Proposal for

Minnesota Pollution Control Agency Remediation Master Contract

Category B – Petroleum Only Environmental Services

April 11, 2018

Brian A. Ross, PG, VP
Project Manager | Scientist II
218.316.3628
Brian.Ross@wsn.us.com

7804 Industrial Park Rd.
Baxter, MN 56425

WIDSETH SMITH NOLTING

Engineering | Architecture
Surveying | Environmental

Table of Contents

WIDSETH SMITH NOLTING

Brainerd/Baxter
7804 Industrial Park Road
PO Box 2720
Baxter, MN 56425-2720

218.829.5117
218.829.2517
Brainerd@wsn.us.com

WidsethSmithNolting.com

April 10, 2018

Ms. Mary Heininger
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155

RE: Proposal for Category B. Petroleum Only Environmental Services

Dear Members of the Evaluation Team:

Category | We have enclosed our qualifications for Category B. Petroleum Only Environmental Services

History | Widseth Smith Nolting (WSN) is a Minnesota corporation, founded in 1975 in Crookston. The firm has expanded by acquiring Dean Anderson of Brainerd, 1978, Hall Engineering, Alexandria, 1979, QED Engineering, Rochester, 2008, FS Engineers, East Grand Forks, 2012, KBM Inc. IN 2016; diversifying into Environmental Services, 1989; and opening new offices in Grand Forks, 1998, Bemidji, 1999, and Forest Lake, 2016. Now with more than 200 employees, our team of professionals—environmental scientists, engineers, architects, and land surveyors—works together to provide our clients with comprehensive, coordinated services. As a Minnesota-based company, WSN serves rural and urban areas throughout the state. Our website address is: www.widsethsmithnolting.com

Organization | WSN is owned by senior-level employees who maintain active roles in their professions, their communities, state organizations, and in the company's management team. The organization is run by a board of directors comprised of WSN employees. The President and Secretary are located in the Baxter office, and the Executive Vice President and Treasurer are in Alexandria. Our Crookston location serves as the firm's business office, where our financial records are kept.

Project Contact | As Vice President and Director of Environmental Services, I will serve as the contact person regarding questions on this proposal as well as be responsible for overall contract administration and quality control. My contact information is as follows:

Brian A. Ross, PG
7804 Industrial Park Road
Baxter, MN 56425
Direct | 218.316.3628
General | 218.829.5117
Mobile | 218.821.3697
Fax | 218.829.2517
Email | Brian.Ross@wsn.us.com

Locations | Projects under this contract will be managed out of our Brainerd/Baxter office with staff/teams mobilizing from the following locations:

Brainerd/Baxter
7804 Industrial Park Road
Baxter, MN 56425
TEL | 218.829.5117
FAX | 218.829.2517

Crookston
216 South Main Street
Crookston, MN 56716
TEL | 218.281.6522
FAX | 218.281.6545

Alexandria
610 Fillmore Street
Alexandria, MN 56308
TEL | 320.762.8149
FAX | 320.762.0263

Day-to-Day Availability | WSN's multiple locations give the firm the proximity, flexibility, and resources to quickly and effectively serve the Contract users. One of our proposed Project Managers and I are located just two blocks from the MPCA Brainerd Regional Office, making us available to meet with MPCA staff on relatively short notice. All of our team members, of course, would be available for scheduled meetings as needed regardless of location. In terms of

discussing such issues as billing and invoicing as well as general issues or information, current technologies (e.g., e-mail, mobile devices, etc.) render physical proximity nearly moot. Contract users will be provided with the contact information needed to reach our team members as appropriate.

Contract Conditions I WSN accepts the Classification Levels and Rates in both Rate Schedule 1 and Rate Schedule 2 in the RFP/Event dated February 28, 2018. We also accept the Equipment and Supplies List, which lists the equipment to perform services with prices per RFP Addendum No. 1.

Contract Experience I WSN appreciates the work given to us by MPCA over the last five years of the Professional and Technical Services Master Contract and the previous five years of the Multi-Site Contract. We have worked with MPCA Petroleum Remediation Program Staff from all of MPCA's offices and have worked on over 75 Petroleum Remediation Program projects for MPCA in several Minnesota communities. We are familiar with Miinnesota's geologic and hydrogeologic characteristics and have over thirty years of environmental investigation and remediation services experience. Using WSN is cost effective because of familiarity with central and northern Minnesota and our office locations in central, north central, and northwestern Minnesota. We would like very much to continue this relationship for the next five-year contract period.

Erosion/Sediment Control Certification Program | More than 40 of WSN's employees have been certified through the University of Minnesota Erosion/Sediment Control Certification Program in construction SWPPP design, construction installation, and construction site management. All certifications are up to date.

We look forward to providing the state with continued high quality, knowledgeable, efficient, and effective environmental services.

Sincerely,
WIDSETH SMITH NOLTING & ASSOCIATES, INC.

Brian A. Ross, PG
Vice President | Director of Environmental Services
Brian.Ross@wsn.us.com

2. Qualifications and Capabilities

Overall Company Capabilities

Widseth Smith Nolting & Associates, Inc.

Good roads, clean water, safe bridges, dynamic spaces, and robust communities are central to our quality of life. Widseth Smith Nolting supports our communities through engineering, architecture, land surveying, and environmental services for public and private clients throughout the Upper Midwest. With more than 200 employees working from eight locations in Minnesota and North Dakota, our integrated multi-discipline team offers a complete package of services to take your project from concept to completion. For you, that means better communication, greater efficiency, and a more satisfying experience. Firm-wide Widseth Smith Nolting's disciplines and staff include:

27 Architecture | 74 Civil Engineering | 4 Structural Engineering
6 Mechanical Engineering | 10 Electrical Engineering | 35 Land Surveying
8 Environmental Services | 7 Water Resources | 2 Funding Specialists
4 Communications | 24 Administrative | 201 Total Employees

Firm History

2016 WSN's services expand to include electrical distribution operations planning and construction design engineering through acquisition of KBM, Inc.
2016 KBM Geospatial LLC added as a subsidiary of WSN
2016 Forest Lake added through acquisition of Hult & Hebeisen
2014 Rochester architecture team expanded through acquisition of Kane and Johnson Architects, Inc.
2013 Brainerd architecture team expanded through acquisition of Architecture One
2012 East Grand Forks is added through acquisition of FS Engineering
2010 WSN's services expand to include water resources through acquisition of JOR Engineering
2008 Rochester added through merger with QED Engineering
1999 Bemidji opens
1999 Brainerd expands through acquisition of EDC Engineering
1998 Grand Forks opens
1996 Brainerd expands through acquisition of Meyer Donnay Architects
1979 Alexandria is added through acquisition of Hall Engineering
1978 Brainerd is added through acquisition of Dean Anderson
1975 Widseth Smith Nolting & Assoc., Inc., is incorporated

Key Staff

Resumes for all key staff are included on the subsequent pages, followed by the Staff Matrix.

Brian A. Ross, PG
Project Manager
Brian.Ross@wsn.us.com

7804 Industrial Park Road
Baxter, MN 56425
218.829.5117

WSN Office Locations

Alexandria
Bemidji
Baxter/Brainerd
Crookston
East Grand Forks
Forest Lake
Grand Forks
Rochester

Key Staff

Brian Ross, PG, VP— Project Manager | Scientist 2

Brian joined WSN in 1991, after six years with a Twin Cities environmental consulting firm. He has extensive experience in site investigation activities including sludge, sediment, soil, surface water and groundwater sampling as well as soil boring logging, monitoring well installation, and aquifer testing. Brian has conducted over 30 investigations of Superfund-type contamination and has experience with response action oversight and remedial actions.

Brian has completed assessments or investigations at more than three dozen RCRA hazardous waste sites around the U.S. He has been involved in pesticide release studies, numerous Phase I and II Environmental Site Assessments (ESA), and provided input for Environmental Impact Statements (EIS). His extensive background in hydrogeologic studies and computer modeling of groundwater flow for municipal water wells includes evaluating aquifer characteristics, siting new well fields, designing new wells, delineating wellhead protection areas, and assessing water quality. As project director, Brian has directed all aspects of several projects, from client communication to arranging subcontractors.

Licenses/Certifications

Professional Geologist: MN

Licensed Monitoring Well Contractor

40-Hour OSHA HAZWOPER Training

HAZMAT Site Supervisor Training

Education

MS, Geology | University of Minnesota, 1985

BA, Earth Science | St. Cloud State University, 1981

RELATED PROJECTS

Petroleum Release Sites

- Johnson Cardtrol (Leak Site 20336) — Kennedy, MN, Site Assessment, LSI
- Tom's Resort (Leak Site 16414)—Cass Lake, MN
  Phase I and II ESA, Remedial Investigation, CAD Report (Excavation)
- Gooseberry Falls State Park (Leak Site 9434)—Two Harbors, MN
  UST Removal, Full RI, CAD Report, CAD Install and O&M
- Aitkin Power Plant (Leak Site 8566)—Aitkin, MN
  Emergency Response, Full RI, CAD Report, CAD Install and O&M
- Former Garrison Conoco (Leak Site 16532)—Garrison, MN
  Remedial Investigation
- Mills Fleet Farm (Leak Site 15260)—Owatonna, MN
  UST Removal, Limited Site Investigation
- Former Auto Import Dealership (Leak Site 8234)—Grand Rapids, MN
  Remedial Investigation
- Arneson Direct Service (Leak Site 14817)—Roseau, MN
  UST Removal, Remedial Investigation
- Spicer Fisheries Headquarters (Leak Site 5932)—Spicer, MN
  UST Removal, Full RI, CAD Installation and O&M
- Edwards Oil Bulk Site Corrective Action (Leak Site 5794)—Virginia, MN
  Corrective Action Design, Free Product Recovery, Soil Excavation
- Mills GM (Leak Site 15267)—Baxter, MN
  UST Removal, Limited Site Investigation
- Aitkin County Retention Pond (Leak Site 16050)—Aitkin, MN
  Vapor Survey, Utility Right-of-Way Excavation
- Sobieski Coop (Leak Site 5864)—Sobieski, MN
  CAD Report, CAD Installation and O&M
- Holiday Station Store 369 (Leak Site 18101) - Baxter, MN, Remediation System Design Review

Non-Petroleum Contamination Sites

- Bemidji South Shore Development (Site ID VP14403)—Bemidji, MN
  VIC Investigation Workplan, DRAP Preparation, DRAP Implementation
- Former IGA (Site ID VP-13440)—Little Falls, MN
  UST Removal and Remedial Investigation of PCE Release
- Crookston Iron and Metal (Site ID VP-20380)—Crookston, MN
  CERCLA Investigation and Corrective Action
- Well Replacement—Randall, MN
  Nitrate Assessment, Well Siting and Design, Pumping Test Assessment

Brian Ross continued on the next page

- Former Arrowhead Cleaners (Site ID SA4392)—Grand Rapids, MN
  Phase I and II ESA, Superfund Assessment
- Pequot Publishing (Site ID11400)—Pine River, MN
  Phase I and II ESA, VIC Investigation Workplan, Corrective Action
- Dan's Flying Service (MDA Case File No: CF-2692)—Crookston, MN
  Ag-Chem Phase I, Remedial Investigation, Corrective Action
- Homecrest Industries (Site ID 11500)–Wadena, MN
  Phase I and II ESAs, VIC Investigation
- Former Cedar Services (Site ID GCH255104)—Bemidji, MN
  Remedial Investigation and Monitoring
- Nitrate Assessment—Verndale, MN
  Nitrate Contamination Mapping, Monitoring Well Installation, Pumping Test Assessment
- Biwabik City Hall—Biwabik, MN
  Limited Phase 2 ESA, Assessment work plan,sampling assessment report

Phase I and Phase II Environmental Site Assessments

- MnDOT TH 7/29 Bypass (S.P. 1202-48)—Montevideo, MN
  Phase I ESA, Drilling Investigation
- Mills Fleet Farm—Rochester, MN
  Phase I ESA
- Lexington Manufacturing—Brainerd, MN
  Phase I ESA
- MnDOT Th1/59—Thief River Falls, MN
  Phase 1 and Phase II ESA
- J.R. Simplot Facility—Grand Forks, ND
  Phase I and II ESA
- Former Standard Oil Bulk Site—Aitkin, MN
  Phase I and II ESA
- MNDOT TH 71 Bridge Project—Jackson, MN
  Phase I and Phase I ESA
- Kruse and K&S Motors—Worthington, MN
  Phase I ESA
- Roadway Turnback Project—Pequot Lakes, MN
  Limited Phase I ESA and Phase II Drilling
- Parker-Hannafin Facility—Deerwood, MN
  Phase I ESA, Oil System Removal Assessment

Other Projects

- Municipal Well Assessment and Design—Watson, MN
  New Well Siting, Test Well Design, New Well Plans and Specifications
- Pequot Lakes WWTF Irrigation Study—Pequot Lakes, MN
  Hydrogeologic Study, Nitrate Contamination Assessment
- Municipal Well Replacement—Kerkhoven, MN
  Arsenic Assessment, New Siting and Design, Plans and Specifications
- Ruttgers Bay Lake Townhomes—Deerwood, MN
  Phosphorus and Nitrate Contamination Study
- CSAH 31 Groundwater Seepage Study—Pillager, MN
  Geotechnical Study
- Municipal Well Replacement—Herman, MN
  Design, Plans Specifications
- Municipal Well Replacement—Holloway, MN
  Nitrate Assessment, Hydrogeologic Assessment, New Well Siting and Design

Licenses/Certifications

Professional Engineer: MN, WI

Education

BS, Civil Engineering
North Dakota State University, 1979

Mark V. Hallan, PE, VP — Engineer 3

Mark joined WSN in 1996 with 17 years of experience in civil and structural engineering projects. As a project engineer with WSN, Mark advises city staff and councils on infrastructure considerations to meet projected growth, the impact of development on existing city systems and funding/assessment alternatives. As a principal in the firm, he is responsible for coordination, design, approvals, construction observation and quality control for water, wastewater, solid waste facilities and street/highway projects. In addition, projects with Camp Ripley have varied from vehicle/tank wash facilities with petroleum, oil, lubricant capture and water reuse to specialized stormwater treatment. Mark further manages WSN's project teams assigned to the preparation of feasibility studies or facility plans, preliminary and final plans/specifications, and construction observation. Mark also represents WSN's clients in all negotiations with State and Federal agencies and prepares permit applications for a variety of agencies.

RELATED PROJECTS

Corrective Action Design Systems

- Hansel Residence (Site ID 19251)—Dalton, MN
  Corrective Action Design Plans and Specifications
- Hutto Residence (Leak Site 17206)—Anoka, MN
  Corrective Action Design, Plans, and Construction Observation
- Dillon Residence (Leak Site 15589)—Paynesville, MN
  Corrective Action Design, Plans, and Construction Observation
- Lamia Ali Residence (Leak Site 17116)—Moorhead, MN
  Corrective Action Design, Plans, and Specifications
- Meyer Residence (Leak Site 13656)—Easton, MN
  Corrective Action Design, Plans, and Specifications
- LaFave Residence (Leak Site 16755)—St. Paul, MN
  Corrective Action Design, Plans, and Construction Observation
- Duncan Residence (Leak Site 5291)—Minneapolis, MN
  Vapor Mitigation System Operation and Maintenance
- Osvold Residence (Leak Site 15602)—Brainerd, MN
  Vapor Survey, LSI, CAD, Vapor Mitigation Construction
- Captain Kirks (Leak Site 464)—Federal Dam, MN
  Corrective Action Design and Implementation, Contaminated Soil Removal

Other

- New Well Review (Leak No. 8524)—Pelican Rapids, MN
  Review Well and Water System Problems with MPCA Staff
- Aitkin County CSAH 1 Rebuild with Contaminated Soils Removal—Aitkin, MN
- Aitkin Bunker Hill Drive Industrial Park—Aitkin, MN
- Aitkin Power Plant Decommissioning Assessment—Aitkin, MN
- Bemidji Water Tower #3—Bemidji, MN
- Municipal Well Replacement and Plant Upgrade—Blackduck, MN
- Camp Ripley Concrete Parking for Building 11-76—Little Falls, MN
- Camp Ripley Outfall #1 Stormwater Treatment System—Little Falls, MN
- Camp Ripley Washrack No. 22 Modifications—Little Falls, MN
- Crosslake/Crow Wing County Joint Public Works Facility—Crosslake, MN
- Crow Wing County Landfill Cells 3 and 4 Construction—Brainerd, MN
- Crow Wing County Landfill Methane Gas Collection—Brainerd, MN
- Hancock Water and Sewer Systems—Hancock, MN

Mark V. Hallan continued on the next page

- Henning Water System Improvements—Henning, MN
- Laporte Water Plant Construction Review—Laporte, MN
- Little Falls Ethanol Plant Sewer and Water Extension—Little Falls, MN
- Lindbergh Drive Reconstruction with Contaminated Soils Removal—Little Falls, MN
- McLeod County Household Hazardous Waste Facility—Hutchinson, MN
- Nisswa Wastewater Irrigation Improvements—Nisswa, MN
- NPC Sewer and Water Extensions with Asbestos Removal—Brainerd, MN
- Pequot Lakes Water System—Pequot Lakes, MN
- Long Prarie Creamery (Leak Site 155)—Long Prarie, MN
  Building Structural Evaluation

Licenses/Certifications

Professional Geologist: MN

40-Hour OSHA HAZWOPER Training

Education

BS, Geological Engineering
University of North Dakota, 1987

AAS, Diversified Agriculture
University of Minnesota-Crookston, 1978

Gregory W. Smith, PG — Project Manager | Scientist 2

Before joining WSN in 1989, Greg was part of an environmental consulting firm in Wayzata, MN. His project experience at WSN includes Phase I and Phase II Environmental Site Assessments, hydrogeologic investigations at petroleum and non-petroleum release sites, oversight of tank removal projects, and groundwater monitoring system design at demolition landfills. Greg is responsible for the coordination of field activities at the landfills including groundwater sample collection, hydrogeologic evaluations, and monitoring well system design. Due to the high number of monitoring wells at the landfills, he is tasked to retrieve, interpret, and collate a large amount of data results on a quarterly basis.

Greg's general responsibilities at WSN include data analysis, interpretation of field data, and effective verbal and written communication with clients and regulators. He prepares technical documents including well installation work plans, remedial investigation reports, and corrective action design reports. Greg is also responsible for providing leadership to other team members to make sure the investigation is moving toward a successful outcome while complying with local, state, and federal regulations and MPCA guidance documents. As the project manager for a wide variety of projects Greg has the ability to organize differing amounts of technical data to make concise and final recommendations.

RELATED PROJECTS

Corrective Action Design Systems

- Hansel Residence (Site ID 19251)—Dalton, MN
  Contaminated Soil Excavation, Vapor Mitigation
- Triangle Oil (Site ID 13383)—Brainerd, MN
  CAD Report, DPE System Design, Install and O&M
- Hutto Residence Corrective Action (Site ID 17206)—Anoka, MN
  Corrective Action Design, Plans, and Construction Observation
- Izaty's Golf & Yacht Club (Site ID 10651)—Onamia, MN
  Drinking Water Well Replacement
- Johnson's Services (Site ID 11617)—Carbon Filter System
  Design, Installation, and O&M

Petroleum Release Sites

- Woitalla Repair Services (Site ID 20585)—Pierz, MN
  Limited Site Investigation
- D&G Auto Repair (Site ID 20306)—Sauk Rapids, MN
  Limited Site Investigation
- Sebeka Public Schools (Site ID 16142)—Sebeka, MN
  Limited Site Investigation
- Melrose Motors (Site ID 17938)—Melrose, MN
  Remedial Investigation
- Ray's Service (Site ID 12719)—Meire Grove, MN
  Remedial Investigation
- Polish Palace (Site ID 11420)—Sobieski, MN
  Remedial Investigation, Free Product Recovery
- Driftwood Family Resort (Site ID 17427)—Pequot Lakes, MN
  Remedial Investigation
- Southside Fuel Plus (Site ID 18065)—Hackensack, MN
  Remedial Investigation
- JL Enterprises (Site ID 17039)—Aitkin, MN
  UST Removal Observation, Excavation Report Preparation
- Johnson Oil Bulk Site (Site ID 15217)—Pine River, MN
  Surface Soil Contamination Assessment
- Izaty's Golf & Yacht Club (Site ID 10651)—Onamia, MN
  Remedial Investigation
- Woodland Store (Site ID 9247)—Lake George, MN
  Remedial Investigation

Gregory W. Smith continued on the next page

- Otter Tail County Garage (Site ID 14493)—Fergus Falls, MN
  Limited Site Investigation, Contaminated Soil Land Treatment
- Johnson's Services (Site ID 11617)—Motley, MN
  Remedial Investigation, Drinking Water Well Replacement

Non-Petroleum Contamination Sites

- Hengel Demolition Landfill (SW-291)—Pillager, MN
  Vinyl Chloride Groundwater Contamination Investigation
- Douglas County Demolition Landfill (SW-406)—Alexandria, MN
  Boron and Manganese Groundwater Contamination Investigation
- Former Brainerd City Dump—Baxter, MN
  Methane Gas Migration Investigation
- Pine River Wood Products—Pine River, MN
  Pesticide Release Investigation (MDA Site)
- Jim's Auto Parts & Salvage—Little Falls, MN
  Subsurface Investigation Work Plan Preparation
- Rudy's Auto Body—Crosslake, MN
  Cleaning Solvent Subsurface Investigation
- Army Corps of Engineers—Red Lake Falls, MN
  Health and Safety Plan Preparation
- Runestone Electric—Alexandria, MN
  VIC Work Plan Preparation, Investigation
- Crow Wing County Landfill (SW-376)—Brainerd, MN
  Leachate Collection, Groundwater Sampling, Report Preparation
- TK Demolition Landfill (SW-333)—Cold Spring, MN
  Landfill Permitting, Groundwater Monitoring System Design
- Wadena County Demolition Landfill (SW-317)—Wadena, MN
  Landfill Permitting, Report Preparation
- Former Brainerd Foundry—Brainerd, MN
  Lead Contamination Investigation, Feasibility Study Preparation

Phase I and Phase II Environmental Site Assessments

- Maple Street Dental—Brainerd, MN
  Phase I ESA
- Houston Ford—Pine River, MN
  Phase I ESA
- MnDOT TH 72 Road Improvements—Kelliher, MN
  Phase I and II ESA
- Former Thorud Motors—Alexandria, MN
  Phase I and Phase II ESA, Excavation
- MnDOT TH 10 Bypass Alternatives (S.P. 5605-18)—Wadena, MN
  Limited Phase I ESA
- MnDOT—Lindstrom, MN
  Phase I ESA
- MnDOT Trunk Highway 371 Bypass—Pequot Lakes, MN
  Phase I ESA
- United Building Center—Brainerd, MN
  Phase I and II ESA
- Izaty's Golf & Yacht Club—Onamia, MN
  Phase I and II ESA
- Headwaters Revolving Loan Fund—Bemidji, MN
  Phase I and II ESA
- Crow Wing Power ESA—Little Falls, MN
  Phase I ESA

Licenses/Certifications

Professional Geologist: MN

40-Hour OSHA HAZWOPER Training

Certified Asbestos Inspector

Certified Lead Risk Assessor

Education

MS, Geology | University of South Carolina, 1991

BS, Geology | North Dakota State University, 1987

Ty J. Fuglseth, PG — Project Manager | Scientist 2

Ty joined WSN in 1995, after two years as an environmental scientist/project manager with a North Carolina environmental consulting firm. He specializes in performing site assessments and investigations involving environmental contamination issues. Responsibilities at WSN include project management, bidding, contractor selection, communication with clients and state agencies, site assessments, site investigations, monitoring, data analysis and interpretation, risk assessment, client and state regulatory compliance, and remediation. Ty has directed numerous tank removals, remedial investigations, contaminated soil excavations, hydrogeologic studies, and environmental site assessments. Ty is experienced in managing and performing all aspects of fieldwork, including utility locating, soil boring advancement, monitoring well installation, soil, groundwater, surface water, and vapor sampling, risk assessments, free product recovery, and aquifer testing in accordance with applicable guidance documents. He also prepares technical reports including Limited Site Investigations/ Remedial Investigations, Hydrogeological Characterization Reports, Phase I and II Assessment Reports, and Asbestos Inspection Reports.

RELATED PROJECTS

Petroleum Release Sites

- Former Sioux Old Retail Site (Site ID 5736)—Winger, MN
  LSI & Corrective Action
- Former Gateway Super Service (Site ID 18412)—Kennedy, MN
  LSI, Sub-Slab Vapor Monitoring, Indoor Air Sampling
- Riverside Bait & Tackle (Site ID 16016)—Warroad, MN
  Groundwater Monitoring, LIF Investigation, Monitoring Reports, and EDCAD Preparation
- Knife River Materials (Site ID 17593)—Bemidji, MN
  Remedial Investigation
- Anderson Oil (Site ID 13524)—Red Lake Falls, MN
  Additional Investigation, Groundwater Monitoring, Vapor Assessment
- Percy's Place (Site ID 11966)—Roosevelt, MN
  Remedial Investigation, Drinking Water Well Sampling, Sub-Slab Vapor Sampling & Assessment
- Anda Construction, Townview Apartments (Site ID 17650)—Red Lake Falls, MN
  Limited Site Investigation
- Bumper to Bumper (Site ID 15344)—Greenbush, MN
  Limited Site Investigation
- Johnson Oil, Roseau Bulk Plant East (Site ID 17630)—Roseau, MN
  Limited Site Investigation
- Jeff's Super Service (Site ID 5837)—Greenbush, MN
  Additional Site Assessment, Groundwater Monitoring, Vapor Assessment, LIF Study, EDCAD Preporation
- Former Blossoms Flower & Gift Shop (Site ID 12866)—Hawley, MN
  Remedial Investigation
- Erickson Oil Company (Site ID 10564)—Fertile, MN
  Free Product Recovery
- Continental Western Group, Sikorski Residence Fuel Oil Spill (Site ID 18960)—Roseau, MN
  Vapor Assessment, Air Sampling, Reporting
- Johnson Oil, Roseau Bulk Plant West (Site ID 14568)—Roseau, MN
  Free Product Recovery, Groundwater Monitoring, Reporting
- Johnson Oil, Hallock Bulk Plant (Site ID 17629)—Hallock, MN
  Limited Site Investigation
- Northern Resources Cooperative, Nelson Residence Fuel Oil Spill (Site ID 19021)—Badger, MN
  Vapor Assessment, Water Well Assessment

Ty J. Fuglseth continued on the next page

Non-Petroleum Contamination Sites

- Former Seaforth Salvage (SA4064)—Seaforth, MN
  Phase II Investigation for Metals, PCBs, PAHs, Dioxins, VOCs, and Petroleum
- Bemidji Regional Events Center South Shore Site—Bemidji, MN
  Formaldehyde and Methane Testing
- Dan's Flying Service (MDA Case File No: CF-2692)—Crookston, MN
  Ag-Chem Phase I, Remedial Investigation, and Corrective Action for an Aerial Applicator Facility
- Agri-Max LLC—Crookston, MN, and Grafton, ND
  Ag-Chem Investigation
- Balzum Construction, Ag-Chem Phase II Investigation, Georgetown Farmers Elevator Site—Georgetown, MN
- Crookston Iron and Metal (Site ID VP20380)—Crookston, MN
  Phase I and Phase II Investigation for Metals, PCBs, and Petroleum Contamination
- Former Cedar Services—Bemidji, MN
  Soil & Groundwater Investigation of a Former PCP Wood Pole Treatment Facility

Phase I and Phase II Environmental Site Assessments (ESA)

- Minnesota Department of Transportation—Thief River Falls, MN
  Phase I & II ESA
- First State Bank of Grand Forks—East Grand Forks Tesoro
  Phase I ESA
- Bemidji Regional Events Center South Shore Site—Bemidji, MN
  Phase I ESA
- Border State Bank, Les's Sanitation—Thief River Falls, MN
  Phase I ESA
- Salem Motors—Crookston, MN
  Phase II ESA
- Valley Eldercare Center—Grand Forks, ND
  Phase I ESA
- Trinidad Benham Elevator & Former Asphalt Plant—Pillsbury, ND
  Phase I & II ESA

Other

- City of Bemidji Municipal Liquor Store—Bemidji, MN
  Asbestos and Hazardous Materials Inspection
- Douglas County DAC—Alexandria, MN
  Asbestos Inspection
- Benson Armory—Benson, MN
  Asbestos and Lead Paint Assessment
- Bemidji Regional Events Center—Bemidji, MN
  DEED Application Preparation for Contamination Investigation and RAP Preparation
- Mills Properties, Former Paul Bunyan Bowl—Brainerd, MN
  Asbestos and Hazardous Materials Inspection
- City of Starbuck-Old Starbuck Hospital—Starbuck, MN
  Asbestos and Hazardous Materials Inspection
- City of Crosby Wastewater Treatment Plant—Crosby, MN
  Asbestos and Hazardous Materials Inspection
- Rice County Bridges 88030, L2755, & 7320—Rice County, MN
  Asbestos and Regulated Waste Assessment
- Crow Wing County, Gull River Road Bridge L2845—Crow Wing County, MN
  Asbestos and Regulated Waste Assessment
- Pennington County Bridge 7248 —Pennington County, MN
  Asbestos and Regulated Waste Assessment

Licenses/Certifications

Professional Engineer: MN, SD

Education

MS, Civil Engineering | South Dakota State University, 1982

BS, Civil Engineering | South Dakota State University, 1980

Larry J. Van Hout, PE, VP, Treasurer — Engineer 3

Larry has widely varied experience in the water and wastewater fields. Before joining WSN, he served as a wastewater operator, a troubleshooter for operational problems at wastewater treatment plants, and trainer for wastewater operators. Since joining WSN in 1986, Larry has worked primarily with water and wastewater treatment projects. Experienced with mechanical wastewater plants includes planning, design, construction administration, start-up, operator training, and preparation of operation and maintenance manuals. Served as project engineer on the planning, design and construction of stabilization ponds and wastewater collection systems. Prepared studies for biosolids handling, infiltration/inflow, sewer use/user charge systems, and stormwater pollution prevention plans. Water system projects include computer analysis of distribution systems, studies of treatment needs, and projection of user demands. Served as project engineer for planning, design and construction administration of water wells, storage, treatment, and distribution projects. Experienced in administering water and wastewater projects financed through community development block grants, MPCA and EPA funds, and Rural Development funds.

RELATED PROJECTS

Petroleum Release Sites

- Water Distribution System Improvements —Herman, MN
  Contaminated Soil
- Old Starbuck Fire Hall Site—Starbuck, MN
  Phase I and Phase II ESA
- Farwell–Kensington Sanitary District Wastewater System—Farwell, MN, and Kensington, MN
  Contaminated Soils
- Water Treatment Plant and Distribution System—Hancock, MN
  Contaminated Soils
- Kensington Water Distribution Project—Kensington, MN
  Contaminated Soils

Other

- Water System Improvements—Wendell, MN
  New Water Treatment Plant, New Wells, Plans and Specifications
- Industrial Park Water and Sewer Extension—Kensington, MN
  Feasibility Study, Plans, Specification
- Industrial Park Watermain and Sanitary Sewer—Starbuck, MN
  Preliminary Cost Estimate, Permits, Plans, Specifications
- Watermain, Wells, Pumphouse, Water Meters, and Elevated Storage Tank—Watson, MN
  Replacement Well Siting, Plans, and Specifications; Rural Development Funding Assistance
- Heritage Industrial Park Phase I New Development—Alexandria, MN
  Feasibility Study, Plans, Specification
- Water Supply Chemical Addition—Holloway, MN
  Feasibility Study, Funding Assistance, Plans, Specification, Construction Administration
- WWTF Phosphorous Removal Upgrade—International Falls, MN
  Facility Plan, Design, Plans, Specifications

Licenses/Certifications

40-Hour OSHA HAZWOPER Training

Erosion & Sediment Control

Education

BS, Resource, Recreation and Tourism | University of Idaho, 2006

AS, Wilderness Management | Vermillion Community College, 2004

Michael L. Bogart — Field Technician | Scientist 1

Mike joined WSN in January 2012. He has a varied background in wilderness management, natural resources, hazardous site clean-up, sampling, and inspections. His primary responsibilities as an environmental technician include soil/water field sampling, field data collection, and preparation of site drawings. Mike has experience with the collection of groundwater samples at numerous demolition landfills using low flow, dedicated and portable bladder pumps. While at WSN, Mike has worked closely with project managers in defining investigation and remediation solutions on various petroleum remediation projects and landfill investigations. Mike's other responsibilities include computerized data entry, remedial investigation report preparation, and developing remediation plans.

RELATED PROJECTS

Corrective Action Design Systems

- Captain Kirks Remediation Construction Observation Additional Work (Site ID 464)—Federal Dam, MN
- Hutto Residence Corrective Action (Site ID 17206)—Anoka, MN
- Johnson Oil, Dean & Greg's Corrective Action Design (Site ID 6736)—Wannaska, MN
- Johnson's Services Additional Investigation (Site ID 11617)—Motley, MN
- Lamia Ali Residence, Additional Investigation (Site ID 17116)—Moorhead, MN
- Sioux Oil Former Gas Station Corrective Action & Design (Site ID 5736)—Winger, MN

Petroleum Release Sites

- Angus Coop Elevator Limited Site Investigation (Site ID 16452)—Angus, MN
- Boondocks Groundwater Sampling & Vapor Checks (Site ID 17273)—Detroit Lakes, MN
- Gateway Super Service LSI and Vapor Assessment (Site ID 18412)—Kennedy, MN
- Circle R Ranch LSI (Site ID 17825)—Long Prairie, MN
- Continental Western Group Vapor Assessment (Site ID 18960)—Roseau, MN
- Dean & Greg's ASA (Site ID 6736)—Wannaska, MN
- Driftwood Family Resort RI (Site ID 17427)—Pine River, MN
- Hawley Bulk Site Monitoring and Corrective Action (Site ID 14404)—Hawley, MN
- Jeff's Super Service (Site ID 5837)—Greenbush, MN
- Johnson Oil, West Bulk Facility (Site ID 14568)—Roseau, MN
- Kens Amoco 2013 (Site ID 12613) Investigation—Chisholm, MN
- M&G Amoco - Hackensack Groundwater Quarterly Monitoring and Additional Investigation FY2013 (Site ID 12613)—Hackensack, MN
- Woodland Store 2012 Sampling (Site ID 9247)—Park Rapids, MN
- Former Pete's Garage LSI and Monitoring (Site ID 14494)—Ely, MN

Non-Petroleum Contamination Sites

- 2012 Wastewater Treatment Improvements—Nisswa, MN
- Arrowhead Cleaners Site Assessment (Site ID SA4392)—Grand Rapids, MN
- Biwabik 2013 Assessment—Biwabik, MN
- Brainerd Foundry Additional Investigation—Brainerd, MN
- Shoreline Soil Vapor Assessment (Site ID SA134)—Navarre, MN
- Former Cedar Services Wood Treatment—Bemidji, MN
- Methane Testing - Northland Arboretum—Brainerd, MN
- MnDOT TH7—Milan, MN
- MnDOT TH71—Jackson, MN
- Former Seaforth Salvage Limited Investigation (Site IDSA4064)—Seaforth, MN

Michael L. Bogart continued on the next page

Other

- Mahnomen Cty Demo Ground Water Sampling & Reporting—Mahnomen, MN
- TK Demo Landfill Groundwater Sampling and Annual Survey (SW-333)—Cold Spring, MN
- Todd County Demo Landfill Groundwater Sampling and Annual Survey (SW-403)—Browerville, MN
- Ambient Groundwater Quality Monitoring Network Installation for Northern and NE Minnesota
- Crow Wing County Landfill Services (SW-376)—Brainerd, MN
- Hengel Demo Landfill Sampling (SW-291)—Pillager, MN
- Industrial Park Road Basin Cleaning—Baxter, MN
- Omega Demo Monitoring Well Installation (SW-416) —St. Hilaire, MN
- Mahnomen County Demolition Landfill Groundwater Investigation (WS-377)—Mahnomen, MN
- Hengel Demolition Landfill (SW-291)—Pillager, MN
  Vinyl Chloride Groundwater Contamination Investigation
- Douglas County Demolition Landfill (SW-406)—Alexandria, MN
  Boron and Manganese Groundwater Contamination Investigation
- Capital Solutions Vapor and Soil Contamination Construction Observation—Grand Forks, ND
- Potlatch Monofill Sampling—Brainerd, MN

Licenses/Certifications

Professional Engineer: MN, WI

40-hour OSHA HAZWOPER Training

Erosion/Stormwater Management: Design Construction SWPPP

Registered SSTS Advanced Designer

Education

BS, Civil Engineering | North Dakota State University, 1990

David S. Reese, PE, VP — Engineer 3 | Project Manager

Dave has been with WSN since 1992. He provides engineering and planning assistance to clients regarding infrastructure needs and policy development. From feasibility studies through construction, his experience includes sewer, water, road, bridge, and environmental projects. Dave offers a strong background in addressing environmental issues. He has processed wetland fill permits for land development and utility and road construction for private developers, cities, and counties. He has prepared stormwater designs to mitigate runoff pollution and investigated the impact of pollutant releases to the soil and ground water including test drilling, sampling, data analysis, and report preparation.

RELATED PROJECTS

Corrective Action Design Systems

- Gulbranson Equipment (Site ID 15048)—Park Rapids, MN
  Water Line Replacement
- USFWS Wetland Management Office (Site ID 4802)—Detroit Lakes, MN
  Contaminated Soil Excavation

Petroleum Release Sites

- Jeff's Service (Site ID 5837)—Greenbush, MN
  Remedial Investigation
- DNR Forestry Office (Site ID 6464)—Park Rapids, MN
  Remedial Investigation
- Orton Oil, Tabaka Site (Site ID 6045)—Walker, MN
  Limited Site Assessment
- Aitkin Power Plant (Site ID 8566)—Aitkin, MN
  Remedial Investigation

Other

- CSAH 31 Groundwater Seepage Study—Pillager, MN
  Geotechnical Study
- Wilderness Resort—Pequot Lakes, MN
  Wastewater System Design
- Brainerd International Raceway Road Course and Stormwater—Brainerd, MN
  Permits, Plans, and Specifications
- Elbow Lake Airport—Elbow Lake, MN
  UST System Plans, Specifications
- 2007 Sanitary Sewer Project—Lakeshore, MN
  Permits, Plans, And Specifications
- Biosolids Treatment Study—Crosslake, MN
  Project Management, Design, Plans

Tim Ramerth, PE , VP— Engineer 3

Tim is a licensed engineer in Minnesota, he is a Vice President with the firm and has over 26 years of experience in the public and private sectors. He has been a project manager for over half of his career and has extensive experience in project development, project management, permitting, wetland regulation and environmental regulation. As a project manager, he has provided technical design and oversight of many projects from concept through bidding and final closeout. Tim's other responsibilities include municipal engineering, water resources, transportation, and private development. He frequently works with regulating agencies, local governments and state agencies to foster project support and acquire permit approvals for projects. He attends meetings with committees, residents and Councils to present materials and provide guidance and opinions.

Licenses/Certifications

Professional Engineer: ND, MN, WI

Design of Construction SWPPP; Construction Site Management

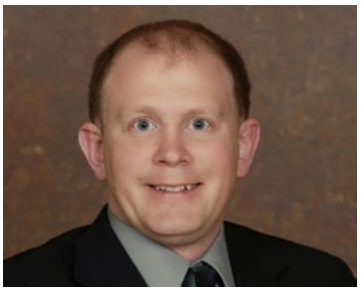
Education

Bachelor of Science, Agricultural Engineering | South Dakota State University, 1992

RELATED PROJECTS

Other

- Ossawinnamakee Channel Clean Out—Pequot Lakes, MN
- Big Lake Outlet Project—Big Lake, MN
- Bois de Sioux Watershed District Permit Application Reviews—Wheaton, MN
  General Watershed Engineering for Bois de Sioux
- General Watershed Engineering for Bois de Sioux Watershed District - Wheaton, MN
- Traverse County Ditch 52—Wheaton, MN
- Wilkin County Ditch 8—Doran, MN
- Wilkin County Ditch 10—Doran, MN
- Grant County Ditch 29—Herman, MN
- Traverse County Ditch 41—Dumont, MN
- Traverse County Ditch 52 Project Team—Wheaton, MN
- Bois de Sioux Watershed Flow Reduction Strategy— Wheaton, MN
- Two Rivers Watershed District Distributed Detention Plan—Hallock, MN
- Joe River Watershed District Distributed Detention Plan— Humboldt, MN
- Demolition Landfills
  - » Hengel Landfill— Hengel, MN
  - » Omega Landfill —Thief River Falls, MN
  - » Grinning Bear Landfill—Backus, MN
  - » Douglas County Landfill—Alexandria, MN
  - » Todd County Landfill—Browerville, MN
- Industrial Storm Water Permits
  - » Brainerd Industrial Center—Brainerd, MN
  - » Hawkes Peat Mining—Marshall County, MN
- NPDES Construction Oversight
  - » MN TH 11— Loman to Pollard, MN
  - » MN TH 2— Bena, MN
  - » MN TH 371— Nisswa to Jenkins, MN
- CATEX
  - » MN TH 23 — Pipestone, MN
  - » MN TH 67— Redwood Falls, MN



Nicholas G. Koos, PE — Engineer 2

Nick Koos joined WSN as a full-time employee in 2006 after having spent five summers working for the firm, performing construction inspection and civil engineering tasks. Since that time, he has assumed greater project responsibilities as well as furthered his career by becoming a licensed professional engineer. Nick is responsible for assisting the project engineer with feasibility studies, street improvements, water and sewer design, site planning and residential development, stormwater pollution prevention plans, wastewater facilities plans, and hydraulic design.

Licenses/Certifications

Professional Engineer: MN

Erosion/Stormwater Management: Design Construction SWPPP; Construction Site Management

MnDOT Certifications: Aggregate Production, Bituminous Street Level II, Concrete Field Level II, Grading & Base Level I

Education

BS, Civil Engineering | North Dakota State University, 2005

RELATED PROJECTS

Corrective Action Design Systems

- Meyer Residence (Site ID 13565)—Easton, MN
  Corrective Action Alternative Analysis

Other

- Wastewater Treatment Facility Upgrade—International Falls, MN
  Plans and Specifications
- Phosphorus Removal Improvements—Starbuck, MN
  Design and Plans
- Southwest Drainage Airport Detention Pond—Alexandria, MN
  Design, Permits, Plan
- Wastewater Stabilization Pond—Hancock, MN
  Design, Plans, and Specifications
- Wendell Water System—Wendell, MN
  Plans and Specifications
- Hospital Demolition Retrieval Investigation—Starbuck, MN
  Environmental Assessment, Plans, and Specifications
- Industrial Stormwater Permit, Morris Sand and Gravel—Morris, MN
  Permit and Plan
- Wastewater Collection System—Forada, MN
  Plans and Construction Observation
- Wilton Overpass Design-Build—Bemidji, MN
  Erosion Control Plans, SWPPP
- Sunopta Monitoring for SWPPP—Alexandria, MN
  Sampling, Permits and Design

Education

Diploma, Computer Aided Design Technologies | Hoosier Hills Area Vocational School, 1995

Joshua W. Rebennack — GIS/CADD Specialist

Joshua joined WSN in 2012. He is primarily responsible for preparing figures for reports and drawings, and is the primary GIS/CADD Specialist for creating the Site Investigations / Limited Site Investigations, Corrective Action Design / Excavation Detailed Corrective Action Design plans, and Environmental Assessment Worksheets figures. Joshua also created plans for nearly a dozen demolition landfill re-permitting applications. He has experience with drafting, design and layout of proposed developments, as well as converting and integrating GIS data. Joshua is experienced with Civil 3D and ArcGIS software for drafting and mapping of relevant features of a site and assists others with GIS mapping and data handling.

RELATED PROJECTS

Phase I and Phase II Environmental Site Assessments

- Hallock Cenex Phase II, Johnson Oil—Hallock, MN
- Houston Ford Phase I ESA—Pine River, MN
- MNDOT Phase I and II ESAs of TH 71 Bridge Corridor—Jackson, MN
- MnDOT & City of Kelliher Phase I and II ESAs of TH72—Kelliher, MN
- Holiday Stores Phase II Assessments—Deerwood, Aitkin, McGregor, MN
- 2012 Facility Review, Lowe's—Cambridge, MN
- 2012 Facility Review, Lively Annex—Baxter, MN
- 2012 Facility Review - Mills Fleet Farm—Carver, MN
- 2012 Facility Review -Mills Parts Center—Willmar, MN
- Willmar Chrysler, Environmental ESA & Phase II—Willmar, MN
- Crosby Cardiovascular Clinic/Cuyuna/Allina—Baxter, MN
- Fair Oaks Lodge Phase II ESA—Wadena, MN
- Fond du Lac Bowling Alley Phase I ESA, Including Asbestos—Fond du Lac, WI
- Frandsen - Clow Stamping Phase I ESA—Merrifield, MN
- Hebert Holdings-Argyle Phase I ESA—Argyle, MN
- Isle Drive Phase I ESA—Baxter, MN

Petroleum Release Sites

- Former Shamrock Café LSI Investigation (Leak Site 19557)—McGregor, MN
- Maple Street Project LSI & ASA (Leak Site 19702)—Aldrich, MN
- Ribaudo Residence LSI (Leak Site 19622)—Culver, MN
- City of Argyle Utility Project LSI (Leak Site 18165) —Argyle, MN
- Circle R Ranch LSI (Leak Site 17825)—Long Prairie, MN
- Clarkfield LSI Investigation (Leak Site16212)—Clarkfield, MN
- Eagle Bend Oil 2013 Investigation (Leak Site 13022)—Eagle Bend, MN
- Former Blossoms ASA (Leak Site 12866)—Hawley, MN
- Former Gas Station (Leak Site 13869)—Ada, MN
- Johnson Oil, East Bulk Facility (Leak Site 17630)—Roseau, MN
- Johnson Oil, Hallock Bulk Facility (Leak Site 17629)—Hallock, MN
- Johnson Oil, West Bulk Facility (Leak Site 14568)—Roseau, MN
- Kens Amoco 2012 Investigation (Leak Site 12613) —Chisholm, MN

Corrective Action Design Systems

- Dean & Greg's ASA (Leak Site 6736)—Wannaska, MN
- Hutto Residence Corrective Action (Leak Site 17206)—Anoka, MN
- Jeff's Super Service (Leak Site 5837)—Greenbush, MN
- Johnson Oil, Dean & Greg's CA Design (Leak Site 6736)—Wannaska, MN

Joshua W. Rebennack continued on the next page

- Johnson's Services Additional Work—Motley, MN
- Kirks CADesign (Leak Site 464)—Federal Dam, MN

Other

- 2016 Alex Rubbish Groundwater Sampling and Annual Survey—Alexandria, MN
- 2017 Alex Rubbish Groundwater Sampling and Annual Survey—Alexandria, MN
- 2017 Glenwood Landfill Permitting—Cold Spring, MN
- 2017 Grinning Bear Demo Landfill Groundwater Sampling and Annual Survey—Pine River, MN
- 2017 Lakes Area Demo Landfill Groundwater Sampling and Annual Survey—Detroit Lakes, MN
- City of Wendell Water System—Wendell, MN
- DeGraff Wastewater System Improvements Study—DeGraff, MN
- Hengel Demo Landfill 2017 Sampling—Pillager, MN

Education

BS, Industrial Technology/ Construction Management
Moorhead State University, 1984

AS, Architectural Commercial Design | Wisconsin Indianhead Technical College, 1994

Coursework, Architecture | North Dakota State University, 1979–1980

Christopher J. Satterlund — CADD Specialist

Chris joined WSN in 1994 and is responsible for architectural and site drawings for remodel and new construction of large municipal, institutional, and commercial facilities (e.g., retail, vehicle maintenance, manufacturing). He is responsible for verifying conditions, design, drafting, estimating, construction administration, construction inspection, and staking. Prior to WSN, Chris worked for a general contractor for 10 years as a quality assurance supervisor, superintendent, and estimator with primary responsibility for construction management, job survey and layout, estimating, and technical report writing. He has experience working on projects including wastewater treatment plants, oil refineries, power plants, dams, churches, and schools.

RELATED PROJECTS

Corrective Action Design Systems

- Dillon Residence (Site ID 15589)—Paynesville, MN
  Corrective Action Design
- Lamia Ali Residence (Site ID 17116)—Moorhead, MN
  Corrective Action Design
- Hutto Residence CAD Implementation (Site ID 17206)—Anoka, MN
  Corrective Action Design
- LaFave Radon System (Site ID 16755)—St. Paul, MN
  Corrective Action Design

Other

- Landfill Assistance—Marshall, MN
  Design and Plans
- Mills Ford Remodel—Brainerd, MN
  Design and Plans
- Mills Fleet Farm Remodel—Baxter, MN
  Plans and Design
- Sioux Falls Landfill Valve House—Sioux Falls, SD
  Building Design and Plans
- Materials and Salt Storage Facility—Nisswa, MN
  Feasibility, Plans, and Design
- Mille Lacs Academy New Campus—Onamia, MN
  Design and Plans
- Mills Fleet Farm New Store—Carver, MN
  Plans and Design
- Slope Stabilization Repairs—Rochester, MN
  Design and Plans

Carrie E. Freeman — Scientist 1 | Field Technician | GIS Specialist

Carrie joined WSN in 2018 working alongside the environmental department as the firm's first water quality scientist. She has experience in data management for numerous environmental assessment and remediation projects in Minnesota and the Midwest, including data comparison to regulatory criteria and quality assurance of analytical data. Carrie is responsible for expanding our environmental services to include stream and lake water quality modeling, surface water planning, and coordination of stormwater/surface water sampling. She is also an internal resource for other WSN staff with water quality questions and will augment WSN's water sampling capabilities for field work and laboratory analysis.

Education

MS, Water Resources Science | University of Minnesota Duluth, 2016

BS, Environmental Science | Minnesota State University Mankato, 2012

Geographic Information Systems (GIS) Certificate | Minnesota State University Mankato, 2012

RELATED PROJECTS

Other

- Lake Malawi Physical Limnology Observations and Modeling—Lake Malawi, Africa
- Impervious Surface Assessment on Madison Lake— Madison Lake, MN
- Lake Andrew EAW — Alexandria, MN
- Greater Blue Earth River Basin Alliance Water Quality Modeling, GIS — Mankato, MN
- Minnesota Pollution Control Agency (MPCA) Watershed Pollutant Load Monitoring Network Sampling—Central Minnesota
- Hawkes Peat Mining Operations, Permitting Assistance—Newfolden, MN

Licenses/Certifications

24-Hour OSHA Hazardous Waste Site Worker Training

Charles M. Nelson — CADD Specialist | Field Technician

Chuck joined WSN in 1978 and has gained extensive experience performing many land corner restoration projects across Minnesota. His experience in both field observations and office calculations has allowed him to provide private and public clients accurate, thorough, and efficient results. He routinely performs historical research/preparation for projects, assists in corner recovery, searches, and monumentation. He is trained in the use of Trimble S6 robotic total stations, Trimble static and RTK GPS systems, data collection and AutoCAD. He has worked on several remonumentation projects with MnDOT, Corps of Engineers, Farmers Home Administration, and the US Forest Service. Chuck is responsible for using AutoCAD Civil 3D to draft land survey certificates, legal descriptions, FEMA Elevation Forms, right-of-ways, and subdivision plats.

RELATED PROJECTS

Other

- MnDOT
- U.S. Army Corps of Engineers
- Farmers Home Administration Wetland Surveys
- U.S. Forest Service Cross-Section Elevations
- Fort Ripley, Hartman Boundary Survey—Crow Wing County, MN
- Living Word Christian Center—Crow Wing County, MN
  Boundary Survey
- Wadena Airport—Wadena, MN
  Boundary Survey
- Lake of the Woods County, MN
  Section Subdivision and Survey Boundary
- TH 78—Ottertail County, MN
  Control Survey
- CSAH 4—Cass County, MN
  Preliminary Survey for Roadway Reconstruction
- City of Baxter, MN
  Right-of-Way Plats, Subdivision Plats, Road Construction Easements, and Boundary Surveys
- Crow Wing County Landfill—Brainerd, MN
  Survey Boundary and Topography
- Former Burlington Northern Tie Plant—Baxter, MN
  Topography of Site and Monitoring Well Elevations
- Pine River Wood Products—Pine River, MN
  Topography of Contaminated Site
- City of Crosslake, MN
  Sanitary Sewer Easements and Construction Staking
- CSAH 20—Crow Wing County, MN
  Road Right-of-Way Determination and Legal Descriptions

Paul A. Strong, EIT — Engineer 1

Paul joined WSN in 2016 after completing a master's degree in civil and environmental engineering. He has experience working in Illinois and California on hydrological studies, stormwater pollution prevention, environmental impact studies, effluent and waste assessments, and wetland delineations. As an environmental engineer, Paul is primarily responsible for hydrologic modeling, environmental reporting, and pollution control and countermeasure plans. He also assists the environmental department with wetland delineations.

Licenses/Certifications

NCEES Engineer in Training

40-Hour OSHA HAZWOPER Training

Education

MS Environmental Engineering | University of California, Los Angeles, 2015

BS, Natural Resources & Environmental Science | University of Illinois Urbana-Champaign, 2014

RELATED PROJECTS

Other

- Water Supply Plan—Pine Island, MN
- Water Supply Plan—Baxter, MN
- Wellhead Protection Plan—Isle, MN
- Wellhead Protection Plan—Pine Island, MN
- Phase I Environmental Site Assessment
  - » Baudette, MN
  - » Minneapolis, MN
  - » Rochester, MN
  - » Deerwood, MN
  - » Kelliher, MN
  - » Monticello, MN
- Phase II Environmental Site Assessment
  - » Nisswa, MN
  - » Owatonna, MN
- Petrofund Application—Herman, MN
- Spill Response Plan—Glenwood, MN
- Spill Prevention Control & Countermeasure Plan
  - » Hermantown, MN
- TH 200 Wetland Delineation—Walker, MN
- Stormwater Pollution Prevention Plan
  - » Brainerd, MN
  - » Baxter, MN
- Facility Assessment—Deerwood, MN

Licenses/Certifications

Wetland Delineation Certified

Education

BS, Natural Resource Management | North Dakota State University, 2013

Joey M. Goeden — Scientist 1 | Field Technician

Joey Goeden graduated from North Dakota State University in 2013 with a B.S. in Natural Resources Management. He has more than three years' experience in wetland delineation and wetland permitting at WSN. He is a certified wetland delineator in the State of Minnesota.

His responsibilities at WSN include Wetland Delineations, Wetland Permitting, Wetland Monitoring, Phase I Environmental Site Assessments and Watershed Monitoring. He has worked on delineation projects that have ranged in size from less than five acres to several hundred acres. The projects have included most of Minnesota's wetland and vegetation types, as well as agricultural lands and atypical situations. He is experienced in GPS equipment and techniques. He has experience writing environmental documents such as Wetland Delineation Reports, Wetland Monitoring Reports, Phase I Environmental Site Assessments, Environmental Assessments and Environmental Impact Statements.

RELATED PROJECTS

Phase I Environmental Site Assessments

- Lakes Region EMS – Lindstrom, MN
  Phase I ESA
- Essentia Heath Clinic – Pequot Lakes, MN
  Phase I ESA
- Essentia Health Clinic – Crosslake, MN
  Phase I ESA
- Mills Fleet Farm – Lakeville, MN
  Phase I ESA
- Mills Fleet Farm – Owatonna, MN
  Phase I ESA
- Mills Fleet Farm – Monticello, MN
  Phase I ESA
- The Bodyworks Super Collision Center – Baxter, MN
  Phase I ESA

Other

- MPCA Watershed Pollutant Load Monitoring Network – Central MN
  Primary Sampler
- Northdale Oil, Inc. – Bemidji, MN
  Environmental Evaluation Checklist (FSA-850)
- Northdale Oil, Inc. – Drayton, ND
  Environmental Evaluation Checklist (FSA-850)
- Excelsior Road Improvements – Baxter, MN
  Soil Borings for Stormwater Pond Design
- MnDOT TH 200 – Cass County, MN
  Wetland Delineation and Report
- Placid Drive Improvements – Crow Wing County, MN
  Wetland Delineation and Permitting / Endangered Species Permit

Licenses/Certifications

Engineer-in-Training: Minnesota

MnDOT Certification:
- Bituminous Street
- Level I & II
- Grading & Base Level I
- Aggregate Production

MN Erosion/Sediment Control Specialist: Design Construction SWPPP

Education

BS, Civil Engineering | University of Minnesota Duluth, 2013

Tony A. Pohl, EIT — Engineer 1

Tony joined WSN in early 2014 with five years of experience in construction. He has expanded his experience to include design for public and private engineering projects including roadways, storm water management systems, and lot development plans. He conducts field inspections, interprets design criteria, develops and reviews site plans and designs, develops special provisions for construction, and coordinates plans and designs with clients. He is responsible for design drafting of an array of civil engineering projects, including new subdivisions, lot and building layouts, water and sewer systems, wastewater treatment systems, storm sewers, and street and highway improvements.

RELATED PROJECTS

Other

- Clark Drive Water Extension—Verndale, MN
- Edgewood Drive Storm Study—Baxter, MN
- Sewer Improvements - Rural Development—Verndale, MN
- Drainage Improvements—Lake Shore, MN
- Malone Island Bridge Design (SAP 048-597-003)—Isle, MN
- Mills Fleet Farm—Monticello, MN
- Inglewood Drive Improvements (SAP 230-107-002)—Baxter, MN
- Pequot Lakes Wastewater Treatment Facility Plan—Pequot Lakes, MN
- Evergreen Court Extension, District III—Hinckley, MN
- Crosby–Ironton High School Track and Field Design—Crosby, MN
- Fosston SuperValu—Fosston, MN
- Nystrom Associates Clinic—Baxter, MN
- River Oaks Dental—Aitkin, MN
- Milford Mine Memorial Park—Crosby, MN
- Dellwood Drive and Novotny Road Improvements (SAP 230-116-001)—Baxter, MN

Key Staff Matrix

Name Lic./Certification Classification	Location	OSHA 40-Hr w/8-Hr Yrly Refreshers	OSHA 24-Hour Training	OSHA 8-Hour Supervisor Training	Certified Asbestos Inspector	Certified Lead Risk Assessor	Lic. Monitoring Well Contractor	SWPPP Training and Certification	Years Experience—WSN	Years Experience—Total	Highest Degree Earned	Discipline	Petroleum Release Sites	Non-Petrol Contamination Sites	Ph I & Ph II Environ Site Assess	Corrective Action Dsgn Systems	Other Environ/Engr Projects
Brian Ross, PG PM, S2	BRD	■	■	■			■	■	27	33	MS	Geology	■	■	■	■	■
Mark Hallan, PE E3	BRD								17	34	BS	Civil Engr	■			■	■
Greg Smith, PG PM / S2	BRD	■	■						28	30	BS	Geological Engr	■	■	■	■	■
Ty Fuglseth, PG PM / S2	CKN	■	■		■	■			23	25	MS	Geology	■	■	■	■	■
Larry Van Hout, PE E3	AXN							■	32	36	MS	Civil Engr	■	■		■	■
Mike Bogart FT, S1	BRD	■	■					■	6	8	BS	Res, Rec & Tourism	■	■	■	■	■
Dave Reese, PE E3	BRD	■	■					■	26	28	BS	Civil Engr	■	■	■	■	■
Tim Ramerth, PE E3	BRD							■	15	15	BS	Civil Engr			■		■
Nick Koos, PE E2	AXN	■	■					■	12	12	BS	Civil Engr				■	■
Joshua Rebennack CS	BRD								6	23	AA	CADD	■	■	■	■	■
Chris Satterlund CS	BRD								24	34	BS	Indust Tech/Constr Mgt	■			■	■
Carrie Freeman S1, FT	BRD								.5	3	MS	Water Quality Science			■		■
Chuck Nelson CS, FT	BRD		■						40	43	HS	CADD, Land Surveying	■	■	■	■	■
Paul Strong E1	BRD	■							1	3	MS	Environmental Engr	■	■	■		■
Joey Goeden S1, FT	BRD								4	5	BS	Environmental Science					■
Tony Pohl E1	BRD							■	4	5	BS	Civil Engr					■

PM Project Manager
S1 Scientist 1
S2 Scientist 2

E1 Engineer 1
E2 Engineer 2
E3 Engineer 3

FT Field Technician
CS GIS/CADD Specialist

AXN Alexandria
BRD Brainerd/Baxter
CKN Crookston

WSN's Experience

Knowledge of Petroleum Remediation Program Project Guidance and Minnesota Statutes

WSN has been involved with the removal of underground and aboveground petroleum storage tanks for 30 years. In conjunction with the removal of the petroleum storage tanks, WSN has completed hundreds of site investigations at petroleum release sites all around Minnesota and eastern North Dakota. We are intimately familiar with the MPCA's 56 guidance documents for UST/AST Release Cleanup and keep abreast of new updates, such as Guidance Document 4-06 Investigation Report (06-08-17). We are active in petroleum release cleanups and investigations and use the documents on a daily basis. When new guidance comes out, we quickly incorporate it into our procedures and consistently attend any training MPCA's Petroleum Remediation Program offers on these guidance documents including last year's Consultant Day on May 24, 2017.

We have become very familiar with Chapter 115C and the Petroleum Tank Fund commonly referred to as the Petrofund. As MPCA's leaking underground storage tank program developed, so did the Petrofund. Because of the many changes, WSN has found it necessary to become involved with the evolution of the fund as well as keeping up on the changes in the program. WSN completes almost 100% of its clients' Petrofund applications. Our client list consists of a mix of responsible parties and volunteers. In addition, we have worked with small gasoline retailers as well as personal residence sites that qualify for 92.5% reimbursement.

Experience Working with MPCA Petroleum Remediation Program

WSN has been working with the MPCA Petroleum Remediation Program and underground and aboveground tank projects for over 30 years. For 15 of those years, we worked for MPCA as a Multi-Site Contractor with over 150 projects including some of the most difficult remediation sites. We often work with MPCA PRP staff on projects requiring our expertise in water supply wells, residential contamination, structural analysis, and utility line contamination. We also interact with PRP staff during our municipal utility projects where contamination is encountered during public works projects, including the cities of Herman and Aldrich during the last two years.

3. Project Descriptions

Hansel Residence Remedial Investigation

Dalton, Minnesota

Site Description

The Charles and Karen Hansel residence is located in a rural area south of Dalton, Minnesota. The Hansel's two-story farmhouse was heated with fuel oil, which was stored in a 275-gallon above ground steel tank (AST) on the north side of the farmhouse. Hansel Lake is located approximately 250 feet south of the leak site and there is small wetland about 750 feet to the north. The balance of the land within 1,000 feet of the site is slightly rolling, tilled agricultural farm land. The only building receptor within 100 feet of the release is the Hansel farmhouse. The water well record for the active on-site drinking water well indicates the well is screened at a depth of 147 feet. Water well records for area wells indicate clay and sandy clay are the primary soil types from the ground surface to a depth of at least 70 feet.

Project Description

The owners of the leak site, Charles and Karen Hansel, experienced fuel oil odors in their farmhouse. The odors were reported to the Minnesota Pollution Control Agency on the following day. An emergency response contractor mobilized to the leak site under emergency status to assess the conditions expecting to mitigate the vapors in the living space. A mechanical soil vapor extraction system was installed near the AST and another was installed in the basement attempting to alleviate the indoor fuel oil odors. Widseth Smith Nolting (WSN) subsequently completed a Limited Site Investigation (LSI) Nonstandard Scope of Work where the vertical and horizontal extents of the release were defined. During the LSI, WSN verified the release was from a broken copper fuel oil supply line just inside the basement wall. It was apparent the mechanical equipment was not sufficient to stop the fuel oil odors from entering the interior of the Hansel farmhouse. It was determined the source of the odors was the petroleum saturated soil and rock basement wall. A indoor building survey was completed for the Hansel Residence and 24-hour Indoor air samples were collected to confirm that petroleum vapors were present.

Client

Charles and Karen Hansel

Contact:
Charles Hansel
218.589.8756

Consequently, WSN prepared a corrective action design (CAD) outlining a plan to mitigate the fuel oil saturated soil, eliminating the odors from the living space. The MPCA approved the CAD with the additional requirement of a site visit by WSN's structural engineer to determine if the farmhouse could safely be braced and supported to allow the safe removal of the petroleum impacted soil. A contractor was selected through the competitive bidding process facilitated by WSN. The farmhouse was shored up and braced allowing the safe removal of approximately 15 cubic yards of fuel oil saturated soil. Because not all the contaminated soil could be removed without jeopardizing the structural integrity of the farmhouse, a vapor barrier and a passive vent system were installed prior to the construction of a new basement floor, foundation footings, and concrete block basement wall. A final site inspection was conducted by WSN's engineer and the project was deemed to be complete. Upon completion of the CAD, petroleum vapors were not present in the living space of the farmhouse. A Corrective Action Excavation Report was prepared and submitted to the MPCA. Based on the success of the corrective action project, the leak site file was closed.

Tasks Performed	Personnel Involved
Review site data from the MPCA project leader and the emergency response contractor to obtain information regarding past investigative work and petroleum vapor mitigation activities	Greg Smith (S2)
Coordinate and obtain access agreements to perform a LSI	Greg Smith (PM)
Coordinate boring placement, observed boring advancement, and collected soil samples during the LSI	Mike Bogart (FT)
Completed a Vapor Intrusion Interior Building Survey and Indoor Air Sampling	Mike Bogart (FT)
Prepared a Correction Action Design outlining a plan to mitigate the fuel oil release and improve the air quality in the Hansel farmhouse	Greg Smith (S2)
Conduct a site visit to assess the structural integrity of the Hansel farmhouse and complete site sketch	Mark Hallan (E4)
Prepare project plans and specifications to conduct the required corrective action	Mark Hallan (E4) Joshua Rebennack (CS)
Prepare bidding documents and facilitate the bidding process	Mark Hallan (E4) Greg Smith (S2) Joshua Rebennack (CS)
Conduct mandatory pre-bid meeting with prospective corrective action contractors	Mark Hallan (E4) Mike Bogart (FT)
Coordinate project schedule with the contractor and provide on-site observation for the general conformance of the plans and specifications	Mike Bogart (FT)
Observe excavation and screen soil with photoionization detector (PID) during removal of fuel impacted soil	Mike Bogart (FT)
Coordinate with a licensed well driller to seal the unused drinking water well	Mike Bogart (FT)
Conduct final project inspection	Mark Hallan (E4)
Prepare Corrective Action Excavation Report	Greg Smith (S2)

Subcontracted Tasks

The following tasks were subcontracted out.

- Drilling of five LSI soil borings
- Laboratory analysis of all soil and groundwater samples
- Shoring and bracing of the on-site residential structure to allow access for the excavation of the fuel oil contaminated soil
- Removal of basement floor, excavation of fuel oil contaminated soil from beneath the floor and excavate contaminated soil from the dirt and stone foundation walls of the residence
- Disposal of petroleum impacted soil at an approved landfill
- Construction of new masonry footing, concrete block basement wall, and concrete basement floor
- Reconstruction of electrical service and HVAC system
- Replacement/reconstruction of those portions of the residence that were removed to allow access to the contaminated soil

Outcome Achieved

The collection and analyses of the soil and groundwater samples collected during the LSI allowed for the delineation of the soil contamination. The LSI showed the petroleum impacted soil was confined to the north basement wall, under the basement floor, and the soil just outside the Hansel farmhouse, near the fuel oil AST. The removal of the petroleum impacted soil and the installation of the plastic vapor barrier and passive vent system eliminated the fuel oil odors from the interior of the Hansel farmhouse.

Woitalla Repair Service LSI

Harding, Minnesota

Site Description

The Woitalla Repair Service site (leak site) is in a rural area west of Harding, Minnesota. The leak site was originally developed in 1960 with the original service station and fuel dispensing system. The leak site has always been operated as a petroleum filling station and automobile repair shop. Originally, the fuel dispenser island and associated underground storage tanks (UST's) were located directly south of the service station. Through the years, additions have been added to the west of the original service station. In 1997, the original tank basin was abandoned (all USTs were removed) and new USTs were installed to the southeast of the repair shop where they are currently located today. During the removal of the former USTs, approximately 100 cubic yards of contaminated soil was excavated and transported off site for treatment. In 1998, a remedial investigation was completed on the leak site by another consultant. In 2017, Phase I and Phase II Environmental Site Assessments (ESA) were completed because the property owner was wanting to sell the Woitalla Repair Service property. Results from the Phase II ESA showed high levels of soil and groundwater contamination near the former USTs. The leak site is in a rural area and is surrounded by agricultural development and rural residential property. There is a residence (owned by others) located on the adjacent property to the east. One domestic water well is present at the leak site and services the adjacent residence, the service station, and the bulk fuel facility located on the adjacent property to the west.

Project Description

WSN was retained by Lynn Woitalla to complete a Limited Site Investigation (LSI) Standard Scope of Work where the horizontal and vertical extents of the release were defined. WSN reviewed the information provided by the owner (i.e., data collected during the Phase I and II ESAs) to get a better understanding of the contaminants identified during previous investigations. A work plan was submitted to the owner detailing the goals and objectives of a LSI. A drilling contractor was obtained to clear the leak site of utilities and complete the soil borings. WSN was on site to observe the advancement of the soil borings and to collect soil and groundwater samples for laboratory analyses. Soils observed during drilling activities

Client

Lynn Woitalla

Contact:
Lynn Woitalla
320.630.9030

were classified by a WSN field technician. The initial phase of the investigation included five soil borings and a potential receptor survey. Field screening conducted during the initial investigation showed heavy soil and groundwater contamination was present south and west of the Woitalla Repair Service building. Soil and groundwater samples were sent to Pace Analytical for analyses. The results confirmed high levels of contamination as observed in the field. The results of the first round of drilling were tabulated and presented to the client and the MPCA's Project Manager, Gary Zarling. Because the vertical and horizontal extents of contamination were not fully defined, four additional soil borings were completed west and south of the property to better define the extent of the contamination. Like the first phase of the investigation, soil and groundwater samples were collected from each boring and sent to the laboratory for analysis. In addition to the four soil borings, two vapor samples were collected. One was collected from the worst-case area located south of the Woitalla Repair Service Station and the second was collected adjacent to the south side of the service station, near the office. Results of the soil borings showed that the vertical and horizontal extents of the groundwater contamination were defined. However, the analytical results of the soil gas samples showed elevated concentrations of perchloroethylene, trichloroethylene, and dichloroethene in the soil gas samples collected. Further investigation is planned to better understand the risks associated with the three compounds. WSN will perform a sub-slab investigation and indoor building survey to better define the risk still present at the leak site. As part of the sub slab investigation, WSN will install five sub slab vapor points inside of the Woitalla Repair Service shop area and one in the office space for the collection of vapor samples during the heating season and again during the non-heating season. An indoor building survey will also be completed to better assess the conditions present inside the building.

Tasks Performed	Personnel Involved
Reviewed available data from former consultants to obtain available information regarding past investigative work	Greg Smith (PM)
Prepared a work plan and cost analysis for the LSI	Greg Smith (PM)
Obtained agreement with the MPCA for the proposed tasks associated with the LSI	Greg Smith (PM)
Coordinated and obtained access agreements for the advancement of the soil borings	Greg Smith (PM)
Performed a LSI, including the coordination and observance of the advancement of nine soil borings, soil sample collection and analyses, and receptor surveys	Greg Smith (PM) Mike Bogart (FT)
Completed and submitted a LSI Report to present the results of the investigation	Mike Bogart (FT) Greg Smith (PM) Joshua Rebennack (CS)
Provide status updates to client and MPCA Project Manager on work completed and updates on the progress of continued investigative work	Greg Smith (PM)

Subcontracted Tasks

The following tasks were subcontracted out.

- Advancement of soil borings
- Laboratory analysis of all vapor, soil, and groundwater samples

Outcome Achieved

The collection and analyses of the soil and groundwater samples collected during the LSI and additional drilling and analysisallowed for the delineation of the

contamination. The LSI showed the petroleum impacted soil and groundwater was confined to the south and west of the Woitalla Repair Service building. Risk associated with the soil and groundwater contamination is low due to the utilities being present outside the contaminant plume. Clean soil borings were completed between the contamination and the water well to the east. However, the collection of soil gas samples did show elevated concentrations of perchloroethylene, trichloroethylene, and dichloroethene and petroleum related compounds above 33x the established intrinsic screening values. Consequently, further investigation will be completed at the leak site with the completion of a sub slab soil vapor investigation and indoor building survey.

4. Scope of Services

Oversee Site Investigation Services for Soil Boring Advancement and Monitoring Well Installation using both Standard Drilling Methods and Direct Push Methods

Push probe drilling at Eagle Bend Oil site

WSN is a licensed monitoring well contractor and is very familiar with drilling and well installation techniques. Our scientists and field technicians are very familiar with standard drilling methods and push probe technology. We have extensive experience with mud rotary drilling, cable tool drilling, rotosonic drilling, and laser induced fluorescence (LIF) probing. WSN does not use solid-stem flight augers unless prior approval is received from the MPCA's project hydrologist. WSN staff are very familiar with the standard drilling method of hollow stem augers with split spoon sampling. We have used hollow stem auger drilling to define the geology at hundreds of petroleum leak sites but have switched to using more push probe drilling for its speed and cost efficency. The continuous core samples obtained when using push probe drilling provides an accurate lithology assessment during a release site investigation. This allows field personnel to make informed decisions during field investigations and enables the relay of pertinent information to the project manager for assistance in the decision-making process.

Push probes are the most common drilling method WSN has used for field investigations at contamination sites. Push probes are often used in the early stages of an investigation to define the extent of contamination as well as determine site lithology. Push probes allow field personnel to collect continuous core samples with a less intrusive operation. WSN also uses push probe methods after the site geology has been defined but further definition of the contaminant plume is required. With the push probe method, discrete samples can be obtained with less risk of cross-contamination. Having worked at leak sites across the entire state of Minnesota, we have encountered many different types of geology and, thus, have a good understanding of the advantages and disadvantages of each drilling method.

WSN typically uses hollow stem auger drilling for the installation of groundwater monitoring wells. However, WSN personnel have installed drive point wells at locations inaccessible by truck mounted drill rigs. We have been involved with the installation of hundreds of monitoring wells at many petroleum leak sites across Minnesota. At a small number of these leak sites, a downward vertical hydraulic gradient is present, which requires the installation of nested wells. WSN personnel are on-site to verify the wells are installed at the appropriate locations and are constructed in accordance with MDH and MPCA guidelines and regulations. WSN has also directed the installation of nearly 100 monitoring wells for MPCA's Ambient Groundwater Monitoring Network.

WSN completes a drilling log for every soil boring that is advanced under our direction and prepares well construction diagrams when monitoring wells are constructed, in accordance with the MPCA Guidance documents.

Conduct Ground Water, Soil, Surface Water, Sediment, Ground Water and Air Sampling and Monitoring

Surface water monitoring for MPCA

WSN personnel have collected thousands of soil and groundwater samples and numerous surface water, sediment, and air samples from dozens of sites throughout Minnesota. These sites include underground and above ground storage tanks, sanitary and demolition/debris landfills, private and public water systems, residential and business sites, and wastewater treatment systems. WSN personnel are experienced in the sampling methods and equipment needed to sample water, soil, and air resources Including pumps (e.g., submersible, air diaphragm, bladder, and purge) and bailers (e.g., stainless steel, PVC, and Teflon®) for groundwater, and automated water bottle samplers for surface water. Soil sampling is performed

using drill rigs equipped with hollow stem augers and split spoon samplers, push probes with continuous core sample capabilities, hand augers, manual push probe corers, and the occasional shovel. WSN personnel are experienced in sediment sampling using methods such as Coliwasa samplers and box cores and air sampling using vacuum canisters in conjunction with Tedlar sample bags, Drager tubes, and Summa canisters. WSN staff is experienced in conducting on-site field analyses of groundwater and surface water samples for parameters including pH, conductivity, dissolved oxygen, temperature, nitrate, iron, sulfide, and hardness. WSN is also familiar with the proper handling and chain-of-custody procedures and other paperwork necessary when samples are collected for field and/or laboratory analysis.

Conduct Vapor/Air Monitoring for Health and Safety and Air Quality Criteria

Vapor Monitoring, Sikorski Residence, Roseau, MN

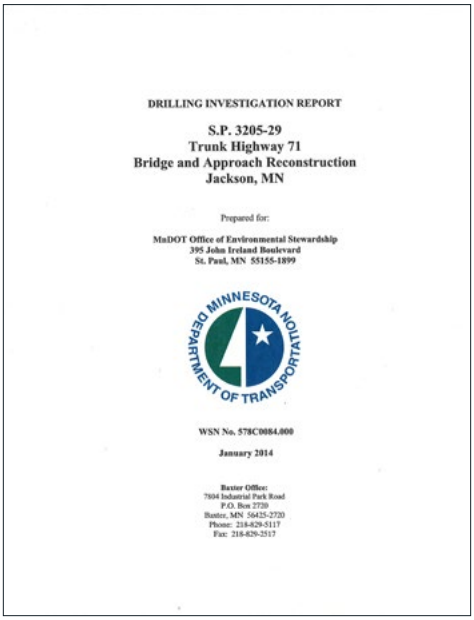
WSN conducts air monitoring in the breathing zone during field activities that could result in the potential exposure to high petroleum vapor concentrations. This monitoring is typically conducted using a PID. WSN has also used colorimetric direct reading gas detection tubes and sampling devices to measure specific gas concentrations in the field.

WSN has conducted indoor air sampling to determine potential vapor intrusion impacts. This sampling is conducted using Summa canisters with flow regulators. A Vapor Intrusion Building Survey Form was completed prior to each sampling event and instructions were provided to the occupants to minimize the potential for cross contamination. Samples were collected over a 24-hour period and a background sample was collected during each sampling event.

At various contamination sites, the results of the vapor assessment indicate that a vapor survey should be completed in the areas where petroleum vapors could accumulate or migrate. These areas include backfilled utility trenches, sanitary and storm sewers, basements, and crawl spaces. WSN has been involved with numerous release sites where vapors have been detected and where the conditions are conducive to vapor migration or accumulation. When either of these situations are present, vapor monitoring is typically completed.

WSN is involved with a particular release site where a combination soil venting/air sparging system has been installed for the remediation of gasoline impacted groundwater. Vapor monitoring of an adjacent basement is completed periodically to assure the operating system is not forcing petroleum vapors into the structure through sewer drains or cracks in the basement walls or floor. At another petroleum release site, it was determined that a gasoline release had impacted the local sanitary sewer and storm sewer. A blower was installed to assist in the mitigation of the vapors. The source of the contamination has been removed and the blower is no longer needed; however, vapor monitoring is ongoing. WSN personnel periodically check 23 locations over a six-block area for the presence of petroleum vapors using an explosimeter and PID. During the vapor monitoring program, records are kept documenting the time, monitoring point, and explosimeter and PID readings. This documentation is important in making an informed decision as to when the petroleum vapors are no longer a threat to human health.

Conduct and/or Oversee Site Assessment Activities (Phase I and Phase II), Limited Site Investigations, and Remedial Investigations



DRILLING INVESTIGATION REPORT

S.P. 3205-29
Trunk Highway 71
Bridge and Approach Reconstruction
Jackson, MN

Prepared for:

MnDOT Office of Environmental Stewardship
395 John Ireland Boulevard
St. Paul, MN 55155-1899

MINNESOTA DEPARTMENT OF TRANSPORTATION

WSN No. 578C0084.000

January 2014

Baxter Office:
7804 Industrial Park Road
P.O. Box 2720
Baxter, MN 56425-2720
Phone: 218-829-5117
Fax: 218-829-2517

Having completed more than 100 Phase I and/or Phase II Environmental Site Assessments (ESA), WSN is very familiar with the American Society for Testing and Materials (ASTM) standards for environmental site assessments (E 1527-13). Clients have included municipalities, financial institutions, hospitals, realtors, resorts, manufacturing facilities, corporations, individuals, and government agencies. Facilities have consisted of gasoline retail stations, dry cleaning facilities, auto body and service stations, hospitals, retail buildings, resorts, and manufacturing facilities.

Over the past five years, WSN has completed or is currently involved in two large Phase I and Phase II ESAs for MnDOT. The ESAs have been performed on the mid-town highways in Jackson and Thief River Falls. The study areas are one to two miles long.

WSN was recently involved with a Phase II ESA at a former steel garage door manufacturing facility. Review of a Phase I report indicated that petroleum storage tanks were present on the property in the past and that solvents were used as part of the manufacturing process. Because the client was purchasing the property, a Phase II was recommended to determine if past activities had impacted the property. The Phase II ESA included the advancement of several soil borings to collect soil and groundwater samples to determine if any contamination was associated with the property. Results of the Phase II indicated that petroleum contaminants were present in the soil and groundwater underlying a portion of the property. The release was reported to the MPCA Duty Officer and a leak number was issued. WSN performed additional research into the location of the former storage tanks and into contamination associated with a known release site that is located immediately adjacent to the property. The data collected supported the theory that the contamination encountered in the Phase II boring was likely related to the adjacent property release and not from the former garage door facility. This information was submitted to the MPCA for final determination as to whether the on-site contamination is associated with the adjacent property and to determine if the new leak site would be closed without additional investigation. If the MPCA determines that the contamination is not related to the adjacent property, a remedial investigation will be conducted to better define the extent of contamination and determine if the contamination is a risk to human health and the environment.

WSN has completed hundreds of remedial investigations (RI) and limited site investigations (LSI). Because MPCA's Remediation Program is a risk-based program, WSN performs an LSI with an objective to quickly evaluate the level of risk associated with the petroleum release. If the information collected during the LSI indicates groundwater monitoring wells are required, a full RI is performed. WSN has completed RIs where only three monitoring wells are necessary to define the extent of the groundwater contamination. On the other hand, we have investigated a petroleum release site with strong, vertical and horizontal gradients and 20 monitoring wells were necessary to adequately define the extent of the contaminant plume.

Conduct Surface Water, Groundwater, Air, and Vapor Receptor Surveys

Petroleum release investigations generally require the performance of one or a combination of the three risk assessments. Over the past five years, WSN has completed surface water, groundwater, and vapor risk assessments for release sites throughout Minnesota.

We consider the groundwater risk assessment as a two-phased event. When the results of a LSI indicate significant petroleum contamination, it is then necessary to determine if the release poses a risk to the local groundwater. Assuming further investigation discovers that the risk is imminent or the groundwater has been impacted, the second phase of the groundwater assessment would be performed to determine if the aquifer is a resource aquifer or if there is sufficient distance between the impacted unit and the first resource aquifer. In either case, a water well survey, including a MGS well search and 500-foot walking survey, should be completed to ascertain the risk to local drinking water wells.

The first described risk assessment was concerned with the impacts or potential impacts to the groundwater. Assuming the groundwater was found to be contaminated, it may be necessary to complete a surface water risk assessment. This assessment considers the potential impacts through the discharge of contaminated groundwater to surface water including rivers, lakes, and wetlands. In conducting the surface water assessment, WSN first identifies those waters within one-quarter mile of the release. We then proceed with a review of the results of the

remedial investigation with particular emphasis on determining if there is a clean downgradient monitoring well or soil boring between the point of the release and the concerned surface water. Assuming a clean sampling point downgradient of the release, an assessment would be completed discussing the contamination risk potential to the identified surface water.

Although not as prevalent as the impacts to the waters of Minnesota, the conditions produced by the migration or collection of petroleum vapors typically require immediate attention. Depending on the surrounding soil conditions, petroleum vapors may readily move through the ground and can produce explosive conditions. Because of these potentially dangerous situations, vapor risk assessments are an important part of a petroleum release investigation and should be implemented soon after discovering the release. The most critical vapor risk setting is when the contaminated groundwater intersects utility trenches, basements, and sewer lines. In a scenario such as this, the assessment would include a discussion regarding the location of these subsurface features with respect to the release or the impacted groundwater. If it is determined that there is a history of vapor impacts in the area or the potential for vapor migration or accumulation exists, a vapor survey would be completed as soon as possible.

Oversee Construction to Mitigate Vapors and Conduct Non-Construction Mitigation Measures

WSN has varied experience with the mitigation of petroleum vapors. WSN staff was responsible for maintaining a vapor mitigation system that had been installed to remove vapors from the storm sewer system in Herman, Minnesota. This included performing monthly and/or quarterly vapor surveys of the sewer system to ensure the vapor mitigation system was operating properly. A recent project completed by WSN consisted of design and oversight of a corrective action to mitigate vapor intrusion resulting from a release that seeped below the basement of a residence. The corrective action involved removing the basement floor to excavate the petroleum contaminated soil, followed by installing a venting system, sealing the cores of the basement wall, and replacing the basement floor. WSN was involved in the mitigation of petroleum vapors in the basement of a retail business in Greenbush, Minnesota, where free product had seeped into the basement, causing vapor concerns, such as inhalation and explosion. WSN has also been involved with a site in Crookston, Minnesota where petroleum vapors from a ten-year-old release began impacting a private residence. WSN was retained by the home owner to investigate the situation under emergency status. We advanced several hand-augered soil borings inside the basement to determine if free product was still present. When product was not found, WSN designed and implemented a corrective action that entailed the installation of a vapor barrier and a new basement floor to mitigate the vapor issues. WSN staff also have experience with the various components of the vapor mitigation systems such as piping, circuit breakers, switches, blowers, timers, etc., to aid in the proper design and operation of vapor mitigation systems.

Vapor Mitigation Blower

Conduct or Oversee Operation and Maintenance on Remedial Systems

WSN's staff operates and maintains all the remedial systems we have installed. WSN has conducted operation and maintenance for a variety of engineered remediation systems including multiple SVE/AS systems, groundwater pump and treat systems, and dual phase extraction systems. WSN is also familiar with and has conducted operation and maintenance associated with thermal oxidizers and granulated activated carbon systems used to treat discharges from remediation systems. Our technicians are familiar with all components of the various remediation systems and are experienced in troubleshooting, repairing, and replacing equipment. Our experience in system operations include the collection of air and groundwater samples, regulation of flow rates for the sparge and vent blowers, removal of water from the condensate tank, collection of vacuum and pressure data from well heads, and measurement of PID and vapor concentrations from extraction points.

Remedial system maintenance performed by WSN includes tasks such as replacing air filter elements, changing oil in pumps, cleaning water treatment system components and changing bag filters. In addition to the collection of air and groundwater samples, field measurements of several parameters are obtained to evaluate the effectiveness of natural biodegradation. These parameters include dissolved oxygen, nitrate, soluble iron, sulfate, temperature, and pH.

Arrange for Transportation, Storage, and Proper Management of Wastes

WSN has been involved with numerous corrective action sites where wastes are generated and need to be managed. Wastes commonly generated during the course of corrective action activities include contaminated groundwater, contaminated soils, and free-product. WSN staff is experienced in the removal, storage, transportation, and treatment of wastes generated through corrective action activities. WSN has worked with numerous contractors including excavators, truckers, thermal treatment operations, and land farm operators, as well as private landowners where arrangements have been made to treat contaminated soils. WSN staff is also familiar with completing the necessary applications and notification forms required by the MPCA to track the progress of soil treatment activities. These include land treatment site approval, approval to thermal treat, soil batch approval, notification of spreading contaminated soils, and soil monitoring results reporting. WSN has arranged for pumper trucks to remove and dispose of wastes old product and contaminated groundwater) found in underground and above ground storage tanks before removal. We have also coordinated the removal of highly contaminated groundwater from underground storage tanks prior to excavation. WSN personnel have also arranged for drums and/or skid-mounted storage tanks to be on-site for the temporary storage of free-product recovered as part of corrective action and subsequent disposal of the recovered free-product and/or contaminated groundwater waste.

Rotosonic Drilling Waste, Biwabik Assessment, Biwabik, MN

Evaluate the Need For and Oversee the Implementation of Alternative Drinking Water, Including Point-of-use Treatment (i.e., Carbon Filtration)

WSN's staff has been involved with the installation of several alternative water supply sources and two point-of-use treatment systems. The alternative water supply source investigations required the assessment of the current water supply source, investigating the geology to locate another aquifer, completing the specifications for a new well, and installing the new well using registered well contractors. The point-of-use treatment included maintaining an activated carbon filter system to remove the contaminants from the water supply system. WSN staff have also been involved in the location of new well fields/alternative water supply sources for numerous communities around Minnesota, including an alternative water supply source for a community whose municipal well had been contaminated with nitrates. In addition, WSN staff has designed extensions of municipal water supply systems to connect private residences and businesses throughout Minnesota. In some of these designs, the driving force was impacted private water supplies and the presence of a municipal water supply system in the area.

Sioux Oil GAC System (point of use treatment)

Coordinate and Cooperate with other State-Contracted Services such as Sampling and Analytical, Emergency Response Contrators, and Hazardous Waste Services

WSN coordinates with other State contractors for their services on a regular basis. Throughout the past few years, we have worked with State-contracted laboratories and drilling companies on over 100 projects. Initially, a project manager verifies that the tasks assigned to the State contractor are within the scope of the State Contract prior to issuing a State Contract Order Form (SCOF). We complete the SCOF using the State contractor's information and the unit prices listed in the applicable

Minnesota Department of Administration's Contract Release. We are aware that it is essential the SCOF is signed by WSN and the State contractor before commencing the work.

WSN has also worked with State contractors for electrical services. Four active sub slab vapor points and an exhaust fan were installed to remove vapors from the basement of a residence in Moorhead. The current owner of the home is not the responsible party and chose not to pay the electrical charges associated with the vapor extraction system. Consequently, a State contracted electrician was retained to install a separate electric meter for the vapor extraction system.

Benzene was detected in a drinking water well above the established health risk limits (HRLs) at a petroleum release site in Winger. WSN coordinated with the MPCA and a State emergency response contractor to expedite the installation of a carbon filter treatment system at the residence until a long term drinking water solution could be implemented. Because WSN was responsible for the maintenance of the treatment system, we also found it necessary to work with a State contractor to obtain replacement carbon filters and dispose of the contaminated carbon.

Arrange for Geophysical Activities

WSN does not have geophysical capabilities in-house, but has subcontracted geophysical studies to several subcontractors. We have used subcontractors for magnetometer surveys, seismic refraction/reflection surveys, and resistivity studies. We have also worked with the Minnesota Geological Survey in using Bouguer gravity anomaly readings in searching for new water supply sources for communities in Minnesota. WSN staff members are familiar with the purpose and applicability of other geophysical techniques including seismic reflection/refraction and ground penetrating radar. Recently, we have worked with the City of Little Falls in assisting with completion of a seismic reflection survey to determine depth to bedrock as part of their search to locate a bedrock valley for new water well locations. We are currently working with their staff to conduct a magnetometer search for old municipal wells as part of their wellhead protection plan implementation. We have also arranged for magnetometers and electrical resistivity surveys to be used to locate buried tanks at several sites.

Seismic Refraction Survey, Little Falls

Oversee Subcontractors and State Contractors During Investigation and Cleanups and Tank Removals

WSN routinely performs oversight of contractors and subcontractors during investigation and clean-up. Subcontracted tasks for which WSN provides oversight includes drilling services, excavation, remedial system installation, equipment assembly, electrical, plumbing, demolition, application of soils, dewatering, composting, and construction. WSN has provided oversight for all phases of several remedial system installations and multiple contaminated soil excavations. In addition, WSN has provided oversight of utility contractors during removal of soil contamination during utility projects.

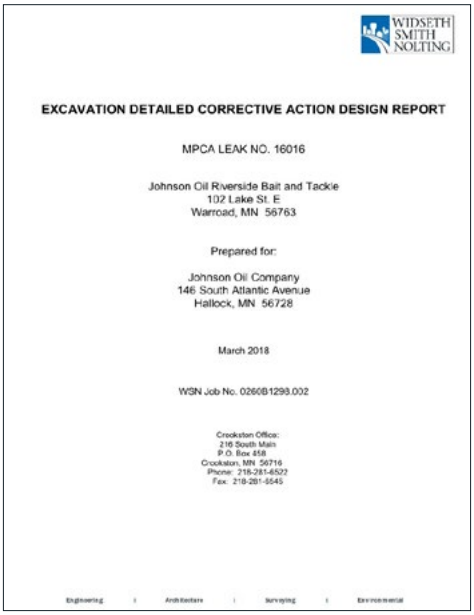
Observing State Contractors, Mitigation Project Hutto Residence, Anoka, MN

WSN worked with Otter Tail County on a project that consisted of three tax forfeited properties, all containing underground petroleum storage tanks. In addition to the tanks, each site contained abandoned buildings, which also needed to be razed and removed. WSN was responsible for the preparation of bidding documents for the removal of any and all petroleum storage tanks and the removal of all on-site structures and debris. All three sites were awarded to one contractor. WSN provided oversight at all three sites. Along with the preparation of the bidding documents and assisting the County in selecting a contractor, WSN was on site to assure the work was completed in accordance with the scope of work outlined in the project specifications.

WSN has been involved with tank removals at petroleum sites since we began doing environmental work. As an engineering and environmental consultant to several counties and cities, WSN has designed tank replacements for many different

sites, including airports, a bus garage, an electric power plant, nursing homes, maintenance garages, fish hatcheries, wastewater treatment plants, and schools. These replacements have included removing tanks from 300 to 15,000 gallons in size. We are familiar with the issues and problems involved in tank removals. Another area we have utilized our tank removal expertise is assisting Counties with removal of tanks on their tax-forfeited properties. Recently, we have been involved with numerous above ground tank removals, both as a prime contractor and as a subcontractor to tank contractors. WSN has also overseen the removal of several abandoned tanks encountered during utility installation projects. These tanks typically are not anticipated and must be addressed after they are discovered.

Prepare and Evaluate Reports (e.g., Investigation Reports, Monitoring Reports, Free Product Recovery Reports



WIDSETH SMITH NOLTING

EXCAVATION DETAILED CORRECTIVE ACTION DESIGN REPORT

MPCA LEAK NO. 16016

Johnson Oil Riverside Bait and Tackle
102 Lake St. E
Warroad, MN 56763

Prepared for:

Johnson Oil Company
146 South Atlantic Avenue
Hallock, MN 56728

March 2018

WSN Job No. 0260B1293.002

Crookston Office:
216 South Main
P.O. Box 458
Crookston, MN 56716
Phone: 218-281-6522
Fax: 218-281-6545

There are numerous documentation reports associated with MPCA's Superfund program. The report most often associated with investigations is the Remedial Investigation (RI) Report Form. This report is used to document work performed during the Remedial Investigation. The RI Form will provide sufficient information to allow the MPCA's project manager to make an informed site cleanup decision. As directed, care is taken not to revise or delete any part of the text or questions in the RI Report. Furthermore, to assist MPCA's project manager in the decision making process, WSN personnel are encouraged to provide any additional investigative information that they believe will assist MPCA in making a site cleanup decision. Other information is added in the appendices such as analytical data, boring logs, monitoring well construction logs, methods, and procedures, and previous reports, if available. WSN as completed investigation report forms for hundreds of sites since the early 1990s.

WSN has done several assessments for the MPCA to determine the nature of contamination so that MPCA staff can determine their next step. The reports may range from including Phase I Environmental Assessments to Assessment Reports that simply discuss the sampling results. In all of these reports, we pride ourselves on providing detailed site maps so the buildings, roads, borings, and other structures are spatially accurate.

Prepare Health and Safety Plans (HASP)

WSN standard procedures include preparing a site-specific HASP for each site that requires on-site activities. The level of detail for each HASP depends on the complexity of the work required for the site. A HASP prepared by WSN typically includes the following elements;

- Site location and project contact information
- Local emergency contact information, hospital location, and map
- Assignment of site safety responsibilities
- An evaluation of site hazards, including chemical, physical, and biological hazards, flammability, excavation, mechanical, drilling, electrical, utility, confined space, traffic, railroad, and temperature
- Personnel training, job safety meeting, and surveillance requirements
- Personal protective equipment requirements and upgrade and downgrade thresholds
- Monitoring procedures, equipment and applicable action levels
- Site control measures such as entry and egress, communication, site rules and work zones
- Safety Data Sheets (SDS)

Arrange for Site Access

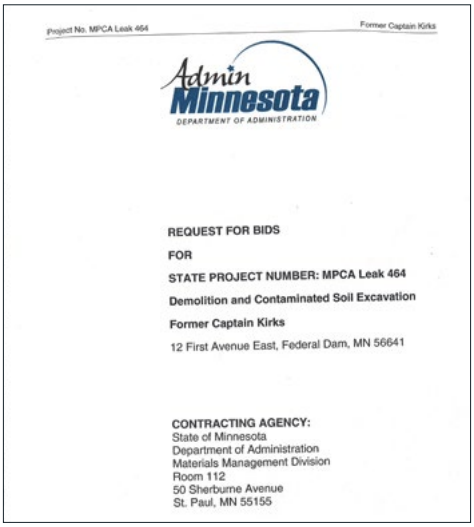
WSN routinely works with clients and adjacent property owners for site access with respect to petroleum-related investigative activities. Clients are informed about the details of the investigative activities and how they relate to site access issues such as drilling in drive areas, tank and piping and dispenser areas, and other areas that

may be difficult to access. Any client concerns about access locations and access times are taken into consideration when performing investigations. Access to immediately adjacent properties is also necessary in many projects. If off-site access is necessary to complete an investigation, the client is informed and asked for their input into the adjacent property on items such as owner name and relationship with the adjacent owner. WSN subsequently contacts the property owner and discusses the ongoing investigation and explains the need to access their property for completing the investigation. If access is granted, an agreement is obtained in writing from the adjacent property owner prior to continuing the investigation. If sufficient information regarding the likelihood of needing off-site access is known prior to initiating the investigation access agreements would be obtained before beginning investigative activities to avoid delays. WSN is also familiar with the procedures and policies employed by the local railroads for obtaining access to railroad property for investigation and remediation activities. WSN personnel have also completed the Contractor Orientation Course required by the railroad to access their right-of-way for investigative activities. WSN has experience negotiating access agreements with private parties, cities, counties, and MnDOT.

Coordinate Utility Locates by Contacting the Appropriate Entity and if Applicable Coordinate Traffic Control

WSN is very familiar with utility locates and utility meets. Prior to completing any subsurface investigations soil probes, soil borings, test trenching, excavation, etc.) WSN contacts Gopher State One Call to complete a utility locate. Whenever possible, a utility meet is performed instead of a blank locate. We feel a utility meet is a better means to reduce the chance of encountering underground utilities because the locations of the proposed underground work can be directly relayed to the respective utility locators. In addition, a utility meet is also preferred by the utility companies because it reduces the time they spend on locates and helps maintain good working relationships with the utility companies. WSN has also contracted with a private utility locator to perform a locate on areas or properties that have limited and/or incomplete public utility or private utility information. On occasion, investigation activities occur within an area where traffic control is needed. In such instances, WSN has engineers that are familiar with traffic control and signage issues. If necessary, WSN will contact traffic signage company such as TSS or 3D to set up the appropriate signage. In instances that do not involve a state highway, the local governing agency is contacted to coordinate traffic control issues.

Prepare and Evaluate Bid Specifications


Project No. MPCA Leak 464 Former Captain Kirks

Admin Minnesota
DEPARTMENT OF ADMINISTRATION

REQUEST FOR BIDS
FOR
STATE PROJECT NUMBER: MPCA Leak 464
Demolition and Contaminated Soil Excavation
Former Captain Kirks
12 First Avenue East, Federal Dam, MN 56641

CONTRACTING AGENCY:
State of Minnesota
Department of Administration
Materials Management Division
Room 112
50 Sherburne Avenue
St. Paul, MN 55155

WSN specializes in preparing bid specifications because we are the municipal engineer for many large construction projects, including remediation, in Minnesota and North Dakota. Our support staff is familiar with the requirements of bid specifications from preparing bid sheets to detailing insurance requirements and average two to three bid specifications per week. We have prepared remedial action designs, with preparation of bid specifications, for the U.S. Fish and Wildlife Service, Minnesota DNR, and many private parties. Many of these designs were for sparge, vapor extraction, and groundwater pumpout at petroleum release sites. WSN has also prepared bid specifications for vapor mitigation and large soil excavation remedial action designs. In addition, many of our other projects for local units of government incorporate remedial action design elements because the projects encounter contaminated media. Finally, our environmental staff has additional experience preparing bid specifications for the many city well projects they work on.

Evaluate Invoices

WSN has a system set up to evaluate invoices. When subcontractor invoices are received, they are reviewed by the project manager who compares the work requested with the billed amount. The project manager then checks the field reports to confirm that the number, amount, and type of units on the invoice match what was completed in the field. If there is a discrepancy, the project manager contacts

the subcontractor and resolves the discrepancy or asks for a new invoice. Once the invoice reflects the work completed, the project manager signs and dates the invoice, puts the WSN project number on it, makes a copy for their file, and sends the original to our business office for billing.

Assist and Provide Training as Requested by the MPCA or MDA Regarding Topics Related to the Scope of this Work

WSN provides training and seminars for its employees such as a recent session on project construction management and contaminated soil management during utility projects. WSN also provides training for clients related to regulatory compliance. In conjunction with completing Spill Prevention Control and Countermeasure (SPCC) plans for a chain of service stations in the upper Midwest, WSN prepared and presented training in SPCC regulations and standard operating procedures for UST compliance. We routinely meet with this client to assist them with UST system audits and train their staff in UST monitoring requirements. WSN prepared and hosted training for demolition landfill operators related to new MPCA regulations and ongoing compliance requirements.

Follow MPCA Green Practices/Procedures Relative to Remediation Projects

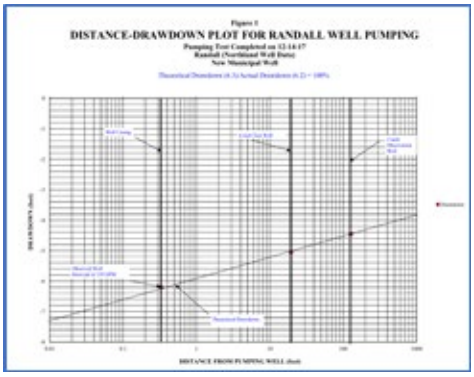
WSN is well versed in MPCA's green practices requirements since their implementation for stimulus act (ARRA) projects in 2009. In response to the green practice requirement, we joined the Minnesota Waste Wise program to help us look at our resource usage and evaluate ways we can be greener. WSN has always cut travel and equipment costs by teaming field work with other projects but the green practices requirements helped us to formalize our process and put them into greater usage. We have been regularly using the Green Practices Work Plan Attachment for our Petroleum Remediation Program work plans over the last several years.

WSN has used the green practices to consider all the environmental effects of corrective action implementation and look at options to minimize the environmental footprint of remediation. We attended MPCA's Green Remediation Day training and have discussed the program at our department meetings. Some of WSN's project managers have taken the Interstate Technology and Regulatory Council (ITRC) training class for Green and Sustainable Remediation. We have reviewed the Green and Sustainable Remediation: A Practical Framework document also put out by ITRC. We understand EPA's core elements of minimizing energy use, air and greenhouse gas emissions, and water use and reduce waste and protect ecosystems for green cleanup. As part of a foundry emission investigation and cleanup, we are incorporating green remediation ideas into our planning for the remediation. We are aware of the green remediation SiteWise™ and SRT tools for assistance with quantifying environmental impacts.

Oversee Hydrogeologic Investigations including Fate and Transport Modeling, Capture Zone Analysis, and Pump Tests

WSN's geologists and engineers have overseen many hydrogeologic investigations, capture zone analysis, and pumping tests for many of our municipal and remediation site projects. Most of the hydrogeologic investigations are in search of new water supplies for cities that have had their wells impacted by nitrate or petroleum contamination. One of the largest investigations was for the City of Baxter, whose wellfield was impacted by benzene and found the aquifer was vulnerable at the current wellfield location. WSN completed a hydrogeologic investigation for the city to identify an area for a new and larger wellfield. The investigation looked at more than 100 residential wells in the area and completed a dozen deep test borings to evaluate the area aquifers. A test well and observation wells were installed to complete a pumping test and evaluate water quality. A pilot test for water treatability was completed. We also completed capture zone analysis for the new wellfield

as well as transport modeling of the benzene from the old wellfield. We have also completed hydrogeologic studies for Beardsley, Randall, Holloway, Verndale, and Watson for new municipal wells due to contamination. We have also included as part of hydrogeologic investigations, pumping tests and capture zone analysis at some of our remediation sites including Gooseberry State Park, Woodland Store (Leak Site 9274), and Lake Alice Store (Leak Site 209).



Prepare Engineering Evaluation Cost Analysis (EECA)

Projects with local, state or federal funding typically require preparation of a preliminary report, feasibility study, facility plan, or engineering evaluation cost analysis as named by the various regulatory or funding agencies. The numerous reports, studies, plans, or analyses prepared by WSN engineering staff each year for various projects follow a similar format. Projects specific to environmental or remediation issues/action generally follow the outline below:

- Executive Summary: Brief summary of data, information and recommendations.
- Introduction: Outlines general information on the site characterization and may include history, previous investigations, actions, extent/nature/sources of contamination, risk evaluation, and specific site information.
- Removal Action Objectives: This section identifies the scope, objectives, and goals for a non-time critical action. Objectives for the removal action are defined along with justification for the proposed action. Applicable or relevant and appropriate requirement (ARAR) groups are identified with descriptions provided.
- Removal Action Technologies and Development of Alternatives: Options for applicable technologies to address the project needs are outlined in this section. If no specific option meets the project needs, then alternatives (combinations of options) are reviewed with recommendations of such to meet the project needs.
- Comparative Analysis of Alternatives: Options and/or alternatives are reviewed with respect to effectiveness and feasibility. Capital, operating, maintenance, periodic, and salvage costs are estimated and evaluated for options or alternatives being considered. Environmental considerations are also identified along with how the environment may be impacted by the options or alternatives under review.
- Recommended Removal Action Alternative: Based on evaluation of the relative performance of alternatives reviewed, this section identifies the removal action alternative that best satisfies the project needs. Schedules, equipment, materials, preliminary design, and general descriptions are provided specific to the project/alterative.

WSN works with regulatory agencies to help identify and confirm the scope of reports, studies, plans and analyses required for the project to allow both WSN and agency staff to proceed effectively while meeting the needs of the project.

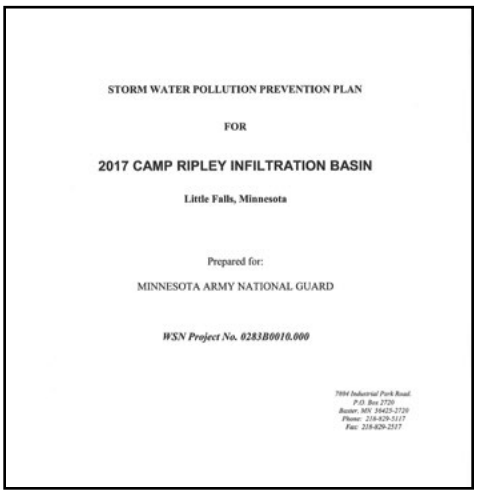
Oversee or Conduct Bench Scale Lab Treatability Studies, Pilot Testing, and Field Demos

WSN staff have conducted several bench-scale lab treatment studies on water and wastewater to determine the levels of chemical and mechanical treatment needed for producing treated water. The data and information from the treatability testing are used to design a field scale pilot test. We then work with a contractor to conduct a pilot test in the field to determine the success for full-scale treatment system design. WSN has completed pilot testing of different remediation technologies over the years. We were part of initial assessments completed for oxygen releasing compound (ORC®) in Minnesota at the Farmers Association Coop (Leak No. 869) in Deer Creek. At this site, we researched the technology, implemented ORC® injections on two trial areas, and evaluated the results in the downgradient groundwater monitoring wells and Deer Creek.

Oversee Equipment Start-up and Work Out Problems with the Contractor/Vendor

WSN has overseen several remediation and water treatment system start-ups and completed troubleshooting the systems with the contractor. We commonly do this on many of our engineering and architectural projects as part of the commissioning process. We understand that even the best designed and built systems have idiosyncrasies that need to be worked out in the field with the contractor to get the system working as designed. WSN staff have years of experience working through the start-up process to work out problems that occur.

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



STORM WATER POLLUTION PREVENTION PLAN

FOR

2017 CAMP RIPLEY INFILTRATION BASIN

Little Falls, Minnesota

Prepared for:

MINNESOTA ARMY NATIONAL GUARD

WSN Project No. 0283B0010.000

WSN prepares dozens of SWPPPs each year for our many construction projects for municipalities, counties, and state agencies. We have several staff with Design of Construction SWPPP certifications who put together SWPPPs using the MPCA SWPPP Templates for Construction Sites. The completed template accompanies project plans and specifications, which includes sheets with maps showing nearby waters and wetlands, existing and final grades, locations of disturbed areas, erosion control BMPs, and standard details for the BMPs. We have staff who are certified Construction Site Managers to observe if the SWPPP is being implemented correctly and document the problems with inspection notes. We are familiar with the process to revise the SWPPP during construction based on site-specific issues that arise during construction.

Install Stainless Steel Soil Gas Sampling Ports using Electric Drill Through Floor Slabs

Vapor pin installation

WSN has installed several sub-slab soil gas sampling ports across the state by drilling through floor slabs. Realizing the importance of collecting samples without leakage from above the slab, a hammer drill is generally used to create a hole for vapor port installation and a concrete slurry is then used to seal the port into place. We are experienced with the MPCA's sample train setup and Summa® canister use. We are also familiar with the MPCA's water dam testing procedure and the Vapor Pin® Kit for more convenient and quicker sampling of inset flush-mounted installation.

Collect and Manage Field and Laboratory Data for Electronic Submittal in a Format Specified by MPCA

WSN collects and manages large amounts of field and laboratory data for submittal to MPCA in the electronic data delivery (EDD) format. WSN has worked with labs to provide the data in formats that can be downloaded directly into MPCA tables within report worksheets. The project manager reviews the data reports to see that they are complete, contain the data requested, the data QA/QC is reported, and the data match the field reports. If there are discrepancies, the project manager contacts the subcontractor to resolve the difference and/or obtain a revised data report. WSN samples groundwater monitoring wells at several landfills and uses the EDD system is used by us to submit the data to MPCA as part of the permit. In addition, WSN samples surface water at MPCA Watershed Pollutant Load Monitoring Network (WPLMN) sites in the central portion of the state for the Mississippi Headwaters Board (MHB). The field data from this sampling is submitted to MPCA in the Canvas® format and EQUIS template. The analytical data is submitted to MPCA using the EDD system.

5. Scenario B–Example Workplan and Spreadsheet

Attachment A

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Example Workplan

Project Title: Category B- Scenario-B: Petroleum Only Environmental Services

1. Project Summary:

The subject property consists of an active petroleum service station with an attached 24-hour restaurant, located on the southern half of the block, in a mixed commercial and residential area of a small town in western Minnesota. The site has been operated as a petroleum fueling station for over 60 years and the restaurant has been present for approximately 20 years. Three active underground storage tanks (i.e., 2-gasoline and 1-diesel) are located west of the station building and the dispensers to the south of the station. Significant staining, present around the dispenser islands and a loss of product over the last few months, indicate a likely petroleum release. A fuel oil aboveground storage tank (AST) is also present along the north side of the station building. Two former underground storage tanks (USTs), present east of the station structure, were removed prior to the construction of the restaurant. During removal of these USTs, petroleum odors were noticed and significant PID readings were detected and likely indicate an old release, from the former tanks. No records of any soil or groundwater analyses were found, in association with the removal of these tanks. The service station and attached restaurant are serviced by municipal water, but, some adjacent residents, who utilize private wells for their water source, have indicated that they noticed petroleum odors in their drinking water. Municipal storm and sanitary sewer utilities are present at service the station, restaurant, and residences.

2. Statement of Problems, Opportunities, and Existing Conditions

The subject property consists of a petroleum service station with an attached 24-hour restaurant, located in a mixed commercial and residential area of a small town. Significant staining, present around the dispenser islands and a loss of product over the last few months, indicate a likely release and during removal of the two USTs on the east side of the service station in the 1990s, petroleum odors were noticed and significant PID readings were detected and would indicate an old release, from the former tanks. No records of any soil or groundwater analyses were found, in association with the tank removal and therefore, no data is present on the severity and/or extent of any contamination related to the former USTs. Some adjacent residents, who utilize private wells for their water source, have indicated that they noticed petroleum odors in their drinking water. Because of the close proximity of the lake and the coarse nature of the native soils, we are assuming that groundwater is shallow (i.e., less than 10 feet below land surface) on the subject property.

Because at least one significant release has been reported, the known surficial geology as interbedded sand and gravel deposits, and adjacent drinking water wells appearing to be impacted, a remedial site investigation is necessary to determine the extent and severity of the release and allow for an accurate assessment of the risks to human health and the environment, associated with the release. A determination can then be made whether corrective action is necessary and if so, what kind of corrective action is warranted. However, because of the rumored impacts to some of the adjacent drinking water wells, an emergency response should be initiated to test the adjacent wells and provide temporary alternate drinking water sources, where necessary.

Based on available information, evidence of an old release associated with the former USTs (i.e., elevated PID readings), was indicated when the old tanks were removed and the restaurant was built and would be at least 20+ years old at the time of tank removal. In addition, based on the significant staining around the current dispenser islands and noted loss of product, a newer release, probably from the gasoline tank or associated piping/dispensers is also likely. The presence of the lake to the east, likely flow direction towards the lake, and the rumors of petroleum odors in the water from the residential wells, indicate contamination is likely migrating off-site to the east, via the groundwater, warrants investigation and likely subsequent remedial action. With municipal sewer utilities running adjacent to the site along Main Street and likely along the Service Road to service the adjacent residences, it is also possible that the sewer utility lines are providing a conduit for contaminant migration, and therefore, the potential for vapor accumulation in the sewers and continued migration onto adjacent properties, via the sewer services, warrants investigation.

3. Goals, Objectives, Tasks, and Subtasks

Goal: The goal of the project is to identify and assess potential health, safety, and environmental risks associated with the identified release at the subject property and provide sufficient information to justify site file closure, develop a monitoring plan,

or if needed, select and implement a corrective action that best reduces or eliminates any identified risks.

Objective 1: Mitigate the immediate threat to the residential drinking water wells.

Task A: Immediately contact the adjacent residences, MPCA, and current station owner about the wells and the petroleum odors in their drinking water and initiate an emergency response to provide alternative water sources for these residences until the wells and water can be tested to confirm impacts.

Subtask 1: Make phone calls to the appropriate people and/or agencies to coordinate/arrange for the emergency response action. Follow-up with e-mails and letters, where appropriate and if necessary, conduct a site visit to obtain access agreements.

Task B: Obtain access agreements for the collection of water samples.

Subtask 1: Prepare access agreements and obtain necessary signatures.

Task C: Collect water samples from the residential wells for laboratory analysis.

Subtask 1: Complete SCOF paperwork for state contractor lab and prepare Health and Safety Plan.

Subtask 2: Coordinate sampling event with MPCA and affected property owners.

Subtask 3: Mobilize to the site to collect drinking water well samples, submit to state contract lab for analysis, and report results. If approved by the MPCA, rush analysis of the water samples will be requested.

Subtask 4: Prepare a letter report on emergency response actions.

Objective 1 Timeline: 1 week for Task A & B and 1-3 weeks for Task C, depending on requested lab turnaround time.

Objective 1 Deliverables: Access agreements, laboratory SCOF, letter report on emergency response actions and results.

Objective 2: Obtain any available information on the site, including, but not limited to any documentation on the current USTs (i.e., tank size, leak protection, spill protection, tightness test results, etc.) and loss of product, any records related to the underground storage tanks removed 20 years ago, site usage history, area utility maps/information, and property information for remaining adjacent properties, to best assess risk issues. Inform affected parties of relevant project details and obtain any additional access necessary for performing an investigation.

Task A: Contact the current station owner, past property owner (if different and possible), City, MPCA, DNR, and adjacent property owners to disperse and/or obtain necessary information on the current activities and the upcoming investigation.

Subtask 1: Contact appropriate people and/or agencies to obtain information and coordinate Subtask 2.

Subtask 2: Mobilize to the site to perform a site reconnaissance, talk to the subject property owner, adjacent property owners, City, and others necessary to gather information, dispense results of the Objective 1 work, and begin developing relationships that will help achieve the project goal.

Task B: Obtain any remaining necessary access agreements, not obtained in Objective 1, for the installation of soil probes, vapor surveys, and likely monitoring wells.

Subtask 1: Prepare access agreements and obtain necessary signatures.

Objective 2 Timeline: 3 weeks. Some work may be completed in conjunction with Objective 1 work.

Objective 2 Deliverables: Executed access agreements, contact names, addresses, and numbers.

Objective 3: Assess risk issues associated with vapor impacts to site and nearby structures, underground utilities, nearby water wells, and surface waters,

Task A: Conduct a vapor survey to include site and adjacent structures and nearby underground utilities to determine if there are any vapor impacts.

Subtask 1: Coordinate with the site owner and adjacent and nearby property owners (i.e., businesses, residences, City) for performing a vapor survey in areas that would likely be impacted (i.e., adjacent sewers, basements, crawl spaces, sumps, etc.).

Subtask 2: Mobilize to the site to perform vapor surveys. This may be done in conjunction with Objective 2 or 4.

Task B: Complete a 500-foot radius walking survey to locate additional basements, crawl spaces, sumps, private water supply wells not identified in Objective 1, and any additional possible petroleum source areas.

Subtask 1: Mobilize to the site to conduct the walking survey. This can be done in conjunction with Objective 2.

Subtask 2: Prepare and mail questionnaires to properties unable to be contacted during the site walking survey.

Task C: Complete a groundwater survey to obtain any available water well records to determine well locations, local stratigraphy, well completion data, static groundwater elevation, etc. Also determine if the site is in a Wellhead Protection Area or a Drinking Water Supply Management Area and complete a surface water receptor survey to identify surface waters within ¼ mile.

Subtask 1: Perform a MGS and CWI search for water well records.

Subtask 2: Review available well records and compile results.

Objective 3 Timeline: 3 weeks

Objective 3 Deliverables: Data tables required for RI report preparation, well records for RI report.

Objective 4: Determine the extent and severity of the contaminant plume.

Task A: Coordinate with the MPCA, State Drilling Contractor, State Laboratory Contractor, field staff, site owner, impacted adjacent and nearby property owners, and City for the advancement of twelve (12) soil probes in and around the release area to determine the vertical and horizontal extent of soil and groundwater contamination. Complete seven (7) of these borings as shallow groundwater monitoring wells and facilitate two (2) quarterly sampling events of the monitoring wells and allow for flow direction determination. Up to five (5) soil gas probes will be advanced to facilitate the collection of soil gas samples to assess the risk of petroleum vapor intrusion. Advance four (4) hand augers to determine the presence and extent of contamination in the sewer backfill. Install three sub-slab soil gas points (i.e., one in the gas station & two in the restaurant) and collect vapor samples for laboratory analysis, in conjunction with the monitoring well sampling events.

Subtask 1: Coordinate field work with State Drilling Contractor, field tech, subject property owners and/or operators, City, MPCA, and any other impacted property owners. Complete Drilling SCOF.

Subtask 2: Contact Gopher One Call and a private locator to locate subsurface utilities or if included in the drillers contract, provide driller with necessary information to arrange for the utility locates.

Subtask 3: Submit MPCA field work notification and prepare field work instructions and data sheet for field tech.

Subtask 4: Mobilize to the site, meet with site personnel, review and sign the HASP, and layout field work expectations.

Subtask 5: Advance twelve (12) soil probes to appropriate depths, screen soils with a PID, and collect representative soil and groundwater samples for laboratory contaminant analysis and/or grainsize analysis to characterize the subsurface conditions. Record stratigraphy and field data and prepare boring logs.

Subtask 6: Complete seven (7) of the soil probes as shallow groundwater monitoring wells to facilitate sample collection and analysis (DRO, GRO, BTEX) to determine contaminant extent, magnitude, and flow direction.

Subtask 7: Advance up to five (5) soil probes to a depth of 8-10 feet to facilitate soil gas sample collection and submit samples to a State Laboratory Contractor for contaminant analysis of TO-15 compounds.

Subtask 8: Complete four (4) hand-augered soil borings into the sewer utility backfill to determine the extent of contamination in the backfill.

Subtask 9: Install one sub-slab monitoring point in the gas station and two sub-slab monitoring point in the restaurant to facilitate sub-slab vapor sample collection. Collect samples in conjunction with the groundwater monitoring events.

Subtask 10: Survey all boring locations and the top of casing elevations on the monitoring wells to allow for flow direction determinations.

Subtask 11: Collect static groundwater measurements and groundwater samples from the monitoring wells for two quarterly events. Also collect groundwater samples from the impacted drinking water wells, as determined in Objective 1.

Subtask 12: Process and ship soil, groundwater, and soil gas samples to a State Laboratory Contractor, using standard chain-of-custody procedures, for contaminant analysis.

Objective 4 Timeline: 2-4 weeks depending on access and driller availability.

Objective 4 Deliverables: Laboratory analytical reports, boring logs, and field data sheets for inclusion in the RI Report.

Objective 5: Prepare and submit a Remedial Investigation (RI) Report to the MPCA requesting site file closure or corrective action.

Task A: Coordinate with the project scientist, technician, and CADD specialist to prepare the RI report.

Subtask 1: Compile laboratory, field, well, receptor, and all other data and complete data tables.

Subtask 2: Prepare all necessary figures for the RI report, including, but not limited to site location, boring and well locations, soil and groundwater extents, cross-sections, receptor surveys, groundwater flow maps, etc.

Subtask 3: Assemble report appendices, including laboratory analytical reports, well records, boring logs, field data sheets, spatial data reporting form, release information worksheet, boring sealing records, etc.

Subtask 4: Prepare the RI report body, complete with discussions of current results, relationships to and previous work, and recommendations for closure or corrective action.

Subtask 5: If, necessary, complete a Conceptual Corrective Action Design (CCAD) Worksheet.

Subtask 6: Complete assembly of RI report and submit for internal review.

Subtask 7: Complete review of RI report, make any edits, and submit to the client and MPCA.

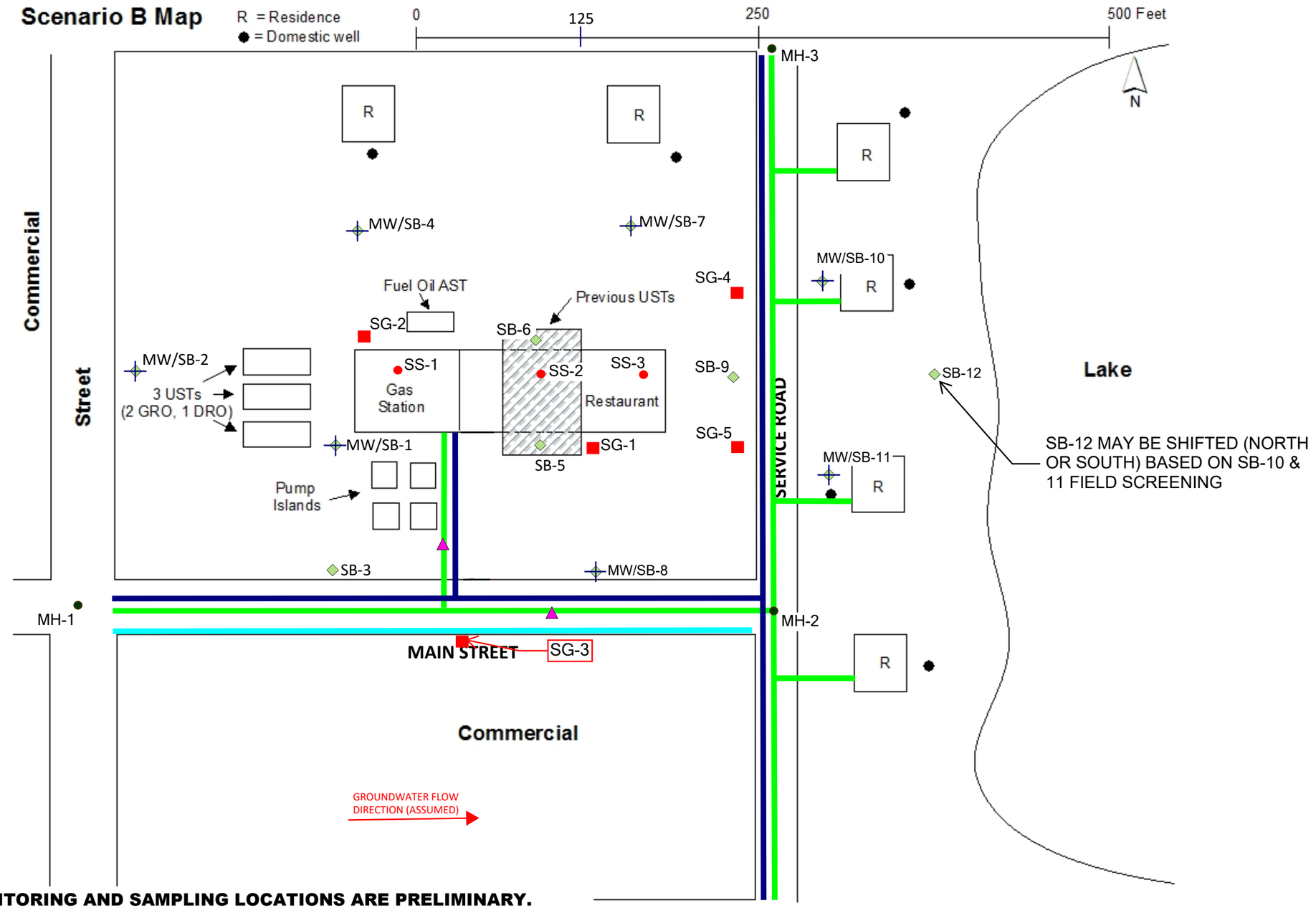
Objective 5 Timeline: 4 weeks

Objective 5 Deliverables: RI report and probable CCAD Worksheet.

Additional Work: Depending on the results of the soil and groundwater results from the borings and wells, additional drilling may be necessary to completely define the extent and determine all risks to human health and the environment.

Proposed Sampling

- Soil Boring
- Monitoring Well
- Sub-Slab Sample
- Hand Auger Sample
- Manhole Sample Point
- Soil Gas Sample
- Municipal Water
- Sanitary Sewer
- Storm Sewer



NOTE: PROPOSED MONITORING AND SAMPLING LOCATIONS ARE PRELIMINARY. ADDITIONAL BORINGS MAY BE REQUIRED TO CHARACTERIZE THE CONTAMINATION.

WIDSETH SMITH NOLTING

SCALE: AS SHOWN

MPCA PROPOSAL
SCENARIO B
PETROLEUM CONTAMINATION SITE

PROPOSED SAMPLING PLAN MAP

Date: APRIL 2018

JOB No. PROPOSAL

FIGURE A

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Attachment B
*Example Scenario Project Spreadsheet

Project title: Category B: Petroleum Only Environmental Services – Scenario B Sampling Plan

	1. Personnel					2. Subcontracting	3. Equipment			4. Other Expenses			Totals (Extended)
Project Budget	Project Manager	Scientist 2	Scientist 1	Field Technician	GIS/CADD Specialist	Wells Drilling/Environmental Borings	PID	Explosimeter	Sampling Equipment	Soil Gas Samples	Water Samples (includes duplicates & blanks)	Soil Samples	
	(Hours)	**(Hours)**	**(Hours)**	**(Hours)**	**(Hours)**	**(# of borings/wells)**	**(# of days)**	**(# of days)**	**(# of days)**	**(# of Sample Locations)**	**(# of Sample Locations)**	**(# of Sample Locations)**	**(Hours)**
Objective 1 - Mitigate Threat to Drinking Water Wells													
Task A - Coordination	4	8	2	1									15
Task B - Access Agreements	2	8	2		4								16
Task C- Water Well Sampling	2	4		10					1		8		16
													0
Total for Objective 1 Hrs	**8**	**20**	**4**	**11**	**4**	**0**	**0**	**0**	**1**	**0**	**8**	**0**	**47**
Objective 2 - Background Research & Access Agreements													
Task A - Background/Research	1	6	2										9
Task B - Access Agreements	1	8	2										11
													0
Total for Objective 2 Hrs	**2**	**14**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**
Objective 3 - Vapor & Well Surveys													
Task A - Vapor Survey	1	2	2	6									11
Task B - 500-Foot Walking Survey		2		4									6
Task C - Groundwater Survey	1	2	2										5
													0
Total for Objective 3 Hrs	**2**	**6**	**4**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**22**
Objective 4 - RI Investigation													
Task A - RI Investigation	6	27	8	78	0	24	5	5	4	11	35	28	119
													0
Total for Objective 4 Hrs	**6**	**27**	**8**	**78**	**0**	**24**	**5**	**5**	**4**	**11**	**35**	**28**	119
Objective 5 - RI Report													
Task A - Report Preparation	6	18	8	12	16								60
													0
Total for Objective 5 Hrs	**6**	**18**	**8**	**12**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	60
	Project Manager	Scientist 2	Scientist 1	Field Technician	GIS/CADD Specialist	Wells Drilling/Environmental Borings	PID	Explosimeter	Sampling Equipment	Soil Gas Samples	Water Samples (includes duplicates & blanks)	Soil Samples	
	(Hours)	**(Hours)**	**(Hours)**	**(Hours)**	**(Hours)**	**(# of borings/wells)**	**(# of days)**	**(# of days)**	**(# of days)**	**(# of Sample Locations)**	**(# of Sample Locations)**	**(# of Sample Locations)**	
Total Project Hours	24	85	28	111	20	24	5	5	5	11	43	28	268

WIDSETH SMITH NOLTING

Engineering | Architecture
Surveying | Environmental

Brainerd Office
7804 Industrial Park Rd.
Baxter, MN 56425
218.829.5117

Brian A. Ross, PG, VP
Project Manager | Scientist II
218.316.3628
Brian.Ross@wsn.us.com

WSN Office Locations
Alexandria
Bemidji
Brainerd/Baxter
Crookston
East Grand Forks
Forest Lake
Grand Forks
Rochester

WidsethSmithNolting.com