Rice brings over 17 years of environmental experience as a Senior Environmental Scientist. He has vast experience working with the MPCA Petroleum Programs and has successfully completed and received regulatory closure on many projects. Jeffrey has provided project management for over one hundred Phase I ESAs, Phase II ESAs and other subsurface investigations of soil, groundwater and soil vapor for petroleum, hazardous chemicals and buried debris. He helps lead and direct project staff while completing investigations in accordance with MPCA guidance documents within the established timelines and budgets.

Peter Moore brings over 30 years of environmental experience as a Senior Project Manager. Peter offices in Rochester and supports WSB's environmental projects. His strengths include communications with the stakeholders (clients, multi-disciplinary staff, attorneys, subcontractors, property owners, interagency collaboration, and neighborhood groups) to bring projects to successful completion. He will ensure that adequate resources are devoted to projects and will work with the MPCA to ensure superior project execution throughout the life of the contract.

Trent Noecker is WSB's Safety Officer and is responsible for ensuring that WSB employees are knowledgeable and have the resources available to perform activities in a safe manner. Trent's responsibilities include directing WSB's safety program training for OSHA 40-hour hazardous waste and 8-hour refresher training.

All WSB's professional staff members have applicable degrees, registrations and certifications and provide a range of professional expertise in the areas of engineering, soil science, geology, CADD, and field services.

Staff Matrix

Name	Job Classification	OSHA Certification	Years of Service with WSB/ Total Experience	Summary of Educational Experience	Work Experience	Licenses and Certifications	Office Location
Jeffrey Rice	Project Manager	OSHA HAZWOPER 40-Hour	3/17	B.A. Biology & Geology	Environmental Project Management, Asbestos and Regulated Materials Inspections, Abatement Project Design and Management, Asbestos and Regulated Materials Removal Oversight, Phase I and Phase II Environmental Assessments, Limited Site Investigations/Remedial Investigations, Site Remediation and Redevelopment, Response Action and Construction Contingency Planning & Management, Spill Prevention Control Countermeasures Planning, Industrial Hygiene/Indoor Air Quality	P.G. Minnesota CHMM Asbestos Inspector Asbestos Supervisor Asbestos Project Designer Lead Risk Assessor	Golden Valley
Peter Moore	Project Manager	40-Hour, Supervisor	1/30	B.S. Geology; M.A. Leadership	Program Management, Remedial Investigations and Remediation, Property Redevelopment (Brownfields), Phase I-Phase II Investigations, Remediation System Operation and Maintenance, Risk Assessments-Risked Based Corrective Actions, Groundwater Modeling, Institutional Controls	P.G. Minnesota, P.G. Wisconsin	Rochester
Trent Noecker	Project Manager	HAZWOPER 40-Hour, OSHA Outreach Trainer	2/9	B.S. Technology Education, M.S. Risk Control	Safety and Health Program Development, Hazard and Risk Assessment, Hazard Control, Safety and Health Training, PPE and Respirator Selection	Certified Safety Professional (CSP)	Golden Valley
Barry Hentz	Field Technician	OSHA 10/40 Hour HAZWOPER	4/31	B.E.S. Industrial Technology	Environmental Sampling, UST removals, Remedial Investigations, Remedial System Install oversight, Construction Materials Field and Lab Testing, Special Structural Field Inspections, Remediation oversight.	NA	Rochester
Bill Chang	Engineer 3	NA	1/30	M.S. Civil Engineering; B.S. Civil Engineering National Chen Kong University	Water/Wastewater Treatment Plant Design. Project Manager for City of Brook Park, MN water treatment plant to remove petroleum contaminants from groundwater. The project was fully funded by Petrofund.	P.E. MN, WI, and ND	St. Paul
Chuck Kochmann	GIS/CADD	NA	22/27	Technical Degree Drafting, Minneapolis Drafting School, General Course Work, St. Cloud State University	Creating DTM Models, developing alternatives, setting alignments,creating complex geometrics, producing large roll layouts over aerial mapping, and creating figures for reports, studies, and presentations.	NA	Golden Valley

Name	Job Classification	OSHA Certification	Years of Service with WSB/ Total Experience	Summary of Educational Experience	Work Experience	Licenses and Certifications	Office Location
Dan Rangitsch	Project Manager, Scientist 2	OSHA 10/40 Hour HAZWOPER	3/7	B.S. Geological Sciences	Asbestos and Regulated Materials Inspections, Phase I Environmental Site Assessments, Phase II Environmental Site Assessments, Limited Site Investigations, Remedial Investigations, Response Action Planning and Implementation, excavation oversight, underground storage tank sampling, asbestos air monitoring, sediment sampling	P.G. Minnesota, Asbestos Inspector, Asbestos Supervisor	Golden Valley
Darin Hyatt	Engineer 3	NA	3/24	B.S. Civil Engineering	Geotechnical Engineering, Construction Materials Testing and Observations, Project Management, Drilling Management	P.E. Minnesota	Burnsville
David Mueller	Scientist 1, Field Technician	OSHA 10/40 Hour HAZWOPER	2/4	B.A. Biology	Asbestos and Regulated Materials Inspections, Phase I Environmental Site Assessments, Phase II Environmental Site Assessments, Limited Site Investigations, Remedial Investigations, Response Action Planning and Implementation, excavation oversight, asbestos air monitoring, sediment sampling, noise monitoring & modeling	Asbestos Inspector Asbestos Supervisor	Golden Valley
Earth Evans	Engineer 3	NA	6/19	B.S. Civil Engineering; M.S. Environmental Engineering	Project management, hydraulic design, stormwater design, stormwater maintenance	P.E. MN, WI, ND, CO, TX, IA	Golden Valley
Greg Johnson	Engineer 3	NA	3/24	M.S. Civil Engineering; B.S. Civil Engineering	Project management and design of portable water treatment facilities and wastewater treatment and pumping stations.	P.E. MN, WI, and ND	St. Paul
Jake Newhall	Engineer 3, Project Manager	NA	11/11	B.S. Civil Engineering, PMP	Project Management, Dredged Material Excavation, Contaminated Material Testing, Contaminated Site Remediation, Hydraulic Design, Stormwater Design, Stormwater Maintenance	P.E. Minnesota, PMP	Golden Valley
Jen Holmstadt	Project Manager, Scientist 2	OSHA HAZWOPER 40-Hour	2/10	M.S. in Geomorphology; B.S. Geography	Project Management, Contaminated Site Characterization and Remediation, Geohazard Risk Assessments	Project Management Professional (PMP)	Golden Valley
Joe Tenley	Project Manger, Scientist 2	OSHA HAZWOPER 40-Hour	15/15	B.S. Geography of Environmental Science	Environmental Project Management, Asbestos and Regulated Materials Inspections, Abatement Project Design and Management, Phase I and Phase II Environmental Assessments, Site Remediation and Redevelopment, Wetland Delineation and Permitting, Indoor Air Quality	Asbestos Inspector Asbestos Project Designer Wetland Delineator	Rochester
Linnea Henkels	Project Manager, Scientist 2	OSHA 30/ HAZWOPER 40-Hour	4/6	B.S Environmental Science	Environmental Field Oversite for Contamination & Remediation Projects, Contracts w USACE, USEPA, USFWS, MPCA, Enbridge, MN Power (@ Bay West), Soil & groundwater sampling, drilling/well construction, vapor mitigation, excavations, groundwater injections, landfill gas monitoring, subsurface mapping, XRF screening, hazardous material management, Environmental emergency response for MPCA and USEPA Region V, Stormwater BMP monitoring	NA	St. Paul
Luke Lunde	Project Manager, Scientist 2	N/A	15/20	B.S. Soil Science	Surface & Groundwater Monitoring, Excavation Oversight, Environmental Compliance & Permitting, Landfill Inspections and Vegetative Management, Project Delivery Management, Design Construction Inspection, Contract Administration, Construction Surveying, Project Management, Geologic Risk Assessment	SWPPP Design, Construction Site Manager, PSS MN and PSC ND	Rochester

Name	Job Classification	OSHA Certification	Years of Service with WSB/ Total Experience	Summary of Educational Experience	Work Experience	Licenses and Certifications	Office Location
Mary Newman	Scientist 1, Field Technician	40-Hour HAZWOPER	1/2	B.S Geology & Environmental Science	Phase I and II Environmental Assessments; Response Action Plans; Contaminated Material Excavation Oversight; Soil, Groundwater, Sediment and Soil Vapor Sampling	NA	St. Paul
Mike Phillipi	GIS/CADD	N/A	3/3	B.S. Geography	Supporting Environmental Group with creation of Map- Surface & Groundwater Monitoring Maps, Critical Issue Analysis Mapping, Contamination Review Maps, Soil Boring Location Maps, Phase I & Phase II ESA Maps. Creating ArcGIS Online maps, also helping setup Collector App for use out in the field to take survey field shots.	NA	Golden Valley
Mike Rask	Project Manager, Scientist 2	HAZWOPER 40-Hour	5/6	B.S. Biology	Surface & Groundwater Monitoring, Asbestos and Regulated Materials Inspections, Excavation Oversight, Environmental Compliance & Permitting, Landfill Inspections and Vegetative Management	MDH Asbestos Inspector SWPPP Design Construction Site Management	Rochester
Paul Johnson	Project Manager	OSHA 10/40 Hour HAZWOPER	2/24	B.A. Environmental Studies/Biology	Project Management , Phase I and II Environmental Site Assessments, SWPPP Design, ESC Plan Design, MS4 Program Management, Remedial Investigation and Remediation, Soil and Ground Water Sampling, Ground Water Quality Monitoring, Surface Water Monitoring, Pre-Demolition Hazardous Waste Abatement, UST Tank Removals, WCA Rule Administration, Civil Engineering Tech Site Overview, Wetland Delineation Review, Construction Site Stormwater Management , ESC Inspections, Urban Stormwater Retrofitting, Demolition and MSW Landfill Regulator, Solid Waste/Hazardous Waste Cleanup Program Management	5-Day Basic Wetland Delineation, Construction Stormwater Management SWPPP Design, Erosion Sediment Control Inspector	Golden Valley
Ryan Spencer	Project Manager, Scientist 2	HAZWOPER 40-Hour	5/10	B.S. Environmental Biology	Environmental Project Management, Phase I and Phase Environmental Assessments, Limited Site Investigations/Remedial Investigations, Site Remediation and Redevelopment, Response Action and Construction, Contingency Planning & Management, Asbestos and Regulated Materials Inspections, Abatement Project Design and Management, Demolition Oversight and Regulated Material Removal	CHMM Asbestos Inspector Asbestos Supervisor Lead Risk Assessor Radon Measurement, Radon Mitigation	Golden Valley
Shibani Bisson	Engineer 3	NA	18/21	B.S. Civil and Environmental Engineering	Project Management and Oversight of Phase I and Phase II,Environmental Assessments, Limited Site Investigations/Remedial Investigations,Response Action and Construction Contingency Planning & Management,Asbestos and Regulated Materials Inspections	P.E. MN	Golden Valley
Tom Walker	GIS/CADD	N/A	1/5	B.S. Environmental Biology; M.S. GIS	Build and maintain GIS databases,Georeferencing, Analyze spatial and non-spatial information, GIS data integration, Online and Mobile application creation, Compile data for statistics to incorporate into documents and reports	GISP	Rochester
Trevor Meyers	Engineer 1	OSHA 10/ HAZWOPER 40	2/7	B.S. Geological Engineering; M.S. Engineering Management	Petroleum Investigations, Drilling oversight, Phase I and other Site Investigations, Geotechnical Engineering, Special Structural Inspections, Materials Testing, Project Management	G.I.T. MN	Rochester
William Alms	Engineer 2	NA	6	B.S. Bio-Systems Engineering; M.S. Environmental Engineering	Project Management, Dredged Material Excavation, Contaminated Material Testing, Contaminated Site Remediation, Hydraulic Design, Stormwater Design, Stormwater Maintenance	P.E. MN, WI	Golden Valley

Project Descriptions

Casey's General Store #3519

CLIENT:	Casey's General Store, Inc.	**CONTACT:**	Julie Pinegar, (515) 965-6100	**SITE LOCATION:**	Hoffman, MN	**MPCA SITE ID#:**	LS3729, LS20311, LS7144

SITE DESCRIPTION: Casey General Store #3519 is a gasoline service station located at 129 Memorial Drive in Hoffman, MN. The site is bound by Highway 55 to the east and Dakota Avenue to the north. Commercial properties are located adjacent to the site the east and south, and rural/agricultural land is located to the west and north.

PROJECT DESCRIPTION:

WSB provided tank removal and oversight services during a UST upgrade project performed at the site in 2016. The site has been occupied by numerous gasoline service stations dating back to the 1930's and is associated with closed petroleum Leak Sites #3729 and #7144. During the UST upgrade project, WSB completed soil screening and sampling during excavation/removal of the fuel dispensers, product piping lines, and material to expose the top of the USTs. The site contained two active 10,000-gallon gasoline USTs and one active 10,000-gallon diesel UST. Due to the presence of groundwater 2-3 feet below grade, dewatering was required to complete the UST system upgrade. The dewatering discharge was containerized in on-site frac tanks and sampled by WSB for characterization and discharge purposes. Once dewatering and removal activities were complete, soil samples were collected below the dispensers, product lines, and tank basin area per MPCA guidance.

During UST system upgrade activities, petroleum impacts were discovered and a release was reported to the State Duty Officer. The petroleum impacted soil was segregated, stockpiled, and sampled for waste characterization. Approximately 215 cubic yards of petroleum impacted soil was transported off-site for disposal at a MPCA permitted landfill. Groundwater samples were collected during dewatering and characterized to determine discharge options. A total of 21,000 gallons of petroleum impacted groundwater was transported offsite and discharged at a municipal wastewater treatment facility.

The MPCA issued a new leak number (LS20311) for the site and WSB completed a standard scope LSI to define the magnitude and extent of the release. The LSI consisted of advancing borings and the collection of soil, groundwater, and soil vapor sampling for laboratory analysis. Based on the findings of the LSI, the MPCA issued site closure on November 11, 2017. WSB also completed a Petrofund application on behalf of the client and obtained reimbursement for eligible costs related to the petroleum leak.

The following activities were completed at the site in 2016/2017:

- UST system upgrade oversight and sampling
- General excavation report
- State duty officer reporting
- Stockpile sampling and landfill disposal coordination
- Frac tank water sampling and wastewater treatment disposal coordination
- LSI
- Investigation report
- Petrofund reimbursement

SUBCONTRACTED TASKS Subcontracted tasks included environmental drilling and analytical services for soil vapor, soil, and groundwater samples.

OUTCOME ACHIEVED: The petroleum impacted soil and groundwater encountered at the Site were managed in accordance with MPCA guidance. The LSI successfully defined the extent and magnitude of the petroleum leak, and adequately assessed human health and ecological risks. The leak site was issued closure by the MPCA and the client will be reimbursed for eligible costs by Petrofund.

Hopkins Mainstreet Improvements

CLIENT:	City of Hopkins	**CONTACT:**	Meg Beekman, (952) 548-6343	**SITE LOCATION:**	Hopkins, MN	**MPCA SITE ID#:**	501 Mainstreet: LS14780, PB4772, and LS19153 525 Mainstreet: LS5196, PB4775, and LS19626

SITE DESCRIPTION: The site consisted of two former gasoline services stations located at 501 and 525 Mainstreet in Hopkins, MN. The sites are bordered by Mainstreet to the south, 6th Avenue N to the west, multi-family residential properties to the north, and 5th Avenue N to the east. The sites are currently vacant and being marketed for commercial redevelopment.

PROJECT DESCRIPTION:

WSB provided environmental oversight and management services during the decommissioning and removal of two former gasoline service station facilities. The services included soil screening, sampling, and regulated materials documentation during the removal of underground storage tanks, hydraulic hoists, gasoline dispensers, and building demolition. In addition, WSB also provided MPCA reporting and voluntary enrollment program services, performed a LSI, and subsequent RI to further investigate petroleum Leak Site LS19626 discovered at 525 Mainstreet during facility decommissioning.

WSB completed MPCA Voluntary Brownfields Program enrollment applications for the 501 and 525 Mainstreet sites. With WSB's assistance, the City successfully acquired general liability and tank removal verification assurance letters from the MPCA for each site. The MPCA also granted file closure confirmation for the site located at 501 Mainstreet. Through the review process, additional corrective action was requested by the MPCA and completed to further define the magnitude and extent of Leak Site LS19626, located at 525 Mainstreet.

The following activities were completed at the site from 2014-2017.

- Environmental project management
- Testing and documentation of regulated material removal (asbestos)
- UST, hydraulic hoist, and gasoline dispenser removal sampling and reporting
- Enrollment in MPCA Petroleum Brownfield Program
- Completion of a LSI
- Completion of a RI
- Quarterly groundwater monitoring
- MPCA general liability letter and tank removal verification letters
- MPCA closure for both sites

SUBCONTRACTED TASKS Subcontracted tasks included environmental drilling (geo-probe investigation) and analytical services for soil, soil vapor, and groundwater samples. All other work was conducted by WSB including the installation of groundwater monitoring wells, survey, and well sealing and abandonment services.

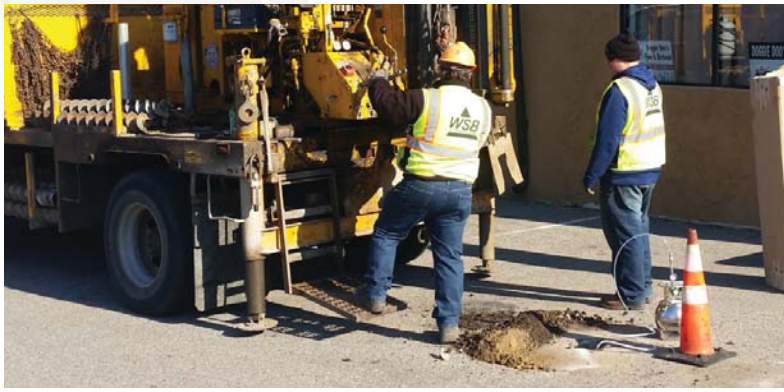
OUTCOME ACHIEVED: WSB provided the City with environmental services to obtain general liability assurance letters, document the decommissioning/removal of fuel dispensers, hydraulic hoists and a UST, complete an LSI, complete an RI, and obtain site closure at both leak sites.

Scope of Services

Oversee site investigation services for soil boring advancement and monitoring well station using both standard drilling methods and push probes

WSB staff have wide-ranging experience overseeing soil boring investigations and installing monitoring wells, including multi-aquifer wells and piezometers. Our field staff, geologists, and drilling technicians are experienced in various drilling techniques including direct push, hollow steam auger, mud rotary, air rotary, rota-sonic, membrane interface probe (MIP), laser induced fluorescence (LIF) and rock coring. WSB has two hollow stem auger drilling rigs (truck-mounted and track-mounted) in our Burnsville and Rochester office locations. Additionally, a state-of-the-art materials testing lab is located in our Burnsville office, offering a wide variety of construction and materials testing specialty services, including permeability testing, gradation and density testing. An experienced drilling and materials testing crew staff with a wealth of institutional knowledge is valuable when planning drilling investigations throughout Minnesota.

In preparation for each investigation, WSB completes a geological background review of the site using County Geologic Atlas information and the drilling staff knowledge of the area. The information collected during our background review of geological conditions allows us to determine the approximate depth to groundwater and bedrock at the site to help determine the appropriate drilling technology to reach the required depths. In addition to reviewing geologic information, WSB reviews the site-specific information to identify other potential release sources, such as the locations of past and current USTs, ASTs, dispensers, and product transfer areas. This research also includes reviewing the MPCA's "What's in My Neighborhood" website to research other potential contamination sources. The knowledge gained from the background review aids in the selection of appropriate drilling locations, depths, and other investigation requirements per MPCA guidance.



WSB's oversight of subsurface boring advancement always begins with the clearance of subsurface utilities, using both public and private utility locate contractors. During the advancement of each soil boring, WSB's field technicians collect samples, classify soils in accordance with the Unified Soil Classification System (USCS), and prepare drilling logs summarizing the results. WSB prepares boring logs using gINT software. If a need for further examination or verification is necessary, the representative soils are returned to WSB staff for further testing. The USCS soil classification, soil boring depths, soil headspace screening values, water level measurements, and pertinent information relating to the drilling method are then recorded on the boring logs.

WSB has staff that are registered with the State of Minnesota as Monitoring Well contractors. They are knowledgeable of both MDH and MPCA well requirements and stay current with new monitoring well technologies. Our drilling and field staff are experienced in installing monitoring wells in accordance with the MDH Well Code, collecting samples, and measuring water levels. Based upon the types of contaminants, the geological setting, and the status of the investigation (i.e. delineation or on-going monitoring). WSB's experienced staff works to develop the appropriate scope of work and methodology necessary to complete project goals in an efficient and cost-effective manner.

Conduct groundwater, soil, surface water, sediment, and air sampling and monitoring

Collecting quality sample data to identify, characterize, and define contamination helps support the development of an accurate Site Conceptual Model. WSB stresses the importance of collecting samples that are representative of actual site conditions with no outside interference, bias, or cross-contamination. Our environmental field technicians are trained to adhere to MPCA guidance when collecting groundwater, soil, surface water, sediment, or air samples. Additionally, we have great working relationships with State contracted laboratories to perform analytical sample analysis in Minnesota. We have the necessary equipment for well stabilization and groundwater sampling, air sampling, surface water and sediment sampling, surface soil, and groundwater sampling and soil sampling from borings and push probes. If unique equipment is needed, our relationships with local vendors assist us in providing equipment, as well as supplies. WSB's sampling qualifications are as follows:

Groundwater

Due to the mobility and other environmental risk factors associated with shallow groundwater contamination, groundwater monitoring and sampling is an important part of most investigations. WSB has successfully completed numerous groundwater sampling projects involving petroleum and non-petroleum contamination. We have experience in collecting groundwater samples from push probe temporary well screens, permanent monitoring wells, multi-level monitoring wells (Solinist and FLUTe), domestic water wells, industrial wells, and municipal supply wells using a variety of techniques. Some of the techniques include bailers, bladder pumps, peristaltic pumps, submersible pumps, and passive diffusion bags.

For most preliminary investigations, temporary well screens in push probe borings are installed for groundwater sample collection per MPCA Guidance Document 4-05. When permanent wells are installed, they are properly developed and allowed adequate time to stabilize before sampling. Wells are opened, gauged (depth-to-water and depth-to-bottom) and sampled in order from least contaminated to most contaminated to minimize the potential for cross-contamination and to ensure equal amounts of time for pressure equilibration in all wells. We use our equipment to monitor and record groundwater field parameters during the well purging process. At many sites we use iPads to record the information collected in the field and enter the data into existing tables, a step that saves time in future stages of the project.

Appropriate quality assurance and quality control (QA/QC) activities are important for groundwater sampling and monitoring projects. These typically involve collecting duplicate samples, trip, and temperature blanks (supplied by the laboratory), matrix spike and matrix spike blanks (if needed) and field blanks when re-usable equipment is used. WSB typically utilizes disposable groundwater sampling equipment which eliminates the need for field blank samples. If needed, the water generated during the purging/sampling process is containerized for disposal.

Soil

In developing a strategy for soil sample collection, the appropriate analytes must first be determined based on the past use of the site and the potential sources of contamination. WSB has experience in soil classification, screening, and sampling at wide range of residential, commercial, industrial, and public-sector sites with petroleum impacts. This includes subsurface sampling of in-place soil, as well as sampling of soil that may have been disturbed for redevelopment and/or improvement projects.

WSB collects soil using a variety of sample collection methods and technologies. These methods include; push probe drilling technology, hollow-stem auger drilling rigs (split-spoon), test pits using and excavator, manual hand augers and grab samples from excavations. We have the ability to collect samples inside buildings and other structures, high-traffic areas, along roadways, and residential / commercial properties. Additionally, WSB has provided construction oversight sampling services for a wide range of private and public redevelopment projects. This type of soil sampling collection typically involves stockpile characterization sampling for offsite landfill disposal and excavation bottom / sidewall sampling for documentation purposes.

Our field staff collects all soil samples in accordance with MPCA Guidance Documents 4-01, 4-04, and 4-05. Accordingly, we record at a minimum the following information:

- USCS classification of the soil
- Photoionization detector (PID) results (equipped with either a 10.6 or 11.7 eV lamp, depending on the suspected contaminant)
- Sample collection methodology, number and types of samples
- Other notable observations that include odors, discoloration, mottling, staining, and debris

In addition, we collect soil samples for grain size analysis, permeability, porosity, total organic carbon, and bulk density to evaluate the physical aspects of the soil and its characteristics for contaminant transport.

Surface Water

WSB staff are experienced in collecting surface water samples to evaluate potential impacts. WSB has collected surface water samples at a variety of sites and for varying situations. A typical surface water sampling approach begins with a downstream sample, and works upstream collecting samples, to minimize disturbance to the surface water sampling area. Collecting surface water samples in support of environmental investigations, storm water projects, and SWPPP inspections is imperative to project success. WSB staff has sampled surface water including lakes, ponds, lagoons, and streams. Staff use various sampling methodologies and are skilled in determining the best sampling approach and methods based on site constraints and safety considerations.

Air/Vapor

Since chemical vapors can result in both explosion and human health hazards, it's important to evaluate potential vapor risks at all petroleum leak sites. These considerations include the presence and locations of possible building receptors, preferential subsurface pathways, and utilities at and near the site. Sub-surface soil vapor samples are recommended at most petroleum leak sites.

Collecting vapor samples during investigations allows WSB staff to assess potential human exposure levels in habitable buildings. This includes the collection of sub-slab vapor samples possibly paired with time-weighted indoor ambient vapor samples. The samples are typically collected using a six-liter summa canister and analyzed by EPA Method TO-15 for compounds in the Minnesota Soil Gas List. Detected concentrations are compared with applicable current Intrusion Screening Values (ISVs), or interim ISVs, to determine whether a risk to human health is present. To determine the presence of any potential human exposure pathways at a building, WSB follows Guidance Document 4-01a and BMP for Vapor Investigation and Building Mitigation Decision. This requires at least two seasons of vapor sampling events to evaluate the presence of a vapor intrusion risk.

WSB performs vapor sampling at petroleum remediation sites to determine system performance by collecting vent stack discharge samples. Additionally, WSB will assess potential human exposure levels by collecting a soil vapor, sub-slab, or indoor air samples. Remediation system vent stack samples are collected in accordance with MPCA Guidance Document 7-09a, Air Emission Controls. Time-weighted air samples from a remediation system vent stack are typically collected using a flow controller and a six-liter summa canister. The sample is analyzed for compounds in the Minnesota Soil Gas List by EPA Method TO-15 and for total hydrocarbons. Samples are collected before and after treatment at locations where accurate airflow measurements can be taken. The results are tabulated on the Guidance Document 7-09b Air Emissions Screening Spreadsheet which is then used to assess acute and chronic risks associated with remediation system emissions.

Conduct vapor/air monitoring for health and safety and air quality criteria

Petroleum leaks sites can result in unsafe environments and airborne exposures to workers and the public. Properly identifying the risks of potential contaminants of concern at each site to ensure proper levels of worker and public protection is imperative. Prior to site work, WSB will prepare a site-specific Health and Safety Plan (HASP) in accordance with OSHA's HAZWOPER standards to address potential health and safety issues. Vapor/air monitoring is an important part of WSB's health and safety program and the process and action levels are clearly outlined in the HASP.

Prior to mobilization, project personnel will be notified of the potential contaminants of concern so that proper personal protective equipment (PPE) can be donned at the site. Air data obtained during field investigation will be used to identify potential exposures that may occur during investigation and remediation activities. Action levels will be established for identifying and using PPE to reduce exposure to vapor chemicals. These action levels and PPE requirements are outlined in the HASP.

Ambient air monitoring will be completed during investigation and excavation/disturbance activities to ensure worker safety and compliance with OSHA regulations. When necessary, dust suppression and/or ventilation at the work area will be performed to further reduce exposure risks. Air monitoring is typically conducted with a PID equipped with a 10.6 eV lamp and a multi-gas meter at most sites; sometimes Draeger tubes are used to identify concentrations of specific chemicals. PIDs are used to assess total organic vapors, and a multi-gas meter equipped with sensors is used to detect unsafe concentrations of oxygen, lower explosive limit, hydrogen sulfide, and carbon monoxide in various site environments. Work sequencing, stop work triggers, and engineering controls will be used and implemented to reduce vapor exposure risks. Work area boundaries and perimeter air monitoring may be completed if warranted to monitor for off-site vapor exposure. WSB is skilled in designing and conducting vapor/air monitoring for health and safety and air quality criteria.

Conduct and/or oversee site assessment activities (Phase I and Phase II), limited site investigations, and remedial investigations

WSB has managed and completed hundreds of site assessment activities, such as Phase I and II ESAs throughout Minnesota, and the upper Midwest. The assessments are performed in conformance with ASTM standards and the MPCA guidance documents, when applicable. We have completed Phase I ESAs for multiple parcels such as Minnesota Department of Transportation (MnDOT) and Hennepin County corridor projects. We have also completed numerous LSIs and RIs in Minnesota.

Phase I and II ESAs

WSB has completed Phase I and II ESAs for both private- and public-sector clients. The scale and size of the assessments range from less than one acre to greater than 3,000 acres in size. Our assessment experience includes, multi-unit residential buildings, residential developments, commercial buildings, manufacturing/industrial parks, corridor roadways, regional trails, parks, stormwater treatment structures, and renewable energy solar and wind projects. WSB is sensitive to tight schedules and budgets demanded by private sector due diligence clients and we pride ourselves on customer service, responsiveness, and attention to detail.

On average, WSB performs approximately 50 Phase I ESA and Phase I ESA update projects annually. The Phase I ESA are completed to review current and historical land use activities and to identify the presence of recognized environmental conditions (RECs) as defined by ASTM E1527-13 and US EPA's All Appropriate Inquiry (AAI) rule.

WSB prepares Phase I ESA reports thoroughly and objectively and based on fact. When a Phase I ESA identifies potential RECs, WSB provides recommendations to correct any deficiencies or RECs. In some instances, a Phase II ESA is requested to further investigate RECs. This work (i.e. Phase II ESA) may include environmental sampling by advancing subsurface borings for the collection of soil, groundwater, and soil vapor samples. The Phase II ESA results are used to evaluate RECs by determining the presence and/or absence of environmental contamination at the site. If contamination is present, the Phase II ESA provides a baseline of environmental data prior to ownership, refinancing, other due diligence requirements. Staff will determine whether contamination is present and explain the activities that may be necessary to further define the contamination extent and the costs associated with cleanup or remediation and pursue certain liability assurance letters through the MPCA Petroleum Brownfield Program.

LSI/RI

WSB has completed many petroleum investigations, including LSIs and RIs. The petroleum release investigations are done in accordance with MPCA guidance documents. WSB stays informed on MPCA guidance documents, best management practices, and changes and amendments. WSB staff members are engaged members of Minnesota Brownfields and attend MPCA Consultant Day events. Additionally, the EPNR group holds in-house training and informational sessions where projects, findings, issues, methodologies, and new screening levels/criteria are discussed regularly.

Our collaborative atmosphere supports idea sharing, peer reviews, development of work plans and reports. We pride ourselves on not only collecting accurate and valid data, but also presenting this information in a clear and concise manner that is easy to read. The primary objective of a LSI is to assess the extent and magnitude of petroleum contamination and identify exposure pathways between the contamination and nearby receptors. Our expertise allows us to identify, notify and provide corrective actions and emergency actions in cases such as explosive situations or a completed pathway. As a first step, we develop a work plan with accurate background information that allows us to identify potential contaminant sources and other environmental site conditions including potential receptors.

Secondly, we look at other sources of existing data to identify geology, depth-to-water and other site conditions such as utilities, roadways and other limiting features to help guide the development of the work plan. We then implement the work plan to help determine the magnitude and extent of impacted soil, groundwater, and soil vapor. WSB prepares a report for the site that includes the development of a site conceptual model (SCM). The SCM provides a basis for evaluating the risk based upon the extent of contamination, the environmental setting, and the receptors. Development of an SCM requires an understanding of the three-dimensional distribution of contaminant phases including vapor, soil, groundwater, and air.

When unacceptable risks (LNAPL, drinking water impacts, vapor intrusion above the 33X ISV) are identified, or when further delineation of impacts is necessary, a RI is completed. Data obtained during any previous site work is used to effectively determine additional sampling locations. A RI typically involves the installation of at least three permanent monitoring wells (source, upgradient, and downgradient) per MPCA guidance, as well as two quarterly groundwater sampling events. The RI further delineates the extent of contamination, aquifer characterization, and receptors. This information will support the site management decision if work is complete, additional delineation is needed, and/or corrective action is needed.

Conduct surface water, groundwater, air and vapor receptor surveys

Site investigations not only to determine the types, concentrations, and locations of contamination, but also identify and assess the risks that the contamination poses to receptors. The completion of receptor surveys typically should be completed as a precursor to the subsurface investigation. The data derived from receptor surveys provides the framework for assessing potential risks associated with contaminated properties and is used to help make site management decisions. In many cases, it's the presence of receptors and not contaminant levels that drive site management decisions and corrective actions. For example, sites with seemingly significant contamination, but no nearby receptors may be appropriate for closure, while minimally impacted sites with nearby sensitive receptors may require additional investigation and possible corrective actions including providing potable water.

The primary information obtained through receptor surveys includes assessment and risk evaluation of the following:

- Water supply well receptor survey
- Water line permeation receptor survey
- Surface soil receptor survey
- Surface water receptor survey
- Vapor receptors such as subsurface utility conduits or basements

Receptor surveys are completed in accordance with MPCA Guidance Document 4-02. WSB completed receptor surveys in accordance with MPCA guidance on several projects over the last year. The completion of receptor surveys can be tailored based upon the extent and magnitude the contamination and the potential pathways of the contaminants. This information is one of the key steps in evaluating the site through the Risk-Based Site Evaluation process. The information gathered is then used to prepare the investigation and remediation work plans and corrective actions.

Oversee construction to mitigate vapors and conduct non-construction mitigation measures such as using fans

WSB tests, evaluates and mitigates potential vapor intrusion. Vapor intrusion in buildings or utility structures can present significant health and safety risks, including acute health problems or potentially explosive conditions. WSB has a clear understanding of the ongoing evolution of investigation techniques, best management practices, and updates to the screening levels and how certain chemicals like TCE may necessitate additional evaluation and immediate actions. We have completed numerous activities to mitigate the risk of vapors to nearby receptors. The vapor mitigation method typically utilized depends upon the type of threatened receptor and extent and magnitude of vapor contamination. We have provided design, construction oversight and post-system installation testing for installed sub-slab ventilation and depressurization systems. We also have a successful history of working with contractors to perform system adjustments and modifications that improve performance and have established key relationships with contractors that perform installation work on mitigation systems. WSB has provided instruction and completed corrective actions to reduce potential vapor intrusion through simple do-it-yourself measures such as sealing cracks in basement walls, floors and at the wall/floor interface and ways to temporarily vent sewers, work areas, and basements with blower fans to remove potentially harmful vapors. We also direct and oversee the installation of vapor barriers below building and utility trenches.

Conduct or oversee operation and maintenance of remedial systems

WSB can oversee the operation and maintenance of various remedial systems such as sub-slab depressurizing systems, soil vapor extraction systems, dual-phase extraction systems, pump and treat systems, gradient control systems and free product collections systems. As a company, WSB has installed and performed operation and maintenance on sub-slab depressurization systems. Additionally, several staff members have extensive experience overseeing the installation and operation and maintenance of all types of remedial systems. Some of these systems include O&M of the gradient control system for St. Louis Park/Reilly Tar Superfund Site, a 750 GPM pump and treat system for the EPA/Wisconsin DNR and a horizontal well beneath a city block in Owatonna that was part of dual phase extraction system. Currently, we are maintaining three sub-slab depressurization systems in Minnesota. We troubleshoot and repair systems so that they operate at peak efficiency. We understand that operation and maintenance of systems can be expensive and have relationships with many contractors/suppliers that can help keep the costs of operation down. We are cognizant of minimizing downtime of systems and troubleshoot and repair systems quickly.

Arrange for transportation, storage, and proper management of wastes

WSB has the experience to properly handle and manage investigative wastes and wastes generated by remedial actions. We are committed to the proper characterization, profiling, transportation and disposal of waste and have coordinated management of various waste streams including asbestos-containing materials (ACM), petroleum impacted soil, petroleum impacted groundwater, polychlorinated biphenyls (PCBs), buried construction and demolition (C & D) debris, and a variety of other hazardous/regulated materials. Our staff is experienced with RCRA and Department of Transportation (DOT) regulations, and can help assure that federal, state and local regulations regarding accumulation, storage and packaging of waste materials are followed and properly documented.

WSB has prepared and implemented multiple MPCA approved RAPs/CCPs and Emission Control Plans ECPs that document the proper management of waste encountered during excavation activities. WSB has performed environmental oversight and monitoring to properly manage, segregate, and dispose of impacted soil based on elevated photoionization detector (PID) readings, ACM, and other visual or olfactory observations.

When impacted soil (petroleum, debris, ACM, or other contaminants) has been encountered during subsurface construction activities, WSB worked directly with the landfill to submit analytical data, field observations, and waste characterization forms for disposal approval. To ensure proper disposal, WSB has provided onsite management of waste manifests and landfill weight tickets.

Additionally, WSB has worked with the MPCA to obtain case-specific beneficial reuse determinations for impacted soil that was encountered during multiple site redevelopment projects. Once approved, WSB provides environmental oversight to ensure that the beneficial reuse is completed to comply with MPCA requirements.

WSB has prepared and overseen demolition and structural bid specifications for multiple redevelopment projects which included details regarding the proper removal, onsite management, and disposal of all asbestos and regulated materials identified in the asbestos and regulated materials inspection reports.

Evaluate the need for and oversee the implementation of alternative drinking water, including point-of-use treatment (i.e., carbon filtration)

Clean drinking water is an essential part of the MPCA's goal to protect public and private water supply wells throughout the state of Minnesota. WSB has a team of hydrologists, engineers, and scientists that collaborate to perform a variety of drinking water services including comprehensive water studies, distribution system modeling and analysis, wellhead protection planning, water storage tank design and rehabilitation, water well analysis, design, and rehabilitation, and a variety of other alternative drinking water services. We have the experience to design and provide point of use treatment including carbon filtration and oxidation. Recently, WSB designed a treatment process for St. Anthony Village that included the treatment of its public water supply system with an advanced oxidation process (hydrogen peroxide and ultraviolet reactors) followed by carbon polishing to remove 1,4-dioxane from the groundwater prior to distribution.

Coordinate and cooperate with other state-contracted services such as sampling and analytical, emergency response contractors, and hazardous waste services

Cooperation and project coordination is an essential part of completing projects on time and in compliance with state and federal rules and regulations. WSB has collaborated with multiple MPCA UST Program contractors and Petrofund contractors (laboratory contractors, drilling contractors, and tank contractors) while working on petroleum release sites throughout Minnesota.

We have established relationships with many state contractors, laboratory services, drilling firms, excavations contractors, waste haulers and disposal facilities and emergency response contractors. We believe that solid relationships with others is a large benefit to project execution. We support these relationships with open communications and the building of trust that creates a team approach. We know when things are not going as planned, and are able to identify and follow through on any needed corrective actions.

Arrange for geophysical activities

WSB has the experience in retaining and directing geophysical activities and have built strong relationships with two well-respected geophysical companies located in Minnesota. We use geophysical services to locate buried utilities, USTs, wells, drums, wastes and other artifacts. Previously unidentified subsurface conditions can be encountered during onsite investigation work and reconstruction activities, and planning for them is essential. Further investigation of subsurface conditions using geophysical investigation techniques including ground penetrating radar (GPR), electrical resistivity, and magnetometers also helps in project preparation and planning.

Recently, WSB worked with Dakota County environmental staff to locate an unsealed well that was identified during a Phase I ESA. WSB coordinated the investigation between the demolition contractor and Dakota County personnel to use a magnetometer to identify anomalies in magnetic strengths to get an exact location of the unsealed well.

During a geotechnical subsurface investigation in Monticello, a casket was encountered adjacent to a graveyard that was located outside of the graveyard fence during a road reconstruction project. After the casket was discovered, WSB staff utilized GPR equipment to identify additional graves/caskets that may have been discovered during this reconstruction project.

Oversee Subcontractors and State Contractors during investigation and cleanups and tank removals

WSB frequently oversees all aspects of working with subcontractors and state contractors during investigation and tank removals. Identifying the scope, preparing a request for proposal, evaluating bids/responses to proposals, executing a contract with that party, directing the contractors work, being the eyes and ears for the MPCA, working within the framework of state contract requirements and understanding that the oversight of subcontractors are essential to ensuring that projects are completed in accordance with MPCA guidance. WSB will use private utility location services contractors, drilling contractors, laboratory services, excavation contractors, disposal facilities, and surveyors on investigation and cleanup sites. Contractor oversight is performed by WSB to ensure that site work is completed in accordance with MPCA guidance and best management practices and that the contracted work is completed safely, documented, and issues are appropriately and quickly addressed. Conflict resolution is one of our strengths and communicating the common goals within the constructs of the contract and environmental rules is important for a safe and successful project.

A well-defined scope and contract allows for effective communication with contractors upfront and as the work progresses. WSB will work directly to prepare scopes and bids, but can also serve as a party that implements work as a prime or subcontractor. We are armed to prepare specific bid specifications on state forms as part of the evaluation process for contractors. Our contractors must meet certain requirements and be in good standing with Minnesota. Some of these requirements include safety, previous experience, mutual trust, integrity, properly certified, capable, and have demonstrated a good team working atmosphere.

WSB has completed tank removals and has worked with many certified tank contractors in Minnesota. We've completed tank removals in Hennepin County and other counties that require additional notification and inspection. WSB staff have performed oversight during the removal of USTs at dozens of sites in Minnesota for private and public clients. Most recently, a project included the bid preparation, for removal of hydraulic lifts, oil/water separators and eight (8) 10,000-gallon USTs for the City of Savage. It is likely that there will be an increased need to perform this type of service as the last UST upgrade requirement was mandated 30 years ago. We are proficient in the MPCA guidance documents on testing and reporting requirements for tank removals and the procedures for making a release notification to the State Duty Officer.

Additionally, any employee has the right to issue a "Stop Work" at any time if unsafe conditions are encountered, or if there is any significant issue that needs to be resolved before proceeding. The work will resume once appropriate corrective actions are completed and documented.

Prepare and evaluate reports (e.g., investigation reports, monitoring reports, free product recovery reports)

Accurate and well-presented information in reports and superior deliverables is key to project success. A report is a repository of data that identifies the basis for evaluating a site for closure or if any additional work is needed. WSB reports are presented in a concise and factual manner to ensure the reader understands the methodology, results, and conclusions. WSB prepares the Site Conceptual Model (SCM) as a way to effectively deliver site settings and the nature and extent of contamination, the receptors and pathways, and how the data compares to the appropriate regulatory levels. Our reports are designed with a quality graphics (GIS and CADD), relevant streamlined tables, and supporting documentation. We are familiar with MPCA reporting formats and have excellent report templates for other types of work. A key part of any report is to present the data effectively, evaluate the data with the appropriate screening levels, and to present that data evaluation in an accurate and concise manner.

Prepare Health and Safety Plans (HASPs)

Safety is our priority at WSB. We take the safety of our workers, the public, and our subcontractors seriously. We are committed to a rigorous review of site conditions and the preparation of a HASP. This approach is reinforced by our safety policies, processes, and systems. WSB develops a HASP specific to each site where work is conducted and type of contaminants that may be encountered. The plan provides information for staff about the past use of the site, any anticipated hazards, and the required PPE. In addition, the HASP outlines safety and health procedures and requirements for working on the site, contaminant sampling procedures, and emergency response plans, a map and directions to the nearest hospital, a tailgate safety meeting form, a utility clearance checklist, and Job Safety Analysis documents. Upon completion, the HASP is reviewed and approved by the Site Supervisor, Project Manager, and Health and Safety Officer prior to any site work being completed. The HASP ensures site workers are aware of the existing and potential hazards and take the necessary steps to protect themselves and others from hazards. At any time unsafe conditions are observed, WSB staff have the authority to "Stop Work" until the unsafe condition can be corrected. The HASP is maintained on-site while work is in progress.

Arrange for site access

Legal access to a site is necessary and is a critical to initiating an investigation. When necessary, landowner written permission is obtained prior to WSB's site assessments. Sometimes, off-site access to adjacent properties is necessary to accurately determine the extent of contamination. WSB has previously obtained site access, both on State Contract jobs, and on jobs for private clients. We have utilized client access templates and have several templates designed for certain types of work and properties that need to be accessed. On occasion, we have utilized attorneys to help execute access agreements.

To secure access agreements, WSB makes initial contact with the property owner in person or via phone, serving as an introduction to our firm, the purpose of the work, and what effects the work will have on the property owner. Assuming the property owner is receptive to allowing access, an agreement is forwarded for their review. On occasion, a property owner may want to use their own access agreement. In this case, we review the access agreement with the client and, if necessary, retain an attorneys' review.

Typically, on a state contract job, WSB provides the required access agreement form. For private clients, WSB either generates the form or provides a form from the property owner. If a property owner does not grant access following several attempts, WSB would work with the MPCA project manager for assistance.

Coordinate utility locates by contacting the appropriate entity and, if applicable, coordinate traffic control

Prior to completing any subsurface work, a locate will be completed to mark buried utilities. Gopher State One Call requires that all utility locates be submitted by the driller or excavator. To help facilitate utility locates WSB works with the subcontractor to provide all applicable site details (i.e. boring locations) for the utility locate. WSB will request a locate meeting with all applicable utilities to help identify and mark buried utilities around the proposed subsurface work.

Pre-marking boring locations is a Gopher State One Call requirement at most sites in Minnesota. When WSB is performing the subsurface work, we submit the locate request to Gopher State One Call. In addition to notifying the public utilities, WSB also utilizes a private locator for sites where utility locations are unknown or undocumented. This is common when marking utilities on private property. WSB works with several private utility locators throughout Minnesota.

Before breaking ground for any subsurface investigation activities, WSB requires that all proper utility locate due diligence has been completed and documented. If at any time there is uncertainty with utility locations, or other potentially dangerous situations, WSB staff are authorized to issue a “Stop Work” until any issues are resolved.

Prepare and evaluate bid specifications

We pride ourselves on our ability to prepare detailed bid specifications on many types of investigations and remedial action projects. This is an important step in the project management process and budget control. The preparation of a good bid specification document allows the bidder (as well as the MPCA and WSB) to understand the requirements and expectations of project and helps tighten cost estimates. In general, depending on the size and type of work, WSB obtains at least two bids for any type of service (i.e. laboratory analysis, drilling, excavation, surveying, private utility locates, waste disposal, remediation). WSB is proficient in preparing and evaluating complex bid packages and identifying and selecting the best candidate for the work. WSB has dedicated staff whose role is to prepare and evaluate complex bids and understands that certain types of services require evaluating past performance, safety, responsiveness, experience, and team.

Evaluating invoices

WSB has vast experience managing multiple contractors on projects. Part of our role has been to not only lead the work, but to manage the contractor’s invoices. A key in evaluating invoices is to make sure that the bidding process (as discussed above) is diligently executed. Proper bidding allows for a more streamlined invoice evaluation. WSB understands the importance of good project management also means working with the contractors to resolve any changes in scope and changes in budget and costs and communicating this to the client for their approval. The invoice evaluation process includes the verification of the costs by reviewing the bids, change orders, and completed scope to ensure that the invoices are accurate. Any discrepancies are resolved prior to approving that invoice for payment.

Assist and provide training as requested by the MPCA – Training must be related to the scope of this Master Contract

WSB's experience with the scope of this Master Contract provides us with the knowledge to assist and provide training on methodologies, policies, guidance, best management practices, and safety. WSB University is a venue to conduct this training and can be used as a public space for sharing information, holding events and forums. WSB University is frequently used to conduct external training and informational events. WSB University is an innovative learning initiative that reflects WSB's commitment to industry-leading education and continuous leadership development. Through the creation of our new education center with cutting-edge technology, WSB University is a hub where our staff, clients, and experts connect and grow. By learning, we teach. By teaching, we collaborate. Our programs are designed with attention to both current best practices and emerging ideas. For more detail see: https://www.wsbeng.com/wsbuniversity/

Follow MPCA Green practices/procedures relative to remediation projects

Green practices for remediation projects can be a viable option to reduce the environmental, social, and economic impacts of the work. During the development of a Site Conceptual Model and evaluation of remediation options, the incorporation of green sustainable remediation aspects is utilized to their practical extent. These practices are also observed during the investigation phase and can be something as simple as combining trips, car-pooling, and being mindful of the carbon footprint. The WSB Sustainable Design Initiative (SDI) is an example of WSB prioritizing our client's sustainability goals. The SDI is comprised of a toolkit of service-specific sustainability resources. These resources include sustainability rating systems, like EnvisionTM, and sustainable design tools, like INVEST. Our SDI Ambassadors can use these specific tools to tailor their designs to fit our clients immediate and long-term needs, without sacrificing social or environmental benefits. This approach sets us apart as a leader in sustainable consulting and design in government, energy and commercial markets

WSB reuses backfill at corrective action excavation sites in accordance with MPCA guidance when applicable. WSB has completed numerous projects where a considerable savings occurred, in not only financial costs, but also the carbon footprint, by reducing the amount of material transported to a landfill. We have also utilized solar powered remediation equipment and considered the beneficial reuse of project derived materials. Additional considerations include location of backfill sources and disposal facilities and utilizing services to reduce trips to the laboratory. WSB is mindful on utilizing electronic submittals, recycling, and utilizing I-Pads for collection of field data to reduce the amount of paper generated.

Oversee hydrogeologic investigations including fate & transport modeling, capture zone analysis and pump tests

WSB has experience with hydrogeologic investigations that include evaluating the fate and transport of contaminants, capture zone analyses from pump tests and transmissivity and hydraulic conductivity testing from slug tests. Determining pathways of contamination in groundwater is critical in understanding the risks to our environment and drinking water. In previous roles, WSB staff have worked on preparing and completing pump tests and utilizing the USGS MODFLOW, multilayer analytic element model (MLAEM), singlelayer analytical element model (SLAEM), and AQTESOLV software to investigate groundwater and contaminant movement.

Prepare Engineering Evaluation Cost Analysis (EECA)

We're proud of our skills and expertise in preparing engineering cost analyses for construction projects, demolition projects, and remediation projects. Our most recent experience includes preparing an EECA for the City of Savage for the subsurface demolition, remediation, and site preparation for a planned redevelopment of a former bulk petroleum facility. Because of the various types of projects that a EECA can be conducted, WSB has multiple templates that can be used to streamline the preparation of an EECA. We also have experienced engineers and estimators on our team that will support this process. The EECA is an important step in the decision making and budgeting process to understand the various cost scenarios and implications.

Oversee or conduct bench-scale lab treatability studies and pilot-tests and field demos

Our staff are skilled in conducting bench-scale tests and pilot-tests. Much of this experience involves conducting tests to gather sufficient data to design for full-scale in-situ chemical oxidations. In previous roles, WSB staff members have conducted tests to address the following types of contaminants: petroleum, tetrachloroethylene, pentachlorophenol, and toluene contamination. Staff also have the experience coordinating field demos on behalf of BASF for several state agencies to present on a proprietary ZV-iron mixture for remediation of chlorinated solvents.

Oversee equipment start-up and work out problems with the Contractor/Vendor

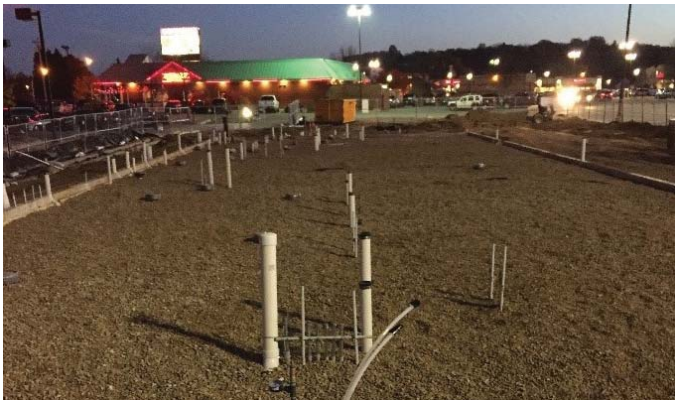
WSB staff are experienced in using remediation equipment of varying sizes ranging from: small pump and treat systems, dual phase extractions systems, soil vapor extraction systems, and large capacity groundwater treatment systems. Our experience has allowed us to problem solve and work through both large and small challenges. Environmental conditions are site-specific and can often be unpredictable, causing unforeseen issues that affect accuracy and schedule. When an issue presents itself, WSB works directly with the contractor until a solution is implemented. We have the experience and the ability to resolve issues through constructive conflict resolution. From the combined experience of the WSB staff, open and honest communication with the full team and stakeholders is key, as well as developing trust within the team. Understanding that that we all have similar goals and that working together within the constructs of the Contract and environmental rules is important. Being able to respond and react quickly during equipment start-up is important, however being able to anticipate and plan for potential issues before they become real problems is essential. WSB's project team have not only the foresight to prepare for many of these issues, but also the experience and perspective to provide proactive solutions to mitigate them.

Prepare and determine if the Stormwater Pollution Prevention Plan (SWPPP) is being followed and make recommendations if revisions are needed during the life of the construction project

We know the importance of a well-designed and maintained stormwater pollution prevention plan, which is a major reason we employ and train Minnesota Certified SWPPP Designers, Construction Site Managers and Certified Erosion Control Managers. WSB is the first non-university organization in Minnesota certified in SWPPP training classes. We have the education and knowledge to make revisions to the SWPPP during the life of the construction project.

Install stainless steel soil gas sampling ports using an electric drill to bore through floor slabs

We understand the versatility and benefits of using stainless steel gas sampling ports for sub slab samples. WSB utilizes the premanufactured Vapor Pin sampling kits. Vapor Pins are a cost-effective option to sample on multiple occasions. The Vapor Pins are readily installed by drilling a hole through the concrete floor and are flush with the floor. Vapor pin are an excellent choice for collecting sub-slab soil gas in all kinds of settings.



Collect and manage field and laboratory data for electronic submittal in a format specified by the MPCA

WSB designs projects based on MPCA guidance and best management practices and utilizes MPCA report formats for final data submittal to ensure that all required data is captured in a precise way. We've found this method allows us to provide consistent looking reports. WSB utilizes iPads for the recording of field data and utilizes MPCA table templates, or can add on to existing tables. Using the iPad in the field to record data saves time and removes the additional step of transferring data from a field book to an electronic table.

Our team is educated on Environmental Quality Information System (EQuIS) and understands that the MPCA may prefer data be submitted under this platform in addition to standard reports. We will work with the analytical laboratory to provide an Electronic Data Deliverable (EDD) in accordance with MPCA's needs for that project. Several sites may contain multiple rounds of data and data points. The maintenance of a project's electronic database is critical and beneficial and provides fast, accurate and custom-reporting opportunities.

Scenario B:

Petroleum Only Environmental Services

Scenario B: Petroleum Only Environmental Services

See Attachments A and B, and Figure 1.

Appendix A:
Resumes







Jeffrey Rice, PG, CHMM

Senior Environmental Scientist

Service Group:
Environmental Planning and Natural Resources

Certifications:
Professional Geologist #54663

Certified Hazardous Materials Manager #14655

MDH Certified Asbestos Supervisor AS8364

MDH Certified Asbestos Inspector AI8364

MDH Certified Asbestos Project Designer AD8364

MDH Certified Lead Risk Assessor LR2594

OSHA 40-Hour HAWOPER Certified

Erosion and Stormwater Management – Construction Site Manager

Erosion and Stormwater Management – SWPPP Designer

Education:
Bachelor of Arts in Biology and Geology, Minor in Chemistry, University of Minnesota - Morris, 2000

Jeffrey brings over 16 years of environmental experience to the WSB Environmental Planning and Natural Resources group. His background includes project management of numerous asbestos and regulated materials inspections, removal oversight and response action plan implementation for highway construction projects, including MnDOT. Jeff has provided project management for over a hundred Phase I and Phase II ESAs including petroleum and hazardous chemical investigations. He has experience in various environmental disciplines including hazardous waste, air monitoring, microbial assessment, OSHA compliance, regulated materials inspections and remediation oversight, soil excavation/remediation and lead risk assessment. He is also a Certified Erosion and Stormwater Construction Site Manager and SWPPP Designer.

Selected Project Experience

Kaposia Landing Park Improvements
Client: City of South St. Paul

WSB provided environmental planning services associated with the management of buried solid waste and asbestos incidental to construction redevelopment of Kaposia Landing Park. Kaposia Landing Park is home to a historical solid waste landfill containing an estimated 3.5 million cubic yards of buried waste, covering over 75 acres along the Mississippi River in South St. Paul, Minnesota. As part of the environmental planning process, Jeffrey enrolled the site into the MPCA's VIC Program as identification number VP 5391. For VIC enrollment, WSB prepared a RAP, an ECP and a site-specific Health and Safety Plan for the management and mitigation of environmental and workplace hazards. During the project WSB completed waste characterization at 38 excavation locations, oversaw the removal of 50 truckloads of ACWM and 117 truckloads of industrial waste, provided oversight and documentation of vapor membrane installation and obtained a site specific beneficial reuse determination from the MPCA for solid waste reuse. WSB also worked with City and MPCA to prepare Environmental Covenant for the site.

CSAH 102 Corridor Improvements Project
City of Golden Valley/Hennepin County

WSB to provide environmental investigation, planning, management and field oversight services for the highway reconstruction and improvements project at CSAH 102. In his role as project manager, Jeffrey completed a Phase I Environmental Site Assessment (Phase I ESA) for the Project Corridor, developed a Phase II ESA work plan, oversaw completion of the Phase II ESA investigation and prepared a CCP to manage GRO, DRO, PAH and VOC impacts identified at the Project Corridor. Jeffrey is currently overseeing implementation of the CCP including communications and coordination with contractors, subcontractors and both field staff and environmental services staff from Hennepin County. In July 2016, following the identification of elevated ambient organic vapor concentrations (400+ ppm by PID) at a sanitary sewer excavation, Jeffrey worked with the contractor and the County to ensure that appropriate engineering and monitoring controls were in place to safely continue the project work in the area. Project completion is Fall 2017.

Hamel Road Stormwater Pond Easements
City of Medina

As part of a larger road improvements project, WSB provided environmental planning and management services for the excavation of two stormwater ponds constructed at Hamel Road in the City of Medina, Minnesota. As part of the environmental planning process,

Jeffrey Rice, PG, CHMM

Senior Environmental Scientist

WSB completed a Phase I ESA, prepared a RAP, proposed an actions letter, and enrolled the site into the MPCA's VIC Program. Prior to RAP implementation, WSB completed test pit excavations to sample and verify types and depths of contamination documented in a previously conducted Phase II ESA. During the test pit investigation, ACM was identified in the buried debris at the easement. Following the identification of ACM, WSB prepared a RAP/CCP addendum, developed an ECP and submitted both documents to the MPCA for review and approval. WSB provided remediation oversight during removal of ACM-impacted soil and debris, conducted field screening, managed material assessment and segregation during excavation, collected GPS coordinates for both remediated areas and remaining contamination at the site and tracked waste shipments for disposal. A total of 266 loads (4,893.93 tons) of ACWM were removed from the site for disposal at an MPCA permitted landfill.

Carpenter Park Stormwater Improvements Project
City of St. Louis Park

The Carpenter Park Stormwater Improvements project included the construction of an underground stormwater treatment, detention and rate control structure for a 30-acre watershed that drains into Bass Lake. In addition to the construction of the underground stormwater structure, redevelopment also included the construction a 12,000-square foot skateboard park, miniature soccer field and trail access. A preliminary desktop environmental review identified a regulatory listing for an unpermitted dump site at Carpenter Park and potential historical aerial photo evidence of possible filled wetlands at the site. Based on these potential issues, WSB completed a subsurface investigation that identified contaminated and debris-containing fill soils to depths of up to 13 feet below grade. Following the identification of contaminated soils, WSB prepared a RAP/CCP which was submitted to the MPCA for review and approval. WSB also obtained grant funding from the Hennepin County Environmental Response Fund to assist with the removal, on-site management and disposal of contaminated soil that was generated during the stormwater improvements project. The city received a No Further Action Letter and RAP Implementation Approval Letter following project completion in January 2018.

Valley Oil Site Redevelopment
City of Savage

The former Valley Oil Property includes a 2.2-acre site located on Highway 13 in Savage, Minnesota, which operated as a commercial bulk petroleum distributer, retail filling station and auto maintenance business from the mid-1960's through 2012. The City of Savage retained WSB to provide environmental geotechnical and engineering design services for redevelopment of the former Valley Oil Site. As part of the environmental planning process, WSB completed a Phase I ESA, Phase II ESA, asbestos and regulated materials inspections, a preliminary Geotechnical Investigation, cost estimating, Response Action Plan/Construction Contingency Plan (RAP/CCP) and enrollment into the MPCA Voluntary Investigation and Cleanup (VIC) and Petroleum Brownfields programs. The Phase II ESA identified elevated PID readings in 9 of the 15 soil borings and DRO, GRO and BTEX exceeding MPCA regulatory or reuse criteria in 6 of the 15 site borings. Groundwater samples identified concentrations of allyl chloride, benzene, ethylbenzene, naphthalene, 1,2,4- trimethylbenzene, total xylenes, 1,3,5-trimethylbenzene, and TCE exceeding the HRLs. WSB prepared bid documents and an engineering estimate for the demolition, decommissioning, stormwater design and grading of the site. The project is scheduled to be bid in the spring of 2018 with site demolition and decommissioning, grading and pad-ready, site preparation to be completed in the summer of 2018.

Peter J. Moore, PG

Senior Project Manager

Service Group:
Environmental Planning & Natural Resources

Registration:
Professional Geologist – MN and WI

Certifications:
Michigan Certified Underground Storage Tank Professional, #1049

First Aid/CPR/AED Certified

HAZWOPER 40-hour training

HAZWOPER 8-hour Supervisors Training

Project Management Certification

Education:
Master of Arts in Leadership, Augsburg College, 2014

Bachelor of Science in Geology, University of Wisconsin-Eau Claire, WI, 1987

Mr. Moore is a Senior Project Manager/Account Manager with 30 years of experience performing environmental investigations, due diligence assessments, voluntary regulatory cleanup, brownfield redevelopment, and remediation projects. Roles included Account Manager for two large industrial companies with global operations focusing on solving complex client problems. He has worked on a variety of sites including industrial and railroad facilities, a Nike air missile site, manufactured gas plant and related coal tar sites, landfills, pipelines, petroleum sites, and other release sites. Mr. Moore has been responsible for completing investigation and remediation projects from start through regulatory closure. Work tasks have included research, characterizing various media, groundwater modeling, risk assessments, institutional controls, and overseeing remedial activities on various media.

Selected Project Experience

Vapor Intrusion Mitigation | Rochester, MN

Client: Professional Management Group and Chick-fil-A

Work included enrolling site into the MPCA Voluntary Investigation and Cleanup Program; obtaining a No Association Determination letter for Chick-fil-A and working towards a No Further Action Letter for the property owner. Obtained MPCA approval of a Mitigation Plan that included the installation of a vapor intrusion mitigation system that was installed during property redevelopment. The site was part of a shopping center with known petroleum and dry-cleaning solvent impacts. Completion of the Chick-fil-A restaurant occurred in January 2018.

Phase II Investigation and Vapor Intrusion Mitigation | Rochester, MN

Client: Textile Care Services and Superior Linen

Work included completing a comprehensive Phase II Investigation, enrolling site into the MPCA Voluntary Investigation and Cleanup Program; obtaining a No Association Determination letter for the buyer (Superior Linen) and working towards a No Further Action Letter for the property owner. Completed a “hot-spot” soil excavation removal beneath the former dry-cleaning machine to remove the bulk of impacted soil and to reduce the potential of vapor intrusion. Obtained MPCA approval of a Mitigation Plan that includes evaluating the current potential of vapor intrusion. Subsurface piping was installed and will be used for vapor mitigation if follow up testing indicates the need to mitigate. Work is on-going in 2018.

Large Scale Operation and Maintenance | Onalaska, WI

Client: Wisconsin Department of Natural Resources

Served as Project Manager for the operation and maintenance activities for the Onalaska Landfill Superfund site. Contaminants included petroleum and non-petroleum compounds Responsible for the complete oversight of a groundwater treatment plant (750 gpm) and the daily activities associated with operation of the plant. Coordinated personnel to keep the plant running within the parameters established by WDNR and EPA Region V. Responsible for periodic groundwater monitoring and monitored natural attenuation monitoring of the site. Conducted a 5-Year review on behalf of the WDNR for submittal to the EPA.

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Peter J. Moore, PG

Senior Project Manager

Project Geologist | St. Louis Park, MN

Client: City of St. Louis Park

Performed various investigations at the Reilly Superfund site located in St. Louis Park. Responsible for the completion of the Annual Monitoring Report which summarized and illustrated the results of over 100 monitoring wells and several gradient control wells installed in five different aquifers. Permitted and managed disposal of creosote/coal tar-impacted soil. Sampled soil and groundwater for trace analyses (parts per trillion), designed groundwater recovery wells, performed aquifer tests, conducted groundwater modeling, and prepared annual data reports and work plans. Conducted monitoring of active hydraulic containment system to control groundwater movement in five aquifers.

Petroleum Investigations | Various U.S. cities

Client: Various companies

Served as Project Manager for over 75 investigations for clients such as 7-Eleven Corporation, Texaco, Unocal, Chevron USA Corporation, and Shell Oil Company. Responsibilities included estimating investigation and clean-up costs, installing monitor wells and recovery wells, sampling soil, water, air and sediment, performing aquifer tests, investigating potable water supply and completing reports. Also aided in development of remedial action plans and completion of state reimbursement packages. Negotiated and responded with various state agencies to obtain approval/closure on sites.

Portfolio Reduction | Various cities in Minnesota

Client: Unocal

Served as Senior Technical Advisor for assessment, design, and implementation of remedial actions at six former bulk petroleum plant sites. Work included continuation of assessments, design, and installation oversight of dual phase extraction systems using various well designs, including a horizontal well extending beneath a city block, modifying remedial actions to maximize efficiency, and identifying and mitigating risks to the public.

Portfolio Reduction | Various cities in Wisconsin and Minnesota

Client: 7-Eleven Corporation

Served as Project Manager for assessment and remediation of over 20 sites as part of a portfolio reduction project. Saved clients money by aggressively pursuing closure of sites by actively working with regulatory agencies. Duties included managing staff, contractors, third-party groups, and budget.

Miscellaneous Clients, Underground Storage Tank Removals/Initial Remedial Actions, Global. Project manager for over 30 UST removal projects and initial remedial actions for clients in Florida, Iowa, Michigan, Minnesota, Missouri, New York, North Dakota, Texas, Wisconsin, Canada, Puerto Rico, and Brazil. Initial remedial actions consisted of removal and proper disposal of impacted soil and free product, if applicable. All projects were completed without any OSHA recordable incidents.

Minnesota Department of Agriculture, Groundwater Delineation and Remediation. Bemidji, Minnesota. Provided senior technical review for the investigation and remediation of the Former Cedar Services Wood Treatment Facility (Facility). Pentachlorophenol (PCP) and diesel range organics (DRO) contamination in soil and groundwater persists at the Site as a result of the former pole treatment operations. Monitoring wells have been installed during several events to monitor the groundwater within three depth zones at the Site

identified as shallow (intersection and below the groundwater table), mid/basal (generally between 50 and 100- feet bgs), and deep (approximately 140-feet bgs). Remediation of the plume was initiated in 2015 with several injection wells installed. Groundwater monitoring is ongoing and a long term ground water remediation system is being designed.

G&K Services, Inc. - Minnetonka, Minnesota (Various Sites in North America)

Responsible for supporting companywide environmental functions that include risk identification, determining obligations, remediation, and acquisitions and divestures of properties. Within first year closed seven of fourteen remediation sites and saved significant costs by completing comprehensive review of existing strategies and contracts. Provided leadership amongst stakeholders on developing and implementing strategies to address those environmental obligations. Focused on achieving goals and leading actions to a desired and purposeful outcome. Experienced based knowledge of regulatory agencies framework, requirements, policies, procedures, and the importance of relationships. Constituents of concern included chlorinated and non-chlorinated VOCs, petroleum compounds, PCBs, and metals.

The Valspar Corporation, Minneapolis, MN (Various sites on a global basis)

Account/Program manager and/or remediation manager for the paint and coatings manufacturer. Provided leadership for the completion of multidisciplinary projects on a global basis. Projects included industrial hygiene, compliance, safety, and remediation projects in various states and countries. Engaged in a key role in managing the environmental liabilities and directing projects to the common goal through careful and purposeful direction. Interacted with Corporate staff to manage typically over 60 current projects to make sure key performance indicators were met and client's needs were met. Projects included impacts to soil, groundwater, vapor intrusion and indoor air, air emissions, and building materials. Constituents of concern included Nano-particles, asbestos, chlorinated and non-chlorinated VOCs, petroleum compounds, PCBs, and metals.

BASF, Voluntary Program Phase II Risk Assessment, Bloomington, Minnesota

Project Manager for a Phase II Investigation and Risk Assessment at a former Degussa Construction Chemicals Operations, Inc. manufacturing facility located in Bloomington, Minnesota. Activities included soil sampling and analysis, groundwater sampling, vapor assessment, "hot spot" soil removal, and the performance of a risk assessment. Soil, groundwater, and vapor data were evaluated and Chemicals of Potential Concern (COPCs) selected based on frequency of detection, concentration, and toxicity and included petroleum compounds and chlorinated and non-chlorinated VOCs. Soil remediation was completed. To help support the sale of the property the site was enrolled into the MPCA Voluntary Investigation and Cleanup Program (VIC) to obtain No Action Letters for the soil and groundwater.

BNSF Railway, Co, UST Removal, Soil Excavation and Limited Site Investigation. Minneapolis and St. Paul, Minnesota.

During property improvement projects several USTs were encountered at the BNSF Bridal Veil Yard in Minneapolis and St. Paul, MN. The USTs were decommissioned and removed. During UST excavation impacted soil containing petroleum compounds including heavy oils were found in two of the five tank basins. After discussion with the client, it was determined to quickly move forward with impacted soil removal. Clearance samples collected from the excavation were used to demonstrated "clean closure" from one UST basin and one required an LSI. With the removal of soil and completion of the LSI the second leaking tank basin received closure from the MPCA.

Trent Noecker, CSP

Safety Specialist

Service Group:
Construction Services

Certification:
Certified Safety Professional

Training:
Authorized OSHA Outreach Trainer

Hazardous Waste Operations 40-hour

Education:
Master of Science in Risk Control, University of Wisconsin - Stout

Bachelor of Science in Technology Education, University of Wisconsin - Stout

Trent is a Safety Specialist at WSB. He is a Certified Safety Professional with over eight years of experience in safety and health in the utility, manufacturing, and construction industries. His previous experience includes risk assessment, safety and health program development and management, training, incident investigation, project safety planning, hazardous waste management, and environmental monitoring and reporting. He ensures WSB staff members are prepared to perform work safely on every project. This includes health and safety plan development, safety training, selection of personal protective equipment, and oversight of field activities. Trent's goal on every project is to foster a culture where safety is carefully planned into the work we perform

General Experience

WSB & Associates, Inc. | Safety Specialist

May 2016 – Present

Primary responsibilities include:

- Safety and Health program development, monitoring, and assessment
- Inspections, audits, and field observation of employee work activities
- Incident investigation and corrective action development
- Hazard and risk assessments of field activities
- Ensuring compliance with OSHA, DOT, PHMSA, and Minnesota Department of Health regulations and client requirements
- Safety and Health training including OSHA Outreach Training classes for the construction industry

Donaldson Company, Inc. | EHS Engineer

October 2014 – October 2015

While in this role, Trent's responsibilities included:

- Developed, implemented, and assessed environmental, health, and safety training including emergency response, hazard communication, and respiratory protection
- Investigated injuries cooperatively with area leaders and developed and implemented corrective actions
- Led environmental, health, and safety impact reviews for capital spending related to new processes and modifications
- Managed all aspects of the hazardous waste program with no regulatory violations
- Completed monitoring and reporting for industrial storm water, wastewater, and air emissions
- Led Environmental, Health, and Safety Committee and sub-teams actively involved in monthly EHS assessments
- Completed industrial hygiene monitoring
- Led risk assessment and countermeasure development activities in multiple laboratory environments
- Completed monthly safety statistics reporting
- Developed and implemented a corporate Crane and Hoist Safety program and trained relevant stakeholders

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Trent Noecker, CSP

Safety Specialist

Xcel Energy | Safety Consultant
May 2009 – October 2014

While in this role, Trent's responsibilities included:

- Developed and evaluated safety programs and procedures
- Observed work of multiple departments and contractors and corrected behaviors and provided feedback to workers and leaders
- Led multiple self-assessments resulting in the implementation of corrective actions to control hazards and close identified gaps between standards and regulations
- Evaluated facility and equipment design changes and project descriptions, ensuring industrial safety hazards were eliminated or reduced in the design phase
- Developed, delivered, and evaluated training for workers as part of a dynamic learning activity each refueling outage
- Active member of the Xcel Energy Ergonomics Program Team focused on education and program improvement and the Prairie Island Safety Committee
- Authored effective written communication to ensure employee awareness of hazards, safety improvements, or changes to safety standards
- Investigated injuries and near misses with an emphasis on identifying corrective actions to prevent future issues

Selected Project Experience

2017 Street Reconstruction Project | Excelsior, MN
Client: City of Excelsior | Safety Specialist | Duration: 2017

WSB provided construction observation and inspection of street reconstruction activities in the City of Excelsior, MN. During removal of existing bituminous pavement and aggregate base, a suspected coal tar paving material was identified on one section of the project. Field samples were collected and sent to a lab for rush analysis. Trent ensured that WSB staff members on the project were made aware of the hazard and provided recommendations for minimizing exposure to contaminates during removal. The contaminated material was removed and transported offsite to a landfill for disposal

Highway 63 Bridge Replacement Project | Red Wing, MN
Client: MnDOT | Safety Specialist | 2017-2018

WSB provided construction inspection, contract administration, and material testing services during the Highway 63 Bridge Replacement Project in Red Wing, MN. Preliminary environmental assessments of the project area had identified potential soil contamination from past industrial uses. Trent worked with the WSB project leader to ensure the team was aware of the areas of concern and developed contingency plans for controlling staff members exposure to contaminants in those locations. In addition, Trent provided safety oversight of the project team and safety training on the use of personal fall arrest systems and working near water.

Barry Hentz

Construction Materials Testing & Environmental Investigation and Remediation

Service Group:
Materials

Certifications:

Hazardous Waste Operations and Emergency Response 40 Hour (HAZWOPER)

Confined Space Entry Certification-29 CFR 1910.1461

MnDOT Concrete Field I Certified

MnDOT Concrete Field II Certified

MnDOT Aggregate Production I

MnDOT Inspection Certified

MnDOT Grading & Base I & II Certified

MnDOT Bituminous Street I Certified

Barry has 30 years of experience as a construction materials testing, special structural inspections, and environmental investigation and petroleum remediation projects. His project management experience includes proposal writing, cost estimating, project management, project invoicing, deliverable management and staff management. His technical skills include construction materials testing/special structural inspections technical report writing and expertise in construction materials testing and special structural field inspections. Underground fuel storage tank removals, monitoring well installation and environmental sampling.

General Experience

WSB Northfield Office Branch Manager (2013-2015)
WSB Rochester Office Materials Testing/Special Inspections Department Manager (2015-Present)

Branch Manager & Materials Testing/Special Inspections Department Manager. Responsible for completing cost estimates, proposals and invoices for clients, oversight/management of office-field personnel, performing geotechnical engineering, construction inspection, construction material testing and I.B.C. special structural inspections at multiple sites to include project management and reports. Also manage company Radiation Safety Program/Equipment/Personnel Training/Personnel Monitoring as the Radiation Safety Officer (R.S.O.).

McGhie & Betts, Inc., Northfield Office | Northfield, MN

Branch Manager. Responsible for completing cost estimates, proposals and invoices for clients, oversight/management of office-field personnel, performing geotechnical engineering, construction inspection, construction material testing and special structural inspections at multiple sites to include project management and reports. Also manage company Radiation Safety Program/Equipment/Personnel Training/Personnel Monitoring as the Radiation Safety Officer (R.S.O.).

Maxim Technologies, Inc. (Twin City Testing Corporation) - Rochester, Minnesota

Branch Manager. Responsibilities included coordination and supervision of testing operations and oversight/management of personnel for both the construction and environmental departments. Performing geotechnical engineering, construction inspection, construction material testing and special structural inspections at multiple sites to include project management and reports.

Twin City Testing Corporation | Rochester, Minnesota

Engineering Technician III. Responsibilities include concrete plant inspection including aggregate testing, concrete mix design tests of plastic concrete, concrete cylinder testing, quality control, all-season concrete placement, and plant mix observations. I.B.C Special Structural Inspections related to caisson/foundation special inspections, concrete reinforcement steel placement inspections, structural steel plant inspection, high-strength

Barry Hentz

Construction Materials Testing & Environmental Investigation and Remediation

Troxler Radiation Safety Officer Certification

Education:
Bachelor of Elective Studies – Industrial Technology St. Cloud State University, St. Cloud, MN 1984

bolt and torque special inspections; masonry special inspections and testing, engineered fill observations/foundation-sub-grade observations/inspections, fireproofing special inspections-thickness/density/adhesion-cohesion testing, field density testing-nuclear gauge/sand cone, moisture density determination-soil/aggregates; aggregate gradation. concrete masonry unit sampling and testing, masonry grout and mortar testing, field fillet weld and steel deck puddle weld special inspections, laboratory and field equipment calibrations and geotechnical engineering to include drill rig experience.

Environmental Project Experience

- Monitor UST Removals. Completed Photoionization Screening of Soils, Soil/Groundwater Sampling, Field Reporting of Site Environmental Conditions and MPCA UST Removal Report
- Drill Rig Environmental Technician, Log and Screen Soils, Sample Soil and Groundwater for Petroleum Contamination, Prepare Soil and Groundwater Samples for Laboratory Testing, Log Monitoring Well Installation, Decontaminate Drill Rig/Drill Rig Equipment and Drill Rig Auger
- Performed Remedial Investigations of MPCA Petroleum Release Sites, Completed Soil Boring and Monitoring Well Installation, Soil and Groundwater Sampling, Soil Screening with PID Instrument, Quarterly Groundwater Sampling of Monitoring Wells and MPCA Remedial Investigation Reports
- Construction Oversight and Installation of Petroleum Release Groundwater/Soil Clean-up Systems, Monitoring, Record Keeping, Maintenance and Groundwater Sampling/Soil Sampling/Air Monitoring of Systems.
- Installation of PVC Vapor Extraction Monitors as Drill Rig Environmental Technician
- Performed Phase I Environmental Site Assessments, Historical Use and Reports of Commercial Properties

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Bill Chang, PE

Senior Project Manager

Service Group:
Water/Wastewater

Registration:
Professional Engineer
Minnesota
No. 22610
Wisconsin
No. 42645-6
Florida
No. 55249

Education:
Master of Science, Environmental Engineering, University of Minnesota

Bachelor of Science in Civil Engineering, National Chen Kong University, Tainan, Taiwan

Bill has 30 years of experience with facility planning, design, construction management, and start-up services for water and wastewater projects. He has managed and designed more than 20 water and wastewater treatment facilities in five states with capacities ranging from 0.3 MGD to 96 MGD. Bill has unique experience applying various innovative water and wastewater treatment technologies to meet stringent permit conditions. He has helped clients secure grants and loans through Federal USDA Rural Development, State Revolving Funds, and the American Recovery and Reinvestment Act. On a recent assignment as the Program Manager for the Guam Waterworks Authority, Bill managed $500 million in capital improvement projects to meet the stipulated order requirements and infrastructure needs for the U.S. military buildup.

Selected Project Experience

Water Treatment Plant | Brook Park, MN*

The City of Brook Park had experienced a major spill at a local gas station. Most of its private drinking water wells were contaminated. The Minnesota Petrofund provided funding for the City to construct a new municipal well. The new well was later found by the Minnesota Department of Health with high levels of radium. As the project manager, Bill helped the City of Brook Park secure additional funding from the Minnesota Petrofund Board and completed a water treatment plant for radium removal and a water tower for emergency water storage.

Water Treatment Plant | Braham, MN*

Bill conducted a pilot study and ultimately designed a 500 gpm water treatment plant for the City of Braham. To remove 13 mg/l of iron from the City's drinking water, Bill designed a compact treatment process with aeration, coagulation, sedimentation, and filtration. The extensive treatment process also removed radium, radon, and manganese from the City's groundwater, producing high-quality drinking water for the community.

Water Utility Operations*

As General Manager for a private utility company working under the US Naval Base contract, Bill was responsible for the operation of a 13-mgd surface water treatment plant, 179 miles of distribution piping, 13 wells, 13 reservoirs and 5 booster pump stations for the US Navy, Guam.

WWTP Facility Plan | Itasca State Park, MN

Client: Department of Natural Resources, State of Minnesota

As Project Manager, Bill completed a Facility Plan for Itasca State Park WWTF. The wastewater treatment system incorporated natural lagoons with native prairies to provide stable and odorless biological wastewater treatment. The planning included environmental regulation review, condition assessment on existing facilities, flow projection, evaluation of the plant's ability to handle the seasonal variation of hydraulic loadings, analysis on

Bill Chang, PE

Senior Project Manager

construction costs and operation and maintenance costs.

Wastewater Treatment Plant Expansion | Brainerd, MN*

Client: Brainerd Public Utilities

Brainerd Public Utilities (BPU) provides wastewater treatment for the Cities of Brainerd and Baxter, a combined population of 22,000. Leading a design team, Bill completed the $26 million Wastewater Treatment Plant Upgrade for the BPU. The new 6 MGD plant employed sequencing batch reactor (SBR) technology to remove phosphorus to less than 1 mg/l. The new plant incorporated energy recovery systems for biogas and recovered heat from the final effluent to heat the BPU Administration Center.

Wastewater Treatment Plant Upgrade | Rushford, MN*

The City of Rushford has a population of 1,700. For years, the plant suffered from its aging infrastructure and shortage of winter sludge storage. The 2007 Rush Creek Flood inundated the plant and further aggravated the conditions of the facility. Bill worked with Federal Emergency Management Agency (FEMA), aided with flood mitigation, and secured funding for the City to upgrade its wastewater treatment facility, which greatly enhanced the plant's reliability.

Wastewater Treatment Facility Upgrade | Wadena, MN*

For the past 20 years, Bill has assisted Wadena with its wastewater treatment plant needs, including the 1997 Biosolids Facility Improvements, 2007 UV Disinfection System Upgrade, and 2010 Wastewater Treatment Facility Improvements. Working with the City's limited financial resources, Bill helped maximize the use of their existing facilities, prioritize improvement needs, and implement capital improvements in phases. He also helped the City apply for PFA State Revolving Fund financing.

Wastewater Treatment Plant | Oak Grove, MN

Client: City of Oak Grove, MN

The City of Oak Grove detected elevated nitrate levels in groundwater down gradient of its municipal wastewater drain field system. Bill served as Project Manager for the design and construction of a new mechanical wastewater treatment plant using the sequencing batch reactors (SBR) technology to remove nitrate and other pollutants. The plant was designed with anoxic and anaerobic zones for complete de-nitrification which was necessary to meet the very stringent 10 mg/l total nitrogen limit prior to land disposal. Bill provided start up services, process control oversight and one year of operator training/mentoring.

Biosolids Facility Improvements | Waseca, MN

Client: City of Waseca, MN

Bill served as Project Manager, completed the design and construction management services for the Biosolids Facility Improvements using an innovative technology- Autothermal Thermophilic Aerobic Digestion (ATAD) process. The new facility occupied a small footprint and was able to produce a Class A quality biosolids.

*Projects completed prior to WSB

Chuck Kochmann

Senior CADD Specialist - Transportation

Service Group:
Transportation

Associate

Education:
Technical Degree Drafting, Minneapolis Drafting School, 1990

General Course Work, St. Cloud State University

Investment in Excellence, The Pacific Institute, 1992

Chuck serves as a Senior CADD Engineering Specialist in WSB's Transportation Group. With over 25 years of experience, he has a diverse background in computer aided design including use of MicroStation, GEOPAK™, SignCAD, and AutoTurn.

As a Senior CADD Specialist, Chuck provides detail design and data management services for infrastructure engineering projects to assist the Design Engineer/Project Manager. He has worked on a wide array of projects including preliminary and final design, feasibility reports, Environmental Documents, and studies. He is responsible for quality control, design, and CADD drafting for a variety of Transportation infrastructure design projects.

Selected Project Experience

Preliminary Design Experience

Within the preliminary design of a project, Chuck is involved in creating DTM Models, developing alternatives, setting alignments, creating complex geometrics, running truck turning templates, producing large roll layouts over aerial mapping, and creating figures for reports, studies, and presentations.

- TH 169 Improvements, Champlin, MN
- CSAH 61, Hennepin County, MN
- Duluth Avenue at TH 13, Prior Lake, MN
- I-94 Interchange at CSAH 18, Monticello, MN
- CSAH 42, Scott County, MN
- CSAH 56 (Concord Blvd), Dakota County, MN

Final Design Experience

Within the final design of a project, Chuck is also involved with creating DTM Models, setting alignments, creating complex geometrics, running truck turning templates, and producing cross sections. His responsibilities also include producing and reviewing many parts of the construction plans including; title sheets, general layouts, typical sections, construction staging and traffic control, alignment layouts and tabulations miscellaneous removal plans, construction plans, roadway profiles, intersection details, retaining wall plans, drainage and superelevation plans, turf establishment and erosion control plans, signing and striping plans, signal plans, cross sections, and right of way plans.

- TH 371 Design Build, Nisswa to Jenkins, MN
- TH 169 Improvements, Champlin, MN
- TH 43 Winona Bridge, Winona, MN
- CSAH 61, Hennepin County, MN
- Ridgemont Avenue / Main Avenue at TH 13, Prior Lake, MN
- Bren Road and TH 169 Interchange, Minnetonka, MN
- CSAH 21 Extension, Scott County

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Dan Rangitsch, PG

Senior Environmental Scientist

Service Group:
Environmental Planning and Natural Resources

Registration:
Professional Geologist - MN

OSHA 40-Hour Hazardous Waste Operations Certification (29 CFR 1910.120)

OSHA 10-Hour Construction Safety and health Certification

Minnesota Department of Health Asbestos Site Supervisor

Minnesota Department of Health Asbestos Building Inspector

Wisconsin Department of Health Asbestos Building Inspector

Dan is a Senior Environmental Scientist in WSB's Environmental Planning and Natural Resources Group with over 7 years of environmental consulting experience. His expericence includes Phase I Environmental Site Assessments (ESA's), Phase II ESA's, Limited Site Investigations (LSI's), Remedial Investigations (RI's), sediment sampling, preparing health and safety plans (HASP), soil, groundwater, and soil vapor sampling during excavation and remediation projects, Response Action Planning (RAP)/Construction Contingency Plan (CCP) implementation, and other regulatory compliance activities.

Select Project Experience

Kaposia Landing Park Improvements | South St. Paul, MN

Client: City of South St. Paul

As part of a park reconstruction project, Dan acted as the field lead with on-site investigation, handling, management, and off-site disposal of buried construction debris, asbestos-containing waste materials (ACWM), and other soil impacts generated during park reconstruction.

Prior to site activities, Dan prepared a RAP containing a CCP and an Emission Control Plan (ECP). Dan also completed 38 test pits at the site for PID field screening, suspect ACM sampling, and sampling soils for laboratory analysis and landfill characterization. ACWM and soil analytical results were used to generate two waste profiles that included ACM soil with demolition debris and soil with demolition debris (No ACWM).

Once landfill waste streams were characterized, Dan was onsite a total of six days to complete photoionization detector (PID) screening, waste assessment, and removal oversight for excavations completed during park reconstruction activities. A total of 50 truckloads including 1,079.38 tons of ACWM and 117 truckloads including 2,567.45 tons of non-ACWM soil/debris were removed from the site and disposed of at an MPCA permitted landfill under manifest managed by WSB.

Dan provided a review of analytical and environmental source documentation for several sites proposed as sources for fill material importation. A total of 70,480 cubic yards of fill soil was imported to the site for site restoration. Dan prepared a RAP Implementation report documenting the completion of site activities in accordance with VIC guidelines and conditions identified in the MPCA's VIC application approval letter.

CSAH 102 Corridor Improvements | Golden Valley, MN

Client: Hennepin County

The City of Golden Valley retained WSB to provide environmental investigation, planning, management and field oversight services for the CSAH 102 reconstruction and improvements project.

As part of the environmental planning process, Dan assisted in the completion a Phase I ESA for the Project Corridor. The Phase I ESA included site reconnaissance and the review of historical source documents, regulatory databases, MPCA regulatory files, previously completed project reports, and other readily available environmental and geological information for the Project Corridor. Based on the review of MPCA file data for the Medium and High risk sites, WSB recommended additional investigation at four sites within the Project Corridor that were likely to encounter soil contamination.

Dan Rangitsch, PG

Senior Environmental Scientist

Registration:
Asbestos Air Sampling Training Course

Confined Space Entry Training (29 CFR 1910.146)

NIOSH 582 Equivalent

Niton X-Ray Fluorescence Analyzer Certification

Education:
Bachelor of Science in Geology, University of Minnesota-Duluth,2009

Dan completed a Limited Phase II ESA to investigate four areas of suspected soil contamination. The investigation included the advancement of 10 geoprobe borings to depths of up to 20 feet below grade. Seven soil borings were advanced to depths ranging from 12 to 20 feet below grade for the purpose of soil sample collection and 3 borings were advanced to a max depth of 5 feet below grade for the purposed of soil vapor sample collection.

Petroleum impacts of varying concentrations were identified at all 4 four suspected contaminated areas investigated along the Project Corridor. Based on results of the Limited Phase II ESA, WSB recommended the preparation of a CCP to manage gasoline range organics (GRO), diesel range organics (DRO), polyaromatic hydrocarbons (PAH) and volatile organic compounds (VOC) impacts identified during the investigation.

Prior to the start of the project, Dan prepared a CCP and a Site Specific HASP to manage both soil and soil vapor impacts identified in the Limited Phase II as well as other previously unidentified impacts which may be encountered during the course of construction activities.

Dan provided environmental oversight and monitoring for approximately 15 days during excavation and other subsurface activities that were conducted in suspect areas of contaminated soil.

Construction contingency activities included the excavation and disposal of 155 truckloads totaling 3,138.3 tons of GRO, DRO, and VOC impacted soil that was generated during site reconstruction activities and disposed of at an MPCA permitted landfill under manifest managed by WSB. Once project activities were complete Dan prepared a CCP Implementation report documenting the completion of site activities.

Trunk Highway (TH) 169 between 14th Street to CSAH 6 | Blue Earth, MN

Client: Minnesota Department of Transportation

As part of the TH 169 reconstruction project, Dan (at a previous employer, Groundwater and Environmental Services (GES), Inc.) acted as the field lead providing assistance to MnDOT with the management of contaminated soil, groundwater, and waste materials encountered during the reconstruction activities.

Dan provided construction monitoring and excavation oversight for approximately 50 days in locations that were identified as potential/known impacts identified along the TH 169 Corridor.

In areas of potential impacted soil, Dan directed the general contractor in conducting test pits to determine the vertical and lateral extent of contamination in areas that were excavated for the reconstruction project. Additionally, Dan field screened soil during excavation activities and segregated impacted soil for landfill disposal. A total of 69 truckloads of petroleum impacted soil were hauled off site under manifests to a MPCA approved landfill. If vapor barriers were required during utility excavations, Dan directed the general contractor on utility vapor barrier installations in accordance with MPCA guidelines. After the project was complete, Dan developed the final Construction Excavation Monitoring Report for MnDOT.

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Darin Hyatt, PE

Geotechnical Engineer

Service Group:
Geotechnical Engineering

Registration:
Professional Engineer - Minnesota #41316

Education:
Associates of Science in Engineering, Hibbing Community College, 1991,

Bachelor of Science in Civil Engineering, University of North Dakota, 1993

Darin has over 20 years of experience in the geotechnical and civil engineering industry. He has project leadership experience in national retail, residential, commercial, roads and bridges, and mixed-use projects. Darin has worked on projects for many clients with a range of funding sources, including state and federal agencies, municipalities, and private businesses. Darin's experience in geotechnical, field and laboratory testing, and project documentation make him a valuable asset to the completion of an array of construction projects.

Selected Project Experience

TH 169 Reconstruction Project | Champlin, MN

Client: City of Champlin | Role: Geotechnical Project Manager | Duration: October 2016 – May 2017

As the Geotechnical Engineer of Record, Darin oversaw the drilling operations, boring location selection, utility clearances, sample selection for laboratory testing, preparation of the boring logs and prepared the Materials Design Recommendation report for the project. During the environmental phase of the project, WSB provided an expedited 6-week turnaround for completion of a MnDOT-style Modified Corridor Phase I ESA and completed a Limited Phase II ESA in advance of the TH 169 Reconstruction Project located in Champlin, Minnesota. Darin was responsible for preparing the drilling crews for the required environmental drilling and sampling of soil and groundwater at the boring locations and coordinating the clearing of underground utilities with Gopher State One Call. After receiving project authorization and a request for expedited completion in early January 2017, WSB provided the Modified Phase I ESA and Limited Phase II ESA to the project team for review in under 6-weeks.

CSAH 20 (Blake Road) Improvements | Hopkins, MN

Client: Hennepin County | Role: Geotechnical Project Manager | Duration: February 2017- September 2017

As part of a corridor improvements project, Darin managed and assisted with the completion of a geotechnical and environmental investigations. During the geotechnical phase of the project, Darin formulated the drilling and sampling plan, staked the boring locations, worked with utility locators to clear underground utilities, prepared boring logs and the geotechnical evaluation report. Following completion of soil borings for the geotechnical evaluation it was necessary to complete soil and groundwater sampling on a rush schedule to ensure the necessary environmental information was available for an aggressive project bidding schedule. Darin managed the drilling crews and coordinated their schedule with the environmental technicians and scientists to ensure that the requested sampling of soil and groundwater was completed per project specifications and within the project schedule.

Darin Hyatt, PE

Geotechnical Engineer

General Experience

AECOM USA, Inc. (Minneapolis, MN)
2010 - 2007
Prior to joining WSB & Associates, Darin worked for AECOM where he was a senior project engineer tasked with managing complex geotechnical investigations and construction testing projects. In this role, Darin scoped subsurface investigations and analyses, prepared reports for design and construction of buildings, bridges, retaining walls, and pavements, determined the appropriate scope and budget for services to meet client needs. He was also tasked with facilitating team building on projects to ensure quality completion within scope and budget, coordinating projects with developers, sub-contractors, and cross-functional team members within the company, designing soil boring or construction testing program depending on project needs, reviewing project plans and specifications to properly manage field construction services projects and preparing interim and detailed final reports for management and clients.

Braun Intertec Corp. (St. Paul, MN)
2007 – 1992
Prior to joining WSB & Associates, Darin worked for Braun Intertec where he was a project engineer/project manager and a key engineering resource for both technicians and clients. Darin also served as the Engineering Group Safety Coordinator responsible for conducting monthly safety meetings. While working in their Blaine office, Darin was the sole engineer. In this role he managed teams of 20-25 technicians seasonally and trained and coached technicians and interns. Darin has performed excavation and lab and field tests on concrete and soil, made observations and logged soil samples and designed test programs, developed solutions, made recommendations for geotechnical reports.

David Mueller

Environmental Scientist

Service Group:

Environmental Planning and Natural Resources

Registration:

OSHA 40-Hour Hazardous Waste Operations Certification (29 CFR 1910.120)

OSHA 10-Hour Construction Safety and health Certification

Minnesota Department of Health Asbestos Site Supervisor

Minnesota Department of Health Asbestos Building Inspector

Registration:

Confined Space Entry Training (29 CFR 1910.146)

NIOSH 582 Equivalent

Education:
B.A. Biology, University of Minnesota – Twin Cities, 2013

David is an Environmental Scientist in WSB's Environmental Planning and Natural Resources Group with over four years of environmental consulting experience. His experience includes Phase I Environmental Site Assessments (ESA's), Phase II ESA's, Limited Site Investigations (LSI's), Asbestos and Regulated Material Inspections, soil and groundwater sampling during excavation and remediation projects, Response Action Planning (RAP)/Construction Contingency Plan (CCP) implementation, air monitoring during asbestos abatement projects, along with other regulatory compliance activities. He has been active with projects involving MnDOT, the MPCA's Petroleum Brownfield and VIC Programs, and MN Petrofund Reimbursement Fund.

David earned a B.A. in Biology from the University of Minnesota – Twin Cities in 2013. He holds current certifications in EPA AHERA Asbestos Inspector, Minnesota Department of Health Asbestos Inspector and Site Supervisor, OSHA 40 Hour HAZWOPER, NIOSH 582 Equivalent, Confined Space Entry Training (29 CFR 1910.146). David is an active member of Minnesota Brownfields.

Select Project Experience

CSAH 102 Corridor Improvements | Golden Valley, MN

Client: Hennepin County

David completed a Limited Phase II ESA to investigate four areas of suspected soil contamination. The investigation included the advancement of borings to collect soil, groundwater, and soil gas samples to further delineate the extent of site contamination. Prior to the start of reconstruction, a RAP/CCP was approved. David provided field oversight for the implementation of the RAP in identified areas of contamination and in areas where unidentified impacts were encountered during construction activities.

Trunk Highway 25/Broadway Improvements | Monticello, MN

As part of a larger downtown revitalization effort, David managed the environmental oversight for an intersection reconstruction and all contaminated soil disposal associated with excavation at the site. The RAP/CCP, that had been previously prepared, stipulated that oversight would be required and that the purpose would be to limit the amount of contaminated material sent to waste facilities. David was able to segregate a substantial amount of soil that was reused on the site. When oversight was completed, David assisted in RAP Implementation documentation.

Trunk Highway 25/7th Street Improvements | Monticello, MN

Client: Minnesota Department of Transportation

David completed a Limited Phase II ESA to investigate site conditions at the intersection of Trunk Highway 25 and Broadway in Monticello, MN to document any subsurface conditions that would need to be managed during the reconstruction of the intersection. The results of the ESA prompted the preparation of a RAP/CCP for the purposes of predetermining how identified impacts were to be managed during construction. Upon approval of the RAP/CCP, David provided full-time oversight when subsurface activity occurred in areas were soil impacts were expected with the objective of reducing the

amount of soil that was sent to waste facilities. When oversight was completed, David assisted in RAP Implementation documentation.

CSAH 20 (Blake Road) Improvements | Hopkins, MN
Client: Hennepin County Public Works

As part of a corridor improvements project, David assisted with the completion of a limited Phase I ESA and a limited Phase II ESA for the stretch of Blake Road between Excelsior Boulevard and Minnetonka Boulevard. Three hot spot areas along the project corridor were identified due to elevated DRO and chloroform impacts to soil. In addition, David will be providing RAP/CCP implementation services during project construction to ensure all documented and undocumented contamination are managed in accordance with local, state, and federal regulations. Construction is anticipated to begin spring 2018.

Due Diligence and Limited Site Investigation | Inver Grove Heights, MN
Client: Private Entity

David assisted a private client with all environmental due diligence required as a part of potential property sale. A Phase I ESA was completed to identify any recognized environmental conditions associated with the site. A number of conditions were identified that necessitated the completion of a Phase II ESA.

David completed all field work for the Phase II ESA which included drilling oversight, soil screening, soil and groundwater sampling, and soil vapor sampling. The results of the Phase II ESA indicated a release had occurred in the vicinity of an underground, petroleum tank basin. After the release was reported, David helped design and implement an LSI to further define the horizontal and vertical extent of the release. Soil borings were advanced in a configuration that would account for soil, groundwater, and vapor samples to be taken from inside a building that was immediately adjacent the to the tank basin.

Ultimately, David was able to sufficiently define the extent of the release and report that it was limited to a small area on the site. As a result, the site was given site closure.

Earth Evans, PE

Group Manager- Water Resources

Service Group:
Water Resources

Registration:
Professional Engineer –

Minnesota #44235

North Dakota #PE-7058

Wisconsin #41660

Iowa #20597

Education:
Master of Civil Engineering, University of Minnesota, 2007

Bachelor of Science in Civil Engineering, University of North Dakota, 1997

Earth has over 20 years of experience serving clients as a project engineer and project manager on technically diverse projects in water resources. Earth is a technical resource in areas such as hydrologic and hydraulic modeling, flood damage reduction and floodplain modeling, water quality modeling and evaluation of best management practices, permitting and hydraulic design.

Earth's experience includes taking projects from planning and preliminary engineering through design and to construction documents. Through her project experience, she's gained extensive knowledge of MnDOT and state aid requirements. She's coordinated extensively with local, regional and state permitting agencies on numerous linear projects. This process has proved to be invaluable in facilitating a design that meets the requirements and streamlines the permitting process.

Selected Project Experience

Southwest Light Rail Transit (SWLRT) | Hopkins, Minnetonka and Eden Prairie, MN

Client: Metro Transit | Role: West Segment Water Resources Lead | Project Duration: October 2012 – Present

This project consists of construction of 14.5 miles of light rail, paved trails, road reconstruction, park-and-rides and stations. Earth is managing the team that is completing the erosion and sediment control design, storm sewer design, permitting, bridge and wall drainage to meet MnDOT requirements, BMP design and track drainage for the west segment of the SWLRT. Earth's team is responsible for identifying and designing BMPs to meet permitting requirements, designing storm sewer infrastructure to connect to the existing municipal and MnDOT systems, preparing water resources related permitting documents, preparing 30%, 60%, 90% and 100% plans and specifications, quantifying wetland and floodplain impacts, completing hydraulic analysis for risk assessments, and water quality analysis of proposed BMPs.

TH 169 TIGER Project | Shakopee, MN

Client: Scott County | Role: Hydraulics Lead

Earth is the hydraulics lead responsible for the drainage design including, 30%, 60% and final design plans, quantities, hydrologic/hydraulic modeling, bridge hydraulic analysis and risk assessments, assistance with environmental documentation and temporary drainage design. The $45m project includes a diverging diamond interchange (DDI) at TH 16/TH 41/CSAH 78, CSAH 14 overpass of TH 169, ramps, roadway realignments and numerous frontage roads. Earth also coordinated with Scott County, Scott County WMO and numerous MnDOT functional groups.

Jackson Pond Water Quality Feasibility Study, Columbia Heights, MN

Earth analyzed a suite of BMP options/costs for Jackson Pond in coordination with proposed flood improvements. Analysis included water quality modeling to estimate pollutant removals from various BMP options including water reuse, iron-enhanced filtration and biofiltration. The project has been awarded funding from the Mississippi Watershed Management Organization and construction was completed in the summer of 2015. Earth spent 50% of her time on this project that lasted approximately 1.5 years including construction.

Earth Evans, PE

Group Manager- Water Resources

Maple Grove Infiltration Outlets Project | Maple Grove, MN*

Developed designs to filter ponded stormwater by pond outlet modifications to filtration areas before discharge into Maple Grove's groundwater ponds. The goal of the design was to provide additional water treatment prior to discharge to the City's groundwater ponds, recharge the surficial aquifer and to obtain infiltration credits for future industrial development.

Water Reuse Projects | City of Woodbury, MN

Earth has evaluated and completed preliminary design of three stormwater reuse systems for the city of Woodbury. The City will use the recycled stormwater for irrigation. The projects originated as a means to meet Watershed requirements for new impervious surfaces associated with nearby roadway or development projects. Recycling stormwater also serves the purpose of reducing Woodbury's discharge of sediment and runoff volume from existing areas and thus follows through on Woodbury's stormwater permit responsibilities. Two water reuse systems are being constructed in existing ponds and connected to the irrigation systems for golf courses in the project sub-watershed. The other reuse system is being constructed as part of a street reconstruction project and will irrigate an adjacent park. The water reuse systems were the most cost effective option of the numerous BMPs evaluated due to the high total phosphorus and volume reduction achieved.

The water reuse systems are being designed to utilize the runoff from impervious surfaces for between 0.5-inch and 1.2-inch rainfall event. The projects are located within the watershed of two impaired waterbodies. The watershed district has developed goals for reducing the total phosphorus loan to the waterbodies to attain their designated use.

Greg Johnson, PE

Principal/Group Manager

Service Group:
Water/Wastewater

Registration:
Professional Engineer – MN
26430

Professional Engineer – WI
36036

Professional Engineer –IA
21765

Education:
Master of Science in Civil Engineering, University of Minnesota, 2002

Bachelor of Science in Civil Engineering, University of Minnesota, 1994

Greg is the Water/Wastewater Group Manager at WSB with over 23 years of water and wastewater engineering experience. He is responsible for employee supervision, water and wastewater treatment process engineering, and has experience related to project planning, design, and construction administration of water treatment facilities, groundwater and surface water supplies, water storage structures, water distribution systems, wastewater treatment facilities, and lift stations.

Prior to joining WSB, he served as project manager for the Minnesota Attorney General to study alternative water supply options for eastern Metropolitan Area communities that have been impacted by Perfluorochemicals (PFCs) in their groundwater. This study required facilitating input from water utilities, local governments, and stakeholder groups such as the South Washington County Water Supply Work Group, the Metropolitan Council, the Minnesota Department of Natural Resources (DNR), and the Minnesota Pollution Control Agency (MPCA). Greg has also designed treatment systems for TCE contamination (Bayport and Waite Park, MN) and 1,4-Dioxane contamination (St. Anthony Village, MN).

Selected Project Experience

Water Treatment Facilities

- West Water Treatment Plant - Chanhassen, MN
- Advanced Oxidation Process Water Treatment Plant - St. Anthony Village, MN
- Biological Filtration Water Treatment Plant – St. Martin, MN
- Water Treatment Plant - Brooklyn Center, MN
- Lime Softening Water Treatment Plant Improvements - Spencer, IA
- Surface Water Treatment Plant - Burnsville, MN
- 700 Horsepower High Service Pump and VFD - Burnsville, MN
- Lime Softening Water Treatment Plant Improvements - Webster City, IA
- Membrane Softening Water Treatment Plant - Elmore, MN
- Potassium Permanganate, Lime, and Soda Ash Feed System Improvements - Minneapolis, MN
- Water Treatment Plant Plate Settler Expansion - Andover, MN
- Water Treatment Plant Improvements - Webster City, IA
- Water Treatment Plant No. 10 - Hudson, WI
- East Water Treatment Plant - Chanhassen, MN
- Water Treatment Plant - Cambridge, MN
- Well No. 2 Air Stripping System - Bayport, MN
- East Water Treatment Plant - Chanhassen, MN
- Central and Zachary Water Treatment Plants - Plymouth, MN
- Water Treatment Plant No. 16 - Minnetonka, MN
- Water Treatment Plant No. 8 - Hudson, WI
- Water Treatment Facility - Sauk Rapids, MN
- Water Treatment Plant No. 3 - New Prague, MN
- Water Treatment Facility - Waite Park, MN

Greg Johnson, PE

Principal/Group Manager

Water Supply Facilities

- Well No. 5 Pump House Improvements – Rogers, MN
- Well House No. 16 – Rosemount, MN
- Well No. 9 - Rogers, MN
- Well Nos. 6 and 7 - Minnetrista, MN
- Well No. 6 - Northfield, MN
- Well No. 4 Pumphouse - Lake Elmo, MN
- Well No. 9, Pump, Pitless Unit, and Controls - Andover, MN
- Well No. 10 - Hudson, WI
- Well No. 6 and Well No. 7 - Cambridge, MN
- Well Nos. 12, 2, and 4 Rehabilitation - Plymouth, MN

Water Storage Facilities

- 0.75 MG Composite Elevated Water Storage Tank – Wyoming, MN
- 10 MG Ground Storage Reservoir Construction Services - St. Paul, MN
- Ground Storage Reservoir - Bayport, MN
- Elevated Water Storage Tank - Montgomery, MN
- Elevated Water Storage Tank - Sauk Rapids, MN
- 1.5 MG Valley View Water Tower Rehabilitation - Bloomington, MN
- 1 MG South Water Tower Repainting - Arden Hills, MN
- 1 MG Seventh Street Ground Storage Tank Reconditioning - Hudson, WI

Water Distribution System Improvements

- Section 34 Pressure Reducing Valve Station - Lake Elmo, MN
- Cedarbridge Pressure Reducing Valve Station - Burnsville, MN
- Crystal Lake Area Pressure Reducing Valve Station - Burnsville, MN
- Nicollet Reservoir Pressure Reducing Valve Station - Burnsville, MN
- South Coon Creek Drive Pressure Reducing Valve Station - Andover, MN
- Willow Creek Watermain Pressure Reducing Valve Station - Burnsville, MN

Water Studies

- Comprehensive Water System Study - Coon Rapids, MN
- East Metropolitan Area Water Supply and Treatment Alternatives - Minnesota Attorney General
- Willow Creek Road Watermain Pressure Reducing Valve Station - Burnsville, MN
- County Road 5/Trunk Highway 13 Utilities Preliminary Design - Burnsville, MN
- Water System Planning - Shakopee, MN
- Comprehensive Water System Study - Burnsville, MN

Wastewater Treatment Facilities and Lift Stations

- Lift Station No. 5 Rehabilitation – Champlin, M
- Sunset Hill Lift Station Improvements – Plymouth, MN
- Wastewater Treatment Improvements, Treasure Island Casino - Welch, MN
- Wastewater Treatment Plant Improvements - New Richland, MN
- Green Lake Wastewater Treatment Plant Biosolids Improvements - Kandiyohi

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Greg Johnson, PE

Principal/Group Manager

County, MN

- Wastewater Treatment Plant Improvements - Lafayette, MN
- Wastewater Treatment Plant Construction Observation - Prescott, WI
- Green Lake WWTP Biosolids Improvements Study - Kandiyohi County, MN
- Wastewater Treatment Plant Facilities Plan, Treasure Island Casino - Isanti, MN
- Casino Lift Station, Prairie Island Indian Community - Welch, MN
- Kingswood Farms North Lift Station and Forcemain Improvements - Plymouth, MN
- Ferndale North Lift Station and Forcemain Improvements - Plymouth, MN
- Wayzata Central Middle School Lift Station - Wayzata, MN
- Central Water Treatment Plant Stormwater Lift Station - Plymouth, MN

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Jake Newhall, PE, PMP

Project Manager

Service Group:
Water Resources

PE Registration:
Minnesota
#49170

PMP Certification:
#1989038

Education:
Bachelor of Civil Engineering, University of Minnesota, 2006

Jake has been with WSB's Water Resource Group since graduating from the University of Minnesota in 2006. He has managed and designed many types of water resource projects, including modeling, construction, planning, design, maintenance programs, and construction. Jake has worked with numerous Minnesota municipalities, Counties, and state agencies. Jake has a well-rounded array of water resources skills and experience which allows him to collaborate and be innovative while solving challenging water quality or water quantity problems.

General Experience

Stormwater Management Planning

Jake has developed and updated numerous comprehensive local surface water management plans and watershed management plans. He also has completed stormwater management planning for all different types and sizes of projects from small developments to large highway projects. These plans help create a roadmap and approach for managing stormwater consistent with project needs and jurisdictional requirements.

Stormwater Treatment Systems

Jake is experienced with the planning and design of innovative stormwater management practices to help solve challenging situations where standard stormwater techniques would not achieve the desired project goals. Some of these innovative practices include: filtration, enhanced filtration, underground detention systems, underground treatment trains, biofiltration systems, and reuse systems.

Hydrologic and Hydraulic Modeling

Jacob is an expert using HydroCAD, P8, XPSWMM and other modeling software to help complete stormwater analysis, water resource planning, and design of improvements.

Stormwater Conveyance Systems

Jake has designed and managed numerous drainage improvements related to roadway improvements or other construction related to development and/or redevelopment. He is experienced in effectively completing the feasibility, design, and permitting process to ensure project schedules and expectations are achieved.

Selected Project Experience

Pond Cleanout Projects | Multiple Communities

Jake has served as the Project Manager on multiple pond cleanout projects throughout the 7-County Metropolitan area as well as across the state of Minnesota. He has coordinated all phases of the project from planning, survey, and feasibility through final design, permitting, and construction. A cost-benefit analysis is often completed to determine the extent of maintenance activities needed to achieve City goals. Contaminated material testing and

analysis is also completed consistent with State requirements to determine excavation and disposal needs.

Keller Lake Water Quality Improvement Project | Burnsville, MN
Client: City of Burnsville

Project manager responsible for the design of a large underground treatment train consisting of the following: baffle and sump pretreatment, extended underground ponding, active infiltration gallery and lift station, and high flow bypass. This capital improvement project was implemented to meet the City's remaining TMDL phosphorus reductions for Keller Lake. Project included grant funding from Clean Water Funds. Project also included emergency response, permitting, and abatement of a previously unknown dump site.

Dredged Material Management | Cargill – Savage, MN
Client: Cargill

Project manager responsible for coordinating the management of dredged material for the Cargill Port along the Minnesota River in Savage, MN. This consisted of permit and agency coordination to achieve the necessary dredging work and associated dewatering and material management. Jake also assisted in developing a plan for dredged material reuse.

Jen Holmstadt, PMP

Senior Project Manager

Registration:
Project Management Professional

Certifications:
40-Hour OSHA Hazardous Waste Health and Safety Training

Education:
Master of Geography, Michigan State University, 2008

Bachelor of Geography, University of Wisconsin – Eau Claire, 2005

Jen has ten years of experience as an environmental consultant specializing in project management, contaminated site characterization and remediation, and geohazard risk assessments. Her project management experience includes proposal writing, cost estimating, deliverable management and stakeholder/staff management. Her technical skills include technical writing, expertise in fluvial and soil geomorphology, designing and implementing site characterization/remediation plans, and designing and implementing geohazard risk assessments. Jen has experience on large contaminated sediment projects, emergency response projects, and federal remediation projects.

Selected Project Experience

Kalamazoo River Oil Spill | Marshall, MI*

Client: Enbridge Pipeline, Inc.
Project Duration: 2010-2013

Jen assisted in project management including directing field crews, including 30 personnel, and updating the agencies and clients on day-to-day accomplishments and plans. She designed geomorphology-based sampling plans and managed data collected and acted as an on-site GIS manager. Jen developed in-channel geomorphic surfaces using multiple lines of geomorphic evidence. Jen interpreted the results of hydrodynamic model using a fluvial geomorphology framework. She also wrote standard operating procedures, sampling plans, and responded to agency comments throughout the project. This project was completed under emergency response conditions.

St. Louis River Area of Concern*

Client: Minnesota Pollution Control Agency
Project Duration: 2014-2015

Jen was a project geomorphologist that designed contaminated sediment sampling plans, analyzed sampling results, and produced decision documents. She participated in stakeholder communication and scoping sessions, and assisted in sediment sampling and sediment logging.

Fox River PCB Cleanup*

Client: Appleton Papers
Project Duration: 2008-2010

Jen was a project geomorphologist and sediment lab lead. She developed an electronic database for field data collection, complied the geologic and anthropogenic history of the Fox River Valley, supervised and performed QA for sediment description and sampling data input, and designed and implemented in-channel sampling plans. Jen supervised and the sediment core logging lab, which processed over 200 sediment logs per day at peak operations. She participated in stakeholder communication and scoping sessions, and produced decision documents.

Jen Holmstadt, PMP

Senior Project Manager

Fairchild Airforce Base Remediation Project*
Client: United States Air Force Civil Engineer Center
Project Duration: 2014-2015

Jen was the Assistant Project manager for this project, which consisted of 54 separate contaminated sites within the base. Contaminates of concern included PAHs, PCBs, and TCE, in soils, sediment, and groundwater. Jen managed the project integrated master schedule in MS Project, managed subcontractors and field staff, and organized permit and utility locates. Jen conducted technical reviews of all documents and assisted in sampling plans. She participated in stakeholder communication and scoping sessions and responded, and facilitated discussions between various regulatory agencies. This project operated under strict schedule constraints.

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Joseph R. Tenley

Senior Environmental Scientist

Service Group:
Environmental Planning and Natural Resources

Education:
B.S. in Geography of Natural Science, and Minor in Environmental Science from University of Wisconsin – La Crosse, 2003

Certifications:
Hazardous Waste Operations and Emergency Response (HAZWOPER)

MN Certified Asbestos Project Designer No. 5LM09141605PDI

MN Certified Asbestos Inspector No. AI11893

MN Wetland Delineator Certified#1255

Mr. Joseph Tenley is a Senior Environmental Scientist in WSB's Environmental Planning and Natural Resources Group that brings 15+ years of experience in the environmental consulting and engineering industry servicing both public and private clients. He excels in the management and completion of Phase I & II ESAs, feasibility studies, limited site investigations, remedial investigations, work plan preparation, response action plans, asbestos abatement specifications and project management, asbestos/pre-demo inspections, and the implementation of response/remedial action plans. He is proficient with various sampling and monitoring techniques to identify soil, groundwater, and soil vapor contamination. Mr. Tenley is also familiar with wetland delineation and permitting as well as completion of various permits and reports for the Army Corps. of Engineers, MPCA, MDH MDA, BSWR; and for state, county, and city officials. Mr. Tenley has also conducted indoor air quality sampling (mold, bacteria, water intrusion and mitigation plans), Environmental Worksheet/Impact Statements, Petrofund projects, initial site investigations and conditional use permits. In addition, he is knowledgeable in GIS based precision conservation and stream restoration. He has experience conducting tree surveys, aquatic management restoration, and tree and root protection zone surveys for commercial and residential development.

Selected Project Experience

Environmental Site Assessment
Client: Multiple

Joe has conducted hundreds of Phase I ESAs throughout Minnesota, Wisconsin, and Iowa. His experience includes both private and public sector sites and is familiar with various Phase I ESA reporting formats (Standard ASTM E 1527, HUD, SBA, and MDA). He also has substantial experience in performing various Phase II ESA investigation and Limited Site Investigations that included environmental drilling, soil and groundwater sampling, soil vapor screening and sampling, and ambient air sampling.

Tank Removal/Leak Documentation and Investigation
Client: Multiple

Joe has experience in conducting UST and AST tank installation and removal oversight/documentation. In addition, he has assisted clients in utilizing the MPCA's Petrofund reimbursement program when petroleum related contamination is encountered as well as conducting Limited Site Investigations and MPCA Program enrollment.

Threatened and Endangered Species Review
Client: Multiple

Joe has worked with clients such as Minnesota Trout Unlimited, Minnesota DNR, and private land developers to address state and federal threatened and endangered species review and protection on numerous projects, including several plant and animal species.

Joseph R. Tenley

Senior Environmental Scientist

Natural Resource Inventory and Assessment

Client: Multiple

Joe has completed Natural Resources Inventories and Assessments for private landowners, watershed districts, Minnesota Trout Unlimited and non-profit organizations and wind turbine projects. This work included field assessment of native vegetation to assess quantity and quality.

Wetland Delineation, Mitigation Design, and Permitting

Client: Multiple

Joe has extensive experience in wetland delineation and mitigation. Many of these projects also included obtaining permits from local, state, and federal agencies, as well as designing sustainable wetland mitigation sites.

Hazardous Materials Building Surveying

Client: Multiple

Joe has conducted numerous residential and commercial hazardous materials building surveys to facilitate redevelopment. Specific duties included, asbestos sampling, Response Action Plans, hazardous materials inventorying, demolition bid letting, and demolition oversight/reporting. As a direct result, clients obtain accurate cost estimates for hazardous materials abatement and disposal prior to initiating renovation/demolition activities.

Indoor Air Quality

Client: Multiple

Joe has completed numerous mold, Formaldehyde and bacteria investigations in both residential and commercial structures. In addition to ambient air and tape lift mold spore sampling, he is knowledgeable in finding water intrusion and knowledgeable in various mold, water intrusion, asbestos, and Formaldehyde mitigation techniques.

Rochester Recreation Center Expansion | Rochester, MN

Client: City of Rochester

The Rochester Recreation Center Expansion Project involved converting an old 1930's-1950's City Burn Dump Site into a new swimming facility and Senior Living Center. Mr. Tenley conducted Phase I and Phase II environmental ESA's, asbestos and hazardous waste screening and testing during excavation of the project as well as hazardous waste disposal permitting and coordination. Although asbestos contamination was found after excavation activities were already started, Mr. Tenley conduct all required permitting and work without slowing down site progress and staying on schedule

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Linnea Henkels

Environmental Scientist

Service Group:
Water Resources

Certifications and Training:

OSHA 40-hour HAZWOPER (with current refresher)

OSHA 30-hour Construction Safety

USACE Construction Quality Management for Contractors Training

National Incident Management System ICS-100, ICS-200, ICS-300, ICS-400, ICS-700, & ICS-800

Confined Space Entry/Rescue Training (29 CFR 1910.146)

DOT Hazardous Materials Training

Education:
Bachelor of Science in Environmental Science, University of Minnesota Duluth, 2011

Linnea is an environmental scientist with seven years of experience providing environmental investigative and remedial services. Her experience includes Phase I and Phase II Environmental Site Assessments (ESA's), Response Action Plan (RAP)/Construction Contingency Plan (CCP) Implementation, and CERCLA Remedial and Removal Actions. She is proficient in Quality Assurance Project Plan(QAPP)/Work Plan development and implementation, multi-media sampling, and analytical data management. She has provided operations oversight for a variety of projects including soil and groundwater evaluations utilizing Direct Push Technology (DPT) and hollow stem auger/split spoon methods, monitoring well installations, soil vapor sampling, and soil excavations. Additionally, she has performed as an environmental emergency responder under MPCA and EPA Region V contracts, providing time-critical response to contain and manage hazardous spills.

Selected Project Experience

Hennepin County – CSAH 101 Reconstruction Project | Golden Valley, MN
Field Oversite

As part of the planning process, WSB prepared a construction contingency plan (CCP) and a site-specific Health and Safety Plan (HASP) to manage both soil and groundwater impacts identified in the Phase II as well as other previously unidentified impacts which may be encountered during the course of construction activities.

WSB provided oversight and management for removal, segregation and disposal of petroleum and polycyclic aromatic hydrocarbon (PAH) contaminated soil that was encountered during the project. WSB also provided investigation and management oversight when buried solid waste encountered during construction activities. WSB coordinated with the Counties contractor on a regular basis to determine when work would be conducted in the contaminated areas and to identify opportunities for reuse of minimally impacted soil at the site. Direction was provided to the project contractors on the proper handling, and on-site storage of impacted soil awaiting disposal. Additionally, WSB prepared and submitted waste characterization documentation to the solid waste landfill for disposal acceptance.

Hennepin County – Potential Medical Examiner Site | Bloomington, MN
Field Oversite

WSB provided an expedited 6-week turnaround for completion of a Phase I ESA and Phase II ESA environmental due diligence and a preliminary geotechnical evaluation to assist the County with their consideration to purchase of a property for future redevelopment into a Medical Examiner Building. To improve both cost and time efficiencies, the geotechnical evaluation and Phase II ESA were completed as a single investigation.

The investigation included the advancement of 22 hollow stem auger borings to depths of up to 25 feet below grade and excavation of six test pits ranging in depth from 8 to 12 feet below grade. Each sample was visually examined for evidence of contamination, field classified, and screened for organic vapors using a PID equipped with a 10.6 eV lamp. Although there was only one sample identified during the investigation with a PID above background concentrations, laboratory analysis identified low level DRO, GRO and 1,2,4-trimethylbenzene in soil and groundwater in over half of the samples.

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Linnea Henkels

Environmental Scientist

MPCA - Exclusive Cleaners Site – Vapor Mitigation System Installation | Worthington, MN
Field Oversite

With a previous employer, Linnea provided field oversite for the installation of multiple vapor mitigation systems in proximity to the Exclusive Cleaners State Superfund Site in Worthington, MN. Concentrations of PCE exceeding the Residential Intrusion Screening Values (ISV) were detected in basements adjacent to the Site. To manage the vapor intrusion risk, Linnea provided field oversite for the installation of sub-slab depressurization systems at four affected businesses. This included documentation of ventilation system components, confirmation of pressure differentials, and post-construction vapor sampling.

MPCA – Perham Arsenic Site | Perham, MN
Field Oversite

With a previous employer, Linnea was responsible for conducting groundwater monitoring at the Perham Arsenic Site in Perham, MN. The site was placed on the NPL for arsenic contaminated soil and groundwater resulting from buried arsenic pesticide in the 1940's. The work was completed as part of the Site's long-term remedy, which includes institutional controls, continued operation of a groundwater recovery system, and on-going groundwater monitoring. Linnea's responsibilities were to ensure long-term groundwater monitoring was conducted in accordance with the Site's QAPP. This included proper groundwater sampling techniques, sufficient QA/QC sampling, and appropriate sample processing, handling, and chain of custody documentation.

NAVFAC – Naval Industrial Reserve Ordnance Plant (NIROP) | Fridley, MN
Field Oversite

With a previous employer, Linnea was responsible for conducting groundwater monitoring at the Naval Industrial Reserve Ordnance Plant (NIROP) in Fridley, MN. Environmental concerns at the site include TCE contaminated soil and groundwater resulting from munitions manufacturing from the 1940's through the 1960's. The work was completed as part of the Site's long-term remedy which includes groundwater monitoring and treatment. Linnea's responsibilities were to ensure long-term groundwater monitoring was conducted in accordance with the Site's QAPP. Additionally, Linnea was responsible for laboratory data processing and report preparation.

USEPA Region V START - Little Earth Brownfields Phase II ESA | Minneapolis, MN
Field Oversite

With a previous employer, Linnea provided oversight for a Phase II ESA conducted under contract with the EPA Region V Superfund Technical Assessment and Response Team (START). Linnea was responsible overseeing the advancement of three soil borings using DPT within in the vicinity of a former filling station. Borings ranged 23 to 25 feet below ground surface. This work also included field screening soil with a PID meter and selecting samples for laboratory analysis. Groundwater and soil gas samples were also collected at the Site.

MPCA - North County Furnishing and Piano LSI | Grandy, MN
Field Oversite

With a previous employer, Linnea provided oversight for the advancement of four soil borings using DPT within the vicinity of a former UST. Borings ranged from 17-37 feet below ground surface. This work also included field screening soil with a PID meter and selecting samples for laboratory analysis. Linnea also collected groundwater samples from temporary monitoring wells and private wells for chemical analysis.

Luke Lunde, PSS, PSC

Senior Environmental Scientist

Luke is a Minnesota Professional Soil Scientist in WSB's Environmental Planning and Natural Resources Group and he has over sixteen years of natural resource and environmental review experience. Luke's experience includes wetland delineation, monitoring, permitting, wetland banking and soil characterizations for archeological assessments. He has prepared wetland delineation and mitigation reports for several projects throughout the Midwest. He is also very knowledgeable in stream surveys, monitoring and assessment, vegetation management, habitat conservation, habitat restoration, forest management and GIS.

Service Group:
Environmental Planning and Natural Resources

Registration:
MN Professional Soil Scientist #49779

ND Professional Soil Classifier #67

Certifications:
MN ISTS Designer # C8641

Design of Construction

Storm Water Pollution

Prevention Plan/Site Management

Education:
Bachelor of Science in Soil Science, North Dakota, State University, 1999

Associates Degree in Forestry, North Dakota State University, 1997

General Experience

Threatened and Endangered Species Review

Luke has worked with clients such as Minnesota Trout Unlimited, Minnesota DNR and private land developers to address state and federal threatened and endangered species review and protection on numerous projects, including a number of plant and animal species.

Natural Resource Inventory and Assessment

Luke has completed Natural Resources Inventories and Assessments for private landowners, watershed districts, Minnesota Trout Unlimited and non-profit organizations and wind turbine projects. This work included field assessment of native vegetation to assess quantity and quality.

Selected Project Experience

Wetland Delineation, Mitigation Design, and Permitting

Luke has extensive experience in wetland delineation and mitigation. Many of these projects also included obtaining permits from local, state, and federal agencies, as well as designing sustainable wetland mitigation sites.

Some 2013 projects include:

- Shell Rock River Watershed: Albert Lea Lake Dam Replacement/Electric Fish Barrier/Water Control Structure
- Shell Rock River Watershed: Goose Lake Electric Fish Barrier
- Shell Rock River Watershed: Eagles Rest Wetland Bank
- Shell Rock River Watershed: Wedge Creek Stream Restoration
- MN DNR: White Water State Park Campground and Stream Restoration
- MN DNR: Blazing Star Trail ImprovementsMN Trout Unlimited: Coldwater Stream Restoration (Pine and Hay Creek)

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Luke Lunde, PSS, PSC

Senior Environmental Scientist

NPDES Construction Permitting/SWPPP Design

Luke's experience is also certified in the Design of Construction SWPPP and has designed and reviewed SWPPPs and completed NPDES permits.

Selected 2013 permitting experience includes:

- Shell Rock River Watershed: Goose Lake Restoration
- Shell Rock River Watershed: Wedge Creek Stream Restoration
- MN Trout Unlimited: Pine Creek

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Mary Newman

Environmental Scientist

Service Group:
Environmental Planning & Natural Resources

Education:
B.S. Geology and Environmental Science, University of Wisconsin - Eau Claire, 2008

Certifications:
40 Hour HAZWOPER

Mary is an Environmental Scientist with over seven years of experience in the environmental consulting and natural resources field. Her environmental investigation and remediation experience includes assisting with the completion of Phase I Environmental Site Assessments (ESA's), Phase II ESAs, response action plan (RAP) implementation and oversight, excavation oversight, and the collection of soil, groundwater, and soil vapor samples. Additionally, Mary has experience completing stormwater pond sediment sampling and providing soil screening/oversight during transportation construction projects.

Selected Project Experience

Gold Line – Corridor Phase I: Environmental Site Assessment | Saint Paul, MN

Client: Metropolitan Council/HNTB

Mary is currently working with project managers to complete a corridor Phase I ESA for the Gold Line bus route project that starts in Saint Paul, MN towards Woodbury, MN. Document review includes analysis of aerial photos, fire insurance maps, city directories, and a variety of databases that track potential contamination sources. Thorough review and attention to detail are very important.

Excelsior Road Reconstruction Project | Excelsior, MN

Client: City of Excelsior

Mary provided rush field oversight services during a mill-and-overlay project where a suspected coal tar paving material was discovered during construction. The oversight included segregation of the suspect tar layer visually and using a PID to measure organic vapors. Mary also provided documentation of the loading and transport/hauling of the material offsite for disposal at a certified landfill. The rush services provided by Mary were important for the documentation and management of the problematic paving material. Additionally, Mary's field oversight was vital to ensure safe working conditions for contractors and the public.

Wayzata Boulevard – Limited Phase II: Environmental Site Assessment | Minneapolis, MN

Client: Venture Bank

To evaluate the current subsurface soil, ground water and soil vapor conditions at the site, various sampling techniques were used. These techniques included auger borings to depths of 20 feet below ground surface to evaluate and collect soil and groundwater samples, auger borings to 8 feet below the ground surface and 18 inches below building concrete to collect soil vapor samples, and extracted sediment screening using a photoionization detector (PID). Strict protocol and attention to detail were of high importance.

TH 169 Reconstruction Project | Champlin, MN

Client: City of Champlin

As part of a Limited Phase II ESA performed for the TH 169 Reconstruction Project, Mary provided field investigation services during the advancement of fifty-four (54) soil

Mary Newman

Environmental Scientist

borings along the corridor. The work was performed on a rush timeline to accommodate an aggressive construction schedule. Mary assisted with visual examination of the soil boing samples, field classification of soil, and screening for organic vapors using a photoionization detector (PID). The samples were containerized per MPCA guidance and sent to a lab for rush analysis. The investigation identified pesticides (4,4-DDT), DRO, PAHs, lead, and PCE impacts at various locations along the Project Corridor. Mary's field investigation assistance performed on a tight schedule was vital for future project planning and budgeting purposes.

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Michael Phillippi

GIS Specialist

Michael is a GIS Specialist with over 3 years of experience. He has provided GIS mapping services for both public and private sector clients. Michael is proficient in ArcGIS Software, ArcMap, ArcGIS Pro, and ArcGIS Online. He is also proficient in Spatial Analysis, Mapping and Visualization, Imagery, and Remote Sensing. Michael's mapping experience is developing daily while working with WSB's groups on various kinds of projects. Michael has worked on numerous Corridor Study Projects, Transportation Study Projects, and Comprehensive Plans Projects. In many of these projects, Michael has been the lead GIS support role. Michael's other GIS Support roles include working with municipalities, creating GIS Maps, creating and updating geodatabases, creating datasets, and updating and creating municipal utility data. His customer service driven approach makes him a valuable asset to project team.

Service Group:
Information Systems

Certifications:
Personal Leadership Certificate

Training:
Linear Referencing Using ArcGIS

Getting Started with Linear Referencing

Geocoding in ArcGIS Desktop 10

Education:
Bachelor of Science in Geography, University of Wisconsin – River Falls, 2015

Selected Project Experience

Robert Street Improvements | West St. Paul, MN

Client: City of West St. Paul | Role: GIS Support | Duration: 2016-2017

Michael provided GIS support for the Robert Street Improvements project which consisted of roadway improvements between Mendota Road and Annapolis Street in West St. Paul, MN. Specifically, Michael created investigation location, contamination hot spot, soil screening and sampling, and excavation limit maps for the implementation of a response action plan (RAP). Additionally, and as the request of the MPCA, maps were created that contained contamination concentrations of in place soil (bottom and sidewall excavation samples) for documentation purposes. Michael's mapping services were valuable for documentation of the required corrective actions completed during the project. The GIS support provided by Michael and WSB's team resulted in a no further action letter issued by the MPCA.

CSAH 101 Corridor | Minnetonka, MN

Client: Hennepin County | Role: GIS Support | Duration: 2015-2017

Michael provided GIS support for the CSAH Improvements project which consisted of roadway improvements between CSAH 62 and Hutchins Drive in Minnetonka, MN. Specifically, Michael created investigation location, contamination hot spot (soil and groundwater), soil screening and sampling, and excavation limit maps for the implementation of construction contingency plan (CCP). Additionally, and as the request of the County, maps were created that contained contamination concentrations of in place soil (bottom and sidewall excavation samples) for documentation purposes. Also, maps of areas were buried debris and asbestos containing materials were also created for documentation purposes. Michael's mapping services were valuable for documentation of the required corrective actions completed during the project. The GIS support provided by Michael and WSB's team resulted in the proper documentation and management of regulated materials encountered during the project.

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Michael P. Rask

Environmental Scientist

Service Group:
Environmental Planning and Natural Resources

Education:
B.S. Biology, University of Wisconsin - La Crosse, 2012

A.A.S., Business Management, Minnesota State College, 2007

Certifications:

MDH Asbestos Inspector ID #AI12853

OSHA 40-HR HAZWOPER Training

MN Design of Construction SWPPP

MN Construction Site Management

Mike is an Environmental Scientist in WSB's Environmental Planning and Natural Resources Group. He brings over six years of environmental consulting experience for both private and public entities. His experience includes providing environmental compliance management services for projects, conducting asbestos and hazardous materials assessments for commercial, industrial and residential projects, assisting with the completion of Phase I & II Environmental Site Assessments, Limited Site Investigations, Air Quality Monitoring and assisting with excavation oversight for contaminated properties. He also has experience in providing construction supervision and other services pertaining to environmentally sensitive projects. Mike also has experience in designing Stormwater Pollution Prevention Plans for residential, commercial and industrial projects.

Selected Project Experience

Oak Park Mall Demolition and Beneficial Reuse | Austin, MN

Client: Hy-Vee Food Stores | Role: Environmental Compliance

Mike was instrumental in working with MPCA staff, contractors and the client for potential violations associated with the demolition, abatement and beneficial reuse of materials associated with redevelopment of Oak Park Mall in Austin, MN. The project sought to reuse the existing 240,000 sf concrete slab for beneficial reuse in accordance with MN Rules 7035.2860. Mike conducted an asbestos inspection and regulated materials inventory for the site, conducted hazardous and regulated materials sampling and adequately characterized the materials on site to meet MPCA standards for beneficial reuse. WSB was contacted for emergency services and work was completed within two weeks of the MPCA visiting the site, substantially reducing project costs and still meeting project deadlines.

TH43 over Mississippi River (Winona Bridge Project) | Winona, MN

Mike assisted with environmental compliance management for the project. He was responsible for working with MNDOT, sub-consultants and construction contractors to ensure the project adhered to all environmental regulations and environmental permit requirements. Mike also performed weekly inspections of the site and completed weekly reports for all environmental aspects of the project. He attended weekly construction meetings to inform and update project managers of any environmental compliance issues and assisted with obtaining environmental permits prior to starting construction.

Austin Mall Demolition and Beneficial Reuse | Austin, MN

Mike was instrumental in working with MPCA staff, contractors and clients for potential violations associated with the demolition, abatement and beneficial reuse of materials on site to be used for redevelopment. He conducted regulated materials inventories, sampling and adequately characterized the materials on site that met MPCA standards for beneficial reuse to substantially reduce project costs and meet project deadlines.

Associated Bank Building | Rochester, MN

Mike led the asbestos inspection and hazardous materials investigation, a 7-story commercial building in the heart of Rochester, Minnesota. He developed the environmental report and mapping documents for use in abatement planning and bidding for a multi-million dollar renovation proposed with the project. He worked with local staff, consultants and the

Michael P. Rask

Environmental Scientist

client to develop an effective method for renovation, and documented key environmental challenges the project faced.

Rochester Recreation Center (Former City Dump) | Rochester, MN

Mike assisted with the collection of soil samples from environmental borings to determine the depth of potential contaminants within a former uncontrolled city landfill. He assisted in the completion of an asbestos health and safety plan, attended meetings pertaining to regulated materials, performed asbestos sampling, and provided excavation oversight services for the duration of the project.

Alma Off-Site Landfill | Alma, WI

Mike assisted with the collection of surface water and groundwater samples from environmental wells and impoundments to determine potential contaminants within a solid waste landfill. He also assisted with performing environmental inspections and reporting in regards to industrial stormwater pollution and vegetative management to ensure compliance with all local, state and federal permits.

Paul Johnson

Service Group:
Environmental Compliance

Certifications:
Design of SWPPP Certification,

ESC Inspector,

OSHA Hazardous Waste,

Troxler Nuclear Density Gauge,

MN Asbestos Inspector,

Trimble GPS,

First Aid-CPR

Education:
Bachelor of Arts, Environmental Studies/Biology, Concordia College, Moorhead, MN 1994

Paul has more than twenty years of experience in a variety of environmental and engineering projects with a focus on environmental compliance and water resources. Paul's experience includes civil engineering, utility reconstruction, utility test witnessing, design and development of SWPPPs, NPDES permitting, ESC NPDES inspections, construction job oversight, erosion control plans, administration and enforcement of WCA regulations and permitting, wetland delineation reviews, environmental site assessment and remediation, grant writing, MS4 program development, stakeholder outreach, stormwater management and retrofit, and program coordination. Paul has managed and coordinated a variety of complex tasks with federal, state, and local agency partners for a wide range of projects. His multi-disciplinary skills and background has enabled him to contribute to a wide range of technical analyses and expertise to effectively diagnose problems and identify potential solutions in support of successful project delivery. Paul is dedicated to the development of innovative and implementable environmental solutions that work across a variety of modes to improve the environment and quality of life.

General Experience

City of Buffalo

Paul's previous position with the City of Buffalo has delivered him 10 years of experience as a Sr. Civil Engineer Technician where he performed a variety of complex and demanding tasks. Paul provided construction job oversight for civil engineering and environmental compliance for city street Improvement projects, commercial and residential developments. Paul also was the LGU representative for the City of Buffalo administering and regulating the enforcement of WCA. Paul provided stormwater management expertise and MS4 program coordination as well.

Environmental Site Assessment and Remediation

Paul has acquired extensive experience through past employers in environmental site assessment, and remediation. Paul worked heavily in the field with UST removals for a large contract with Fort Ellsworth Airforce Base in Rapid City, SD where more than 100 USTs were removed. Determining the extent of soil impacts was a big part of his job. Paul also worked with large agronomy plants throughout Minnesota conducting site assessments, soil remediation, monitoring well installations, and groundwater sampling.

Stakeholder and Public Involvement

While employed with previous employers, Paul was a key technical participant in public involvement efforts for environmental documents. Adam represented projects in front of agency stakeholders, elected officials, non-governmental organizations, members of the press, and members of the general public in small and large group settings. Paul also developed and reviewed materials for public open house meetings, stakeholder meetings, newspaper notices, websites, and informational videos. Paul coordinated with public outreach staff and agency officials to ensure that the information was accurate, concise, and reflective of agency perspectives and regulatory responsibilities.

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Paul Johnson

Grant Writing

Paul has developed text and supporting information for several local, state and federal grant proposals for previous employers. Specifically, he has assisted in the preparation of a CWF grant application for the City of Buffalo for Blake Road Corridor in the City of Hopkins. In coordinating the delivery of the final grant application package, Adam developed text and tables to describe anticipated funding sources and to summarize the Benefit Cost Analysis. He also compiled materials for grant application attachments and submitted the complete package through the Grants.gov process.

Water Resources

With previous employers, Paul has developed skills in rural and urban stormwater assessment. While with the City of Buffalo, Paul worked on urban stormwater retrofitting and stormwater pollution control devices. Paul assisted in the design and implementation of 7 rain gardens and strategic placement of stormceptors for pre-treatment of stormwater runoff. Paul worked closely with local agencies in developing innovative solutions to stormwater treatment.

Selected Project Experience

Monticello 2017 Street Reconstruction (State Aid)

The City of Monticello performed several street reconstruction projects along areas nearby the Mississippi River. Paul is an environmental compliance manager on this sensitive project and attended weekly construction meetings, and completes ESC inspection reports for meeting compliance requirements for the General NPDES Stormwater Construction Permit. Paul provides environmental awareness, stormwater management and erosion and sediment control expertise to the project and works closely with the project engineer and contractors in meeting environmental compliance for the project.

2017 Woods at Rush Creek/Cambridge Park Townhomes (Municipal)

The City of Maple Grove is developing several high profile development projects and Paul is currently the environmental compliance manager on these two highly visible and environmentally sensitive private developments. Managing mass grading, infiltration basin designs and the construction activities of half million dollar homes presents daily environmental concerns that apply to surrounding wetlands.

2017 Polar Mazda White Bear Lake (Commercial)

RJ. Ryan Construction is in the process of developing and expanding Polar Mazda in White Bear Lake. The project is located near sensitive water resources and involves underground stormwater detention and infiltration areas as part of the design. Paul developed the SWPPPP and performs weekly NPDES inspections for the project and provides detail erosion control reporting to R.J. Ryan and other stakeholders in regards to environmental compliance.

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Ryan Spencer, CHMM

Senior Environmental Scientist

Ryan is a Senior Environmental Scientist in WSB's Environmental Planning and Natural Resources Group. He has ten years of experience in the environmental consulting and engineering industry servicing both public and private clients. He is proficient in the management and completion of Phase I & II ESAs, limited site investigations, remedial investigations, work plan preparation, response action plans, demolition specifications, regulated materials building surveys, and the implementation of response/remedial action plans. He is familiarly with various sampling and monitoring techniques to identify soil, groundwater, and soil vapor contamination. He is also familiar with radon and chemical vapor measurement and mitigation techniques. In addition, he has completed numerous projects in conjunction with MnDOT, MPCA's Brownfields Program, Hennepin County, and the MN Petrofund Program.

Service Group:
Environmental Planning and Natural Resources

Certifications:
Certified Hazardous Materials Manager #20180

MDH Asbestos Site Supervisor AS10800

MDH Asbestos Inspector AI10800

MDH Lead Risk Assessor LR3148

AARST/NRPP Radon Measurement # 109227 RT

AARST/NRPP Radon Mitigation # 10228 RMT

EPA:
Niton X-Ray Fluorescence Analyzer Certification

Confined Space Entry Training (29 CFR 1910.146)

OSHA 40-Hour HAZWOPER Supervisor Certified

Education:
Bachelor of Science in Environmental Biology, Saint Mary's University, 2005

Selected Project Experience

Block 34 Improvements | Monticello, MN

Client: City of Monticello

As part of a downtown revitalization and intersection improvements project, Ryan managed and assisted with the completion of a Phase I ESA, asbestos and regulated materials survey, demolition specifications and bid documents, Phase II ESA, RAP, MPCA voluntary enrollment, and RAP implementation services. Various parcels with documented soil and groundwater contamination were being conveyed to MnDOT as part of the TH 25 at Broadway Intersection Improvements project. Ryan worked closely with MnDOT's OES staff to ensure the proper MPCA liability assurances letters were obtained prior to land conveyance. The RAP was implemented during construction, resulting in 900 tons of petroleum impacted soil to be removed and disposed offsite at a certified landfill. Confirmation samples were collected in the excavation areas to document the contamination levels remaining in place on the MnDOT and City owned parcels. The RAP implementation services resulted in site closure by the MPCA.

Main Street Improvements | Hopkins, MN

Client: City of Hopkins

As part of a downtown revitalization project, Ryan managed and assisted with the decommissioning and demolition of two historical gas stations. WSB provided environmental management throughout the decommissioning process, including soil sampling, segregation and waste characterization during the removal of USTs, hydraulic hoists, gasoline dispensers, and building demolition. In addition, WSB also provided MPCA excavation reporting and MPCA Brownfields enrollment services, performed a limited site investigation (LSI) and a remedial investigation (RI) to further investigate a petroleum leak discovered during facility decommissioning. Extra coordination was required to obtain a right or access permit for the installation of a monitoring well on adjacent railroad owned property. RI activities included seven rounds of quarterly groundwater sampling per MPCA guidance. WSB was successful in obtaining leak site closure and all regulated materials were managed in accordance with state and federal guidelines.

CSAH 20 (Blake Road) Improvements | Hopkins, MN

Client: Hennepin County Public Works

As part of a corridor improvements project, Ryan managed and assisted with the completion of a geotechnical investigation, limited Phase I ESA, Phase II ESA work Plan, limited Phase II ESA, HASP, and a RAP/CCP. The limited Phase I and II ESAs were completed on a rush timeline to ensure information was available for an aggressive project bidding schedule. All documents were provided to Hennepin County for review and approval. Three hot spot areas along the project corridor were identified due to elevated DRO and chloroform impacts to soil. In addition, Ryan and WSB's field staff will be providing RAP/CCP implementation services during project construction to ensure all documented and undocumented contamination are

managed in accordance with local, state, and federal regulations. Construction is anticipated to begin spring 2018.

Former Gopher State Truck Stop | Shakopee, MN

Client: City of Shakopee

In preparation for commercial redevelopment, Ryan managed and assisted with the completed of a Phase I ESA, limited Phase II ESA, MPCA Brownfields enrollment, and a Phase I ESA update at a former truck stop site. The truck stop is a closed leak site that had been decommissioned in the 1980s. No soil vapor data was collected during decommissioning. WSB coordinated with MnDOT to get a work permit issued for completion of a Phase II ESA investigation, as well as tree clearing for site access. The limited Phase II include the collection and analysis of soil, groundwater, and soil vapor samples. The Phase II ESA results will be used for environmental planning purposes.

Commercial Real Estate Transactions | Minneapolis & St. Paul Metro, MN

Client: Various Banks & Lending Institutions

In preparation for real estate transactions, Ryan has managed and provided environmental due diligence services for numerous commercial real estate transactions. The services include completing a Phase I ESA and/or an environmental transaction screen, and limited Phase II ESA sampling to address potential environmental risks (if identified). Typical Phase II ESA activities include the advancement of soil borings and soil vapor points for the collection of soil, groundwater, and soil vapor samples for chemical analysis. If contamination is identified during Phase II ESA sampling, Ryan assists clients with obtained the desired environmental liability assurances through the MPCA's Brownfields Program.

Southview Design Redevelopment | Mendota Heights, MN

Client: Southview Design

Ryan managed and assisted with RAP implementation services during the redevelopment of a historical construction debris landfill located in Mendota Heights, MN. WSB field staff provided oversight and documentation of regulated material removal and disposal, soil and groundwater sampling, MPCA correspondence, MPCA discharge and reuse permitting, site restoration activities, and final RAP implementation reporting. WSB observed the installation of a vapor membrane below the building slab to reduce chemical vapor intrusion risks. Key WSB contributions included obtaining a temporary dewatering discharge permit and a beneficial reuse permit for the reuse of buried debris by the MPCA. The reuse permit allowed approximately 3,500 cubic yards of debris to be reused onsite, which saved the client time and money. WSB was successful in providing all required RAP implementation services and the project was issued site closure by the MPCA.

Shibani Bisson, PE

Senior Project Manager

Service Group:
Municipal

Registration:
Professional Engineer
Minnesota #41860

Education:
Bachelor of Science in Civil Engineering, University of Wisconsin, 1996

Shibani has over 20 years of experience as a municipal and aviation project engineer. Her experience in municipal engineering and design includes water distribution systems, sanitary sewer systems, site grading, street and storm sewer design, park improvements and municipal state aid systems. Her responsibilities include providing day-to day city engineering services, capital improvement planning, transportation planning, development plan and contract review, environmental documents project management and oversight, preparation of project feasibility reports, design and preparation of project plans, specifications, engineer estimates, permitting, assessment rolls, public hearing presentations, and construction management. She has served as the City Engineer for the City of Grant and has been the full-time City Engineer for the City of Monticello for the past 5 years

Selected Project Experience

Municipal Projects

- Fallon Avenue/I-94 Overpass Project, Monticello, MN
- TH 25/7th Street Intersection and Streetscape Improvements, Monticello, MN
- Frontage Road Improvements for the CSAH 18/I-94 Interchange, Monticello, MN
- Development Plan Review, Monticello, MN
- Phase 1 and LSI Oversight, Monticello, MN
- FiberNet Telecommunications Tower, Monticello, MN
- Street Reconstruction Program, Circle Pines, MN
- Silver Lake Road Bridge Improvements, New Brighton, MN
- Pavement Management Program, Monticello, MN
- Newton Avenue Extension, Burnsville, MN
- Eastside Watermain Extension, Rosemount, MN
- Water Distribution Modeling, North Branch, MN
- 101st Avenue Street and Utility Construction, Brooklyn Park, MN
- Ring Road Street and Utility Improvements, Prior Lake, MN
- Various local street and utility improvement projects for the Cities of Rosemount, North Branch, Chanhassen, Prior Lake, Grant, Monticello, Brooklyn Park, and Hanover, MN
- Sanitary Sewer Studies, Monticello, MN
- Various park improvement projects in Minnetonka, Brooklyn Park, Roseville, and Maplewood, MN

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Thomas Walker

GIS Specialist

Service Group:
Information Systems

Education:
Master of Science in GIS, St. Mary's University of Minnesota, 2015

Tom is a GIS Specialist with five years of diverse experience working in the GIS field. He has hands-on experience with environmental, municipal, and private utility GIS work. Tom has worked with various cities to create GIS base maps and databases for housing field collection data. He is proficient in ArcGIS Software, ArcMap, ArcGIS Pro, and ArcGIS Online. Under the ArcGIS Platform, Tom is proficient in Spatial Analysis, Mapping and Visualization, Imagery, and Remote Sensing. Tom frequently works cross-functionally at WSB to support the GIS needs on various projects led by groups from municipal or transportation to environmental or community planning.

Selected Project Experience

Datalink Integration | St. Paul Park, MN

Client: City of St. Paul Park

Tom was responsible for creating a database to store GIS layers and information for St. Paul Parks DataLink application through WSB. He created utility data for the city from points collected in the field while populating attributes with as-built information. He supported all aspects of the project insuring that the final product was within time and budget.

Story Map Creation | Burnsville, MN

Client: City of Burnsville

Tom created a StoryMap application for Burnsville Minnesota's Drinking Water Protection Overlay District (DWOPD). The application was used to educate the community on ways to create a safer environment for the cities drinking water. It will be used on the cities website as an educational tool for use in the community.

Erosion and Sediment Control Plan | Olmsted County, MN

Client: Private Client

Tom worked with the project engineer to help create a comprehensive erosion control plan that would will be used in the field. By using contours and geo-referencing the proper amount of grading and erosion control was displayed on a comprehensive map.

GIS utility updates | Minnesota

Client: Various Cities

Tom is the primary GIS contact for cities that include: Lonsdale, Melrose, Red Wing, Rogers, Woodbury, and Wyoming. He is responsible for supporting the cities GIS needs and updating GIS data on an ongoing basis.

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Trevor Meyers

Environmental Inspection and Testing

Certifications and Training:
G.I.T. MN Geologist in Training
MUCA Erosion Control Site Management
HAZWOPER – 40-hour
OSHA – 10-hour
Asbestos Awareness
Confined Space Entry & Rescue
Fall Protection

Education:
M. S.
Engineering Management, South Dakota School of Mines and Technology, 2014

B. S.
Geological Engineering, South Dakota School of Mines and Technology, 2011

MnDOT Certifications:
Aggregate Production
Grading and Base I & II
Concrete Field I & II
Concrete Strength
Concrete Plant I
Bituminous Street I & II
Bituminous Plant I

Trevor has over 7 years of experience with environmental investigations, petroleum investigations, drilling oversight, construction materials testing and special inspections. His current responsibilities include petroleum investigations, drilling oversight, excavation observations, construction materials testing, construction special inspection, contract administration, project management, record documentation, and quality control. Trevor has worked on many fast paced projects and is accustomed to focusing on many construction sites daily. Trevor's experience in environmental investigations, along with experience in geotechnical engineering, construction materials testing, construction inspection, project documentation and logistics coordination, make him a valuable asset to the completion of any construction project.

Selected Project Experience

Residential Development Projects

Below is a list of major residential development projects Trevor has served on. Responsibilities for each project vary but typically include excavation observations, SWPPP compliance observations, engineering of house pads, and density testing and observations of underground utility installations.

- Reflections on Mayo Lake Development – Rochester, MN
- Summit Point 5th Residential Development – Rochester, MN
- North Summit Residential Development – Rochester, MN
- Stonebridge Residential Development – Rochester, MN
- Hart Farms Residential Development – Rochester, MN
- Stonewood Residential Development – Mantorville, MN

TH 169 Reconstruction Project, Champlin, MN

WSB completed a Limited Phase II ESA for the project corridor to investigate areas of suspected soil or groundwater contamination. The investigation included the advancement of 54 borings to depths of up to 25 feet below grade. The Phase II ESA included subsurface sampling of soil, groundwater and soil vapor. Based on results of the Limited Phase II ESA, WSB recommended preparation of a Response Action Plan (RAP) to manage both petroleum and not petroleum contamination identified at multiple areas of the project corridor. Trevor performed oversight of drilling and sample collection of soils, water and soil gas.

Graybar Campus Expansion Phase II, Rochester, MN

Graybar retained WSB to provide environmental investigation, planning, management and field oversight services for the reconstruction project. WSB completed a Limited Phase I and Phase II Environmental Site Assessment (ESA). The Phase II ESA included subsurface sampling of soil, groundwater and soil vapor. Trevor was responsible for the oversight of drilling and sampling conducted during the Phase II portion of this project.

Buckeye (Flats on 4th), Rochester, MN

Trevor served as the inspection engineer on the 6 story commercial/residential building. Trevor contributed a major role in this project, including oversight of the 6 UST removals, seismic monitoring while pile driving operations were taking place, materials testing and special inspections.

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Trevor Meyers

Environmental Inspection and Testing

Stonewood Residential Development, Mantorville, MN

Trevor served as the driller assistant for the geotechnical and environmental investigation for this project, responsible for the oversight of soil classification and creating boring logs. This project involved the addition of 20 new homes. Both split-spoon and geoprobe samples were utilized in the investigation.

West Circle Commercial Development, Rochester, MN

Trevor acted as the inspection and testing engineer for this 10 acre / 5 building commercial development project. Trevor performed excavation observations, SWPPP compliance observations, density testing of fill material for building pads and utility work, and testing of concrete, aggregate base, and asphalt. Similar to other projects in the Rochester area, this project presented many varieties of Silty Clays. Trevor was able to apply ample attention to the demanding soil conditions and contribute to getting the project done ahead of schedule.

Continental Oil Company, Williams County, ND

Trevor served as the assistant geotechnical engineer for the design of soil cement for multiple drilling pads. He was responsible for strengthening underlying clays with the addition of cement. Optimum moisture and cement content varied for each variety of soil. With little information on the new science, Trevor was able to extensively test multiple assortments and successfully develop strategies for each drilling pad site.

Rapid Creek Contamination due to Historic Mining – Black Hills, SD

Trevor participated as a scientist in the investigation of stream contamination due to historic mining in the Black Hills of SD. The project included stream bed mapping and sampling throughout the Rapid Creek Drainage Basin. The investigation found increased levels of Arsenic in stream soils.

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Bill Alms, PE

Project Engineer

Service Group:
Water Resources

Registration:
Professional Engineer – Minnesota #54301, Wisconsin No. 45605-6

Education:
Master of Science in Environmental Engineering, University of Nebraska – Lincoln, 2009

Bachelor of Science in Biological Systems Engineering, University of Nebraska – Lincoln, 2007

Bill Alms is a Project Manager in WSB's Water Resources Group. Bill has ten years of management experience and seven years of experience in in the field of water resources engineering. Bill has experience working with many different municipalities, helping to achieve desirable water resource outcomes from identifying maintenance needs to completing capital improvement projects. Bill has completed many types of water resource projects including planning, design, and construction management for a number of regional BMP projects including passive treatment technologies, chemical treatment systems, and stormwater reuse applications. Bill has been responsible for the development of numerous other subwatershed assessments, hydrologic and hydraulic models, water quality models, feasibility studies, and other water resource planning activities. Bill has coordinated multiple Phase I and Phase II environmental site assessments as well as development of Response Action Plans, VIC program projects and MPCA notifications for cleanup of contamination discovered during construction.

General Experience

Stormwater Treatment Systems

Bill has experience with design of alternative storm water management devices for a variety of unique situations where standard storm water management techniques were not feasible. Such devices include: alum treatment systems, raingardens, infiltration basins, infiltration trenches, underground detention systems, underground storm water treatments systems, biofiltration systems, and underdrain filtration systems.

Comprehensive Water Resource Management Plans

Project Engineer responsible for creating Comprehensive Water Resource Management Plans (CWRMP) in accordance with MN Rules Chapter 8410. The projects involved completing an inventory of the Cities' water resources, founding the Cities' water resource goals and policies, establishing an implementation plan and financial plan to protect, maintain and improve water resources within the Cities.

Hydrologic and Hydraulic Modeling

Bill has vast experience using XPSWMM, HydroCAD, P8, and other modeling software to help complete stormwater analysis, water resource planning, and design of improvements.

Selected Project Experience

St. Croix Meadows Redevelopment | Hudson, WI

Bill was the Project Water Resources Project Manager responsible for overseeing the storm sewer and water quality BMP designs for this 130-acre redevelopment. Project work included hydraulic and water quality modeling, storm sewer design and coordinating with developer and architect to ensure site grading plans and drainage connections were integrated across the site.

Bill Alms, PE

Project Engineer

Pond Cleanout Projects | Multiple Communities

Bill has served as the Project Engineer on multiple pond cleanout projects throughout the metro area. He has coordinated all phases of the project from planning, survey, and feasibility through final design, permitting, and construction. A cost-benefit analysis is often completed to determine the extent of maintenance activities needed to achieve City goals. Contaminated material testing and analysis is also completed consistent with State requirements to determine excavation and disposal needs.

Keller Lake Water Quality Improvement Project | Burnsville, MN

Bill was the project engineer and construction observer for the design of a large underground treatment train consisting of the following: baffle and sump pretreatment, extended underground ponding, active infiltration gallery and lift station, and high flow bypass. This capital improvement project was implemented to meet the City's remaining TMDL phosphorus reductions for Keller Lake. Project included grant funding from Clean Water Funds. Project also included emergency response, permitting, and abatement of a previously unknown dump site containing DRO soils and ACM debris.

St. Anthony Stormwater Research Facility | St. Anthony, MN

Bill was the Project Manager responsible for designing plans and specifications to construct an underground storm water treatment system that serves a 600-acre drainage area. The 76 by 40 structure was designed to remove sediment and phosphorus from a 54" Trunk storm sewer. System components include a hydrodynamic separator, lift station and controls, an iron enhanced sand filter, and multiple cartridge media filters. The project was constructed din coordination with Mississippi Watershed Management Organization and is intended to serve as a research facility to evaluate future treatment technologies in coordination with the U of M St. Anthony Falls Laboratory.

Taft Lake/Legion Lake Watershed Water Quality Improvement Project | Richfield, MN

Bill was the Project Engineer responsible for designing plans and specifications and watershed district permitting of this water reuse irrigation and infiltration system. System components included 5000 ft. of infiltration trenches, 7.2 acres or water reuse irrigation, pond dredging, habitat enhancement through nature prairie restoration and buffer strips, and a flocculation treatment system for Taft Lake. The project included coordination with MnDOT and the City of Richfield, and the Minnehaha Watershed District. Project also included permitting and abatement of a regulated debris discovered in the park during construction.

Articles and Presentations

"Improved Soil Mixing and Delivery System for a Storm Runoff Simulator" was published in Applied Engineering in Agriculture Vol. 27(4) pages: 579-586.

"Stormwater Volume Control – Design Vs. Reality" was presented at the 2012 Minnesota Water Resources Conference.

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