Appendices

Appendix A – RFP Acknowledgement

MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North
St. Paul, MN 55155-4194

REQUEST FOR PROPOSAL (RFP) ADDENDUM

Addendum No.: 1 Date of Addendum: March 19, 2018

Due Date, Time: April 11, 2018, 2:00 PM

Title: MPCA PT RFP – REMEDIATION MASTER

SCOPE OF ADDENDUM

The Request For Proposal (RFP) is revised as follows with additions underlined, and deletions are ~~struck out~~:

Revision 1. RFP Section 2: Project Goals, Page 3, is amended as follows:

The total amount of money available for work under this Master Contract is approximately ~~$120,000,000.00 (One Hundred Twenty Million Dollars)~~ $420,000,000.00 (Four Hundred Twenty Million Dollars) for five years between all Master Contracts issued under this RFP. No payments will be made except for work authorized by a Work Order that is issued from the State. No minimum payment is guaranteed by the State.

Revision 2. RFP Attachment C. Sample Contract, Page 2, Clause 4.1 Consideration. is amended as follows:

4.1 Consideration. The State will pay for all services satisfactorily performed by the Contractor for all Work Order Contracts issued under this Master Contract. The total compensation of all Work Orders may not exceed **~~$120,000,000.00 (One Hundred Twenty Million Dollars)~~ $420,000,000.00 (Four Hundred Twenty Million Dollars)** for five (5) years between all Master Contracts

Revision 3. RFP Section 7. Proposal Content, Category A: Petroleum, Superfund, MDA, and Closed Landfill Program Environmental Services, A.3, Page 31, is amended as follows:

Provide a detailed description of the company's experience as it relates to the scope of services outlined in this RFP; specifically, describe the company's experience with each of the bullets listed in **Section 4 3** of this RFP. The Proposal shall contain the following additional details specific to Category A services:

- A summary of Proposer's experience with agricultural chemical investigation and cleanups.
- A list of remediation technologies with which the Proposer has experience.
- Provide a detailed description of the company's experience as it relates to the scope of services outlined in this RFP for Category A.

Revision 4. RFP Section 3: Scope of Services, Page 3, is amended as follows:

The Contractor shall submit a separate proposal for each Category of Service for which the Contactor would like to be considered. Proposals will be evaluated individually for each Category of Service for which they were submitted. Category B is a subset of Category A. If the Contractor submits Proposals for both Category A and Category B, Category A will be evaluated first for qualification. If the Contractor is not approved for Category A, they will then be evaluated for Category B. Category C will be evaluated individually. Contractors can submit Proposals for all three Categories if desired.

Should a Contractor be approved and selected for more than one Categories, the Contractor will receive only one Master Contract containing all the approved and selected Categories.

Joint ventures and teaming among groups of Contractors is not allowed.

Revision 5. RFP, Attachment C Sample Contract, Clause 38. C. Additional Insurance Conditions, Bullet #5, Page 21, is amended as follows:

- Contractor's policy(ies) shall include legal defense fees in addition to its liability policy limits, with the exception of ~~B.4~~ Professional/Technical, Errors and Omissions, and/or Miscellaneous Liability Insurance above;

Revision 6. RFP, Section 4. Personnel Classifications and Qualifications, Category C: Closed Landfill Program, Project Manager Qualifications,Second Bullet, Page 23, is amended as follows:

- Minimum of three years experience working with landfill, investigation and closure. ~~Minnesota Guidance and Policy with the Superfund/ Petroleum programs. https://www.pca.state.mn.us/waste/cleanup-guidance~~

Revision 7. RFP, Section 6. Supplies and Equipment Pricing, EQUIPMENT RATES, Pages 28 and 29, and RFP, Attachment C, Sample Contract, EQUIPMENT RATES, Pages 5,6,7, is amended as follows:

Equipment	Cost (per day)
Turbidity Meter	$52.00
Oxidation-reduction potential (ORP) Meter	$39.00
~~Hydrolab Quanta~~	~~$80.00~~
Dissolved Oxygen Meter	$46.00
Temperature, pH, conductivity, ORP meter	$68.00
Temperature, pH, conductivity	$35.00
~~YSI Multi Meter w/ Flow Cell~~	~~$117.00~~
Flow Cell	$77.00
Water Quality Meter (6 parameters)	$102.00
2" Trash Pump	$~~189~~75..00
Bladder pump	$118.00
Submersible Pump	$52.00
Peristaltic Pump	$43.00
Diaphram Pump	$53.00
Mechanical Pump Puller	$44.00
Water Level Indicator	$27.00
Hydrocarbon/Water Interface Probe	$55.00
Pump/Slug Testing Equipment	$110.00
Manual direct-push probe equip.	$165.00
X-ray Fluorescent (XRF) for Soil and Lead Paint	$468.00

Nuclear Density Gauge	$69.00
Multi Gas Meter (02/CO/LEL/Methane)	$123.00
O2/Combustible Gas Detector	$110.00
LEL/O2/CO2 Gas Meter	$66.00
LEL/O2Gas Meter	$55.00
Explosimeter	$52.00
Photoionization Detector (PID) 10.6	$99.00
Photoionization Detector (PID) 11.7	$138.00
Flame Ionization Detector (OVA)	$135.00
Velometer / Anemometer	$34.00
Micro Manometer	$64.00
Sound Level Meter	$53.00
Dust Meter	$70.00
Air Compressor	$54.00
Metal/Cable Detector	$47.00
Generator	$65.00
Sump Pump	$33.00
Pressure Washer	$69.00
Magnetometer	$151.00
Coreing Machine with Drill Bits	$110.00
Surveying Equipment - Rotary Laser	$104.00
GPS (Submeter)	$122.00
Laser Level/Lenker Rod	$127.00
Ground Penetrating Radar (GPR)	$426.00
EM-31 Ground Conductivity Meter	$440.00
EM-61 Ground Conductivity Meter	$688.00
55 gal Drums	$70.00
Sub-Slab Soil Gas Sampling Point Insert	$88.00
Screen for Soil Gas Monitoring Points	$51.00
Vapor Pin Installation Kit (per point)	$60.00
Lumex Mercury Monitoring	$187.00
Mercury Analyzer	$179.00
Canoe	$15.68
Boat (includes motor and trailer)	$58.24
ATV (Hourly Rate)	$16.80

Revision 8. RFP, Section 7. Proposal Content, Category B. Petroleum Only Remdiation Environmental Services B.5., Scenario 1: Petroleum Only Environmental Services, Page 39, is amended as follows:

5. **Scenario ~~1~~ B: Petroleum Only Environmental Services**

   Scenario ~~1~~B:

Revision 9. RFP, Section 6. Supplies and Equipment Pricing, Item cc., Page 27 and RFP, Attachment C, Sample Contract, Clause 8, Page 5, is amended as follows:

cc. Tubing less than $100.00

Revision 10. RFP, Section 7. Proposal Content, 5. Scenario A., Page 33, is amended as follows:

The property owner conducted a limited investigation consisting of several push probes throughout the facility and adjacent property. This investigation identified chlorinated ethenes (most notably trichloroethylene [TCE]) and agricultural chemicals (nitrogen, dicamba, metolachlor, metribuzin, pendimethalin, and triclopyr) in soils and groundwater above agency-regulated cleanup goals. General geology was noted to generally consist of coarse grained sands with thin lenses of silt and clay. The investigation encountered shallow groundwater approximately 6-10 feet bgs, with an assumed flow direction heading into town. All groundwater samples (blue GW samples) were collected at 30 feet for domestic wells, and 15 feet for investigation borings. The investigation did not evaluate the stream.

A single round of vapor points were also advanced off-site as part of the property owner's investigation, with some of the detections exceeding the 33X ISV for TCE (Figure 1). Vapor samples (orange vapor samples) were collected above the water table. MPCA is aware there is a pregnant person at the property with the sub-slab point. A passive soil-gas sample collected in the vehicle/equipment maintenance garage was several orders of magnitude above screening criteria; however, additional characterization nor remediation occurred in the building by the property owner.

Revision 11. RFP, Section 7., Proposal Content, Category A..; Scenario A, 2nd Paragraph, Page 32, is amended as follows:

The site topography is mostly flat, however the elevation does dip downward toward a small stream running through the northern portion of the property. This stream continues into the town which is located in the west adjoining property (see Figure 1). Older portions of the town (situated closer to the former ag-chem plant) are on private well drinking water (blocks 3, 5, and 7) that are 30 feet deep. Newer portions of the town (farther from the former plant) are on community water from the local municipality (blocks 1, 2, 4, and 6).

Revision 12. RFP, Section 7., Proposal Content, Category B. #5. Scenario 1: Petroleum Only Environmental Sercices, 5th Paragraph , Page 39, is amended as follows:

Municipal services are available in the area; however, the lakeside homes are all on private wells. The wells are 80 feet deep. The fueling station is hooked up to municipal water and other utilities at the site include storm sewer, sanitary sewer, and water that run along main street.

This addendum shall become part of the RFP and MUST be returned with the RFP Response.

RESPONDER NAME: [signature] CURTIS M. HUDAK

TITLE: Branch Manager

DATE: 4/9/2018

Appendix B – Resumes of Key Personnel and Subject Matter Experts

Emma Driver, PMP

Contract Manager/Project Manager

amec foster wheeler

Ms. Driver has over 17 years of experience in the environmental industry specializing in site investigation/remediation, groundwater monitoring programs and landfill operations maintenance and monitoring (OM&M). Ms. Driver has also significant experience in conducting CERCLA preliminary assessments and site inspections, regulated materials surveys, hazardous and non-hazardous waste assessments, due diligence, soil vapor investigations, environmental compliance assessments, GIS and data management. Ms. Driver is currently serving as contract manager under the existing MPCA/MDA Technical Services contract and has worked on and managed projects as part of the contract since 2008. Ms. Driver has a thorough working knowledge of the MPCA Risk Based Site Evaluation (RBSE) Manual, PRP guidance for UST/AST release cleanup, hazardous and solid waste rules, VIC and MDA guidance, and MPCA vapor intrusion BMPs documentation.

Classification
Program Manager/ Project Manager

OSHA Certification(s)
40-hr OSHA HAZWOPER with current refresher

Years with Amec Foster Wheeler: 16

Years of Experience: 17

Education
BSc Hons. Geography

Regulatory Experience
ADEQ, IDNR, MPCA, MDA, MnDOT, IDNR, NDDH, NMED, SDDENR, WDNR

Licensing / Certifications
PMP

Relevant Work Experience

Focused Site Investigation, Confidential Manufacturing Client, Hennepin County, MN. Project Manager. Conducted a focused site investigation as part of spill response activities to address an accidental release of AFFF from a fire suppression system. Investigation activities were time-sensitive and involved the drilling of soil borings and monitoring wells using a combination of push-probe and hollow-stem auger drilling methods. Investigation activities were conducted in accordance with MPCA RBSE guidance and following strict PFAS sampling protocols to avoid potential cross-contamination. In the role of project manager, Ms. Driver developed project scope, conducted subcontractor procurement and management, managed schedule and budgets, provided guidance for project team and held routine meetings with project stakeholders including clients (local and at corporate level), regulators, subcontractors and project team.

Superfund Site Investigation, Former Universal Plating Facility, Minneapolis, MN. Project Manager. Amec Foster Wheeler conducted an off-site soil vapor investigation in accordance with MPCA best management practices at the Former Universal Plating (state superfund site) to address potential vapor intrusion concerns at properties adjoining the site. In the role of project manager, Ms. Driver has developed project scopes of work, conducted subcontractor procurement, prepared monthly invoices, prepared information for public meetings and participated in stakeholder meetings informing residents of investigation findings and next steps.

Closed Sites Soil Vapor Evaluation Program, MPCA, Statewide, MN. Project Manager. Amec Foster Wheeler conducted a regulatory file review and sensitive receptors evaluation to evaluate sites that had previously been closed by the MPCA for potential vapor intrusion concerns. Specifically, the closed sites are being further evaluated as they may have potential human health concerns attributed to previously uninvestigated soil vapor impacts and/or residual groundwater contamination that may exceed current criteria. Amec Foster Wheeler developed an evaluation matrix that included consideration of site background and use, hydrogeologic information, previous investigations, and analytical profiles specifically including recent analytical results for chlorinated volatile organic compounds (CVOCs). Profile summaries were developed for all sites and a matrix providing recommendations for additional evaluation/investigation was provided.

Architect-Engineering (A-E) Services to Support Site Inspection of Aqueous Film Forming Foam (AFFF) Release Areas, Environmental Programs Worldwide, U.S. Air Force Civil Engineer Center (AFCEC), San Antonio, TX. Amec Foster Wheeler performed ongoing site investigations for the USAF-wide initiative to assess the presence or absence of PFAS at 28 active Air Force installations across the United States. Ms. Driver currently serves as a base project manager responsible for completion of SI activities at three installations in several states. Technical components of the program include conducting site inspection activities at AFFF release areas previously identified during Preliminary Assessment activities to confirm if a

release of AFFF occurred in groundwater, soil, surface water and sediment in concentrations greater than the USEPA health advisory (HA) values or other applicable state and/or federal standards. In her role as base project manager, Ms. Driver is responsible for writing work plans, developing subcontractor scopes of work, overseeing field activities (drilling, sampling, surveying, investigation derived waste management), developing subcontractor scopes of work, preparing monthly project status reports, reviewing project financials, and communicating with project stakeholders including project manager, AFCEC contract managers, local environmental managers, regulators and the project team.

Soil Vapor Investigation, Stoltz Cleaners, St. Paul, MN. Project Manager. Amec Foster Wheeler conducted an off-site soil vapor investigation in accordance with MPCA best management practices in relation to the former Stoltz dry-cleaning facility in St. Paul. Project activities included coordinating site access and drilling schedules, utility locates, obtaining necessary permits, collecting soil-gas and sub-slab soil vapor samples and preparation of data reports. In the role of project manager, Ms. Driver developed project scopes of work, conducted subcontractor procurement, prepared monthly invoices, conducted quality assurance/quality control and coordinated with project stakeholders.

Landfill Operations, Maintenance and Monitoring, North and Vinland Landfills, Winnebago County, WI. Project Manager. Ms. Driver served as project manager for the OM&M activities conducted at two landfills in the town of Vinland, Winnebago County, Wisconsin. Ms. Driver developed a compliance matrix for each of the landfills to provide a framework of all the OM&M requirements to ensure that the landfills remain in compliance with federal, state and local requirements. Routine OM&M activities include quarterly landfill gas monitoring, semiannual groundwater, leachate, and surface water monitoring, coordinating with residents and conducting private water well sampling, analytical data reporting using the WDNR Groundwater and Environmental Monitoring System (GEMS), leachate line cleaning, landfill inspections, leachate transport and disposal and routine maintenance. Routine maintenance activities include mowing of the landfill cap, brush clearance along fence lines and around monitoring wells, road repair, landfill cap maintenance including erosion/settlement repairs, regrading and seeding, and maintenance/repair of sampling points. Throughout the course of the contract, Ms. Driver successfully reduced costs of the OM&M activities. Following initial transition activities, Amec Foster Wheeler was able to modify the groundwater sampling methodology that resulted in efficiencies in the groundwater sampling program. Ms. Driver also successfully completed a revision to the Plan of Operations reducing the frequency of groundwater and surface monitoring at the Vinland landfill. The Plan of Operations update included an evaluation of spatial and temporal optimization of the long-term monitoring network that included a statistical evaluation using Monitoring and Remediation Optimization System (MAROS) and Visual Sample Plan (VSP) software. In her role as project manager, Ms. Driver has coordinated with regulatory officials at both the WDNR and the Town of Vinland for modification of the OM&M Plan of Operations at the Vinland landfill. Ms. Driver also conducts monthly invoicing, leachate volume tracking, subcontractor coordination and evaluation. Non-routine tasks have also included development of an alternatives evaluation focusing on leachate reduction options and development of a beneficial reuse cost evaluation for several options designed to close the North landfill.

Site Investigation and Regulated Materials Survey, Confidential Manufacturing Client, Northern Minnesota. Ms. Driver served as project manager for a site investigation project that consisted of a Phase I, Phase II and Regulated Materials Survey (RMS) as part of transactional due diligence. In her role as PM, Ms. Driver provided support for all stakeholders including regular communication with the client, regulators, property owner and client attorneys. Ms. Driver managed the project scope, schedule and budget and worked closely for the client to provide budgetary tracking on a quick turn project. At the on-set of the project, Ms. Driver provided an overview of the regulatory framework to the client and provided frequent updates regarding next steps in the process and schedule relative to the property transfer process. The RMS was conducted in support of pre-demolition activities.

Preliminary Site Assessment/Site Investigation, Fridley Industrial Corridor, Minnesota Pollution Control Agency (MPCA), St. Paul, MN. Project manager for a CERCLA Preliminary Site Assessment/Site Investigation to evaluate soil vapor impacts associated with an industrial corridor consisting of approximately ten industrial properties and two superfund sites located in Fridley, Minnesota. Soil vapor sampling was conducted over a year to monitor chlorinated solvent and petroleum vapor migration from suspected source areas to residential neighborhoods adjoining the corridor. Ms. Driver conducted meetings with regulators, worked with adjoining property owners and attorneys regarding obtaining site access and provided frequent project updates to the client and other stakeholders in support of community action group involvement.

Garret Bondy, PE

Engineer 3
Principal-in-Charge

amec foster wheeler

Classification
Engineer 3

OSHA Certification(s)
HAZWOPER, 40-hour

Years with Amec Foster Wheeler: 26

Years of Experience: 34

Education
BS., Environmental Science & Engineering

Regulatory Experience
CERCLA, RCRA, MPCA, MDEQ

Licensing / Certifications
PE – MI

PE-OH

Introduction

Mr. Bondy is a Regional Manager and Senior Principal Engineer at Amec Foster Wheeler, with over 30 years of environmental experience across EPA Region 5. Mr. Bondy, has extensive environmental and engineering experience in support of brownfield redevelopment projects; site and remedial investigations; remedial design and remedial action; construction management and oversight; landfill engineering; sediment sampling design and remediation; and, regulatory negotiations. Mr. Bondy also serves as Program Manager for multiple state contracts including an Environmental Remediation contract with the Michigan Department of Environmental Quality. Prior to his career at Amec Foster Wheeler, Mr. Bondy also served as a Superfund Enforcement Section Chief in EPA Region 6.

Relevant Work Experience

Fort Gratiot Landfill; Landfill Cover System Design; Port Huron, MI. Principal-in-Charge. Served as principal-in-charge and senior engineer for the implementation of a remedial action at the Fort Gratiot Landfill, a 19-acre landfill. Mr. Bondy provided final review of a dual liner cover system, leachate pumping system, groundwater interceptor, passive gas venting system, storm water management facilities, and SESC controls. Provided review during construction of the remedy reviewing shop drawings, survey data, test results, and directed walkover inspection for substantial completion. Mr. Bondy currently serves as program Manager for the Fort Gratiot Landfill operation and maintenance program including maintenance of the cover system, storm water facilities, and leachate pumping system.

Remedial Action, Confidential Manufacturing Client, Hennepin County, MN. Program Manager. Mr. Bondy currently serves as program manager in support of the remedial action for a confidential manufacturing client in Hennepin County, Minnesota. Project activities included design, construction, start-up and ongoing operations and maintenance of a groundwater treatment and extraction system. In the role of program manager, Mr. Bondy reviewed design documents, provided guidance for project team and held routine meetings with project stakeholders including clients (local and at corporate level), and regulators.

Kalamazoo River Superfund Site, Multiple RI/FS for Sediments; Kalamazoo and Allegan Counties, MI. Confidential Client. Mr. Bondy served as program manager conducting strategy development, serving as client and regulatory interface, and conducting principal review of overall project status for multiple RI/FS projects for sediment at the Kalamazoo River Superfund Site. PCBs are the constituent of concern in river sediments and floodplain soils. Amec Foster Wheeler has been integral in all aspects of the CERCLA process including remedial investigation, risk assessment, modeling, feasibility study and developing detailed remedial alternatives.

Remedial Site Investigation, Confidential Manufacturing Client, Minnetonka, MN. Project Manager. Mr. Bondy currently serves as program manager in support of a groundwater and soil vapor investigation for a confidential manufacturing client located in Minnetonka, Minnesota. Site activities have included groundwater and soil vapor investigation, data analysis and technical report preparation. In the role of program manager, Mr. Bondy

reviewed design documents, provided guidance for project team and held routine meetings with project stakeholders including clients (local and at corporate level), and regulators.

Wickes Manufacturing; Focused Feasibility Study and Bid Specifications. Principal Engineer. Mr. Bondy served as principal engineer for a focused feasibility study and development of bid specifications for a remedial investigation of a 5-mile long TCE plume located in Mancelona, MI. In his role as principal engineer, Mr. Bondy conducted technical review of the focused feasibility, evaluating several remedial action alternatives. Mr. Bondy also supported the development and review of bid specifications to conduct sonic drilling operations valued at over $3.2 million. The project scope also included conducting investigation [vertical aquifer sampling, geophysical surveys (seismic profiling, induced polarity and electrical resistivity, and down hole gamma logging) multiple drilling methods for deep monitoring well installations], community relations for TCE plume extending 5 miles from source area, affecting more than 1,200 properties.

MDEQ Part 201/CERCLA; Tar Lake Superfund Site; Mancelona, MI. Program Manager. Developed strategic approach to implementation of a 20 well bio-sparge system and site monitoring well network. AMEC is currently managing operation of groundwater bio-sparge system to mitigate off site migration of groundwater plume by enhancing in situ bioremediation of aromatic hydrocarbons and phenols in groundwater. Pilot testing of the system was performed to optimize how system was operated to meet oxygen demand of biota and minimize excessive oxygen delivery which would result in plugging of the aquifer formation. Responsibilities included the review of primary project deliverables.

Confidential Client, Detroit Refinery Remedial Investigation/Feasibility Study (RI/FS)/Remedial Action, Detroit, MI. Program Manager. As Program Manager, developed strategic approach and directed the remedial investigation and development of the feasibility study. An interim groundwater collection system was installed at this 12-acre site to prevent discharge of contaminated groundwater to the Rouge River. The interim system includes installation of 48 extraction wells with individual vacuum lines. The vacuum system consisted of high vacuum liquid-ring pumps, vapor-liquid separation, vapor phase granular activated carbon. The system is fully automated with instrumentation, PLC control and a Supervisory and Data Acquisition System. Following decommissioning to the site a comprehensive remedial investigation was completed to delineate extent of coal tar, soil and groundwater contamination. Offsite investigation activities posed significant challenges due to active industrial road with many utilities present and an active railroad line requiring extensive coordination of sampling activities. Laser-induced fluorescence (LIF) techniques were implemented to expedite coal tar NAPL delineation. The feasibility study analysis is in progress and a number of alternatives are being evaluated as a final remedy to address exposure risks.

MDEQ Part 201, Remedial Investigation, Feasibility Study, Interim Measures and Source Remediation; Former Magnetek Site, Owosso, MI. Program Manager. As Program Manager, developed strategic approach and directed the remedial investigation of a former electronic parts manufacturer and drycleaner. The former dry cleaners contributed to the groundwater contaminant plume and caused indoor air issues in a restaurant and medical center. Thermally enhanced soil vapor extraction was selected as the most efficient and cost effective (proven) technology for cleaning up the second source area. Amec Foster Wheeler prepared a bid specification package of the remediation system on behalf of the MDEQ and MDTMB supported the procurement of an experienced contractor, provided construction oversight during implementation of the remedy. The system was installed in less than 90 days, achieved temperature in 60 days, reduced contaminant mass more than 90 % following 2.5 months of operation. Results indicate project goals are achieved and indoor air inhalation risks are mitigated.

Anne Bernhardt, CMQ/OE, CPM

Scientist 2, Corporate Quality Manager

amec foster wheeler

Classification
Scientist 2

OSHA Certification(s)

40-Hour OSHA HAZWOPER with current 8 hr refresher

Hazardous Waste Worker Supervisor Training, OSHA, 1998

Construction Quality Management for Contractors (#NWP-01-14-00372, exp 10/11/2018)

Years with Amec Foster Wheeler: 23

Years of Experience: 25

Education
BS, Environmental Science, Madison, 1991

Licensing / Certifications
Certified Manager of Quality/ Organizational Excellence, No. 11430, 2011

Certified Project Manager, Project Management Institute, 2015

Certified Manager of Quality/Organizational Excellence, American Society for Quality, #11430

Certified Project Manager, Project Management Institute. October 30, 2015.

Ms. Bernhardt is a Quality Control Program Manager with 25 years of experience. She has served as a QA/QC Manager on multiple government contracts overseeing the quality of our team's delivery primarily executing site characterizations, site investigation, feasibility study, remediation, and construction projects. She has successfully led the quality program for Air Force, Navy, Coast Guard, EPA and multiple commercial clients. Ms. Bernhardt has a background in analytical data quality, has previously worked as a chemist in environmental laboratories, and is very familiar with EPA analytical methods and laboratory quality systems. She works with project teams to resolve sampling strategies, required physical, biological, and analytical testing, and selection of accredited laboratories best qualified to provide these services. Her efforts focus on large-scale environmental programs with an emphasis in information management and data quality.

Ms. Bernhardt is the Director of Quality Assurance for Amec Foster Wheeler, Environment & Infrastructure, Americas. She oversees the development, improvement, and implementation of our company's quality program. Our quality program is based on ISO principles and provides the basis for consistent, reliable project delivery. The effectiveness of our program is measured through Customer Satisfaction surveys, audits, and management reviews. We continuously integrate improvements to our program that increase the value of our project delivery to our Customers. Ms. Bernhardt oversees Quality Leads across Americas to facilitate execution of our program.

Relevant Work Experience

Air Force Perfluorinated Compounds Release Determination, Delineation, and Remediation at BRAC Installations. This large-scale sampling and analysis program has over 1000 samples for PFC sample analysis at 39 bases. As Amec Foster Wheeler's Quality Manager, Ms. Bernhardt has worked to establish the quality assurance program for successful sampling and analysis of PFCs. She has worked closely with the chemistry team to review laboratory methods and establish a team of laboratories able to support the program. She supported the quality plan preparation and regularly monitors performance of the established procedures for sampling and analysis by conducting field audits and review of analytical QC data. Amec Foster Wheeler is recognized for providing high quality analytical data for this emerging contaminant class. Our project delivery has been rated as Excellent and Very Good under two separate task orders for this client.

Performance-Based Environmental Multiple Award Contract (PERMAC) for Environmental Remediation Services. Amec Foster Wheeler has been awarded five task orders totaling $91M under the current $120M Performance-Based Multiple Award Contract (PERMAC). Ms. Bernhardt is the Quality Control Program Manager for PERMAC. She is responsible for Sampling and Analysis Plan preparation adhering to the UFP-QAPP requirements and the quality control of Amec Foster Wheeler field

programs, construction activities, and deliverables across all task orders. Projects include design and construction of a soil cover over a landfill and groundwater remediation at the former NAS Alameda (CTO 0002), Site-Wide Groundwater Monitoring, Alameda California (CTO 0003). This large-scale monitoring program includes the sampling and analysis of over 300 monitoring wells. Additional projects include Alameda Petroleum Field Work (CTO 0004), Removal Action at Hangar One Moffett Field (CTO 0005); and Pesticide Remediation at Camp Pendleton performed under CTO 0006. Amec Foster Wheeler has received an "OUTSTANDING" ACASS rating for its work on the Camp Pendleton project.

Hydro One Networks, Inc., Polychlorinated Biphenyl Program, Laboratory Audit. Amec Foster Wheeler provided expert, third party review and audit of the polychlorinated biphenyl (PCB) analytical methodologies and statements of measurement uncertainty associated with the analysis of PCBs. Amec Foster Wheeler reviewed quality system documentation, verified measurement uncertainty calculations, and verified methods used in analysis. The purpose of the work was to evaluate uncertainty in the reported data versus compliance requirements so that Hydro One could establish decision points for acceptance. Ms. Bernhardt was the Project Manager and provided led the review of quality systems.

AFCEE 4PAE08 Contract. Ms. Bernhardt is the Program QA Manager, serving 218 Task Orders (TOs) valued at $220M since the start of the contract in 2008. Responsible for the analytical program QA in addition to establishing the quality program under which all projects are executed. Worked with project managers to identify, screen and select qualified laboratories based on project scope, world-wide location, and required certifications (including host-nation requirements). Established and oversees the quality program for a large, challenging TO addressing perfluorinated compounds (PFCs), an emerging contaminant present in aqueous film forming foam used in fire training/fighting of fuel related fires. Work is underway to assess PFC presence across 39 bases.

Laboratory Program Management, CSX Transportation. Ms. Bernhardt created a laboratory program for this major US railroad company which established quality laboratories in the program, leveraged the volume of analytical work to achieve cost-effective pricing, and standardized data reporting across hundreds of consultants working for CSXT. The project establishes quality guidelines for environmental laboratory analysis, web-based tools for initiating lab services, and quality monitoring of a network of laboratories. Amec Foster Wheeler assisted CSXT in the selection of the laboratories by developing a SOW, issuing an RFP, evaluating and rating proposals for final selection by CSXT. After establishment of the program, Ms. Bernhardt conducted annual laboratory audits and coordinated performance evaluations studies to assess and monitor performance across a network of approximately 12 labs. She evaluated laboratory reports for completeness, verification of reporting limits, laboratory standard operating procedures and compliance with NPDES required parameters. Her reports gave assessments of the labs' performance and ability to provide high quality defensible data and identify areas where improvements were required. The program continues through present day and leadership is handled by another Amec Foster Wheeler Chemist.

Gabe Sandholm

Corporate Health & Safety
Scientist 2

amec foster wheeler

Classification
Scientist 2

Years with Amec Foster Wheeler: 15

Years of Experience: 17

Education
BA, English, University of Iowa, 2000
MBA, City University of Seattle, 2008

Regulatory Experience
H&S Oversight

Licensing / Certifications
Certificate in Human Resources Management;
Senior Professional in Human Resources (SPHR) Certification;
Associate in Risk Management (ARM) Certification

Mr. Sandholm has over 17 years of experience in Human Resources and Health & Safety/Risk Management having spent over 15 years at Amec Foster Wheeler, filling several roles including Human Resources Manager and Loss Prevention Manager. Mr. Sandholm's roles have allowed him to partner with staff at all levels throughout Amec Foster Wheeler with a focus on proper implementation, management, and communication of Human Resources and Health & Safety policies, procedures, and programs. Mr. Sandholm is the Amec Foster Wheeler Minneapolis office's Health and Safety Coordinator and provides guidance and training to all project staff in regards to safety analysis and reporting.

Relevant Work Experience

Health & Safety and Loss Prevention Manager. As a member of Amec Foster Wheeler Environment & Infrastructure's corporate Health & Safety department, Mr. Sandholm provides oversight to Amec Foster Wheeler Environment & Infrastructure's North American offices with respect to safety, incident record keeping and analysis. In addition, Mr. Sandholm manages several Health & Safety programs including Amec Foster Wheeler E&I's motor vehicle safety program, medical surveillance program, monthly safety communication program, and HSSE efforts required by the proposal team, specifically the Oil and Gas sector of E&I. Duties include production of monthly, quarterly, and annual claim management and safety statistical reports for Amec Foster Wheeler Management, preparation of OSHA 300 logs and related reports, maintenance of company participation in safety pre-qualification organizations (ISNetworld, PICS, etc.), and development of best management practices in Health & Safety advising Amec Foster Wheeler management on best strategies to reduce claims severity and frequency, achieving continuously improving experience modification rates and OSHA recordable incident rates. Along with the Vice President of Health & Safety and Regional HSE Managers at Amec Foster Wheeler, Mr. Sandholm also reviews, revises, creates and communicates the policies and procedures that make up Amec Foster Wheeler Environment & Infrastructure's Health, Safety & Environment program. .

Regional Human Resources Manager. Mr. Sandholm's experience in Human Resources includes providing counsel to senior management in the areas of training, performance management, compensation planning, and employee relations. Mr. Sandholm has been responsible for conducting internal investigations and for developing, interpreting, and administering Human Resources policies and procedures to ensure a consistent message exists throughout the company. Mr. Sandholm has provided guidance to employees at all levels regarding career development, conflict resolution, and other issues as they arise. Mr. Sandholm's additional Human Resources skills include ensuring company compliance with legal employment requirements. identification and resolution of staffing and retention needs, analysis and production of affirmative action plans, management of work visa and immigration needs, management of worker's compensation and unemployment programs, management of pre-employment programs including background screening, drug and alcohol testing programs, and medical screening.

Andrew Fiskness, PG, PMP

Project Manager

amec foster wheeler

Mr. Fiskness has 16 years of experience in the environmental field as a project manager and geologist. Mr. Fiskness has participated in several large projects for private sector clients in Minnesota, Iowa and Ohio involving environmental remediation and restoration. His experience includes project management, budgeting, subcontractor management, scheduling, remedial investigation/feasibility studies, sampling, systems operation & management, oversight, drilling, well and borehole installation, and systems construction. Mr. Fiskness' expertise includes shallow and deep groundwater and bedrock drilling, systems troubleshooting, and accelerated remediation technology (ART), vapor intrusion investigation and mitigation. Mr. Fiskness has a thorough working knowledge of the MPCA Risk Based Site Evaluation Manual, PRP guidance for UST/AST release cleanup, MPCA vapor intrusion best management practices, VIC guidance documents and MDA guidance documents.

Classification
Project Manager

OSHA Certification(s)
40-Hour HAZWOPER

Site Supervisor

Years with Amec Foster Wheeler: 8

Years of Experience: 19

Education
Bachelor of Science, Geology, University of Minnesota Duluth, 1998

Regulatory Experience
US EPA Superfund, RCRA

MPCA VIC, Superfund

IDNR

MDEQ Part 201

Licensing / Certifications
Professional Geologist, TN, 5078, 2010

Professional Geologist, MN, 44133, 2005

Project Management Professional/#2020335/US/03/31/2020

Certified Groundwater Professional/#2059/IA/12/31/2019

Relevant Work Experience

Remedial Action, Confidential Manufacturing Client, Hennepin County, Minnesota. Task Manager. Mr. Fiskness currently serves as project manager in support of startup and transition of an ongoing groundwater treatment and extraction system for a confidential manufacturing client in Hennepin County, Minnesota. Site remediation activities include sampling groundwater monitoring wells, logging instrumental data from the groundwater treatment system, and OM&M maintenance on the system. Mr. Fiskness managed the operation of a groundwater treatment system using sixteen groundwater recirculation wells (GCWs) along the eastern property line of a contaminated industrial site. Mr. Fiskness maintained the treatment trailer equipped with blower, air / water separator and air compressor, in addition to vapor phase activated carbon units, located at the northeast corner of client's parking lot. Managed the semi-annual cleaning of GCWs and associated maintenance activities. Quarterly groundwater sampling and annual system operation report generation conveying annual activities. In the role of project manager, Mr. Fiskness developed project scope, conducted subcontractor procurement and management, managed schedule and budgets, provided guidance for project team and held routine meetings with project stakeholders including clients (local and at corporate level), regulators, subcontractors and project team.

Remedial Site Investigation, Confidential Manufacturing Client, Minnetonka, Minnesota. Project Manager. Mr. Fiskness currently serves as project manager in support of a groundwater and soil vapor investigation for a confidential manufacturing client located in Minnetonka, Minnesota. Site activities have included groundwater and soil vapor investigation, data analysis and technical report preparation. In the role of project manager, Mr. Fiskness developed project scope, conducted subcontractor procurement and management, managed schedule and budgets, provided guidance for project team and held routine meetings with project stakeholders including clients (local and at corporate level), regulators, subcontractors and project team.

Confidential Client, Interim Response Measure and Remedial Action Plan, Minnetonka, Minnesota. Project Manager. Project involved an evaluation of Sub Slab Depression Systems and floor sealants and conducted an

engineering evaluation on Vapor Intrusion mitigation technologies for to support the future property use at a former circuit board manufacturing Site where releases of TCE, 1,1,1-trichlorethane (TCA) and 1,4-dioxane occurred. Project tasks included development of cost estimates and feasibility evaluations for several VI technologies, and conducting installation of a vapor intrusion floor sealant. Mr. Fiskness served as project manager responsible for developing project scope of work, communications with project team and client, technical support and quality assurance/control.

Groundwater Monitoring Program/OM&M, Confidential Client, Postville, Iowa [2010-2015], Project Geologist. Mr. Fiskness served as Project Geologist for a current industrial manufacturing plant with historic groundwater contamination. Mr. Fiskness conducted ongoing performance of project management and administrative activities including budget tracking, invoicing, scheduling, and coordination of labor and subcontract resources. Managed the preparation and submittal of annual groundwater monitoring report which includes results of the semi-annual sitewide groundwater sampling. Mr. Fiskness also initiated a trial shutdown of the source groundwater pumping system and assisted with the generation of potentiometric surface maps to evaluate groundwater flow directions before, during, and after shutdown. Following field activities, the data was analyzed and a report generated to evaluate the potential to cease pumping operations at the site.

Groundwater Monitoring Program/OM&M, Confidential Client, South Point, Ohio [2010-present], Project Geologist. Mr. Fiskness performed project management oversight of operation, monitoring, and maintenance activities at South Point Plant Site. Project support included conducting ongoing performance of project management and administrative activities including budget tracking, invoicing, scheduling, and coordination of labor and subcontract resources. Also assisted in managing the preparation and submittal of quarterly site inspection reports. Performed the preparation and submittal of annual groundwater monitoring report which includes results of the semi-annual sitewide groundwater sampling.

Site Investigation/Groundwater Monitoring Program, Confidential Client, Ironton, Ohio [2010-2013], Project Geologist. In his role as Project Geologist, Mr. Fiskness performed management oversight for operation, monitoring and maintenance activities at an industrial remediation site. Project management tasks included budget tracking, invoicing, scheduling, coordination of labor and subcontract resources and support for the preparation of monthly progress submittals to the agencies. Mr. Fiskness also assisted in managing the preparation of the quarterly groundwater monitoring reports for compliance with agency requirements, performed groundwater system evaluation to ensure that the pumping well system remains effective in operation and capture of impacted groundwater at the site.

Jonathan Murer, PG

Project Manager

amec foster wheeler

Mr. Murer has over 29 years of experience in the environmental consulting field as project manager and geologist. Mr. Murer has been responsible for the performance of hundreds of environmental projects for various public and private sector clients. Mr. Murer has extensive experience with the planning and implementation of multi-media assessment and remediation projects, including numerous sites with per- and polyfluoroalkyl substance (PFAS) contamination. He is a valuable resource in the development, implementation, and monitoring of project scopes of work, safety plans, budgets and schedules. Mr. Murer currently serves as a technical reviewer under the existing MPCA-MDA Technical Services contract and is familiar with the MPCA Risk Based Site Evaluation Manual, UST and AST release cleanup guidance documents, VIC guidance documents and MDA guidance documents.

Classification
Project Manager

OSHA Certification(s)
40-hour HAZWOPER with current refresher

Years with Amec Foster Wheeler: 3

Years of Experience: 29

Education
MS Water Resources Management

BS Geology/Geophysics

Regulatory Experience
MPCA RBSE, VIC, Superfund, CERCLA, MERLA, RCRA, WDNR, IDNR, NDDH

Licensing / Certifications
Professional Geologist, #668, Wisconsin

Specialized Training
eRAILSAFE

CPR & First Aid Certified

Relevant Work Experience

Railroad Corridor Due-Diligence Projects (Phase I and II ESAs), Class I Railroad, North Dakota. Project Manager. Lead concurrent project teams in the performance of over 25 ASTM-compliant Phase I ESA projects, and subsequent Phase II ESA projects, for a Class I Railroad client. The project sites consisted of operating railyards and lease properties along multi-mile railroad corridors located in four cities in North Dakota. For both the Phase I ESA and Phase II ESA phases, Mr. Murer was responsible for project scoping, budget control, schedule maintenance, client communications, and safety coordination. During the Phase I ESA phase, tasks completed at each property included environmental database evaluation, historic land use assessment, site inspection, interviews, and production of a Phase I ESA report. Based on the results of the Phase I ESA activities, 15 of the properties were selected for the completion of Phase II ESAs. Tasks completed at each of the selected properties during the Phase II ESA phase included multi-media sampling, data evaluation, preparation of assessment reports, and regulatory communications. The types of properties for which these due diligence projects were conducted included rail yards, spur lines, general railroad corridors, and lease properties (e.g., bulk oil sites, agricultural chemical facilities, stockyards, grain elevators, seed processing facilities, scrap metal yards, automobile salvage facilities, and vehicle repair shops).

Expedited VI Investigation at Former Drycleaner, MPCA, Minneapolis, Minnesota. Technical Review. In 2017, Amec Foster Wheeler conducted an expedited vapor intrusion investigation which included indoor sub-slab soil vapor and paired indoor/outdoor ambient air assessment activities, at a former drycleaner which currently operated as a laundromat, with two residential units above. Results of a previous Phase II ESA soil vapor sampling revealed the presence of chlorinated volatile organic compounds (CVOCs), specifically tetrachloroethene (PCE), at levels above the expedited intrusion screening value (EISV). Based on the results of the Phase II ESA, the MPCA moved to conduct an expedited soil vapor intrusion assessment to ensure the health and safety of residents at the Site. Based on the findings from this sub-slab soil vapor and ambient air investigation, contamination at levels above applicable criteria was confirmed to be present both beneath the Site building, as well as within the building which contains both commercial (main floor) and residential (2nd floor) settings. Mr. Murer reviewed technical deliverables which were provided to MPCA to ensure they were compliant with applicable MPCA guidance.

Continued...

PFAS Site Investigation Program, USACE/AFCEC, Las Vegas, NV. Base Project Manager. Amec Foster Wheeler was retained by the United States Army Corps of Engineers (USACE) to conduct PFAS multi-media investigation activities at multiple Air Force bases across the country. Mr. Murer served as the Base Project Manager for Nellis Air Force Base located in Las Vegas, Nevada. Mr. Murer was responsible for project scoping, budget control, technical deliverable preparation, subcontractor procurement, schedule maintenance, base logistics management, USACE communications, FAA coordination, and safety planning. Mr. Murer lead a project team which completed tasks including the development of project work plans, T&E species assessments, multi-media sampling for PFAS constituents, and preparation of a subsurface investigation report. The types of areas evaluated for PFAS contamination included fire stations, firefighting training areas, aircraft crash sites, a waste water treatment plant, aircraft hangars, surface water drainage areas, and sludge ponds.

PFAS Site Investigation Program, USACE/AFCEC, Multiple Air Force Bases, Arkansas and New Mexico. Senior Geologist. Amec Foster Wheeler was retained by the United States Army Corps of Engineers (USACE) to conduct PFAS multi-media investigation activities at multiple Air Force bases across the country. For three of these bases, Mr. Murer lead, or participated in, the development of project planning documents, subcontractor procurement activities, base logistics coordination, field assessment programs, and preparation of subsurface investigation reports. The types of areas evaluated for PFAS contamination included fire stations, firefighting training areas, waste water treatment plants, aircraft hangars, and surface water drainage areas.

Dump Site Investigation, Private Client, Maplewood, MN. Project Manager. The project included conducting a Limited Phase II Investigation at a portion of an approximately 74-acre parcel of land operating as a manufactured home park with approximately 350 mobile home sites. Mr. Murer was responsible for scope of work development, budget maintenance, safety planning, client communications, and preparation of a final technical deliverable. Historic data indicated the presence of a dump site on the adjoining property to the west, which encroached onto a portion of the Site. To address the possible encroachment of the dump onto the Site, Amec Foster Wheeler conducted Limited Phase II activities including soil, soil vapor, and groundwater sampling.

Operations, Maintenance, and Monitoring (OM&M) at North and Vinland Landfills, Georgia Pacific, Menasha, WI. Technical Review. Mr. Murer performed senior technical review and document QA for deliverables associated with the completion of routine and non-routine OM&M activities for two landfills containing paper mill-related bulk sludge in eastern Wisconsin. Activities for the sites included routine semi-annual water sampling, leachate monitoring and system maintenance, landfill inspections, landfill gas monitoring, reporting, routine maintenance oversight, leachate disposition oversight, and life cycle planning.

Sub-Slab Soil Vapor Assessment - Unidale Mall, MPCA, St. Paul, MN. Technical Review. In 2017, Amec Foster Wheeler conducted a sub-slab soil vapor assessment at a previously closed Voluntary Investigation and Cleanup (VIC) site that was selected for re-evaluation by the MPCA based on recent updates to Minnesota Department of Health (MDH) screening criteria (specifically the health-based values [HBVs] for tetrachloroethene [PCE] and trichloroethene [TCE]). The site was selected by the MPCA for further evaluation following nearby soil vapor levels of volatile organic compounds (VOCs) in relation to other closed sites, as well as the historical presence of a drycleaner facility within the mall. As part of the project, Amec Foster Wheeler reviewed historical reports and worked closely with the MPCA to secure site access. Amec Foster Wheeler conducted detailed indoor building surveys, installed sub-slab vapor sampling points and completed sub-slab vapor sampling. Future phases of the project may involve further installation of sub-slab vapor sampling points and the potential installation of a vapor mitigation system. Mr. Murer reviewed technical deliverables which were provided to MPCA.

Erin Siewert, PMP

Project Manager

amec foster wheeler

Classification
Project Manager

OSHA Certification(s)
40-Hour HAZWOPER with current refresher

Site Supervisor

Years with Amec Foster Wheeler: 9

Years of Experience: 12

Education
Bachelor of Science, Environmental Studies, 2005

Master of Science, Environmental Management and Sustainability, 2014

Regulatory Experience
US EPA Superfund, RCRA

MPCA VIC, Superfund

Ohio EPA, DERR, VAP, NPDES

MDEQ Part 201

Licensing / Certifications
Project Management Professional, 2020767

As a Project Manager, Ms. Siewert has 9 years of experience with a focus on industrial remediation, regulatory compliance, reporting and client portfolio management at 70 sites throughout EPA Region V including two MPCA Superfund sites. Ms. Siewert has experience in project management, data management, data analysis, operation and maintenance program development and tracking, NPDES permitting, wetland monitoring, and report development and generation for environmental remediation projects. She provides direct client support for portfolio financial management, insurance tracking, regulatory compliance, program and policy development and project coordination duties. Ms. Siewert has a thorough working knowledge of the MPCA Risk Based Site Evaluation (RBSE) Manual, PRP guidance for UST/AST release cleanup and VIC documentation.

Relevant Work Experience

Portfolio Management, Confidential Manufacturing Client, Hennepin County, MN. Project Manager. Ms. Siewert has served as client portfolio manager over nine years for over 70 sites in EPA Region V. Ms. Siewert's portfolio management consists of all aspects of financial management including budgeting, forecasting, annual planning; policy and document review; quality control and outside consultant support for a complex range of industrial projects with an average annual spend of $25 million. Ms. Siewert works directly with the client to address any needs or concerns regarding changing regulatory landscapes and internal client needs.

Remedial Action, Confidential Manufacturing Client, Hennepin County, MN. Task Manager. Ms. Siewert served as task a manager in support of startup and transition of a groundwater treatment system for a confidential manufacturing client in Hennepin County. Site remediation activities include sampling groundwater monitoring wells, logging instrumental data from the groundwater treatment system, and OM&M maintenance on the system. In her role as a task a manager, Ms. Siewert directed the startup and transition of the OM&M operations into the client managed portfolio of sites to ensure uniformity with client standard operating procedures.

Remedial Site Investigation, Confidential Manufacturing Client, Minnetonka, MN. Task Manager. Ms. Siewert served task manager in support of previous and ongoing groundwater and soil vapor investigation for a confidential manufacturing client located in Minnetonka, Minnesota. Site activities have included groundwater and soil vapor investigation, data analysis and technical report preparation. Ms. Siewert provided support for pre-task planning, subcontract setup, data analysis, report review and project closeout activities.

Remedial Action, Confidential Manufacturing Client, Lawrence County, OH. Project Manager. Ms. Siewert has served as an environmental scientist, task manager and project manager in support of an ongoing remedial action for a confidential manufacturing client in Lawrence County, Ohio. Site activities include OM&M of a groundwater extraction and treatment system, NPDES compliance, remedy inspections, and routine reporting. Ms. Siewert serves as the point of contact for site operations and monitors adherence to both client and regulatory policies. Ms. Siewert has prepared and reviewed agency required analytical, monitoring and inspection reports. She monitors and control site financials to identify and document any site increases or decreases on operating budget. Annual operating costs have been reduced by over 20 percent in the past four years.

PRP Site Management and Review, Confidential Manufacturing Client, Hennepin County, MN. Project Manager. Ms. Siewert served as the project manager of a historical review and forecasting exercise of a portfolio of 15 PRP sites in EPA Region V. She coordinated historical file review, memo reports and future financial requirements and presented to the client for review and approval.

Shalene Thomas

Project Manager/Subject Matter Expert ~ Emerging Contaminants

amec foster wheeler

Mr. Shalene Thomas is a project manager and currently serves as the Emerging Contaminant Program Manager for Amec Foster Wheeler. She has more than 19 years of experience in environmental consulting that includes 10 years of experience supporting per- and polyfluoroalkyl substance (PFASs) evaluations. She has extensive program and project management, human health risk assessment, data management, GIS and 3D visualization and animation, and site investigation experience and has supported State, Federal and industrial clients with PFAS evaluations. She currently serves as the PFAS Work Group Manager for Amec Foster Wheeler and has supported PFAS projects in 32 different states in 9 of the 10 USEPA regions as well as projects in Australia and Canada. She led the ITRC PFAS Team Proposal and serves on the regulatory/risk task force for the ITRC PFAS Team as well as the co-lead for AFFF Fact Sheet. She also was a contributing author for the regulatory section of NGWA PFAS State of Knowledge and Practice document.

Classification
Project Manager

OSHA Certification(s)
40hr HAZWOPER

Years with Amec Foster Wheeler: 16

Years of Experience: 19

Education
Bachelor of Science, Biology

Master of Science, Environmental Science and Management

Regulatory Experience
MPCA, IDNR, NDDH, WDNR, NYDEC, PADEP, MIDEQ, CA DTSC, MA DEP, NHDES, TX CEQ,

Relevant Work Experience

Per- and Polyfluoroalkyl Substances Program State Inventory of Current Users, MPCA, State-wide MN. Phase I and II Project Manager. County level surveys of potential PFAS users and their proximity to various identified receptors to aid MPCA in determining state-wide priorities for future anticipated PFAS investigations. Various industries likely to utilize PFAS in their processes/tasks were identified based on Federal industry databases and were subsequently geo-located, and categorized based on their proximity to various water receptors (e.g. water supply wells, Public Waters surface water bodies, wellhead protection areas, sensitive aquifers) and whether they had registered tanks or previous environmental investigations. Provided Project Manager and technical lead for the effort, including development of scope and pilot test protocol for prioritization.

Perfluorochemical Information Clearinghouse, MPCA, State-wide MN. Project Manager. Research and development of an information clearinghouse that identified PFCs, their usage in products and industrial processes, legacy stores or stockpiles in the US and products or synthesis components or ingredients that were or are imported into the US. The objective of the project scope is to develop a Clearinghouse Reference Tool that may be used by MPCA staff for informing remediation investigations, exploring pollution prevention opportunities and to help make management decisions related to PFCs. Served as project Manager and Lead Scientist to develop conceptual model and clearinghouse design. Led team to develop clearinghouse and provided training to State employees.

Soil Reference Value (SRV) Work Group, MPCA, St. Paul, MN, Project Manager. Amec Foster Wheeler was contracted to assist MPCA with a technical review of its Soil Reference Values (SRVs) for volatile organic compounds (VOCs). The purpose of the technical review was to determine if MPCA should consider recent developments in fate and transport modeling and risk assessment for VOCs in its calculations of SRVs. In her role as project manager, Ms. Thomas developed the work plan, schedule, and budget, collaborated with the project team, conducted regular meetings with the MPCA regarding the project progress, and issued invoices. The outcome achieved was a final deliverable that included a review of screening criteria around the US, an exposure scenario evaluation, a sensitivity analysis, and a draft User's Guide so that the MPCA could make more informed regulatory decisions.

Continued...

Shoreham Yard Remedial Investigation, Canadian Pacific, Minneapolis, MN. Program, Project Manager. Ongoing remedial investigation and monitoring for the Shoreham rail yard in northern Minneapolis. Scope included semiannual groundwater sampling for a variety of petroleum products, creosote by-products and solvents, along with quarterly water level measurements. Performed project management in support of the ongoing monitoring program including annual scope and cost. Provided project management oversight of the day-to-day operations including scheduling, deliverable tracking, cost estimation, task order management, vendor and subcontractor management, field crew management and leadership.

PFAS Investigation, Confidential Manufacturing Facility, Minnetonka, MN. Technical Advisor. Amec Foster Wheeler conducted a focused site investigation in response to an accidental release of AFFF from a fire suppression system. Investigation activities consisted of completing soil borings and temporary monitoring wells at the Site, installing three permanent monitoring wells, conducting soil and groundwater sampling and completing a site investigation report. Rigorous internal protocols involving the collection of samples for PFAS compounds were followed to prevent cross-contamination.

PFC Release Investigations Multiple Base Realignment and Closure (BRAC) Bases, Air Force Civil Engineer Center (AFCEC), Nationwide. Technical Lead for the Base Realignment and Closure (BRAC) PFC Program, Technical Lead. As the Technical Lead, Ms. Thomas acted as the primary technical lead by supporting the three Regional Leads with PFC technical expertise, providing regulatory/stakeholder interface on PFC technical issues, and developing sampling SOPs and providing guidance and instruction during the Team calibration sessions to ensure consistent, accurate, precise data collection, interpretation and communication across the entire program. Technical components of the program include, evaluating the release mechanisms and investigation of PFCs at 39 Air Force BRAC installations across 11 States.

ANG Well Sampling and Provisions for Supply of Alternate Water at Multiple Air National Guard Bases, Multiple Sites, Nationwide. Technical Advisor. Amec Foster Wheeler was contracted to support well sampling and alternatives for water supply when a release of PFOS/PFOA may be impacting municipal and/or home/business owner's drinking water supplies. Scope of work and specific tasks include Quality Control Plan, public meeting support and attendance, private and public well surveys, comprehensive communications planning, well sampling, notification, point of entry device installation and maintenance, well abandonment, and bottled water supply. Ms. Thomas' role to date has been primarily in support of regulatory review and risk communication support.

Baseline Risk Assessments, Australian DoD, HMAS Stirling, Australia, Project Manager/Technical Advisor. Amec Foster Wheeler is currently leading baseline human health and ecological risk assessments at a former military base near Perth. Ms. Thomas leads the project team with PFAS technical expertise, providing scope, schedule, and budget management for the execution of risk assessments, as well as database management for Site Investigation activities executed by prime contractor RPS. Ms. Thomas also provides technical advisor role for SAP, QAPP, and work plans developed by RPS as well instruction during the team calibration training sessions.

Site Investigation, Stakeholder and Community Engagement and Baseline Risk Assessments, Australian DoD, Lavarack Army Barracks, Australia, Project Manager/Technical Advisor. Amec Foster Wheeler is currently leading site investigation, stakeholder and community engagement, and baseline human health and ecological risk assessments at a former military base near Townsville. Ms. Thomas leads the project team with oversight of scope, schedule, and budget management. The scope of work includes planning documentation, detailed site investigation, human health and and ecological risk assessments, and stakeholder and community engagement, hydrological modelling, and database management. Ms. Thomas also provides instruction during the team calibration training sessions.

Cory Vowles

Project Manager

amec foster wheeler

Classification
Project Manager

OSHA Certification(s)
40hr HAZWOPER

30hr Construction Safety and Health

Years with Amec Foster Wheeler: 12

Years of Experience: 12

Education
Bachelor of Science, Biochemistry

Regulatory Experience
MPCA, FDOT, IDNR, NDDH, WDNR

Mr. Cory Vowles is a project manager with over a decade of experience primarily in the field of environmental assessment and remediation, as well as industrial hygiene and transportation. Mr. Vowles has worked with and developed lasting relationships with clients from city, municipal, commercial, private, state, and federal sectors.

During his career, Mr. Vowles has been certified as an asbestos inspector, airfield pavement inspector, and has also undergone trainings for Stream Condition Index and Habitat Assessment as well as project management. Core skills include project planning, workplan development, field implementation, sampling protocol, technical specifications, subcontractor procurement, budgeting, and customer service. Mr. Vowles currently serves as a project manager under the existing MPCA-MDA Technical Services contract and is familiar with the MPCA Risk Based Site Evaluation Manual, PRP guidance for UST/AST release cleanup, MPCA vapor intrusion BMPs, VIC guidance documents and MDA guidance documents.

Relevant Work Experience

Morning Star Missionary Church, MPCA, St. Paul, MN. Project Manager. Amec Foster Wheeler conducted a Soil Vapor Investigation including the installation of seven sub-slab vapor sample points in seven different buildings surrounding a former drycleaner operation. Building types ranged from single-family residential to multi-use commercial/residential. Amec Foster Wheeler personnel conducted initial building surveys to assess installation locations and building conditions pursuant to determining 33x Intrusion Screening Values (ISVs) applicability. Amec Foster Wheeler personnel followed MPCA guidance to install and sample the sub-slab sample points. In each of the seven properties tested, exceedances to applicable ISV criteria indicated the need for expedited mitigation activities. Data was immediately submitted to the MPCA based on the understanding of the time-sensitive nature of the results. Project is ongoing, with installation and subsequent confirmation sampling of the SSDS imminent.

Waldorf Expedited VI Investigation, MPCA, Minneapolis, MN. Project Manager. Amec Foster Wheeler conducted an expedited vapor intrusion investigation which included outdoor soil gas and indoor sub-slab soil vapor assessment activities, at a former drycleaner site where soil vapor contamination was detected as part of a Limited Soil Gas Sampling Event (LSGSE) conducted earlier in 2017. Results of the previous soil vapor sampling from two soil borings revealed the presence of chlorinated VOCs (CVOCs), specifically tetrachloroethene (PCE) at levels above the 33x Residential Intrusion Screening Value (33x Residential ISV) of 110 micrograms per cubic meter (µg/m3), initiating the need for an expedited investigation response. Amec Foster Wheeler was able to mobilize to the site and implement the expedited workplan within 2 weeks of being awarded the project, clearly within the required 30-day window to perform expedited actions. Results of the investigation proved a need to follow up with mitigation activities in each of the three buildings, as concentrations exceeded 33x Expedited ISVs (33x EISVs). Amec Foster Wheeler is currently contracted to provide oversight of the installation of a vapor mitigation system at one of the properties, where construction is set to commence immediately. Managed all phases of the project including site access negotiations, subcontractor procurement, expedited scheduling, invoicing, as well as provided immediate project updates to the MPCA site team as soon as data was available, based on the time-sensitive nature of the project.

Monite Building, MPCA, Minneapolis, MN. Project Manager & Field Lead. The project included conducting a Limited Site Investigation (LSI) at a Leak Site based on the historic presence of above-ground storage tanks (ASTs).

Amec Foster Wheeler has conducted a receptor survey of the surrounding properties within 500 feet of the historical ASTs, which includes a survey of the county well index, identification of nearby surface water, as well as determination of drinking water supply in the immediate vicinity. As part of the receptor survey, Amec Foster Wheeler also extended notifications to the property owners within the affected radius of the receptor survey in order to identify the investigation objectives as well as collect data on private water use and building details.

The field activities of the LSI were implemented to include collection of soil, soil vapor and groundwater samples by Direct Push Technology drilling, to be analyzed for possible contaminants related to the ASTs. The results of the multi-media sampling were used to define the vertical and horizontal extent and magnitude of the possible contamination stemming from the Leak Site, as well as identified a chlorinated solvent plume in groundwater which was proven to originate offsite. Ultimately, Amec Foster Wheeler continued assessment activities until the extent was determined, and the leak Site was closed by the MPCA, and the chlorinated solvent plume referred to the site assessment division.

Ottumwa Rail Yard – Land Recycling Program, Canadian Pacific, Ottumwa, IA. Project Manager. Project Manager on long term monitoring and assessment of a railroad yard in Iowa, being enrolled in the Land Recycling Program, to allow for repurposing land for uses after industrial impacts. Key contaminants of concern include arsenic and total extractable hydrocarbons. Notable actions at the Site include a Phase I, delineation of contaminant extent and magnitude, background arsenic study, installation of a network of approximately 30 bedrock, intermediate and shallow monitoring wells, quarterly groundwater monitoring, and working in coordination with the IDNR site managers. One key step was the production of a Risk Evaluation / Remedial Action Plan to move the Site towards compliance within the IDNR LRP framework. Managed all aspects of the project since 2016 including subcontractor procurement, invoicing, field investigations and reporting, to support the investigation.

Rolling Hills Estates – Former Dump Site, Private Client, Maplewood, MN. Assistant Project Manager & Field Lead. (2015-2016) The project includes conducting a Limited Phase II Investigation (Phase II) at portion of an approximately 74-acre parcel of land operating as a manufactured home park with approximately 350 mobile home sites. Evidence from a 1966 aerial photograph indicated the presence of a dumpsite on the adjoining property to the west, which encroached onto the Site in the northwest corner. The presence of the former dumpsite (Maplewood Dump) on the adjacent property was considered in the Phase I ESA to be an environmental concern in relation to the Site, as was the presence of the Oakdale dump to the east, which exhibited groundwater impacts in the Site vicinity. In response to the location of the Site in relation to the Oakdale Dump, Amec Foster Wheeler conducted a review of available information to evaluate if the Site is within an area of former and/or active per- and polyfluoroalkyl substances (PFAS) investigation for groundwater contamination due to its location within an existing and well-documented regional-level PFAS plume. To address the possible encroachment of the Maplewood dump onto the Site, Amec Foster Wheeler conducted Phase II activities including soil, soil vapor, and groundwater sampling, all utilizing Direct Push Technology drilling. Observations made during the field activities included the presence of landfill debris in four of the six soil borings. Conducted the field portion of the project, collecting samples from each of the media types and provided subcontractor oversight.

PFAS Investigation, Confidential Manufacturing Facility, Minnetonka, MN. Field Lead. Amec Foster Wheeler conducted a focused site investigation in response to an accidental release of AFFF from a fire suppression system. Investigation activities consisted of completing soil borings and temporary monitoring wells at the Site, installing three permanent monitoring wells, conducting soil and groundwater sampling and completing a site investigation report. Rigorous internal protocols involving the collection of samples for PFAS compounds were followed to prevent cross-contamination.

Curtis Hudak, PhD, PG

Project Manager

amec foster wheeler

Introduction

Dr. Hudak is a Professional Geologist (MN) in, and the Branch Manager of, the Amec Foster Wheeler Minneapolis Office. His services include managing and implementing large and complex Phase I & II Environmental Site Assessments, drilling investigations, groundwater and surface water studies, site selection strategies, and environmental strategies for both public and private assets and liabilities. He is often employed to assist our clients with discovering and developing the best strategic, long-term, value-added solutions for our clients' challenging and routine processes. Dr. Hudak employs standard work, namely Lean Management Processes and Tools, in his complex office and project management activities.

Classification
Project Manager

OSHA Certification(s)
HAZWOPER, 40-hour

Years with Amec Foster Wheeler: 2

Years of Experience: 35

Education
PhD, Geology

Regulatory Experience
Assisted North Dakota Department of Health with their Landfill Leachate Bed Materials Regulations

Licensing / Certifications
P.G. (MN-30013) CPG-7771

Specialized Training
First Aid / CPR / AED
Lean Management

Location
Minneapolis, MN

Relevant Work Experience

Development of Statewide High-Resolution Databases and Environmental Models, MnDOT, MN. Project Manager & Project Geologist. Dr. Hudak helped to manage, develop, and edit high resolution, GIS-based, statewide databases and models being developed for better resource management activities associated with improvement of Minnesota's transportation infrastructure. The data sets include vegetation, hydrography, geomorphology, terrain, original GLO land surveys and others. These data were assembled from smaller data sets, which required us to georeference, georectify, clip, and mosaic into one contiguous statewide data set. Some of these data are now housed on MnIT servers, and are available to the public.

Construction Observation for the Expansion of a Private Landfill Cell, Sargeant County, ND. Project Manager. Dr. Hudak managed an 11-acre landfill cell expansion for Waste Management, Inc.'s Big Dipper Landfill. His work included proposing, budgeting, organizing the Owner's construction observers, and quality control of the construction record report. Hudak also helped to negotiate the acceptance of a proof of concept document regarding variable leachate bed materials because of the regional lack of silicate sands in the eastern half of North Dakota. This negotiation led to our leachate bed material document methods being adopted into the North Dakota Department of Health's Division of Waste Management leachate bed materials guidance documents.

Hydrogeologic Investigation for the Expansion of a Private Landfill, Sargeant County, ND. Project Manager and Hydrogeologist. Dr. Hudak performed a systematic drilling program for proposed expansion of three landfill cells for Waste Management, Inc. His work included describing glacial tills, hydrogeology, topography, wetlands, and performing a potential receptor survey. Hudak collected Shelby Tube soil samples for laboratory-run vertical hydrologic conductivity tests, and conducting slug tests on temporary and permanent monitoring wells for horizontal conductivity. His reports assembled these data and interpreted detailed cross-sections, particle-size graphs, hydrogeologic conductivity results, stratigraphic anomalies, and other information. His report was accepted without change by the North Dakota Department of Health's Division of Waste Management.

RI/FS for a Private Landfill, Anoka County, MN. Regulatory Agency Liaison. Dr. Hudak's responsibilities included negotiations with the Minnesota Pollution Control Agency and other regulatory agencies on behalf of Waste

Management of Minnesota, Inc., at the Anoka Regional Landfill during remedial investigation/feasibility study and remedial action program.

Remedial Action Plan Hydrogeology for a Private Landfill, Anoka County, MN. Project Manager and Geologist. Dr. Hudak was the project geologist and project manager for the implementation of 12 barrier wells and eight (8) recovery wells at the Anoka Regional Landfill. Pump tests were performed and analyzed to achieve a more efficient barrier and recovery of contaminated groundwater.

Wetland Delineation at a Solid Waste Landfill, Medina, MN. Project Geomorphologist. Dr. Hudak performed a wetland delineation at the Wood Lake Solid Waste Landfill in Medina, Minnesota, under the Closed Landfill Unit of the MPCA. Responsibilities included hydric soil delineation (using USDA terminology) and interfacing with a wetland biologist.

Process & Technical Audit, JLARC & TPAB clients, Olympia, WA. Project Manager. Dr. Hudak managed a Process and Technical Audit on the Washington Department of Transportation's (WSDOT) $275MM Hood Canal Bridge and Port Angeles Graving Dock Project, which was about to lose ~$85MM and the public's support. The audit was commissioned by the Transportation Performance and Audit Board (TPAB) and the Joint Legislative and Audit Review Committee (JLARC) to make suggested improvements to the WSDOT management and project process. Dr. Hudak led a team of experts across the fields of Project Management, Transportation, Environmental Assessments, Ocean Ecology, Geology, and Cultural Resource Management to identify multiple methods and processes that would help to improve communication, management, and technical efficiencies. The Audit Team delivered 38 Recommendations to the TPAB/JLARC based upon the lack of employing standard work and Best Management Practices. This audit was awarded the prestigious National Legislative Program Evaluation Society's "Impact Audit of the Year." WSDOT has adopted the recommendations.

Environmental Compliance Calendar Development, Confidential Sporting Goods Manufacturer, 22 North American Cities. Lean Project Management Facilitator. Dr. Hudak facilitated the development of a Lean Visual Project Management Environmental Compliance Calendar for a 22-facility sporting goods manufacturer across North America. His process and its associated tools increased efficiencies with both the organization of company-wide environmental compliance data, and the annual compliance reporting to regulators.

Environment & Infrastructure Permitting and Design for a Confidential Industrial Sand Mine Operation and Processing Facility, WI. Lean Visual Project Facilitator. Dr. Hudak organized a series of client and consultant planning and design tasks for a new industrial sand mine and transload facility in central Wisconsin. Hudak facilitated the tracking of milestones and deliverables for this new mining operation via weekly 15-minute stand-up meetings between clients and consultants.

Munitions Water Quality Study for Minnesota National Guard, Camp Ripley, MN. Project Manager. Dr. Hudak was Project Manager for a large water, soil, and sediment study around two artillery/bombing ranges and two small-arms ranges within Camp Ripley, Minnesota. The project intended to identify potential plumes and soil/sediment contamination from decades of artillery and bombing practice exercises, as well as small arms fire in and around the intended target ranges. Work included developing a sampling plan that would identify the potential escape of various munitions' analytes and their daughter products from the military reservation, as well as coordinating around normal base activities. The work required extraordinary health and safety measures, which included coordinating with Unexploded Ordinance (UXO) Teams prior to implementing the relatively comprehensive drilling and sampling program. This investigation was only the second munitions study of its kind ever conducted on a military base or reservation in the United States.

John Grams, PG, CPG

Project Manager

amec foster wheeler

Mr. Grams is a Professional Geologist who has over 26 years of experience specializing in environmental compliance for the oil industry. His experience environmental consulting, operational compliance for an integrated oil company, management of a pipeline terminal, financial analysis for an oil company, and operations management and business development for a consulting firm.

Classification
Project Manager

Years with Amec Foster Wheeler: 4

Years of Experience: 26

Education
MBA Coursework – Carlson School of Management
MS, Geochemistry - State University of New York, 1987
BS, Geology - University of Minnesota, 1984

Regulatory Experience
Program manager and primary client representative for regulatory interaction.

Licensing / Certifications
PG, Minnesota
Certified PG, American Institute of Professional Geologists
OSHA 40 hr Hazwoper
Member of Board of Directors, Geological Society of Minnesota

Relevant Work Experience

Contaminated Site Management, Spring Valley Terminal; Spring Valley, MN. Project Manager for investigation and corrective action at a bulk terminal subject to state consent order. Challenges of the project resulted from gasoline and diesel fuel impacts to a fractured limestone aquifer with complicated hydrogeology, a strong downward vertical component of flow, and the existence of high permeability pathways for horizontal migration at depth. Free phase product was present at depths greater than 250' at the source of the contamination, while MTBE had migrated to over 1 mile from site. Several potable wells were impacted by contaminants and required replacement. As Project Manager, Mr. Grams prepared numerous communications with the state, prepared community outreach newsletters, client communications, facilitated meetings, and prepared annual budgets and lifecycle spending forecasts. Field work included installation of multi-level sampling wells (Westbay and FLUTe systems), mapping of surficial geology, completing a sodium bromide tracer study, redesign of the terminal's surface water management system, soil excavation, and installation and operation of remediation systems at two distinct areas of the terminal.

Petroleum Bulk Terminal and Pipeline Investigation and Remediation, numerous locations in Northern and Central US. Project Manager on large scale investigation and remediation projects at several petroleum pipeline terminals located in North Dakota, South Dakota, Minnesota, Wisconsin and Michigan. Projects include AST spill response, pipeline spill response, and corrective actions to address issues resulting from legacy site operations. Experience includes addressing environmental impacts resulting from refined products, crude oils, ethanol, and various fuel additives. Coordinated site investigation, site safety, contractor management, reporting, permitting, remediation management, budgeting and financial reserve estimation. Project experience includes fractured limestone, igneous bedrock, and a range of unconsolidated sediments.

Investigation into Vapor Impacts to Hotel and Utilities. Mr. Grams was the project manager and hydrogeologist on a project that was initiated by complaints of petroleum odors in a residential hotel. Field work included supervision of underground tank removal and excavation of approximately 400 tons soil, identifying and removing two previously unidentified tanks and documenting significant contribution from a waste oil tank operated by a former site owner. Follow up investigation with soil borings and monitoring wells. Soil and ground water contamination identified off-site in downtown business district. Investigated reports of vapors in neighboring buildings. Perform vapor survey of sanitary and storm sewers and buildings. Vapor impacts to hotel successfully remedied by installation of vapor vent system in basement and elevator shaft. Sparge and vent system installed to address residual soil and ground water impacts.

Continued...

Terminal Manager, Jamestown, ND. Manager of a refined products marketing terminal located in Jamestown, ND. Terminal received gasoline and distillates by pipeline, received additives by truck, and distributed final blended products to commercial customers. Operational responsible included:

- Ensuring proper blending of gasoline detergent additives, diesel performance additive, and diesel dye for high sulfur fuel, and prepare related reports required for fuel compliance documentation.
- Manage fuel inventory system tracking and controlling customer allocations, daily inventory reconciliation, and fuels blending.
- Perform routine maintenance on facility equipment including pumps, valves, pressure relief valves, gauges, injector calibrations and meter proving.
- Supervise contractors working on site to ensure work is done properly and safely.
- Manage exchange agreements, additive blending and reporting, and customer allocations at seven third party terminals located in South Dakota and Nebraska.
- Prepare annual expense budget, track performance, exercise expense control.
- Serve as Incident Commander for local emergency response team.
- Ensure facility is operating in compliance with applicable health and safety regulations.
- Conduct monthly EH&S training sessions.
- Conduct periodic audits at other Amoco terminals as part of continuous improvement process.

Environmental Management Plans. Mr. Grams developed the format and prepared comprehensive compliance management plans for 23 refined products terminals. The plans evaluated periodic and event based requirements contained in applicable local, state and federal regulations, permits and other compliance plans and documents. The information was presented in a clear format for implementation by the terminal operations teams.

Environmental Program Management.

- Represented Amoco Oil Company on the American Petroleum Institute's Marketing Environmental Subcommittee. Primary focus was on evaluating and providing industry input on the Gasoline Distribution MACT rule.
- Represented Amoco on the Minnesota Above Ground Storage Tank Task Force, a group including representatives from industry and the state regulatory agency (Minnesota Pollution Control Agency (MPCA)), led by the Minnesota Petroleum Council. Purpose was to find common ground and work out an agreement on how to regulate above ground storage tank facilities under Minnesota's Above Ground Storage Tank rules.
- Member of task force assembled by MPCA to prioritize environmental risks posed by issues under the jurisdiction of MPCA's hazardous waste division.
- Member of a team that developed a Microsoft Access based compliance management program to aid terminals ensuring operations are in compliance with federal and state environment, health and safety requirements.
- Developed a training program and provided training for terminal personnel to meet federal and state training requirements on environmental issues such as SPCC, CWA, CAA, RCRA, TSCA, Emergency Response.
- Conducted environmental file reviews for proposed purchases and sales of service station and terminal properties.
- Environmental specialist on Amoco's corporate Process and Program Review compliance audit team.

Robert Marxen, PE, CHMM, PMP

Engineering Lead/Project Manager

amec foster wheeler

Mr. Marxen has over 30 years of professional consulting experience as an engineer, project manager, and construction manager. He is familiar with compliance requirements for a wide range of regulations including RCRA, TSCA, EPCRA, SPCC, NESHAP, wastewater, and stormwater. He has experience with demolition and decommissioning, environmental site assessment and remediation, and construction. Mr. Marxen has extensive environmental experience with soil and groundwater remediation, site assessments, and brownfield redevelopment. His experience includes all facets of remediation including project management, system design, hands-on installation, system operation, and site closure.

Classification
Engineer 3/Project Manager

OSHA Certification(s)
HAZWOPER

Years with Amec Foster Wheeler: 14

Years of Experience: 30

Education
BS, Chemical Engineering

BS, Mathematics

Regulatory Experience
MPCA RBSE, MDA, NDDH,

Licensing / Certifications
Professional Engineer, Chemical, #22501, Minnesota, 6/30/2018

Certified Hazardous Materials Manager, #14437, 8/31/2018

Project Management Professional, #1624845, 6/27/2019

Asbestos Inspector, #AI12120, Minnesota, 10/3/2018

Specialized Training
Stormwater Construction Site Management

Railroad eRailSafe

Relevant Work Experience

Dry Cleaning Solvent Remediation, Schloff Chemical, MPCA, St. Louis Park, MN. Project Manager. The facility distributed dry cleaning solvents, and the soil and groundwater became impacted with chlorinated compounds. The Minnesota Pollution Control Agency retained Amec Foster Wheeler to prepare the specification for a soil vapor extraction system. Mr. Marxen helped prepare the specifications and a startup workplan for a system that would use one vapor extraction well. The specifications included a 2.5HP regenerative blower, controls, remediation building, gauges, and moisture separator. Mr. Marxen assumed the role of project manager in 2016. He has overseen operation, maintenance, and monitoring of the SVE system and semi-annual groundwater monitoring. He is currently working with the MPCA to perform additional groundwater monitoring to update the conceptual site model.

Former Warroad Elementary School Demolition, Warroad Real Estate LLC, Warroad, MN. Engineer. Warroad Real Estate, LLC contracted with Amec Foster Wheeler to demolition the former Warroad Elementary School building. The building totaled 70,000 square feet and was comprised of four major additions constructed from 1918 to 1967. Mr. Marxen planned and performed an asbestos inspection in 2015 to comply with the NESHAP regulations, including collecting 282 bulk samples to supplement an inspection completed in 1988. Additionally, Mr. Marxen collected concrete samples to determine the suitability for beneficial use and inventoried other regulated materials including mercury-containing switches, fluorescent light tubes and ballasts, and ozone depleting substances. Mr. Marxen prepared bid specifications for the demolition project and solicited bids from contractors. During demolition, Mr. Marxen performed construction management services for the owner. Site restoration is scheduled to be completed in May 2018.

Demolition of Auto Assembly Plant, Ford Motor Company, St. Paul, MN. Environmental Manager and Project Manager. A two million square feet auto assembly plant in St. Paul, Minnesota was demolished. Ford contracted with Amec Foster Wheeler to provide environmental oversight and regulated materials planning. Mr. Marxen is the project manager and on-site construction manager. His duties include observing contractors, managing solid and hazardous wastes regulations, and verifying compliance with wastewater discharge and stormwater permits. Ford needed to replace one of the temporary stormwater sediment basins, and Mr. Marxen oversaw Amec Foster Wheeler's engineering team to design an expansion of another existing temporary sediment basin.

Mr. Marxen has reviewed and organized existing regulated materials sampling data and identified data gaps. Mr. Marxen has sampled a wide variety of materials including concrete, roofing materials, and sealants to determine the suitability for reuse and characterize for disposal.

UST Removal and Replacement, USPS Vehicle Maintenance Facility, Minneapolis, MN. Project Engineer. The USPS contracted with Amec Foster Wheeler to replace six diesel, gasoline, motor oil, and used oil USTs with three new USTs and an AST at a vehicle maintenance facility in Minneapolis, Minnesota. Mr. Marxen coordinated equipment submittals with the subcontractors, and guided Amec Foster Wheeler's construction manager during the project. He directed the collection of soil samples and a subsequent limited site investigation to determine the magnitude and extent of remaining contaminated soil.

Response Action Plan and Regulated Materials Survey, Melrose Riverview Addition, MPCA, Melrose, MN. Project Engineer. The City of Melrose and a private developer were seeking to redevelop a property on Melrose Lake. Mr. Marxen assisted prepare a Response Action Plan including excavating and managing contaminated soil. He developed a soil boring program to define the extent of contaminated soil that would be disturbed during development. Mr. Marxen also conducted an asbestos inspection and regulated materials survey on a vacant 1,300-square foot office building on the site in anticipation of demolition.

Remedial Action Plan, Former Depot, City of Hutchinson, Hutchinson, MN. Project Engineer. The former rail depot in Hutchinson, Minnesota soil impacted with petroleum and heavy metals. The City of Hutchinson wished to develop the site into a trailhead, and the Minnesota Pollution Control Agency contracted with Amec Foster Wheeler to prepare a response action plan (RAP) to address the impacts. Mr. Marxen worked with the City and MPCA to develop options for remediating the site to recreational standards. The selected option included excavating portions of the site to depths of two and four feet. Mr. Marxen assisted with preparing the cost estimate which included approximately $500,000 to excavate and dispose of 8,000 cubic yards of soil.

Phase I and II Environmental Site Assessments, Canadian Pacific Railway, Callaway and Strandquist, MN. Project Manager. Canadian Pacific Railway contracted with Amec Foster Wheeler to complete Phase I and Phase II Environmental Site Assessments (ESA) at two rail corridor and lease properties sites in northern Minnesota. During their history, the sites had been used for the transportation and storage of agricultural products. Mr. Marxen wrote the work plan and managed the project. Mr. Marxen coordinated the field work with the client, Amec Foster Wheeler's project team, and subcontractors. Mr. Marxen assisted with development of the work plan and Phase I and II ESA reports. His duties also included updating the client on project progress, and tracking budget and schedule.

Site Assessment and Regulated Materials Survey, CSM Investors Inc, St. Paul, MN. Project Engineer. The facility had manufactured adhesives since the 1950s. The site had petroleum and non-petroleum impacts from aboveground and underground storage tanks. Mr. Marxen helped develop a construction contingency plan and a development response action plan (DRAP) for the site. Mr. Marxen conducted a pre-demolition hazardous materials survey at the site. He also oversaw excavation of petroleum-impacted soil from under the footprint of the proposed new construction and placement of the material elsewhere on-site under paved areas and green spaces. Mr. Marxen also collected samples of residual material discovered in a sump during demolition of the existing structure.

Justin Gal, PE

Remedial Engineer

amec foster wheeler

Mr. Gal has 13 years of consulting experience in the development, design and construction of innovative remedial strategies. He specializes in the development and implementation of remedial strategies for NAPL impacted properties with extensive project experience at variety of former industrial and manufacturing facilities throughout the U.S., resulting in successful negotiation of site closure with regulatory agencies and provides a variety of methods to maximize client cost avoidances. He is widely sought after for evaluating NAPL mobility and recovery, Per- and Polyfluoroalkyl Substances (PFAS) site characterization plans and remedial alternatives, and the vapor intrusion to indoor air pathway (VIAP). Mr. Gal has consulted on a variety of technologies such as NAPL recovery trenches and wells, in situ chemical oxidation (ISCO), thermal remediation, dig and haul, permeable reactive barriers (biotic and abiotic reactive media), containment barriers, in-situ solidification and stabilization, sub-slab depressurization systems (SSDS), and a variety of ex-situ soil and ground water treatment technologies, as well as performing treatability and feasibility studies for technology application.

Classification
Engineer 3

OSHA Certification(s)
40-hr HAZWOPER Training and refresher

HAZWOPER Supervisor's Training

Years with Amec Foster Wheeler: 6

Years of Experience: 13

Education
B.S, Civil and Environmental Engineering

Regulatory Experience
MPCA RBSE

Licensing / Certifications
PE, MN, 2016

PE, MI, 2009

Relevant Work Experience

Groundwater Extraction and Treatment System (GWETS) Design and Construction, Confidential Client, Golden Valley, MN. Lead Design Engineer for GWETS that was installed in 2016. Designed and procured necessary state and local permits for system that captured groundwater impacted with chlorinated VOCs. Procured contractor and lead subcontractor submittal review and approval process during construction. Provided lead technical support after construction, through commissioning and continued to support the system Operation, Maintenance, and Monitoring (OMM) tasks. Key project aspects include groundwater extraction well installation and permitting, trench excavation and backfill for groundwater various utilities, process water deposit control, groundwater treatment with granular activated carbon (GAC), and instrumentation and control between groundwater well pumps approximately 1,500-feet from the point of treatment. Responsibilities included process and instrumentation design, plumbing design, treatment design, operator interface design, deposit control and fouling prevention design, solid filtration design, creating design drawings and bid documents, client representation during construction and system start-up, and ongoing support throughout system OMM.

Ironton Tar Plant Superfund Site, RCRA Landfill Cap and Storm Water Collection System Design; Confidential Client; Ohio River, Ironton, OH. Design Engineer. Design engineer for low-permeability RCRA 16-acre cap and storm water management system. Also the design engineer for groundwater collection and treatment plant. The cap consists of a dual liner comprised of a geosynthetic clay liner and linear low-density polyethylene liner overlain by a drainage layer, vegetative layer, and topsoil. The storm water collection system consisted of 15 catch basins, 15 manholes, and over 2,000 lineal feet of storm water conveyance pipe that discharged to two plunge pools. The project also included a separate design for a soil cover system on the 5-acre parcel adjacent to the Ohio River. The on-site cap design included the placement of 18 inches of soil and 6 inches of topsoil on portions of the site above the normal high water elevation. The designs were prepared in CSI format detailing the proposed remedial actions. The bid documents include contract requirements, drawings and specifications, and appendices summarizing previous investigations. The groundwater treatment plant includes oil water separation, solid removal through

aeration, clarification, flash flocculation, sludge thickening, and sand filtration, and groundwater treatment through GAC treatment.

Confidential Client, Interim Response Measure and Remedial Action Plan, Minnetonka, MN. Senior Engineer. Evaluated Sub Slab Depression Systems and floor sealants and conducted an engineering evaluation on Vapor Intrusion mitigation technologies for to support the future property use at a former circuit board manufacturing Site where releases of TCE, 1,1,1-trichlorethane (TCA) and 1,4-dioxane occurred. Completed cost estimates and feasibility evaluations for several VI technologies. Selected and supported the installation of a vapor intrusion floor sealant. Evaluated floor sealant options and specified the vapor intrusion monitoring program. Supported team with Vapor intrusion monitoring program that used Hapsite field screening techniques.

IRP Multiple ANG Installations, National Guard Bureau (ANG), Duluth, MN. Project Manager. Multi-Site, Multi-Base Remedial Activities project. Lead Engineer. Completed PFAS remedial investigation and feasibility study for former fire training area that used Aqueous Film Forming Foam (AFFF). For PFAS feasibility study, evaluated several general response actions and generated cost estimates and technical evaluations for groundwater extraction and treatment, excavation, permeable reactive barrier (PRB), hydraulic containment, and site capping. Reviewed calculations and supporting technical evaluations of contaminant mass flux venting through the site. Reviewed remedial investigation data to update current conceptual site model. Provided technical recommendations, support, and client communications related to future remedial alternatives and site strategic planning. Project received "Very Good" interim CPARS rating from client.

Preliminary Assessment, Site Investigation, and Supplemental Site Investigation for PFC Release Areas Including Polyfluoroalkyl Substances (PFAS) at Former Wurtsmith Air Force Base, Michigan, Oscoda, MI. Technical lead for PFAS investigations across a 3,500 acre+ Air Force base in Oscoda, MI. Provided preliminary assessment and identified 15 areas where PFAS may have been used or released. Prepared investigation work plans for site and supplemental investigations, communicated to regulator and client on a routine basis, provided drinking water well survey and sampling support, procured contractors to perform field work, reviewed and provided technical support to graphical and technical interpretations of data, presented investigation results to regulator, provided team and client with recommended further evaluations if necessary, supported cost estimating and evaluation of potential groundwater treatment options, and supported client with understanding of regulatory framework relating to these emerging contaminants.

(AFCEC), 11 BRAC Installations, Various Cities throughout US. Wood provided Perfluorinated Compounds (PFCs) site investigations at 11 BRAC Bases throughout the continental United States (Castle AFB, CA, Chanute AFB, IL, Loring AFB, ME, KI Sawyer AFB, MI, Wurtsmith AFB, MI, Pease AFB, NH, Griffiss AFB, NY, Plattsburgh AFB, NY, Kelly AFB, TX, Reese AFB, TX and General Mitchell ARS, WI). Performed Site Investigations at 157 AFFF areas located at 11 BRAC installations in 8 states. In addition, this project included implementation of a pilot-scale groundwater treatment using ion exchange resin remediation technology based on the promising results of a bench scale test, which led to the design of two large-scale groundwater treatment plants (200 to 500 gpm). As part of this national effort, identified wells at and near the former Wurtsmith Air Force Base, determined the status of the surveyed wells, collected well construction information, documented the presence of sampling equipment, provided current groundwater level measurements for the surveyed wells, and updated the Air Force Civil Engineer Center's Environmental Resources Program Information Management System database. Located and gathered information on 301 monitoring well locations using a sub-meter accurate and Bluetooth™ enabled geographic positioning system locator as well as the mobile-based platform Collector for ArcGIS.

Joseph Renier, PG

Scientist Lead

amec foster wheeler

Classification
Scientist 2/Project Manager

OSHA Certification(s)
40-hr HAZWOPER with current 8-hr refresher

Years with Amec Foster Wheeler: 17

Years of Experience: 37

Education
MS, Geology

Regulatory Experience
CERCLA, RCRA, MPCA, WDNR, SDDENR, IDNR, NDDH

Licensing / Certifications
PG - Wisconsin

Mr. Renier has over 30 years of experience as a hydrogeologist, project manager and senior technical reviewer. Mr. Renier has extensive experience in remedial site investigation and is well-versed well and aquifer hydraulics, aquifer test interpretation, well and well field design. He also has experience in groundwater modeling, possesses an in-depth knowledge of water supply and monitoring well construction practices, drilling techniques, well rehabilitation and maintenance. Mr. Renier is also experienced with Resource Conservation and Recovery Act (RCRA) including waste management, remediation and spills. Mr. Renier has a thorough working knowledge of the MPCA Risk Based Site Evaluation Manual, UST and AST release cleanup guidance documents, VIC guidance documents and MDA guidance documents.

Relevant Work Experience

Regional Site Inspections for Per-fluorinated Compounds (PFCs), Multiple Air National Guard Installations, Minnesota, South Dakota and Kansas. Regional Base Lead. Mr. Renier is the Regional Base Lead for three Air National Guard (ANG) bases in Minnesota, South Dakota and Kansas for per-fluorinated compound (PFC) site inspections (SIs). SIs involve investigation of potential release locations (PRLs) of PFC containing aqueous film forming foam (AFFF) at multiple sites on the referenced installations. Inspections include soil boring and well installation with soil, groundwater, surface water and sediment sampling and analysis.

Remedial Investigation, Commercial Site, Upper Midwest. Project Manager. Mr. Renier is the Project Manager for a remedial investigation at a commercial site where soils have been impacted by polychlorinated biphenyls (PCBs) and metals associated with paper mill sludge and municipal wastes deposited in a former (buried) borrow pit complex. Investigated to determine nature and extent of PCBs and metals, first by conducting an electronic and physical regulatory file review to obtain historical aerial photo coverage and maps. These were used to help delineate the former borrow pit geometry/dimensions and document fill nature and extent within the pits. File review was followed by installing and sampling a series of soil borings and temporary monitoring wells via direct push drilling technology (DPT) across the site, and mapping the stratigraphic and analytical results. Analysis of PCB aroclors was conducted to assess potential sources of the PCBs detected, and a risk analysis using calculated exposure point concentrations (EPCs) for PCBs and metals was conducted to understand potential site risk due to PCB and metal impacts in near surface soils. Based on these results a site capping plan (using landscaping techniques) has been formulated and will be implemented to strategically cover those areas that could be of potential risk if disturbed.

Remedial Site Investigation, Confidential Laundering Facility, Outstate MN. Project Manager. Mr. Renier serves as Project Manager and provides technical guidance to the project team and develops project work plans, schedules and budgets, conducts meetings with the client and MPCA regarding project progress, reviews project reports, coordinates with subcontractors and completes project invoicing. The Site is an active confidential commercial laundering facility where soil, groundwater and soil vapor have been impacted by chemicals of potential concern (COPCs) associated with a former dry-clean operation that operated in the building from 1976 to 1990. The COPCs include tetrachoroethene (PCE) and degradation (daughter products) cis-1,2-dichloroethene (cis-1,2-DCE), trichloroethene (TCE) and vinyl chloride (VC). Currently conducting an on-going remedial investigation at the CLF. Investigated under the MPCA Voluntary Investigation and Clean-up (VIC) Program and

was then transferred to the MPCA Superfund Program. Completed Limited Groundwater Investigations, a Source Soil Investigation, a pilot study to evaluate the use of soil vapor extraction (SVE) and in-situ chemical oxidation as remedial alternatives for source area soil and groundwater, a vapor intrusion study, and annual groundwater and air monitoring. Completed a vadose zone response action plan (RAP) and installed and operated an SVE system for two years to facilitate source removal in the vadose zone beneath the building and has monitored soil vapor in the vapor intrusion wells south of the Site for the same period of time (2 years).

Site Investigation/Groundwater Monitoring Program, Shoreham Facility, Canadian Pacific, Minneapolis, MN. Senior Geologist/Technical Lead. As Senior Geologist and Technical Reviewer, Mr. Renier developed work plans, conducted field oversight, reviewed all project reports, developed and refined a site conceptual model, collaborated with all members of the project team including client, regulators and engineers from other consulting firms. Site investigation and characterization activities including installation of over 200 monitoring wells were completed at the Shoreham Rail Yard under the MPCA VIC and Superfund programs. Soil and groundwater contamination included volatile organic compounds, semi-volatile organic compounds and petroleum-related compounds in a highly complex glacial and karst environment where glacial material of varying composition overlays an incised bedrock surface creating complex groundwater flow directions and contaminant transport problems. Karst investigation included drilling and geologic and groundwater flow characterization of the dolomitic bedrock in the area of the site.

Underground Storage Tank (UST) Removal, Huron Rail Yard, Huron, South Dakota, Canadian Pacific. Technical Lead. In his role of Technical Lead, Mr. Renier conducted development of work plans, field oversight, coordination of subcontractors; investigation derived waste management and disposal coordination. Conducted senior technical review of all reporting. Mitigated our client's liability by removing the abandoned tanks and by disposing of investigation derived waste in a cost-effective manner and in compliance with waste disposal regulations. Characterized the remaining impacts in the excavation sidewalls and bottom for the planning of subsequent investigations. Contracted by Canadian Pacific to conduct a Site investigation including UST removal at the Huron Rail Yard in South Dakota. During completion of a Phase I ESA, identified the presence of a former pintsch gas manufacturing plant with the potential presence for USTs to remain at the Site. Conducted a geophysical and trenching investigation which identified that three USTs remained at the Site. The USTs were identified as containing a mixture of water and floating product.

Remedial Site Investigation, Confidential Manufacturing Facility, Outstate MN. Senior Technical Advisor. As Senior Technical Advisor, Mr. Renier provides technical guidance and oversight to the project team, develops work plans and coordinates with the project manager, client and regulators. Mr. Renier also serves as technical review for all reporting and has conducting technical field oversight. The Site is an active confidential manufacturing facility where soil, groundwater and surface water have been impacted by chemicals of potential concern (COPCs) associated with wood preservation/treating and other plant operations. The COPCs include pentachlorophenol (PCP), mineral spirits and some chlorinated and non-chlorinated volatile organic compounds (VOCs). The remedial investigation is being performed under Resource Conservation and Recovery Act (RCRA) guidance in accordance with a consent decree issued by the Minnesota Pollution Control Agency (MPCA). Since the beginning of field investigation activities in the late 1980s, Phase I, Phase II, and subsequent investigations have been conducted by Amec Foster Wheeler and other consulting firms that have largely delineated the extent of contamination. Remedial activities that have been conducted include soil boring and monitoring well installation and sampling, regularly scheduled groundwater and surface water quality monitoring, recirculation line excavation and removal, installation and operation of a groundwater pump and treat system, drainage culvert

Matt Vavra

GIS/CADD Lead / Scientist

Mr. Vavra has 16 years of working experience in the field of GIS and environmental science. Mr. Vavra has experience in technical support and project delivery in a multitude of service lines, including GIS data analysis and mapping, database support, site investigation and monitoring, task and field management, PFAS investigation, soil vapor intrusion, NEPA analysis and documentation, utility siting and permitting, construction and demolition oversight, and general environmental science. With a Masters Degree in GIS, specializing in natural resources planning and management combined with a B.S. in Wildlife Biology, Mr. Vavra combines a thorough understanding of environmental science with the use of advanced data analysis.

Classification
GIS Lead/Scientist 2

OSHA Certification(s)
OSHA 1910.120 40-Hour HAZWOPER Certification

Years with Amec Foster Wheeler: 13

Years of Experience: 16

Education
Master of Science, GIS,

Bachelor of Science, Wildlife Biology

Relevant Work Experience

Closed Sites Regulatory File Review / Desktop Receptor Evaluation, MPCA, State-wide MN. GIS and Data Support. Evaluation of MPCA formerly closed environmental investigation sites to determine and rank the potential need for re-investigation for potential soil vapor intrusion concerns. Regulatory file reviews were completed for a number of formerly closed sites to determine whether remaining volatile contamination at the sites, if any, may pose a threat to area receptors. Identified sites were further analyzed through GIS to determine the number and proximity of various sensitive receptors (e.g. schools, medical facilities). Provided GIS support for the effort, including site identification and digitizing, sensitive receptor dataset formulation from State and County based records, and proximity analysis and tabulation. Resulting site cut sheets assisted the MPCA in determining a priority ranking of sites for further investigation.

Per- and Polyfluoroalkyl Substances Program State Inventory of Current Users, MPCA, State-wide MN. GIS and Data Support. County level surveys of potential PFAS users and their proximity to various identified receptors to aid MPCA in determining state-wide priorities for future anticipated PFAS investigations. Various industries likely to utilize PFAS in their processes/tasks were identified based on Federal industry databases and were subsequently geo-located, and categorized based on their proximity to various water receptors (e.g. water supply wells, Public Waters surface water bodies, wellhead protection areas, sensitive aquifers) and whether they had registered tanks or previous environmental investigations. Provided GIS support for the effort, including site identification and digitizing, receptor dataset formulation from State and County based records, and proximity analysis.

Shoreham Yard Remedial Investigation, Canadian Pacific, Minneapolis, MN. Program, Field, GIS, and Environmental Support. Ongoing remedial investigation and monitoring for the Shoreham rail yard in northern Minneapolis. Conducted semiannual groundwater sampling for a variety of petroleum products, creosote by-products and solvents, along with quarterly water level measurements. Performed GIS data and mapping functions in support of the ongoing monitoring program. Updated legacy data and imported new data into the existing site monitoring database. Managed a 1.5-million plus record site analytical database. Assisted in helping the client to acquire Petrofund Program funding for previous site investigation efforts. Oversaw pump maintenance and well rehabilitation efforts for the well network. Completed annual report drafting and edits, along with figure and table creation. Provided assistant project management oversight of the day-to-day operations including scheduling, deliverable tracking, cost estimation, task order management, vendor and subcontractor management, field crew management and leadership, and primary point of contact role.

Continued...

North and Vinland Landfills Operation, Maintenance, and Monitoring (OM&M), Georgia Pacific, Vinland Twp, WI. Program, Environmental, Field, and GIS Support. Management and completion of OM&M activities for one closed and one temporarily capped landfills containing paper mill related bulk sludge in eastern Wisconsin. Activities for the sites include semi-annual water sampling, leachate monitoring and system maintenance, landfill inspections, landfill gas monitoring, reporting, maintenance oversight, leachate disposal oversight, and life cycle planning. Organized and lead field sampling events, including scheduling, vendor coordination, and stakeholder communication. Provided subcontractor oversight and coordination for site maintenance and leachate hauling. Provided database support for historic and current analytical data. Drafted and coordinated reporting to State and local agencies. Assisted with the completion of site conceptual model formulation in support of requested reductions in monitoring scope. Assisted with Wisconsin DNR coordination leading to approval of scope changes. Provided assistant project management oversight of the day-to-day operations including scheduling, deliverable tracking, cost estimation, and work flow monitoring.

AFFF Release Areas TO 0004, AFCEC, San Antonio, TX. GIS Support. File review, documentation, and remediation planning and implementation regarding potential PFC contamination at multiple Air Force sites countrywide. Completed site research and potential contamination area delineation. Provided mapping and database support for the effort, including installation specific work plan mapping, site inspection report mapping, and well inventory mapping. Worked on over 15 bases nationwide. Submitted Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE) compliant data submittals, including mandated attributing and metadata.

Marvin Remedial Investigation, Marvin Windows, Warroad, MN. Field, Environmental, and GIS Support. Ongoing remedial investigation and monitoring support for the Marvin Windows plant in Warroad. Conducted semiannual surface and groundwater sampling to monitor for wood treatment by-product and petroleum plumes on the site. Completed annual report drafting and edits, along with figure and table creation. Conducted passive soil gas (PSG) sampling to focus further investigation.

AmeriPride Remedial Investigation, AmeriPride Services Inc, Hibbing, MN. Field, Environmental, and GIS Support. Ongoing remedial investigation and monitoring of a historic dry-cleaning chemical spill for the AmeriPride plant in Hibbing. Conducted groundwater sampling to verify plume stability. Conducted periodic indoor air monitoring and exterior soil vapor intrusion sampling for VOCs by Summa canister. Installed and periodically sampled sub-slab soil vapor sample. Provided confirmation sampling for SVE and SSDS effectiveness.

GP Ashwaubenon PCB Impact Review, Georgia Pacific, Ashwaubenon, WI. GIS, Environmental, and Field Support. Regulatory file review and synopsis, with further site investigation in support of potential litigation surrounding a former paper sludge and municipal landfill located in Ashwaubenon, WI. Historical photo review to estimate the potential extent of the former landfill. Review and synopsis of previous studies conducted on the site, including review of soil boring logs, locations, and PCB analytical results. Mapping support for client communications and limited site investigation activities at the adjacent apartment complex. Conducted hand auger soil sampling to further delineate the northern boundary of contamination.

Montana Tie, Montana Alberta Tie, Ltd., Great Falls, MT. GIS, Permitting, and Field Support. Two hundred plus mile transmission line siting and permitting project between Lethbridge Canada and Great Falls Montana. Performed GIS, database, and permitting support for the 130-mile U.S. portion. Acquired and analyzed GIS information for a five-county area, 1.5-million-acre study area. Digitized initial routes and performed ongoing GIS line edits to establish final routes. Performed ongoing map, route editing and data support for over five years of continuing route modification and client/government/citizen interaction.

GIS Support for Multiple SI/RI Projects, MPCA, State-wide MN. GIS Support. GIS mapping, analysis, and data support for over 20 site investigation and/or remedial projects conducted under the MPCA Superfund and Petroleum Remediation programs.

Hannah Albertus-Benham, PE

Field Technician Lead

amec foster wheeler

Classification
Field Technician Lead / Engineer 2

OSHA Certification(s)
40-hr HAZWOPER

30-hr Construction Safety

Years with Amec Foster Wheeler: 5

Years of Experience: 8

Education
BS/MS Civil Engineering

Regulatory Experience
MPCA RBSE, UST/AST, VIC, SDDENR

Licensing / Certifications
Professional Engineer, MN, 53152, 2015

Erosion and Stormwater Management Certification, University of Minnesota: Construction Site Management (Exp. May 31, 2018); BMP Maintenance (Exp. May 31, 2018); Construction Installer (Exp. May 31, 2018)

Asbestos Inspector, Minnesota Department of Health, Exp. March 27, 2020

Specialized Training
CPR/First Aid, American Red Cross, Exp. June 16, 2019

Ms. Albertus-Benham has eight years of experience in the environment and water resources field following completion of a Master's Degree in Civil Engineering. She has worked on a wide variety of projects, including site investigations at government and private/ commercial/ industrial sites involving soil, groundwater and soil vapor contamination according to MPCA guidance; various work involving the emerging contaminants per- and polyfluoroalkyl substances (PFAS), including site investigations field management, reporting, and tabletop research; environmental remediation systems writing SOPs, providing technical assistance with OM&M, as well as specifications for construction and/or demolition; stormwater plan (SWPPP) design and inspections; Phase I and Phase II environmental assessments in rural and urban settings; SPCC plans and inspections at industrial/commercial facilities; and construction and demolition management and oversight at UST facilities. Outside of work, she also participates in multiple engineering and environmental professional societies and has been actively involved in the Interstate Technology & Regulatory Council (ITRC) PFAS Team, developing sampling protocols as well as the regulatory environment surrounding use of PFAS-containing AFFF.

Relevant Work Experience

Storage Tank Removal/Installation, United States Postal Service, Minneapolis, MN. Construction Supervisor/Environmental Professional. Ensured demolition, underground storage tank removals (x6), tank installations (3 USTs, 1 AST, and related pumps and piping) and related construction activities were completed according to drawings and specifications at vehicle maintenance facility; regularly called out discrepancies between contractor materials or methods and the specifications. Completed daily and weekly reporting with photo logs. Completed environmental sampling and documentation for former site tank closure according to MPCA PRP guidance, including a LSI due to a small leak discovered during excavation. Completed safety oversight during all site activities. Consistent attention to detail and working well in a team environment helped Ms. Albertus-Benham ensure all client requirements were met.

Groundwater Extraction/Treatment System Commissioning and O&M, Manufacturing Facility, Golden Valley, MN. Field Engineer. Conducted commissioning of a granular activated carbon (GAC) groundwater remediation system at a large TCE-related MPCA Superfund site consisting of system troubleshooting, coordination with subcontractors, system sampling, task management, and communication with various stakeholders. Reviewed specifications and compared to system equipment, instrumentation and materials. Reviewed submittals from subcontractors. Consistent attention to detail and working well in a team environment helped Ms. Albertus-Benham ensure a successful O&M program into the future.

PFASs Release Detection, Delineation, and Remediation at 39 BRAC (former USAF) Bases, U.S. Air Force Civil Engineer Center (AFCEC), Holloman AFB and Cannon AFB, NM. Field Manager. Coordinated field activities for site investigation of potential PFAS contamination resulting from release of AFFF from firefighting activities at two bases in NM. Ms. Albertus-Benham coordinated the field activities, including hollow stem auger drilling oversight; soil logging; well development oversight and sampling via drilling subcontractor; soil, groundwater and surface water sampling; all using PFAS-free protocols; as well as safety oversight and waste management. This also included upfront permitting and coordination according to base procedures. Ms. Albertus-Benham received very high commendations from the base contacts for her communication of progress or challenges encountered and responsiveness throughout the project which ensured project timeliness and success.

Rolling Hills Estates Former Dump Site, Private Client, Maplewood, MN. Field Engineer. Conducted a Limited Phase II Investigation (Phase II) at a portion of an approximately 74-acre parcel of land operating as a manufactured home park which,

during the Phase I ESA, was found to have a dumpsite ("Maplewood dump") which encroached onto the Site in the northwest corner. In addition, due to the location of the Site relative to the Oakdale Dump, an existing and well-documented regional-level PFAS plume, Amec Foster Wheeler (Ms. Albertus-Benham) also reviewed available information to evaluate if the Site is within an area of former and/or active PFAS investigation for groundwater contamination. To address the possible encroachment of the Maplewood dump onto the Site, Amec Foster Wheeler conducted Phase II activities including soil, soil vapor, and groundwater sampling, all utilizing Direct Push Technology drilling. Observations made during the field activities include the presence of landfill debris in four of the six soil borings, but the groundwater did not exhibit detections above applicable criteria. Methane detections were observed in all five soil vapor samples from the subsurface of the portion of the property which overlies the former dump, with elevated detections in four of those samples above the National Institute for Occupational Safety and Health (NIOSH) Immediately Dangerous to Life and Health (IDLH) value for methane in human occupied spaces of 5,000 ppm. As a result, Amec Foster Wheeler conducted a sewer vapor survey to address the possible pathway for methane within utility corridors. Ms. Albertus-Benham assisted with the field work, collecting samples from each of the media types, provided contractor oversight, and completed reporting.

Ford Decommissioning, Ford Motor Company, St. Paul, MN. Environmental Project Management/SWPPP Design and Implementation. Project involved environmental engineering and regulated materials planning relative to de-commissioning process at Ford's Twin Cities Assembly Plant. Coordinated with client and regulatory entities, including MN Department of Health, MN Department of Natural Resources, and MPCA, to ensure appropriate permits are addressed to update the SWPPP for the demolition of a vehicle assembly plant adjacent to the Mississippi River. Completed Stormwater Pollution Prevention Plan document for the project, including several revisions throughout the course of the project. Currently assisting with additional stormwater management issues that arise and assist with weekly inspections when needed.

Fire Water Tank EPC at a Refinery, Private Client, Southeast Minnesota. Environmental Project Management/SWPPP Design and Implementation. Coordinated with client and regulatory entities to ensure appropriate permits are addressed for the construction of a 6-million-gallon fire water supply tank, associated pumps and groundwater well at a refinery within 1 mile of the Mississippi River. Submitted pre-construction Conditional Land Use Permit application and coordinated follow-up with client and city planner. Completed Stormwater Pollution Prevention Plan design and document for the project, including several revisions throughout the course of the project. Completed Metropolitan Council Environmental Services (MCES) permit application for the discharge of hundreds of thousands of gallons of waste water during the groundwater well drilling, coordinate management of the water, and conducted regular sampling of the water during the four weeks of drilling. Conducted weekly stormwater inspections and worked closely with construction manager to ensure requirements of the SWPPP were met and documentation was in place at all times.

Java Detour/Former Gas Station, MPCA, Rochester, MN. Project Manager. Conducted a Limited Site Investigation (LSI) at a former gas station site to evaluate soil, soil vapor and groundwater impacts associated with a petroleum leak that was detected during a highway construction project adjoining the Site. Coordinated site access with multiple stakeholders including city, county and state planning officials, the current Site and neighboring property owner(s), the site and neighboring property occupant(s), and third-party consultants working on behalf of the property owner. Coordinated with drilling and laboratory analytical subcontractors in accordance with MPCA contract protocols. Conducted a receptor survey including identification of potential receptors within 500-feet of the Site and sewer vapor sampling.

Former Schloff Chemical Superfund Site, MPCA, St. Louis Park, MN. Assistant Project Manager & Field Engineer. In 2014, Amec Foster Wheeler was the lead contractor for installation of a Soil Vapor Extraction (SVE) system after determining that trichloroethene (TCE) and tetrachloroethylene (PCE) contamination was impacting the site as a result of a former dry-cleaning facility. Ms. Albertus-Benham worked closely with the MPCA, reviewed historical reports, reviewed technical specifications for and oversaw installation of the SVE system, continued the groundwater monitoring program, and updated the site conceptual model. Conducts SVE system monitoring, sub-slab vapor monitoring, and groundwater sampling at the site on a regular basis and in accordance with MPCA guidance. Additionally, conducts investigation derived waste management, data management, and reporting activities for this on-going Superfund site.

Dave Woodward

Scientist 2
Subject Matter Expert ~ Remediation

amec foster wheeler

Mr. Woodward has 32 years of experience in environmental consulting with a significant focus on research and development (R&D) and emerging contaminants. He has managed and served as Technical Program Director for large scale (>$500 million) remedial programs in the United States, South America, Canada, Mexico, Australia, and throughout Europe. He also has experience managing and supporting large scale RCRA, CERCLA, Department of Defence (DOD), and state lead projects. He has authored or co-authored over 100 publications, given over 50 platform conference presentations, served as an invited expert panelist at leading remediation conferences, led the development of numerous state policies/guidance, ITRC guidance and ASTM standards, and prepared 100's of technical reports covering all aspects of soil and groundwater investigation and remediation. He has also developed several Corporate Green and Sustainable Remediation Programs

Mr. Woodward has over 10 years of experience conducting PFAS investigations and remediation for private industry, the Australian DOD, and the U.S. DOD in the U.S. Canada, Europe, and Australia. He also has led and supported PFAS R&D for the American Petroleum Institute, U.S. Air Force, Canadian Government, and on a SERDP SEED project. He also has significant 1,4 Dioxane remediation experience and has conducted 1,4 Dioxane R&D under U.S. Air Force, SERDP, and ESTCP R&D grants.

Classification
Scientist 2

Years with Amec Foster Wheeler: 27

Years of Experience: 32

Education
Bachelor of Science, Earth Sciences, Cartography, Mined Land Reclamation, 1984

Regulatory Experience
Interstate Technology & Regulatory Council

Relevant Work Experience

Confidential Fire-Fighting Equipment Manufacturer, Fire Training Center Remediation, Waderslough, Germany. Served as a Project Advisor on the remediation of a large fire training center impacted with comingled PFASs, petroleum hydrocarbons, and chlorinated VOCs. The remediation involved the capping and containment of soil, installation of a groundwater containment and GAC treatment system, and excavating and reconstructing a contaminated pond.

U.S. Naval Facilities Command (NAVFAC), Former NAS Joint Reserve Base Willow Grove, Willow Grove, PA. Served as Project Advisor for evaluating remediation alternatives for the PFAS-impacted site and providing overall remediation strategy support.

Air National Guard (ANG), Delaware ANG Base, Investigation and Remediation, New Castle, DE. Project Advisor. Performance-based task order for investigation and remediation of four sites. Project will result in regulatory closure of two sites and will advance the remaining two sites through the Record of Decision (ROD) phase under the CERCLA process. Also serving as technical advisor for PFAS investigation and offsite source study.

Confidential Client, Greer, SC. Technical advisor on a corrective measures study and pilot testing to remediate a large 1,4 dioxane plume in a fractured rock aquifer. The project involves the use of innovative aerobic cometabolic biosparging using propane injection, which will be the first time this technology has been demonstrated in the field.

Confidential Client, Worldwide Remediation Support. Served as the outsourced global coordinator for European remediation projects. Provided ongoing technical support on several large remediation projects in the US and

South America. Also provided remediation and asset retirement obligation liability forecasting support in accordance with the Sarbanes-Oxley Act.

Confidential Client, Chemtronics Superfund Site, North Carolina. Technical advisor providing strategic consulting for one responsible party and providing direct oversight coordination on behalf of the client. This project involves both CERCLA and RCRA issues and the remediation of chlorinated solvents, explosives, propellants and perchlorate in groundwater.

Confidential Client, Orlando, FL. Technical advisor on a large multi-plume RCRA Corrective Action remediation project associated with several landfills. Remediation technologies include: air sparging; chemical oxidation; and reductive dechlorination. The project was successfully performed at a fixed cost under a performance-based contract.

Confidential Client, CERCLA Management Activities, Multiple Locations. Managed a project involving the development and implementation of an innovative Superfund portfolio tracking and strategic management process. Continuing to track the status of CERCLA activities at more than 50 sites that include multiple third party PRPs. Maintained a database to compile site information, coordinate the status of environmental activities, track financial information, and assess additional future potential client liabilities. Also managed participation in PRP technical committees at several of the Superfund sites.

U.S. Air Force Civil Engineer Center, Broad Agency Announcement R&D-Treatment of PFASs. Conducted PFAS treatment laboratory and field research using Enzyme Catalyzed Oxidative Coupling (ECOC) Technology. Preliminary data resulted in expansion of the project to also include ex situ ECOC treatment using GAC to temporarily adsorb PFASs while also serving as an enzymatic growth substrate for subsequent PFAS enzymatic degradation and GAC regeneration.

Confidential Industrial Client, Decatur, AL. Served as Project Advisor on a PFAS project involving the characterization of PFASs in surface water, sediments, soil, groundwater, agricultural crops, and livestock. The PFASs originated in wastewater biosolids from a municipal wastewater treatment plant. The biosolids were beneficially reused as fertilizer on agricultural fields across several rural Counties and resulted in PFAS contamination throughout the food chain and dozens of impacted groundwater supply wells. The project is currently the subject of several class action lawsuits.

Confidential Industrial Client, Uppsala, Sweden. Served as Project Advisor and technical lead on a source study and site-wide investigation of PFAS impacts at an active pharmaceutical manufacturing facility. Also provided consulting associated with an emergency accidental AFFF release and infrastructure cleaning during facility transition from C8 to C6 foam. Also provided consulting associated with offsite drinking water impacts in a nearby city and supported identification of other offsite sources.

Confidential Industrial Client, Milwaukee, WI. Provided strategic consulting on a research and development project associated with treating PFAS in a wastewater stream. Several different novel technologies and combinations of technologies were evaluated.

NAVFAC Atlantic, Naval Air Station, New Brunswick, ME. Serving as Project Advisor on a large Naval Air Station impacted by PFASs. Characterization of the site has focused on a variety of sources including a landfill, several chromium plating areas, a former fire training area, and several AFFF storage areas.

American Petroleum Institute. Served as the Project Director and Principal Author for a PFAS Literature Review and development of a PFAS White Paper.

Carla Landrum, PhD

Scientist 2

Subject Matter Expert ~ Geostatistics and Data Management

amec foster wheeler

Dr. Landrum has 10 years of experience in geostatistical (2D and 3D), geospatial, statistical, and time series modeling with a focus in water resource management and environmental remediation. She employs techniques prescribed in state and federal environmental regulatory frameworks, in addition to more novel techniques, to quickly and defensibly process information from environmental data. She uses streamlined information frameworks to build real-time and defensible conceptual site models (CSM) that are applicable throughout the project lifecycle. Dr. Landrum approaches data analysis as an evolving and multidisciplinary process that requires standard quality procedures, strong teamwork collaboration, and streamlined data workflow and information services.

Her current services help project team members make cost effective and defensible project decisions regarding environmental site characterization, risk assessment, remedial design, and site closure. She works closely with hydrogeologists, geologists, geochemists, ecologists, risk assessors and engineers to: optimize sampling and monitoring programs; model and reduce sampling uncertainty; pinpoint source(s), spatial extent(s), and potential migration pathway(s) of constituents; generate cost and uncertainty scenarios for remedial assessment and design; predict surface areas and volumes of impacted earth material(s); and generate probabilistic environmental and cultural resource models.

Classification
Scientist 2

Years with Amec Foster Wheeler: 3

Years of Experience: 10

Education
PhD, Soil Science / Geostatistics, University of Kentucky, 2013
MS, Geosciences, University of Tulsa, 2010
BS, Biogeosciences, University of Tulsa, 2007

Regulatory Experience
Modeling using state and federal regulatory frameworks

Location
Whiterock, CA

Relevant Work Experience

Geostatistics Task Lead, Landfill Site Groundwater Sampling Optimization. Data-driven sampling frequency optimization for an interwell groundwater monitoring well network. Temporal trends are assessed using linear and seasonal temporal models. Optimization criteria are set using non-detectable sample concentration frequencies and/or using the temporal variance in the well constituent sample data. Parallel statistical analyses include calculating background threshold values for compliance assessment in addition to groundwater fingerprinting to help the assess adequacy and representativeness of background well designations.

Assistant Project Manager and Statistical Modeling Task Lead, Coal Combustion Residual (CCR) Groundwater Compliance Monitoring. Conceptual site model development and statistical data analyses to assess site groundwater compliance in accordance with CCR Rule requirements (40 CFR Section 257.93). Assessing data gaps and uncertainty in current groundwater monitoring network; providing guidance to optimize groundwater monitoring network performance. Using statistical "fingerprinting" analysis to investigate potential alternative sources. Performing groundwater compliance statistical analyses in accordance with EPA's Unified Guidance. Using ArcGIS, R, ProUCL, Isatis and GWSTAT software packages.

Geostatistical Task Lead, Groundwater Compliance Monitoring and Conceptual Site Model Development. Data-driven groundwater conceptual site model development, sampling design and groundwater monitoring network optimization. Constituents of concern include heavy metals, salts and hydrocarbons. Performing data adequacy assessment and statistical analyses in accordance with EPA's Unified Guidance. Calculating nature and extent and mass to support risk assessment and remedial design; generating spatial moments (2D and 3D) to determine

remedial effectiveness as it relates to total mass, center of mass, the spread of plume over time. Assessing spatial and temporal data uncertainty to optimize engineering design and operation. Performing temporal trend modeling and fingerprinting to identify potential sources of groundwater impact, including regional and on-site anthropogenic source differentiation. Generating 3D simulated lithologic models to understand subsurface heterogeneity and uncertainty with identifying preferential transport pathways. Long-term monitoring optimization using data-driven techniques, such as data redundancy analyses and detection frequency. Multidisciplinary project collaboration with project hydrogeologists, geochemists, engineers, risk assessors and geologists. Using ArcGIS, GWSTAT, Visual Sampling Plan, Isatis, R and ProUCL software packages.

Assistant Project Manager and Statistical Modeling Task Lead, MnDOT Archeological Predictive Modeling. Generating archeological predictive statistical models to locate cultural resource areas across the state of Minnesota. Multivariate analysis using hydrography, soil, terrain, anthropogenic and geomorphologic geospatial data. Applying machine learning and data mining methods, such as logistic regression, tree methods, multinomial logistic regression, naïve bayes, PCA and stepwise logistic regression. Integrating geographic information system and soil science skillsets to develop statistical models. Deliverable is a "click and go" statistical/GIS interface for client to easily predict cultural resource areas across the state of Minnesota. Participation is part of a multidisciplinary and streamlined project workflow. Using the R-ArcGIS software bridge interface to build, interpret, validate and run models.

Spatial Visualization and Data Uncertainty Task Lead, Engineering Remedial Alternatives Study. Generating spatially weighted average total mercury concentrations in river sediments along 30 river miles using geostatistics and geospatial techniques. Exploring data uncertainty using geostatistical and traditional statistical techniques; recommending best approach for incorporating uncertainty into remedial alternative selection. Using ArcGIS and Isatis software packages.

Hydrogeology Studies Task Lead, Superfund Project. Orchestrated and supported tasks among a strong project team consisting of hydrogeologists, engineers, and geologists. Tasks included RI/FS conceptual site model development, data gap and uncertainty analysis, long-term monitoring optimization, fate and transport modeling, and remedial design for groundwater impacted by chlorinated solvents. Provided geographic information system, geodatabase, and geostatistical technical services. Used ArcGIS, GWSDAT and Isatis software packages.

Project Geostatistician, Region 9 Superfund Project. Developed a data-driven phased sampling program using real-time portable x-ray fluorescence (XRF) spectroscopy (Phase I) and discrete soil sampling (Phase II) to assess heavy metal distributions in soil; phased sampling design reduced the initially planned sampling and analysis effort by approximately half. Performed multivariate geostatistics to fuse portable XRF with discrete soil sample analytical data and predict metal distributions in unsampled locations with measured confidence. Performing conditional simulation using portable XRF and discrete soil sample analytical data to pinpoint unsampled areas where there is an increased probability of metals concentrations exceeding human health and ecological exposure risk concentrations.

Simulating volume of impacted soil to inform remedial design, costs and uncertainty. Used ArcGIS and Isatis software packages.

Christopher Abate

Scientist 2

Subject Matter Expert ~ Groundwater Modeling

amec foster wheeler

Dr. Abate has 27 years of experience in environmental geology, hydrogeology, modeling of water resources, project management, and litigation support. He has provided technical and management support for site investigations and remedial design efforts under the RCRA/CERCLA/MCP programs for a range of federal and private clients. Dr. Abate has specific expertise in the application of quantitative methods to water resource problems including wellhead protection, groundwater remediation system design, stormwater management, and non-point source pollution. He has developed and calibrated groundwater flow models for the purposes of risk assessment, wastewater permitting, water supply management, mine dewatering, and assessing contaminant fate and transport and also performed and analyzed aquifer tests and sited water supply wells for clients in coastal plain, glaciated, and hard rock terrains. In addition, he has experience in assessment of munitions and explosives of concern (MEC) distribution and environmental impacts at Department of Defense (DOD) sites with military training ranges. Dr. Abate has provided expert testimony and made numerous presentations at stakeholder meetings and technical conferences on quantitative methods for site assessment and remedial design as well as other aspects of applied hydrogeology and environmental geology.

Classification
Scientist 2

Years with Amec Foster Wheeler: 17

Years of Experience: 27

Education
Doctor of Philosophy (PhD), Geosciences, 1993

Master of Science, Environmental Pollution Control, 1990

Bachelor of Science, Geology, 1985

Relevant Work Experience

Remedial Investigation, Confidential Manufacturing Client, Hennepin County, Minnesota. Senior Hydrogeologist and Groundwater Modeler. Dr. Abate served as technical lead for regional modeling of a complex aquifer system comprised of unconsolidated glacial deposits and sedimentary rocks. Modeling objectives include calibration to static water levels and drawdown during pumping tests, demonstrating groundwater extraction wells successfully capture a VOC plume, and continually refining the model as new stratigraphic data becomes available.

Shepleys Hill Landfill/AOC72, U.S. Army Corps of Engineers, New England District, Devens, MA. Senior Hydrogeologist. Senior Hydrogeologist for comprehensive site assessment including risk assessments, to support an RI/FS at a closed landfill at Devens with Arsenic impacted groundwater. The project has multiple stakeholders and involves conceptual model development, assessment of ETR system performance, and use of a numerical groundwater flow model to assess potential contaminant plume interaction with offsite municipal water supply wells and achieve risk-based closure. Responsible for project management, hydrogeologic assessments, groundwater modeling activities, and technical presentations to stakeholders.

NIPSCO Bailly Generating Station, Northern Indiana Public Service Co., Chesterton, IN. Senior Hydrogeologist. Responsible for development and calibration of groundwater flow and contaminant transport models to support a Corrective Measures Study at a landfill for coal combustion residuals containing boron. Included predictive simulations of multiple remediation scenarios and simulating groundwater interactions with sensitive surface water bodies in a stratified glacial deposit aquifer system.

White Swan/Sun Cleaners Area Groundwater Contamination Superfund Site, Bank of America, N.A., Wall Township, NJ. Senior Hydrogeologist. Responsible for development and calibration of multiple models of groundwater flow and contaminant transport to support comprehensive RI/FS efforts addressing a large solvent

plume with multiple source areas. Unique dimensions of the project include evaluation of municipal and commercial pumping stresses, simulating groundwater interactions with tidally-influenced surface water bodies, and evaluation of structures and hydrogeologic properties in a stratified coastal plain aquifer system. Amec Foster Wheeler performed a series of environmental site investigations and remedial actions that assisted the client and their legal counsel in the successful negotiation of a Settlement Agreement defining the environmental liabilities for the White Swan/Sun Cleaners National Priority List (Superfund) site and its environmental cleanup. These investigations and subsequent actions included a Remedial Investigation/Feasibility Study (RI/FS) under EPA Region 2 supervision; surface and subsurface investigations; soil and groundwater sampling and analyses; aquifer testing and monitoring; treatability studies; building demolition; remedial design; remedial action; sub-slab depressurization system (SDS) installations; and annual inspections. Volatile organic compounds (VOCs), particularly tetrachloroethylene (PCE), were detected in area ground and surface water, as well as indoor air of residences and businesses. The source of contamination consisted of comingling groundwater plumes from two former dry-cleaning operations.

AIG - Harvard Mills - Remediation Design and Construction Oversight, AIG Global Claims Services Inc., Wakefield, MA. Senior Hydrogeologist. Groundwater monitoring network evaluations and 3-D visualization of geologic structures and groundwater plumes. Amec Foster Wheeler performed a series of site investigations, including groundwater, indoor air, and sub-slab vapor; and characterized impacts from chlorinated solvents and petroleum hydrocarbons found in the soil and groundwater of a 100-year-old brick former mill building. Performed a risk evaluation and feasibility study. Designed and oversaw the installation of a sub-slab vapor mitigation system at the site.

Gorham Remediation, Confidential Client, Providence, RI. Senior Hydrogeologist. Developed a groundwater flow model and used it to design a dewatering program to facilitate sediment removal operations. Amec Foster Wheeler performed site investigations and remediation of this former smelting and metals casting operation. The 38-acre property was being converted to retail space, a high school, proposed sports fields and a park along the adjacent 70-acre pond. The Site Investigation Reports (SIR) were completed and the Program Letter issued by RIDEM. Prepared the Remedial Action Work Plan (RAWP) and received the Remedial Approval Letter RIDEM to address the metals, petroleum and dioxin-contaminated soils and pond sediment. Prepared the construction design, contractor bid documents, and regulatory permits. Provided construction oversight and reporting for the site remediation. Amec Foster Wheeler's community outreach activities converted an initially hostile public to stakeholders interested and supportive of the revitalization of their neighborhood.

U.S. Army Corps of Engineers, New England District, Massachusetts Military Reservation. Technical lead for quantitative assessment of hydrogeology and contaminant fate and transport at multiple sites across the 22,000-acre facility, Services have included conceptual model development, numeric modeling of groundwater flow and contaminant fate and transport, and 3-D visualization\animation of subsurface conditions being applied to remedial feasibility studies. Unique dimensions of this project include MEC assessments, modeling leaching and fate and transport of explosive compounds and perchlorate, evaluating remedial alternatives for soil and groundwater, and assessing contaminant plume interaction with offsite municipal water supply wells.

B.6 Attachments

B.6 Attachments

Sample Contract – Attachment C

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

ATTACHMENT C

Professional and Technical Services Remediation Master Contract

State of Minnesota

SWIFT Master Contract No.:
T-Number:
Agency Interest No.:
Activity ID No.:

This Master Contract is between the State of Minnesota, acting through its Commissioner of the **Minnesota Pollution Control Agency** ("MPCA" or "State") 520 Lafayette Road North, St. Paul, MN 55155 and **Contractor Name** ("Contractor"), address, city, state zip .

Recitals

1. Under Minn. Stats. § § 15.061 and 116.03 Subd. 2, the State is empowered to engage such assistance as deemed necessary.
2. The State is in need of multiple contracts to perform **<Category A > <Category B> <Category C >** program activities.
3. The Contractor represents that it is duly qualified and agrees to perform all services described in this Master Contract ("Master Contract" or "Contract") to the satisfaction of the State.

Master Contract

1. TERM OF MASTER CONTRACT

***1.1. Effective date*: July 1, 2018**, or the date the State obtains all required signatures under Minn. Stat. § 16C.05, Subd. 2, whichever is later. **The Contractor must not accept work under this Master Contract until this Master Contract is fully executed and the Contractor has been notified by the State's Authorized Representative that it may begin accepting Work Orders.**

1.2. Work Order Contracts. The term of the work under Work Order contracts issued under this Master Contract may not extend beyond the expiration date of this Master Contract.

***1.3 Expiration date*: June 30, 2023**, with no contract extensions, or until all obligations have been satisfactorily fulfilled, whichever occurs first.

***1.4 Survival of terms*:** The following clauses survive the expiration or cancellation of this Master Contract and all Work Orders: Indemnification; State Audits; Government Data Practices and Intellectual Property; Publicity and Endorsement; Governing law, Jurisdiction, and Venue; and Data Disclosure.

2. SCOPE OF WORK

The Contractor, who is not a State employee, will upon request from the State, prepare workplans for work outlined in **<Category A > <Category B> <Category C >** outlined in this Master Contract and the Request for Proposal (RFP) which is incorporated herein by reference, and perform the duties authorized in a Work Order and any related Change Order, Work Order Amendment, or Stop Work Order issued by the State, as described in this Master Contract and the RFP. No work shall be performed by the Contractor under this Master Contract without State authorization. In the event of a conflict between the provisions of this Master Contract and the provisions of the RFP, the provisions of this Master Contract shall prevail.

The Contractor shall begin work only upon receipt of a fully executed Work Order that authorizes the Contractor to begin work under this Master Contract. Any and all effort, expenses, or actions taken before the Work Order is fully

executed is not authorized under Minnesota Statutes and is under taken at the sole responsibility and expense of the Contractor.

The Contractor understands this Master Contract is not a guarantee of work under a Work Order contract. The State has determined it may need the services under this Master Contract, but does not commit to spending any money with the Contractor.

<Category A Scope of Services>
<Category B Scope of Services>
<Category C Scope of Services>

3. TIME

The Contractor must comply with all the time requirements described in Work Orders. In the performance of Work Orders, time is of the essence.

4. CONSIDERATION AND PAYMENT

4.1 Consideration. The State will pay for all services satisfactorily performed by the Contractor for all Work Order Contracts issued under this Master Contract. The total compensation of all Work Orders may not exceed **$120,000,000.00 (One Hundred Twenty Million Dollars)** for five (5) years between all Master Contracts.

a. ***Travel expenses.*** Reimbursement for travel and subsistence expenses actually and necessarily incurred by the Contractor as a result of any Work Order will be reimbursed, for travel and subsistence expenses in the same manner and in no greater amount than provided in the current "Commissioner's Plan" promulgated by the Commissioner of Minnesota Management and Budget which is incorporated into this Master Contract by reference which can be viewed at: **http://www.mmd.admin.state.mn.us/commissionersplan.htm.** The Contractor will not be reimbursed for travel and subsistence expenses incurred outside Minnesota unless it has received the State's prior written approval for out-of-state travel. Minnesota will be considered the home State for determining whether travel is out of state. When coming from out-of-state the Contractor's hourly rate for staff will not apply until the Contractor's staff has arrived at the project location.

To qualify for the breakfast and dinner costs, the Contractor must leave the point of mobilization before 6:00 a.m. and arrive back at the point of mobilization after 7:00 p.m., respectively. Lunch reimbursements may be claimed if the Contractor is in travel status more than 35 miles away from his/her normal office or is away from home overnight.

Receipts for meals and lodging must be attached to the Contractor's invoices. Meal receipts are required to be submitted with invoices, and retained in accordance with Clause 33. Meal and lodging costs and any expenses must be summarized in an Expense Worksheet and submitted with invoices.

4.2 Payment

a. ***Terms of Payment.*** The Contractor shall be paid for actual services performed for the State in accordance with Work Orders from the State and in accordance with the Classifications and Rates established in Clause 10, of this Master Contract. The Contractor will be paid in accordance with the Workplan and Budgets for each Work Order.

b. **Invoices.** The Contractor shall submit invoices to the State monthly for work completed during the prior month, unless no costs, or minimal costs are incurred during the billing period. The invoices shall be submitted in the format acceptable to the State. Invoices and attachments should be consistent with the Work Order Budget. Documentation must be itemized and legible. It is the Contractor's sole responsibility to make sure invoices are submitted as required. Invoices shall include:

   a. Contractor name

b. SWIFT Master Contract ID No.
c. Work Order Number
d. Purchase Order Number
e. Invoice number
f. Invoice date
g. State Project Manager
h. Invoicing period (actual working period)
i. Itemized list of all work performed and Brief Update of Tasks Completed
j. Itemized list of all labor, supplies and equipment
k. Subcontractor invoices
l. Mileage expenses
m. Itemized expenses with receipts, for meals, lodging, and parking expenses per person per day (State to provide form)
n. Staff travel logs and/or timesheets (if requested or applicable)
o. Documentation of times and dates must be disclosed on the expense worksheet and attached to invoice
p. Retainage calculation
q. Budget Summary Report (form provided by State) summarizing State approved budget amounts by task and total billed to date for the categories of Contractor and subcontractors labor, expenses, and equipment.
r. Expenses as approved on workplan
s. Brief update of tasks completed for subject invoice

MPCA Work Order invoices will be submitted to mpca.ap@state.mn.us.

If there is a problem with submitting an invoice electronically please contact the MPCA Accounts Payable Unit at 651-757-2491.

Minnesota Department of Agriculture (MDA) Work Order invoices should be submitted by email (preferred) to: MDA.Accounts-Payable@state.mn.us or by US Mail to Finance and Budget Division, Accounts Payable, 625 Robert Street North, Saint Paul, MN 55155.

The State's Authorized Representative shall have the authority to approve invoices, and no payments shall be made without the approval of the State's Authorized Representative. Payment shall be made within thirty (30) days of submission of the Contractor's invoices for services performed. The State shall pay interest at the rate of one and one half percent (1.5%) per month to the Contractor for undisputed billings when the State has not paid the billing within thirty (30) days following receipt of the invoice, in accordance with Minn. Stat. § 16A.124. When discrepancies occur regarding portions of an invoiced amount, the State shall pay the undisputed amount in accordance with this part. The disputed items shall be paid within thirty (30) days of when the discrepancies are resolved.

c. ***Retainage.*** Under Minnesota Statutes §16C.08, subdivision 2 (10), no more than 90 percent of the amount due under any Work Order may be paid until the final product of the Work Order contract has been reviewed by the State's agency head. The balance due will be paid when the State's agency head determines that the Contractor has satisfactorily fulfilled all the terms of the Work Order.

5. CONDITIONS OF PAYMENT

All services provided by the Contractor under a Work Order must be performed to the State's satisfaction, as determined at the sole discretion of the State's Authorized Representative and in accordance with all applicable federal, state, and local laws, ordinances, rules, and regulations including business registration requirements of the Office of the Secretary of State. The Contractor will not receive payment for work found by the State to be unsatisfactory or performed in violation of federal, state, or local law.

6. CONTRACT SERVICE PRICES

When the MPCA Contractor hires a State Contractor, the MPCA Contractor is required to pay the State Contractor within 30 days after receipt of the invoice for undisputed billings from the State Contractor. The MPCA Contractor is responsible to assure the State Contractor's invoice and services were in compliance with the MPCA Work Order, State Contract scope of services and fee schedules.. The MPCA Contractor shall also assure the services were provided. The MPCA Contractor has the option to submit invoices twice a month to expedite payment of State Contractor/Subcontractor invoices.

The Contractor may provide oversight and invoice approval of State Construction Contracts over $50,000 and ensure invoices are in compliance with the scope of work that was performed. However, the Contractor shall not pay the State Construction Contractor directly. The State Construction Contractor shall submit invoices to the State for payment and the State will make payments directly to the State Construction Contractor.

The end of the State fiscal year is June 30. All invoices are due by August 15 of each year for work done prior to July 1 of that year. Charges incurred in two fiscal years (before and after July 1) shall not be on the same invoice. The State closes its fiscal year accounts at the end of August.

Courier services shall be reimbursable when requested by the MPCA. Copies of plans and specifications for bid packages for major construction projects shall be reimbursable when approved in the Work Order. The State shall not pay for markup on Contractor or Subcontractor invoices.

7. PAYMENT TO SUBCONTRACTORS

As required by Minn. Stat. § 16A.1245, the prime Contractor must pay all subcontractors, less any retainage, within ten (10) calendar days of the prime Contractor's receipt of payment from the State for undisputed services provided by the subcontractor(s) and must pay interest at the rate of one and one-half percent per month or any part of a month to the subcontractor(s) on any undisputed amount not paid on time to the subcontractor(s).

8. SUPPLIES AND EQUIPMENT PRICING

Supplies and Expenses: The State considers the following items to be examples of supplies, disposables, and/or equipment that are already part of a Responder's overhead that will not be reimbursed separately. This is not an all-inclusive list.

a. Vehicle or Vehicle daily rates
b. Tool Boxes
c. Hand tools and small electric tools
d. Tri-pod
e. Grease
f. Mobile phone or related fees
g. Answering machine/voice mail systems or access
h. Computer/tablets/field notebooks/printer and ink cartridges
i. Hand-held global positioning system locator
j. Digital/film camera, photo processing and film
k. Bucket
l. Tape measures
m. Gloves
n. Level D personal protective equipment (including but not limited to coveralls, steel-toed boots/shoes, safety glasses or chemical splash goggles, face shield, ear protection, hard hat, gloves)
o. First aid kit
p. Eye wash

q. Trash bags
r. Duct tape
s. Rainwear suits and raingear
t. Distilled water
u. Ice/coolers
v. Bungee cords
w. Alconox
x. Ziplocs or similar plastic bags
y. Electrical cords
z. Stamps or postage
aa. Boot covers
bb. Locks
cc. Tubing
dd. Nails/screws/bolts/fasteners
ee. Items less than $30

Equipment: All anticipated equipment to be used on all projects under this Master Contract is listed on the equipment list. Any equipment not listed, if approved by the MPCA Project/Contract Manager, shall be purchased as required in the MPCA Contractor/Subcontractor Purchasing Manual: https://www.pca.state.mn.us/about-mpca/contractor-and-subcontracting-guidance.

The MPCA will allow the Contractor to use MPCA equipment, if available, with MPCA contract manager approval and proper training as deemed appropriate by the contract manager. The MPCA will not reimburse contractors for this training. The Contractor assumes all risks of loss or damage to the equipment during periods of transportation, installation, and during the entire time the equipment is in possession of the Contractor.

Items shown below shall be billed at the daily or hourly rate shown without further proof of cost.

EQUIPMENT RATES
Effective July 1, 2018 – through June 30, 2023

Equipment	Cost (per day)
Turbidity Meter	$52.00
Oxidation-reduction potential (ORP) Meter	$39.00
Hydrolab Quanta	$80.00
Dissolved Oxygen Meter	$46.00
Temperature, pH, conductivity, ORP meter	$68.00
Temperature, pH, conductivity	$35.00
YSI Multi Meter w/ Flow Cell	$117.00
Flow Cell	$77.00
Water Quality Meter (6 parameters)	$102.00
2" Pump	$189.00
Bladder pump	$118.00
Submersible Pump	$52.00

Peristaltic Pump	$43.00
Diaphram Pump	$53.00
Mechanical Pump Puller	$44.00
Water Level Indicator	$27.00
Hydrocarbon/Water Interface Probe	$55.00
Pump/Slug Testing Equipment	$110.00
Manual direct-push probe equip.	$165.00
X-ray Fluorescent (XRF) for Soil and Lead Paint	$468.00
Nuclear Density Gauge	$69.00
Multi Gas Meter (02/CO/LEL/Methane)	$123.00
O2/Combustible Gas Detector	$110.00
LEL/O2/CO2 Gas Meter	$66.00
LEL/O2Gas Meter	$55.00
Explosimeter	$52.00
Photoionization Detector (PID) 10.6	$99.00
Photoionization Detector (PID) 11.7	$138.00
Flame Ionization Detector (OVA)	$135.00
Velometer / Anemometer	$34.00
Micro Manometer	$64.00
Sound Level Meter	$53.00
Dust Meter	$70.00
Air Compressor	$54.00
Metal/Cable Detector	$47.00
Generator	$65.00
Sump Pump	$33.00
Pressure Washer	$69.00
Magnetometer	$151.00
Coreing Machine with Drill Bits	$110.00
Surveying Equipment - Rotary Laser	$104.00
GPS (Submeter)	$122.00
Laser Level/Lenker Rod	$127.00
Ground Penetrating Radar (GPR)	$426.00
EM-31 Ground Conductivity Meter	$440.00
EM-61 Ground Conductivity Meter	$688.00
55 gal Drums	$70.00
Sub-Slab Soil Gas Sampling Point Insert	$88.00
Screen for Soil Gas Monitoring Points	$51.00
Vapor Pin Installation Kit (per point)	$60.00

Lumex Mercury Monitoring	$187.00
Mercury Analyzer	$179.00

Note: all calibration gasses are included in the price of the meters.
Vibracoring cannot be conducted under this contract.

9. CONTRACTOR STAFFING AND PERSONNEL CLASSIFICATIONS

Classifications are grouped in levels. Each level has an hourly rate. To qualify for a classification, you must have the education, experience and a majority of the qualifications as listed in the RFP, which is incorporated herein by reference. Classifications and hourly rates are as follows below:

Category A: Petroleum, Superfund, Ag, and Closed Landfill Program Environmental Services

The following personnel classifications will be utilized in Category A. Additional personnel classifications other than those listed below will not be accepted.

Ecological Risk Assessor 2
Ecological Risk Assessor 3
Engineer 1
Engineer 2
Engineer 3
Engineer 4
Field Technician
GIS/CADD Specialist
Human Health Risk Assessor 2
Human Health Risk Assessor 3
On-Site Inspector
Project Manager
Quality Assurance/Quality Control Officer
Scientist 1
Scientist 2

Category B. Petroleum Only Environmental Services

The following personnel classifications will be utilized in Category B. Additional personnel classifications other than those listed below will not be accepted.

Engineer 1
Engineer 2
Engineer 3
Field Technician
GIS/CADD Specialist
Project Manager
Scientist 1
Scientist 2

Category C: Closed Landfill Program

The following personnel classifications will be utilized in Category C. Additional personnel classifications other than those listed below will not be accepted.

Engineer 1
Engineer 2
Engineer 3
Engineer 4
Field Technician
GIS/CADD Specialist
On-Site Inspector
Project Manager
Quality Assurance/Quality Control Officer
Scientist 1
Scientist 2

10. CLASSIFICATIONS AND RATES

Classifications are grouped in levels. Each level has an hourly rate. To qualify for a classification, you must have the education, experience and a majority of the qualifications as listed in the RFP, which is incorporated herein by reference. Classifications and hourly rates are as follows below in Rate Schedule 1 and 2:

Rate Schedule 1
Effective July 1, 2018 – June 30, 2020

Level One	Classifications	Hourly Rate
	Engineer 1	$78.09
	Field Technician	$78.09
	GIS/CADD Specialist	$78.09
	Scientist 1	$78.09
Level Two	**Classifications**	**Hourly Rate**
	Ecological Risk Assessor 2	$97.48
	Engineer 2	$97.48
	Human Health Risk Assessor 2	$97.48
	Quality Assurance/Quality Control Officer	$97.48
	Scientist 2	$97.48
Level Three	**Classifications**	**Hourly Rate**
	Ecological Risk Assessor 3	
	Engineer 3	$137.52
	Human Health Risk Assessor 3	$137.52
	On-Site Inspector	$137.52
	Project Manager	$137.52
Level Four	**Classifications**	**Hourly Rate**
	Engineer 4	$205.97

Rate Schedule 2
Effective July 1, 2020 – June 30, 2023

Level One	Classifications	Hourly Rate
	GIS/CADD Specialist	$79.65
	Engineer 1	$79.65
	Field Technician	$79.65
	Scientist 1	$79.65
Level Two	**Classifications**	**Hourly Rate**
	Ecological Risk Assessor 2	$99.43
	Engineer 2	$99.43
	Human Health Risk Assessor 2	$99.43
	Quality Assurance/Quality Control Officer	$99.43
	Scientist 2	$99.43
Level Three	**Classifications**	**Hourly Rate**
	Ecological Risk Assessor 3	$140.27
	Engineer 3	$140.27
	Human Health Risk Assessor 3	$140.27
	On-Site Inspector	$140.27
	Project Manager	$140.27
Level Four	**Classifications**	**Hourly Rate**
	Engineer 4	$210.09

The Contactor will provide resumes to the State Contract Manager for review and approval before new staff can be added or begin work on a Work Order. New staff must meet the requirements in the RFP, which is incorporated herein by reference, of the personnel classification requested.

The Contractor will maintain and update a list of staff in matrix format that shows the personnel classifications and, staff name. The State may request and the Contractor shall comply with any request that a member of the Contractor's staff be removed from working on State projects for unsafe practices, violations of Contract procedures, or other problems. The State will pay the appropriate salary costs for the task being done.

11. **BACKGROUND CHECKS.** After Contract award and prior to the start of Contract work, the Contractor shall conduct background checks on all current and future employees that will perform the services required in the Contract. The background checks will be conducted through the State of Minnesota Bureau of Criminal Apprehension (BCA) and the Contractor shall also conduct its own check of any job applicant's work background. The State also reserves the right to request employee background checks be performed by the Contractor through the Federal Bureau of Investigation. All costs associated with any background checks conducted by the Contractor shall be the responsibility of Contractor.

    The Contractor must review the results of these background checks, and the background checks must show any felony and gross misdemeanor convictions and any misdemeanors for which jail time may be imposed that disqualify the Contractor's employee from performing work on State property or in sensitive work areas.

    If the completed background check on an individual employee shows an offense on their record, the Contractor must seek written approval from the State's Authorized Representative prior to allowing that individual to work under this Contract. The State reserves the right to decline any Contractor's employee with an offense on their record.

Before a Contractor's employee is allowed onsite to work, Contractor must certify to the State that it has a printed copy of the required background check on file and will keep it and other information on file and available for a minimum of six years for audit by the State. If requested, the results of the background checks shall be provided to the State.

12. REPORTING REQUIREMENTS

Progress Reports: The Contractor shall submit progress reports monthly or on an as needed basis determined by the State's Project Manager for the appropriate Work Order for each assigned project. This requirement shall be part of the workplan.

Usage Reports: The Contractor is required to submit Usage Reports. Usage Reports are a non-billable task required under the Master Contract. Usage Reports are due every year, no later than November 1, for the previous twelve month period of July 1 through June 30. Usage Reports are to be sent in writing or electronically to the MPCA's Contract Manager.

The Usage Report must include the following information:

a. Contractor's Name
b. Customer Name (MPCA, MDA)
c. Project Name
d. Work Order Number (if applicable) and SWIFT Purchase Order Number
e. Total Dollars by Work Order by Project for All Expenditures
f. Total Dollars Received by the MPCA Multi Site Contractor
g. Subcontractor's Name, Dollars Received, and Type of Service (by Work Order and per project)
h. Total Dollars Received During the Reporting Period by all Subcontractors
i. State Contractor's Name, Dollars Received, and Type of Service (by Work Order and per project)
j. For the report ending June 30, the total amount received for the entire fiscal year (July 1 – June 30) and yearly totals for each Work Order and each Subcontractor per Work Order
k. For the Environmental Products and Services portion of the Report, list products the Contractor is using or steps it is taking that are environmentally responsible (i.e. identify if the Contractor uses an E-85 vehicle and E-85 gas, or products made of recycled material)

The MPCA will provide a form to submit the above information as required.

Equipment Report: The Contractor shall submit Equipment Reports for State-owned equipment. Equipment Reports are a non-billable task required under the Master Contract. Reports are due every six months. Reports are due on March 1 for the previous six month period of July 1 through December 31 and on November 1 for the previous six month period of January 1 through June 30. Reports shall be sent electronically to the MPCA Contract Manager.

The Equipment Report shall include the following information:

a. Contractor Name
b. Item Description and Quantity
c. Purchase Date and Price
d. Make, Model, and Serial Identification Number of the Item
e. State Asset Number (items over $5,000)
f. Storage Location
g. Work Order or Purchase Order Number
h. Site Name

When State-owned equipment is lost or stolen, the Contractor must report the loss or theft to the MPCA Contract Manager within 24 hours.

13. SUBCONTRACTING

MPCA Contractors may subcontract tasks within the scope of this Master Contract and construction tasks assigned to it under this Master Contract as specified in the MPCA Contractor and Subcontracting Purchasing Manual which is incorporated by reference. The MPCA Contractor shall follow the MPCA Contractor/Subcontractor Purchasing Manual to subcontract services. The MPCA reserves the right to reject or accept Subcontractors as defined in the current MPCA Contractor/Subcontractor Purchasing Manual available at the MPCA website: https://www.pca.state.mn.us/about-mpca/contractor-and-subcontracting-guidance. The State reserves the right to update said instructions at any point. Once the State has posted revised instructions, the Contractor is required to implement all changes based on the revision date of the MPCA Contractor and Subcontracting Purchasing Manual

All construction activities must be subcontracted. The Contractor must not subcontract over $50,000. MDA is not authorized to use the MPCA Contractor and Subcontracting Purchasing Manual.

If MPCA Contractors decides to fulfill its obligations and duties under this Master Contract through a Subcontractor, to be paid for by funds received under this Contract, the Contractor shall not execute a contract with the Subcontractor or otherwise enter into a binding agreement until it has first received written approval from the State's Authorized Representative. All subcontracts shall reference this Master Contract and require the Subcontractor to comply with all of the terms and conditions of this Master Contract. The Contractor shall be responsible for the satisfactory and timely completion of all work required under any subcontract and the Contractor shall be responsible for payment of all subcontracts.

Professional / Technical Services: **Professional / Technical services cannot be subcontracted under this Master Contract.**

14. PREVAILING WAGE

The Contactor shall follow the MPCA Contractor and Subcontracting Purchasing Manual in regards to subcontracting construction activities. Any work on real property which uses the skill sets of any trades covered by Labor Code and Class under prevailing wages is construction and requires prevailing wages must be attached to the bid solicitation. For more information see http://www.doli.State.mn.us/LS/PrevWage.asp for the list of affected trades.

15. CONTRACTOR / SUBCONTRACTOR RESPONSIBILITIES

The Contractor is responsible for all work assigned to the Contractor under this Master Contract whether the work is actually performed by the Contractor or a Subcontractor. The State considers the Contractor to be the sole point of contact with regard to matters governed by this Contract, including payment of any and all charges resulting from this Master Contract. The Contractor is responsible for ensuring that the Subcontractor complies with all provisions of this Master Contract. The Contractor shall not utilize the services of any firms that have been debarred or suspended under Federal Regulation, 40 CFR Part 32. The MPCA will reject or accept Subcontractors as provided in the MPCA Contractor and Subcontracting Purchasing Manual: https://www.pca.state.mn.us/about-mpca/contractor-and-subcontracting-guidance

The use of temporary staff services must be authorized by the State's Contract Manager prior to use.

In the event the Contractor fails to make timely payments to a Subcontractor, the State may, at its sole option and discretion, pay a Subcontractor any amounts due from the Contractor for work performed under the Master Contract and deduct said payment from any remaining amounts due the Contractor. Before any such payment is made to a Subcontractor, the State shall provide the Contractor written notice that payment will be made directly to a Subcontractor. If there are no remaining outstanding payments to the Contractor, the State shall not have obligation to pay or be responsible for the payment of money to a Subcontractor except as may otherwise be required by law.

The MPCA Contractor is the oversight Contractor and will provide direction to the State Contractor and Subcontractor. The MPCA Contractor is responsible for informing the MPCA Contract Manager or State's Project Manager in regards to non-performance by a State Contractor.

16. WORKPLANS:

The workplan shall set forth the tasks the Contractor proposes to perform, a time schedule, and workplan budget. Upon request by the State Project Manager, the Contractor is required to submit Workplans for Work Orders. The Workplan shall be submitted to the requesting State Project Manager for review and approval within the time period prescribed by the State.

The State and the Contractor may negotiate changes to the Workplan prior to issuing the Work Order. The Workplan, once approved by the State, becomes an integral part of the resulting Work Order.

Billable hours and expenses must not exceed the State's approved Workplan amounts. The total labor amount of staff classifications shall not exceed the approved labor amount on the Workplan per task. Only the preapproved staff classifications shall be used and the task must be completed by the appropriate level of staff classification.

Additional personnel classifications will not be permitted.

Classifications may be substituted within a level upon approval by the MPCA Project Manager. If a substitute is outside of the level, the change must be approved prior to any work being done by that classification through either a change order or amendment. Additional personnel classifications shall not be utilized.

Any hours charged to a classification not approved under this Master Contract, or on the budget submitted with the Workplan, will not be considered for payment.

The State may solicit Workplans from multiple Contractors and shall base Contractor selection on the factors set forth in Section 15, Work Orders.

The State shall not pay for the preparation of Workplans or any other work conducted by the Contractor prior to issuance of a Work Order, including time for reviewing files and meeting with State staff. However, when substantial file review is required and/or an extensive Workplan is required, the State may agree to pay for the Workplan preparation.

17. WORK ORDERS

A Work Order is a contract document that is signed by the State's Authorized Representative, the Contractor's Authorized Representative, and if applicable the Department of Administration, requiring the Contractor to perform tasks pursuant to this Master Contract. Each Work Order shall become an integral and enforceable part of the Master Contract once executed by the State. The Workplan, Budget and Timeline must be attached to the Work Order.

Work Orders may be amended by a Change Order or a Work Order Amendment as described in this Master Contract.

Work Orders shall be issued under this Master Contract at the State's discretion. Whether or not a Work Order is issued shall be based on: the Contractor's performance on previous Work Orders; potential or actual conflicts of interest; availability of staff; the need for specialized skill or experience; or other factors as determined by the State's Authorized Representative.

The Contractor shall not begin work under this Master Contract until the Contractor has received an executed Work Order from the State's Authorized Representative.

A Work Order may be issued under this Master Contract with the State's prior approval utilizing funds other than the funds available from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Minnesota Environmental Response Liability Act (MERLA), and the Minnesota Petroleum Tank Release Cleanup Account (Petrofund). The State's Authorized Representative has sole discretion regarding when this option is available.

The State fiscal year ends June 30 of each year. All Work Orders written within a fiscal year must end June 30 of that year. Should work need to continue beyond June 30, a new Work Order beginning July 1 will be required.

18. CHANGE ORDERS:

If the State's Project Manager or the Contractor's Authorized Representative identifies a change needed in the workplan and/or budget, either party may initiate a Change Order using the Change Order Form provided by the MPCA. Change Orders may not alter the overall scope of the Project, increase or decrease the overall amount of the Work Order, or cause an extension of the term of the Work Order. Major changes require an Amendment rather than a Change Order.

The Change Order Form must be approved and signed by the State's Project Manager and the Contractor's Authorized Representative in advance of doing the work. Documented changes will then become an integral and enforceable part of the Work Order. The MPCA has the sole discretion on the determination of whether a requested change is a Change Order or an Amendment. The state reserves the right to refuse any Change Order requests.

19. WORK ORDER AMENDMENTS

Except for changes made by Change Orders described in Clause 18, Change Orders, of this Master Contract, all other changes to the Workplan established in a Work Order shall be made by a Work Order Amendment, signed by the State's Authorized Representative, the Contractor's Authorized Representative, and the Department of Administration Authorized Representative.

A Work Order Amendment may be initiated by the State or by the Contractor. Under no circumstances shall the Contractor proceed with work beyond the work authorized by a Work Order unless a Change Order or a Work Order Amendment has been approved by the State. Each Work Order Amendment shall become an integral and enforceable part of the Master Contract once executed by the State. Changes in Work Order end dates must be processed through a Work Order Amendment.

A revised Workplan must be attached to the Work Order Amendment. All Work Order Amendment amounts shall not exceed 10% of the cost established in the original Work Order or $50,000.00, whichever is less, of the overall Work Order, cumulatively.

20. STOP WORK ORDERS

The State's Contract Manager, State's Project Manager, or the State's Authorized Representative may issue a Stop Work Order if it is determined, for any reason, work authorized under a Work Order shall stop. A Stop Work Order may be verbal, but shall be confirmed in writing by the State. The Contractor shall immediately comply with the terms of the Stop Work Order, which may include steps to leave the site in a safe condition.

The Contractor shall be paid for costs properly invoiced for all work satisfactorily completed up to the date of the Stop Work Order. Costs incurred by the Contractor as a result of the issuance of a Stop Work Order shall be paid by the State through a Work Order Amendment.

21. STATE'S AUTHORIZED REPRESENTATIVES

The State's Authorized Representative has the responsibility to monitor the Contractor's performance and the authority to accept the services provided under this Master Contract. If the services are satisfactory, the State's Authorized Representative will certify acceptance on each invoice submitted for payment.

- The MPCA's Authorized Representatives for this Master Contract are: **name and contact information** 520 Lafayette Road North, Saint Paul, Minnesota 55155, or any other person the Commissioner of the MPCA designates in writing to the Contractor. The MPCA's Project Manager shall be designated in writing by the State before the Contractor begins work on a Work Order and may be changed by written notice to the Contractor.

- The MDA's Authorized Representative is **name and contact information** 625 Robert Street North, Saint Paul, Minnesota 55155, or any other person the Commissioner of the MDA designates in writing to the Contractor. The MDA's Project Manager shall be designated in writing by the State before the Contractor begins work on a Work Order and may be changed by written notice to the Contractor.

22. CONTRACTOR'S AUTHORIZED REPRESENTATIVES

The Contractor's Authorized Representative are **name and contact information**, and is authorized to sign Contracts and accept Work Orders from the State on behalf of the Contractor. If the Contractor's Authorized Representative changes at any time during this Master Contract, the Contractor must immediately notify the State.

The Contractor's Authorized Representative may designate alternative or additional representatives by written notice to the State's Authorized Representative.

23. CONFLICTS CHECK

Prior to beginning any work on a project, the Contractor shall determine whether it has any actual or potential conflict of interest in working on the project. If the Contractor determines it has no conflict of interest, it shall provide to the State the following certification within five (5) business days of receiving the first Work Order from the State per site and prior to beginning any work under the Work Order.

> *[To the best of the [name of Contractor]'s knowledge, no conflict of interest would be created by this firm's performance of work for the State at this site. To the best of the firm's knowledge, no relationship exists between this firm, its parent companies, affiliates, Subcontractors and subsidiaries, or any potentially responsible persons involved with the work described in this Workplan, except [disclose any relationship the Contractor has that does not rise to the level of a conflict of interest].*

If the State determines that there is an actual or potential conflict of interest, the State may revoke any previously issued related Work Order. In the event that a conflict is discovered after the Contractor has begun work under the Work Order, the Contractor shall immediately notify the State's Project Manager in writing with a copy sent to State's Contract Manager, and cease work on the project until the conflict is resolved. The cost of demobilization because of a conflict shall be paid by the State unless the State's Authorized Representative finds that the Contractor should have previously discovered the conflict. The Contractor shall not conduct work for any other party on projects for which the Contractor has accepted a State project assignment unless specifically authorized to do so by the State's Authorized Representative.

24. CONTRACT RELATIONS

The Contractor shall cooperate and coordinate with other State Contractors and shall ensure all subcontractors cooperate and coordinate with other State Contractors. The Contractor and Subcontractor shall use their company's personnel assigned to the Master Contract in the Response to the RFP, which is incorporated herein by reference, or as subsequently approved by the State.

Communication among the Contractors shall be as efficient as possible. The State's use of this Master Contract must be easy and efficient, with no extra administrative burden for the State.

25. CONTRACTOR MEETINGS AND TRAINING

The Contractor shall meet with the State's representatives to discuss matters relevant to this Master Contract and the work assigned to the Contractor, upon request of the State Contract Manager, State's Project Manager and/or the State's Authorized Representative. The State's Contract Manager, State's Project Manager and/or the State's Authorized Representative shall meet with the Contractor upon the Contractor's request to discuss matters relevant to this Contract and projects assigned to the Contractor under this Master Contract. The State shall pay for meeting time only for project specific meetings. The State shall not pay for time for Master Contract status meetings or other meetings requested by the State's Authorized Representative.

The Contractor must attend training required by the State.

26. SITE ACCESS

The Contractor shall be responsible for checking property ownership and obtaining access to property needed to accomplish work assigned under this Master Contract unless otherwise notified by the State's Project Manager. However, if, after making reasonable efforts, the Contractor cannot obtain access to the site, the Contractor shall seek assistance from the State's Project Manager. The State will not pay for access to property, but it shall make other reasonable efforts to gain access to the Site. The Contractor shall use the forms provided by the State for obtaining access.

27. PERMITS AND LICENSES

The Contractor shall obtain and maintain all patents, licenses, permits, authorizations, or any other documents required by federal, State, or local governments, patent holders, or other authorities, that are needed for work the Contractor shall perform pursuant to this Master Contract. With limited exception, the State will not pay patent, permit, license, authorization, or other fees, but shall provide reasonable assistance to the Contractor in obtaining such patents, permits, licenses, authorizations, or other documents.

28. GENERAL HEALTH AND SAFETY

The Contractor shall ensure that its personnel assigned under this Master Contract, and the personnel of the State Contractor and all Subcontractors have received the appropriate level of health and safety training as specified by all applicable laws. The Contractor shall be responsible for the health and safety of its employees, and the employees of the State Contractor, and all Subcontractors in connection with the work performed under this Master Contract. The Contractor must have a copy of the project specific Health and Safety Plan available upon request at the project site. Site Security Plans will be developed as needed.

The Contractor is responsible to assure the Contractor, Subcontractor, and the State Contractor follow the Contractor's Health and Safety Plan. The Contractor must notify the State Project Manager in regards to non-performance or health and safety conditions.

29. SITE SECURITY PLAN

After award of a Work Order the Contractor shall prepare a site specific Health and Safety Plan (HASP) that complies with all applicable State and federal laws and regulations.

The Contractor shall submit a copy of the Contractor's HASP and SSP to the State's Project Manager, for review only. MPCA staff shall comply with the provisions of the Contractor's HASP and SSP when on-site. The Contractor's HASP and SSP shall not place more stringent requirements on MPCA staff than on the Contractor's employees. The Contractor must have a copy of the HASP and SSP available upon request at the project site.

Site Safety Conditions: The Contractor shall have authority to restrict from the project site anyone not complying with the Contractor's HASP and SSP. Any person so restricted from the project site shall be allowed to return to the project site after meeting all provisions of the Contractor's HASP and SSP. The Contractor must notify the MPCA Project Manager regarding non-compliance with the HASP or SSP.

The Contractor shall hold regular safety meetings. State staff may attend when appropriate. The topic of the meetings shall specifically involve safety and attendees shall, at a minimum, discuss safety problems and requirements related to the project.

The Contractor shall not be required to supply personal protective equipment or monitoring equipment for any persons other than Contractor's employees. However, the Contractor shall make available its decontamination facilities to those persons who reasonably require access to the work site, including Subcontractors, State, and other regulatory authorities. The Contractor shall be solely responsible for ensuring compliance by all persons with Contractor's HASP. However, the Contractor shall not unreasonably restrict State access to the site. If the State requests the right to observe work and State staff are denied access because of noncompliance with the Contractor's Health and Safety Program, the Contractor shall not proceed with the work until the State may observe the work.

30. SITE STABILIZATION

If the Contractor becomes aware that a site assigned to the Contractor requires immediate corrective action to stabilize the site to prevent further damage to the environment or to remove a threat to public health or welfare, the Contractor shall immediately notify the State's Authorized Representative or State's Project Manager of the situation. If authorized by the State's Authorized Representative or State's Project Manager, the Contractor shall take appropriate measures to stabilize the site.

31. WASTE REMOVAL AND WELL OWNERSHIP

The Contractor shall manage all hazardous and non-hazardous wastes according to applicable local, State and federal laws. The Contractor shall recommend to the State the means of disposal of hazardous waste. In the event the Contractor is required to manage hazardous wastes, the State's Project Manager shall obtain an U.S. Environmental Protection Agency (EPA) hazardous waste identification number to identify the State as generator of the waste. The Contractor is not responsible for the long term maintenance and proper abandonment of wells installed pursuant to this Master Contract unless the Contractor is directed to do so by a Work Order.

32. BROWNFIELD SITE-SPECIFIC STANDARDS AND PRACTICES

Contractor working on Brownfield site-specific activities must meet interim standards and practices established in EPA's proposed All Appropriate Rule, and the standards and practices contained in EPA's All Appropriate Rule when promulgated: http://www.epa.gov/brownfields/aai/index.htm

33. STATE AUDITS

Under Minn. Stat. § 16C.05, Subd. 5, the Contractor's books, records, documents, and accounting procedures and practices relevant to this Work Order are subject to examination by the State and/or the State Auditor or Legislative Auditor, as appropriate, for a minimum of six years from the end of this Master Contract.

34. ASSIGNMENT, AMENDMENTS, WAIVER, AND MASTER CONTRACT COMPLETE

34.1 Assignment. The Contractor may neither assign nor transfer any rights or obligations under this Master Contract without the prior consent of the State and a fully executed assignment agreement, executed and approved by the same parties who executed and approved this Master Contract, or their successors in office.

34.2 Amendments. Any amendment to this Master Contract must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original Master Contract, or their successors in office.

34.3 Waiver. If the State fails to enforce any provision of this Master Contract or any Work Order, that failure does not waive the provision or its right to enforce it.

34.4 Contract complete. This Master Contract and any Work Order contains all negotiations and agreements between the State and the Contractor. No other understanding regarding this Master Contract or Work Order, whether written or oral, may be used to bind either party.

35. CANCELLATION / TERMINATION, CONTINUITY OF SERVICES

Termination by the State: The State or Commissioner of Administration may cancel this Master Contract and any Work Orders at any time, with or without cause, upon thirty (30) days' written notice to the Contractor. Upon termination, the Contractor will be entitled to payment, determined on a pro rata basis, for services satisfactorily performed.

In the event this Master Contract is cancelled or expires, the Contractor shall provide phase-in phase-out (PIPO) training if required to do so by a Work Order. The PIPO services shall be provided to enable the State or another Contractor to continue, extend, or expand the work to be performed by the Contractor. The PIPO training may include conducting a training program and establishing dates for transfer of responsibility to new personnel. During the PIPO period, the Contractor shall provide sufficient experienced personnel to allow the work governed by this Master Contract to proceed without a loss of efficiency. The Contractor shall also provide the State with copies of computer models, data tapes, and other records developed under this Master Contract, and ensure training is provided on the use of these materials. The Contractor shall be reimbursed for its PIPO costs at the rates specified in the attached fee schedule.

Termination for Insufficient Funding: The State may immediately terminate this Master Contract and any Work Order if it does not obtain funding from the Minnesota Legislature or other funding source; or if funding cannot be continued at a level sufficient to allow for the payment of the services covered here. Termination must be by written or fax notice to the Contractor. The State is not obligated to pay for any services that are provided after notice and effective date of termination. However, the Contractor will be entitled to payment, determined on a pro rata basis, for services satisfactorily performed to the extent that funds are available. The State will not be assessed any penalty if the Contract or Work Order is terminated because of the decision of the Minnesota Legislature or other funding source, not to appropriate funds. The State must provide the Contractor notice of the lack of funding within a reasonable time of the State's receiving that notice.

36. INDEMNIFICATION

In the performance of this Contract by Contractor, or Contractor's agents or employees, or Subcontractors, the Contractor must indemnify, save, and hold harmless the State, its agents, and employees, from any claims or causes of action, including attorney's fees incurred by the State, to the extent caused by Contractor's:

a) Intentional, willful, or negligent acts or omissions; or
b) Actions that give rise to strict liability; or
c) Breach of contract or warranty.

The indemnification obligations of this section do not apply in the event the claim or cause of action is the result of the State's sole negligence. This clause will not be construed to bar any legal remedies the Contractor may have for the State's failure to fulfill its obligation under this Contract.

37. LIABILITY

Liability under MERLA

A. When performing work under the Contract for the State when the State is acting pursuant to Minn. Stat. § 115B.17 of the Minnesota Environmental Response and Liability Act (MERLA), the Contractor that is not otherwise responsible for a release or threatened release of hazardous substances or pollutants or contaminants is considered to be a Contractor that is performing response actions in accordance with a plan approved by the Commissioner, for purposes of Minn. Stat. §115B.03, Subd. 10.
B. When performing work under the Contract for the State when the State is acting:
    i. pursuant to Minn. Stat. § 115B.17 of MERLA, or
    ii. in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300), promulgated by the U.S. Environmental Protection Agency (EPA) pursuant to 42 U.S.C. § 9605 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) with respect to any release or threatened release of a hazardous substance, the Contractor is considered to be engaged in acts taken or omitted in preparation for, or in the course of rendering care, assistance and advice to the Commissioner or the Agency for purposes of Minn. Stat. § 115B.04, Subd. 11, and, in the event a third

party claims injury or damages resulting from acts or omissions arising from performance of the Contract, the defense provided under Minn. Stat. §115B.04, subd. 11, is intended, but not warranted by the State, to be available to the Contractor and the State as a defense to MERLA liability claims. The provisions of the Liability under MERLA paragraphs are intended, but not warranted by the State, to include subcontractors approved by the State.

Liability under CERCLA

To the extent that the Contractor meets the definition of a "response action contractor" under 42 U.S.C. § 9619(e) of CERCLA, it is intended, but not warranted by the State, that the Contractor be exempt from liability under CERCLA or other federal law as is provided in 42 U.S.C. § 9619. Furthermore, 42 U.S.C. § 9619 provides the President with discretionary authority to indemnify response action contractors for releases of hazardous substances or pollutants or contaminants arising out of negligence in the course of Superfund work. No indemnification by the State is created by the Contract. The term "response action contractor" is intended, but not warranted by the State, to include subcontractors approved by the State. Nothing in this Part is intended to be construed as a waiver by the State of the Tort Claims Act, Minn. Stat. §3.736, or any other law, legislative or judicial, limiting government liability. The duties and obligations imposed by the Contract and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the State or the Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

38. INSURANCE

Contractor certifies that it is in compliance with all insurance requirements specified in the solicitation document relevant to this Master Contract. Contractor shall not commence work under the Master Contract until they have obtained all the insurance specified in the solicitation document. Contractor shall maintain such insurance in force and effect throughout the term of the Master Contract.

A. Contractor shall not commence work under the Contract until they have obtained all the insurance described below and the State of Minnesota has approved such insurance. Contractor shall maintain such insurance in force and effect throughout the term of the Master Contract.

B. Contractor is required to maintain and furnish satisfactory evidence of the following insurance policies:

Workers' Compensation Insurance: Except as provided below, Contractor must provide Workers' Compensation insurance for all its employees and, in case any work is subcontracted, Contractor will require the Subcontractor to provide Workers' Compensation insurance in accordance with the statutory requirements of the State of Minnesota, including Coverage B, Employer's Liability. Insurance **minimum** limits and coverages are as follows:

$100,000 – Bodily Injury by Disease per employee
$500,000 – Bodily Injury by Disease aggregate
$100,000 – Bodily Injury by Accident
Waiver of Subrogation in favor of the State of Minnesota

If Minn. Stat. § 176.041 exempts Contractor from Workers' Compensation Insurance or if the Contractor has no employees in the State of Minnesota, Contractor must provide a written statement, signed by an authorized representative, indicating the qualifying exemption that excludes Contractor from the Minnesota Workers' Compensation requirements.

If during the course of the Master Contract the Contractor becomes eligible for Workers' Compensation, the Contractor must comply with the Workers' Compensation Insurance requirements herein and provide the State of Minnesota with a certificate of insurance.

Commercial Automobile Liability Insurance: Contractor is required to maintain insurance protecting it from claims for damages for bodily injury as well as from claims for property damage resulting from the ownership, operation, maintenance or use of all owned, hired, and non-owned autos which may arise from operations under this Master Contract, and in case any work is subcontracted the Contractor will require the Subcontractor to maintain Commercial Automobile Liability insurance. Insurance **minimum** limits are as follows:

a. Minimum Limits of Liability:
   i. $2,000,000 – per occurrence Combined Single limit for Bodily Injury and Property Damage
b. In addition, the following coverages should be included:
   i. Owned, Hired, and Non-owned Automobile
   ii. CA9948 Endorsement – Pollution Liability – Broadened
   iii. MCS90 Endorsement
   (NOTE: CA9948 and MCS90 Endorsement is required if service includes the transport of pollutants. Refer to MPCA Contractor and Subcontracting Purchasing Manual.)

Commercial General Liability Insurance: Contractor is required to maintain insurance protecting it from claims for damages for bodily injury, including sickness or disease, death, and for care and loss of services as well as from claims for property damage, including loss of use which may arise from operations under the Master Contract whether the operations are by the Contractor or by a subcontractor or by anyone directly or indirectly employed by the Contractor under the Contract. Insurance **minimum** limits are as follows:

a. Minimum Limits of Liability:
   i. $2,000,000 – Per Occurrence
   ii. $2,000,000 – Annual Aggregate
   iii. $2,000,000 – Annual Aggregate – Products/Completed Operations
b. The following coverages shall be included:
   i. Premises and Operations Bodily Injury and Property Damage
   ii. Personal & Advertising Injury
   iii. Blanket Contractual Liability
   iv. Products and Completed Operations Liability (If applicable)
   v. State of Minnesota named as Additional Insured
   vi. Waiver of subrogation in favor of the State of Minnesota

Pollution Liability Insurance: Contractor's Pollution Liability (or equivalent pollution liability coverage endorsed on another form of liability coverage, such as general liability or professional errors and omissions policy).
a. Minimum Limits of Liability:
   i. $2,000,000 – Per Claim
   ii. $2,000,000 – Annual Aggregate
b. Coverages:
   i. Policy will include Non-Owned Disposal Site Pollution Liability.
   ii. Policy will not contain a lead exclusion.
   iii. Owner named as an Additional Insured.
   vii. . Waiver of subrogation in favor of the State of Minnesota

Professional/Technical, Errors and Omissions, and/or Miscellaneous Liability Insurance: This policy will provide coverage for all claims the Contractor may become legally obligated to pay resulting from any actual or alleged negligent act, error, or omission related to Contractor's professional services required under the Master Contract.

Contractor is required to carry the following **minimum** limits:

$2,000,000 – per claim or event
$2,000,000 – annual aggregate

Any deductible will be the sole responsibility of the Contractor and may not exceed $50,000 without the written approval of the State. If the Contractor desires authority from the State to have a deductible in a higher amount, the Contractor shall so request in writing, specifying the amount of the desired deductible and providing financial documentation by submitting the most current audited financial statements so that the State can ascertain the ability of the Contractor to cover the deductible from its own resources.

The retroactive or prior acts date of such coverage shall not be after the effective date of this Master Contract and Contractor shall maintain such insurance for a period of at least three (3) years, following completion of the work. If such insurance is discontinued, extended reporting period coverage must be obtained by Contractor to fulfill this requirement.

Builder's Risk Insurance: The Contractor shall be responsible for providing and maintaining "All Risk" or equivalent Builder's Risk policy insuring the interest of the State, Contractor, and any tier of Subcontractor or the Contractor shall be responsible for requiring that their Subcontractor provide and maintain Builder's Risk policy insuring the interest of the State, Contractor, and any tier of Subcontractor. Coverage on an "All Risk" or equivalent basis shall include the perils of flood, earthquake and pollution cleanup expense. Builder's Risk limit of liability shall be equal to the construction cost. Any deductible shall be the sole responsibility of the Contractor and shall not exceed $10,000 without the written approval of the State.

1. The Builder's Risk policy will cover all materials, supplies and equipment that are intended for construction and specific installation in the project while such materials, supplies and equipment are located at the project site, in transit and while temporarily located away from the project site for the purpose of repair, adjustment or storage at the risk of one of the insured parties.

2. Any property not covered by the Builder's Risk policy, such as the Contractor's or any tier of Subcontractor's licensed motor vehicles or personal property, including job trailers, machinery, tools, equipment and property of a similar nature not destined to become a part of the project, shall be the responsibility of the Contractor or Subcontractor at any tier, and such person or organization may self-insure or provide other insurance at its option for the same.

3. ***Waiver of Liability.*** Absent State or Architect sole negligence or breach of specific Contractual duty specifically and logically related to the damage or loss, the State or Architect will not be responsible for loss or damage to property of any kind owned, borrowed, rented or leased by the Contractor, Subcontractors of all tiers and/or the Contractor's/Subcontractors employees, servants or agents.

4. ***Waivers of Subrogation***. The State and Contractor waive all rights against (1) each other and any of their Subcontractors of all tiers and (2) the Architect, and the Architect's Subcontractors of all tiers for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to the provisions of paragraph 31.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the State or Contractor as fiduciary. The State or Contractor, as appropriate, shall require of the Architect, and the Architect's Subcontractors of all tiers, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

5. All losses and claims shall be immediately reported to the Contractor, State and applicable insurance carrier, under loss notice procedures as directed by the Contractor.

6. Any loss insured under Section 31.3 is to be adjusted with the Contractor and made payable to the Contractor as trustee for all insured parties, as their interests may appear, subject to the requirements of any applicable mortgage clause. The Contractor shall pay the State a just share of any insurance moneys received, and by appropriate agreement, written where legally required for validity, shall require the Contractor to make just share payments to the Subcontractors and lower tiered Sub-Subcontractors in similar manner.

7. Partial occupancy or use shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise.

8. ***Boiler and Machinery Insurance***. The Contractor shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the State; this insurance shall include interests of the States, Contractor, Subcontractors and Sub-Subcontractors in the Work, and the State and Contractor shall be named insureds.

   Loss of Use Insurance. The State, at the State's option, may purchase and maintain such insurance as will insure the State against loss of use of the State's property due to fire or other hazards,

C. Additional Insurance Conditions:

- Contractor's policy(ies) shall be primary insurance to any other valid and collectible insurance available to the State of Minnesota with respect to any claim arising out of Contractor's performance under this Master Contract;

- If Contractor receives a cancellation notice from an insurance carrier affording coverage herein, Contractor agrees to notify the State of Minnesota within five (5) business days with a copy of the cancellation notice, unless Contractor's policy(ies) contain a provision that coverage afforded under the policy(ies) will not be cancelled without at least thirty (30) days advance written notice to the State of Minnesota;

- Contractor is responsible for payment of Master Contract related insurance premiums and deductibles;

- If Contractor is self-insured, a Certificate of Self-Insurance must be attached;

- Contractor's policy(ies) shall include legal defense fees in addition to its liability policy limits, with the exception of B.4 above;

- Contractor shall obtain insurance policy(ies) from insurance company(ies) having an "AM BEST" rating of A- (minus); Financial Size Category (FSC) VII or better, and authorized to do business in the State of Minnesota; and

- An Umbrella or Excess Liability insurance policy may be used to supplement the Contractor's policy limits to satisfy the full policy limits required by the Master Contract.

D. The State reserves the right to immediately terminate the Master Contract if the Contractor is not in compliance with the insurance requirements and retains all rights to pursue any legal remedies against the Contractor. All insurance policies must be open to inspection by the State, and copies of policies must be submitted to the State's Authorized Representative upon written request.

E. The Contractor is required to submit Certificates of Insurance acceptable to the State of Minnesota as evidence of insurance coverage requirements prior to commencing work under the Master Contract.

Further, the Contractor certifies that it is in compliance with Minn. Stat. § 176.181, Subd. 2, pertaining to Workers' Compensation insurance coverage. The Contractor's employees and agents will not be considered State employees. Any claims that may arise under the Minnesota Workers' Compensation Act on behalf of these employees or agents and any claims made by any third party as a consequence of any act or omission on the part of these employees or agents are in no way the State's obligation or responsibility.

39. GOVERNMENT DATA PRACTICES AND INTELLECTUAL PROPERTY

39.1 Government data practices. The Contractor and State must comply with the Minnesota Government Data Practices Act, Minn. Stat. Ch. 13, as it applies to all data provided by the State under any Work Order and as it applies to all data created, collected, received, stored, used, maintained, or disseminated by the Contractor under the Work Order. The civil remedies of Minn. Stat. § 13.08 apply to the release of the data referred to in this Clause~~,~~ by either the Contractor or the State.

If the Contractor receives a request to release the data referred to in this Clause, the Contractor must immediately notify the State. The State will give the Contractor instructions concerning the release of the data to the requesting party before the data is released.

39.2 (A) Intellectual property rights.

The State owns all rights, title, and interest in all of the intellectual property rights, including copyrights, patents, trade secrets, trademarks, and service marks in the Works and Documents *created and paid for under Work Orders.* Works means all inventions, improvements, discoveries (whether or not patentable), databases, computer programs, reports, notes, studies, photographs, negatives, designs, drawings, specifications, materials, tapes, and disks conceived, reduced to practice, created or originated by the Contractor, its employees, agents, and Subcontractors, either individually or jointly with others in the performance of this Master Contract or any Work Order. Works includes "Documents." Documents are the originals of any databases, computer programs, reports, notes, studies, photographs, negatives, designs, drawings, specifications, materials, tapes, disks, or other materials, whether in tangible or electronic forms, prepared by the Contractor, its employees, agents, or Subcontractors, in the performance of a Work Order. The Documents will be the exclusive property of the State and all such Documents must be immediately returned to the State by the Contractor upon completion or cancellation of the Work Order. To the extent possible, those Works eligible for copyright protection under the United States Copyright Act will be deemed to be "works made for hire." The Contractor assigns all right, title, and interest it may have in the Works and Documents to the State. The Contractor must, at the request of the State, execute all papers and perform all other acts necessary to transfer or record the State's ownership interest in the Works and Documents

(B)Obligations:

1. ***Notification:*** Whenever any invention, improvement, or discovery (whether or not patentable) is made or conceived for the first time or actually or constructively reduced to practice by the Contractor, including its employees, agents, and Subcontractors, in the performance of the Work Order, the Contractor will immediately give the State's Authorized Representative written notice thereof, and must promptly furnish the State's Authorized Representative with complete information and/or disclosure thereon.

2. ***Representation:*** The Contractor must perform all acts, and take all steps necessary to ensure that all intellectual property rights in the Works and Documents are the sole property of the State, and that neither Contractor nor its employees, agents or Subcontractors retain any interest in and to the Works and Documents. The Contractor represents and warrants that the Works and Documents do not and will not infringe upon any intellectual property rights of other persons or entities. Notwithstanding Clause 24, the Contractor will indemnify; defend, to the extent permitted by the Attorney General; and hold harmless the State, at the Contractor's expense, from any action or claim brought against the State to the extent that it is based on a claim that all or part of the Works or Documents infringe upon the intellectual property rights of others. The Contractor will be responsible for payment of any and all such claims, demands, obligations, liabilities, costs, and damages, including but not limited to, attorney fees. If such a claim or action arises, or in the Contractor's or the State's opinion is likely to arise, the Contractor must, at the State's discretion, either procure for the

State the right or license to use the intellectual property rights at issue or replace or modify the allegedly infringing Works or Documents as necessary and appropriate to obviate the infringement claim. This remedy of the State will be in addition to and not exclusive of other remedies provided by law.

40. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSION

Federal money will be used or may potentially be used to pay for all or part of the work under the Master Contract, therefore Contractor certifies that it is in compliance with federal requirements on debarment, suspension, ineligibility and voluntary exclusion specified in the solicitation document implementing Executive Order 12549. Contractor's certification is a material representation upon which the Master Contract award was based.

41. PUBLICITY AND ENDORSEMENT

41.1 ***Publicity.*** Any publicity regarding the subject matter of a Work Order must identify the State as the sponsoring agency and must not be released without prior written approval from the State's Authorized Representative. For purposes of this provision, publicity includes notices, informational pamphlets, press releases, research, reports, signs, and similar public notices prepared by or for the Contractor individually or jointly with others, or any subcontractors, with respect to the program, publications, or services provided resulting from a Work Order. During State contracted work, the Contractor shall defer all interviews and requests for information from the media, private citizens or public officials to the State unless the State specifically requests the Contractor to handle such requests.

39.2 Endorsement. The Contractor must not claim that the State endorses its products or services

42. GOVERNING LAW, JURISDICTION, AND VENUE

Minnesota law, without regard to its choice-of-law provisions, governs this Master Contract and all Work Orders. Venue for all legal proceedings out of this Master Contract and/or any Work Order, or its breach, must be in the appropriate state or federal court with competent jurisdiction in Ramsey County, Minnesota.

43. DATA DISCLOSURE

Under Minn. Stat. § 270C.65, Subd. 3 and other applicable law, the Contractor consents to disclosure of its social security number, federal employer tax identification number, and/or Minnesota tax identification number, already provided to the State, to federal and State agencies, and State personnel involved in the payment of State obligations. These identification numbers may be used in the enforcement of federal and State laws which could result in action requiring the Contractor to file State tax returns, pay delinquent State tax liabilities, if any, or pay other State liabilities.

44. NON-DISCRIMINATION (IN ACCORDANCE WITH MINN. STAT. § 181.59)

The Contractor will comply with the provisions of Minn. Stat. § 181.59 which requires:
Every contract for or on behalf of the State of Minnesota, or any county, city, town, township, school, school district, or any other district in the State, for materials, supplies, or construction shall contain provisions by which the Contractor agrees: (1) That, in the hiring of common or skilled labor for the performance of any work under any contract, or any subcontract, no contractor, material supplier, or vendor, shall, by reason of race, creed, or color, discriminate against the person or persons who are citizens of the United States or resident aliens who are qualified and available to perform the work to which the employment relates; (2) That no contractor, material supplier, or vendor, shall, in any manner, discriminate against, or intimidate, or prevent the employment of any person or persons identified in clause (1) of this section, or on being hired, prevent, or conspire to prevent, the person or persons from the performance of work under any contract on account of race, creed, or color; (3) That a violation of this section is a misdemeanor; and (4) That this Master Contract may be canceled or terminated by the State, county, city, town, school board, or any other person authorized to grant the contracts for employment, and all money due, or to become due under the Master Contract, may be forfeited for a second or any subsequent violation of the terms or conditions of this Master Contract.

45. STANDARD OF WORK

The Contractor shall comply with the terms of this Master Contract and Work Orders, Change Orders, Work Order Amendments, and Stop Work Orders from the State. The State shall not approve, and no payment shall be made for, work that does not meet these standards. The State reserves the right to request that any data deliverables improperly formatted be corrected before the submittal will be accepted. Any extra expenses incurred due to such edits will be the Contractor's responsibility.

Unless the Force Majeure clause applies, failure to meet such deadline dates shall be a basis for a determination by the State's Authorized Representative that the Contractor has not complied with the terms of the Master Contract.

46. FORCE MAJEURE

Failure to meet time lines established in Work Orders, Change Orders, Work Order Amendments, and Stop Work Orders when caused by acts of God, war, strike, riot or other catastrophe or by acts or omissions of the State or the State's Authorized Representative, or by other reasons beyond the reasonable control of the Contractor, which are not due to negligence or lack of diligence on the Contractor's part, and which occur despite the Contractor's good faith efforts to meet the time lines, shall not be considered to be noncompliance with the Master Contract if the Contractor promptly notifies the State's Authorized Representative of the failure to meet the time lines and the reasons therefore and takes all necessary steps to bring about compliance as soon as practicable.

The Contractor shall have the burden of proof that the failure to meet the schedule was caused by events beyond the reasonable control of the Contractor which could not have been overcome by due diligence. In the event of such interruptions or delays, the date for completion of the Work Order shall be extended for a period of time equal to that of the interruption or delay.

47. PERFORMANCE DEADLINES

The Contractor must comply with all of the time requirements described in this Master Contract. In addition to any other remedy authorized by this Master Contract, the State may elect to invoke the liquidated damages remedy provided in this part.

If the Contractor misses a deadline, and if the Force Majeure clause does not apply, the State's Authorized Representative shall send the Contractor a written notice that a deadline has been missed and that in no sooner than ten (10) days a second written notice shall be sent. No sooner than ten (10) days after the initial written notice, unless the matter has been resolved, the State's Authorized Representative shall send the Contractor a second written notice stating that liquidated damages pursuant to this Master Contract shall begin to accrue twenty (20) days after receipt of the second notice. If pursuant to the Change Order clause or the Work Order Amendments clause of this Master Contract a request for extension has been received and if the State considers the extension request reasonable and the delay does not substantially affect the public interest, the State shall issue a Change Order or Work Order Amendment with the new deadline. If the State considers the request unreasonable, or if a delay would substantially affect the public interest, the State shall not extend the performance deadline.

The Contractor shall pay the State liquidated damages in the amount of $3,000, or 5% of the budget amount authorized in the Work Orders from the State, whichever is less, per week beginning twenty (20) days after the Contractor receives a second written notice of the deadline violation and ending when the performance is complete. The State may also deduct the liquidated damages from its payments to the Contractor under this Master Contract.

48. USE OF STATE CONTRACTS

Contractors and Subcontractors may provide oversight to State Contractors as appropriate, or the State may directly use the State Contractors.

49. FOREIGN OUTSOURCING

Contractor agrees all services under this contract shall be performed within the borders of the United States. All storage and processing of information shall be performed within the borders of the United States. This provision also applies to work performed by subcontractors at all tiers.

50. AFFIRMATIVE ACTION

Affirmative Action Requirements for Contracts in Excess of $100,000 and if the Contractor has More than 40 Full-time Employees in Minnesota or its Principal Place of Business

The State intends to carry out its responsibility for requiring affirmative action by its Contractors.

50.1 ***Covered Contracts and Contractors.*** If the Contract exceeds $100,000 and the Contractor employed more than 40 full-time employees on a single working day during the previous 12 months in Minnesota or in the state where it has its principle place of business, then the Contractor must comply with the requirements of Minn. Stat. § 363A.36 and Minnesota Rule Parts 5000.3400-5000.3600. A contractor covered by Minn. Stat. § 363A.36 because it employed more than 40 full-time employees in another state and does not have a certificate of compliance, must certify that it is in compliance with federal affirmative action requirements.

50.2 ***Minn. Stat. § 363A.36.*** Minn. Stat. § 363A.36 requires the Contractor to have an affirmative action plan for the employment of minority persons, women, and qualified disabled individuals approved by the Minnesota Commissioner of Human Rights ("Commissioner") as indicated by a certificate of compliance. The law addresses suspension or revocation of a certificate of compliance and contract consequences in that event. A contract awarded without a certificate of compliance may be voided.

50.3 ***Minnesota Rule Parts 5000.3400-5000.3600.***

A. *General.* Minnesota Rule Parts 5000.3400-5000.3600 implement Minn. Stat. § 363A.36. These rules include, but are not limited to, criteria for contents, approval, and implementation of affirmative action plans; procedures for issuing certificates of compliance and criteria for determining a contractor's compliance status; procedures for addressing deficiencies, sanctions, and notice and hearing; annual compliance reports; procedures for compliance review; and contract consequences for non-compliance. The specific criteria for approval or rejection of an affirmative action plan are contained in various provisions of Minnesota Rule Parts 5000.3400-5000.3600 including, but not limited to, parts 5000.3420-5000.3500 and 5000.3552-5000.3559.

B. *Disabled Workers.* The Contractor must comply with the following affirmative action requirements for disabled workers.

1. The Contractor must not discriminate against any employee or applicant for employment because of physical or mental disability in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified disabled persons without discrimination based upon their physical or mental disability in all employment practices such as the following: employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.
2. The Contractor agrees to comply with the rules and relevant orders of the Minnesota Department of Human Rights issued pursuant to the Minnesota Human Rights Act.
3. In the event of the Contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with Minn. Stat. § 363A.36, and the rules and relevant orders of the Minnesota Department of Human Rights issued pursuant to the Minnesota Human Rights Act.
4. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the commissioner of the Minnesota Department of Human Rights. Such notices must state the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified disabled employees and applicants for employment, and the rights of applicants and employees.
5. The Contractor must notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of

Minn. Stat. § 363A.36, of the Minnesota Human Rights Act and is committed to take affirmative action to employ and advance in employment physically and mentally disabled persons.

C. *Consequences*. The consequences for the Contractor's failure to implement its affirmative action plan or make a good faith effort to do so include, but are not limited to, suspension or revocation of a certificate of compliance by the Commissioner, refusal by the Commissioner to approve subsequent plans, and termination of all or part of this Master Contract by the Commissioner or the State.

D. *Certification*. The Contractor hereby certifies that it is in compliance with the requirements of Minn. Stat.§ 363A.36 and Minnesota Rule Parts 5000.3400-5000.3600 and is aware of the consequences for noncompliance.

51. TESTIMONY

If requested by the State's Authorized Representative, the Contractor agrees to testify at any State, federal, judicial or administrative proceeding brought by federal or State agencies or by a political subdivision of the State in which the work performed under this Master Contract is relevant. The Contractor agrees to meet and cooperate with the State's legal counsel as necessary to prepare for such testimony, and if so requested by the State's Authorized Agent, the Contractor shall prepare written testimony, graphs, diagrams or other visual aids to be used by the State in the proceeding(s). The Contractor shall be reimbursed at the rates for participation in State or federal judicial or administrative proceedings as specified in the Classifications and Rates.

52. ANTITRUST

The Contractor shall assign to the State any and all claims for overcharges as to goods or services provided in connection with this Contract resulting from antitrust violations which arise under the antitrust laws of the United States or the antitrust laws of the State.

53. E-VERIFY CERTIFICATION (IN ACCORDANCE WITH MINN. STAT. §16C.075)

For services valued in excess of $50,000, Contractor certifies that as of the date of services performed on behalf of the State, Contractor and all its Subcontractors will have implemented or be in the process of implementing the federal E-Verify program for all newly hired employees in the United States who will perform work on behalf of the State. Contractor is responsible for collecting all Subcontractor certifications and may do so utilizing the E-Verify Subcontractor Certification Form available at http://www.mmd.admin.State.mn.us/doc/EverifySubCertForm.doc. All Subcontractor certifications must be kept on file with Contractor and made available to the State upon request.

54. Certification of Nondiscrimination (In accordance with Minn. Stat. § 16C.053)

The following term applies to any contract for which the value, including all extensions, is $50,000 or more: Contractor certifies it does not engage in and has no present plans to engage in discrimination against Israel, or against persons or entities doing business in Israel, when making decisions related to the operation of the vendor's business. For purposes of this section, "discrimination" includes but is not limited to engaging in refusals to deal, terminating business activities, or other actions that are intended to limit commercial relations with Israel, or persons or entities doing business in Israel, when such actions are taken in a manner that in any way discriminates on the basis of nationality or national origin and is not based on a valid business reason.

[Signatures as required by the State]

Affidavit of Noncollusion– Attachment D

ATTACHMENT D

STATE OF MINNESOTA
AFFIDAVIT OF NONCOLLUSION

I swear (or affirm) under the penalty of perjury:

1. That I am the Responder (if the Responder is an individual), a partner in the company (if the Responder is a partnership), or an officer or employee of the responding corporation having authority to sign on its behalf (if the Responder is a corporation);

2. That the attached proposal submitted in response to the MPCA PT RFP Remediation Master Contract Request for Proposals has been arrived at by the Responder independently and has been submitted without collusion with and without any agreement, understanding or planned common course of action with, any other Responder of materials, supplies, equipment or services described in the Request for Proposal, designed to limit fair and open competition;

3. That the contents of the proposal have not been communicated by the Responder or its employees or agents to any person not an employee or agent of the Responder and will not be communicated to any such persons prior to the official opening of the proposals; and

4. That I am fully informed regarding the accuracy of the statements made in this affidavit.

Responder's Firm Name: Amec Foster Wheeler Environment & Infrastructure, Inc.

Authorized Representative (Please Print) Curtis Hudak

Authorized Signature: C Hudak

Date: 03/29/2018

Subscribed and sworn to me this 2nd day of April

Notary Public Signature:

My commission expires: January 31, 2019

SPENCER ACE CRONIN
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2019

Affirmative Action Certification of Compliance – Attachment E

ATTACHMENT E
STATE OF MINNESOTA – WORKFORCE CERTIFICATE INFORMATION

Required by state law for ALL bids or proposals that could exceed $100,000

Complete this form and return it with your bid or proposal. The State of Minnesota is under no obligation to delay proceeding with a contract until a company becomes compliant with the Workforce Certification requirements in Minn. Stat. §363A.36.

BOX A – MINNESOTA COMPANIES that have employed more than 40 full-time employees within this state on any single working day during the previous 12 months, check one option below:

☑ Attached is our current Workforce Certificate issued by the Minnesota Department of Human Rights (MDHR).

☐ Attached is confirmation that MDHR received our application for a Minnesota Workforce Certificate on _____ (date).

BOX B – NON-MINNESOTA COMPANIES that have employed more than 40 full-time employees on a single working day during the previous 12 months in the state where it has its primary place of business, check one option below:

☐ Attached is our current Workforce Certificate issued by MDHR.

☐ We certify we are in compliance with federal affirmative action requirements. Upon notification of contract award, you must send your federal or municipal certificate to MDHR at compliance.MDHR@state.mn.us. If you are unable to send either certificate, MDHR may contact you to request evidence of federal compliance. The inability to provide sufficient documentation may prohibit contract execution.

BOX C – EXEMPT COMPANIES that have not employed more than 40 full-time employees on a single working day in any state during the previous 12 months, check option below if applicable:

☐ We attest we are exempt. If our company is awarded a contract, we will submit to MDHR within 5 business days after the contract is fully signed, the names of our employees during the previous 12 months, the date of separation, if applicable, and the state in which the persons were employed. Send to compliance.MDHR@state.mn.us.

By signing this statement, you certify that the information provided is accurate and that you are authorized to sign on behalf of your company.

Name of Company: Amec Foster Wheeler Environment & Infrastructure, Inc. Date 03/29/2018

Authorized Signature: _____ Telephone number: 612-252-3757

Printed Name: Curtis Hudak Title: Branch Manager

For assistance with this form, contact:

Minnesota Department of Human Rights, Compliance Services

Web: http://mn.gov/mdhr/
Email: compliance.mdhr@state.mn.us

TC Metro: 651-539-1095

Toll Free: 800-657-3704
TTY: 651-296-1283

Minnesota Department of
HUMAN RIGHTS

WORKFORCE
CERTIFICATE OF COMPLIANCE

The Commissioner of the Minnesota Department of Human Rights by the signature below attests that **AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE INC** is hereby certified as a contractor under the Minnesota Human Rights Act, §363A.

Certificate start date: **3/7/2016**
Certificate expiration date: **3/6/2020**

Minnesota Department of Human Rights

FOR THE DEPARTMENT BY:

Kevin M. Lindsey, Commissioner

Certification Regarding Lobbying – Attachment F

ATTACHMENT F

CERTIFICATION REGARDING LOBBYING

For State of Minnesota Contracts and Grants over $100,000

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

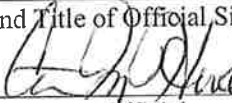
(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, A Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, Disclosure Form to Report Lobbying in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Amec Foster Wheeler Environment & Infrastructure, Inc.
Organization Name

Curtis Hudak, Branch Manager
Name and Title of Official Signing for Organization

By: 
Signature of Official

03/29/2018
Date

Equal pay certificate – Attachment G

ATTACHMENT G

State of Minnesota – Equal Pay Certificate

If your response could be in excess of $500,000, please complete and submit this form with your submission. **It is your sole responsibility to provide the information requested and when necessary to obtain an Equal Pay Certificate (Equal Pay Certificate) from the Minnesota Department of Human Rights (MDHR) prior to contract execution. You must supply this document with your submission.** Please contact MDHR with questions at: 651-539-1095 (metro), 1-800-657-3704 (toll free), 711 or 1-800-627-3529 (MN Relay) or at compliance.MDHR@state.mn.us.

Option A – If you have employed 40 or more full-time employees on any single working day during the previous 12 months in Minnesota or the state where you have your primary place of business, please check the applicable box below:

☐ Attached is our current MDHR Equal Pay Certificate.

☑ Attached is MDHR's confirmation of our Equal Pay Certificate application.

Option B – If you have not employed 40 or more full-time employees on any single working day during the previous 12 months in Minnesota or the state where you have your primary place of business, please check the box below.

☐ We are exempt. We agree that if we are selected we will submit to MDHR within five (5) business days of final contract execution, the names of our employees during the previous 12 months, date of separation if applicable, and the state in which the persons were employed. Documentation should be sent to compliance.MDHR@state.mn.us.

The State of Minnesota reserves the right to request additional information from you. **If you are unable to check any of the preceding boxes, please contact MDHR to avoid a determination that a contract with your organization cannot be executed.**

Your signature certifies that you are authorized to make the representations, the information provided is accurate, the State of Minnesota can rely upon the information provided, and the State of Minnesota may take action to suspend or revoke any agreement with you for any false information provided.

Curtis Hudak	Branch Manager
Authorized Signature — Printed Name	Title
Amec Foster Wheeler Environment & Infrastructure, Inc. 91-1641772	03/29/2018
Organization — MN/FED Tax ID#	Date
Issuing Entity	Project # or Lease Address

DEPARTMENT OF HUMAN RIGHTS

EQUAL PAY
CERTIFICATE OF COMPLIANCE

The Commissioner of the Minnesota Department of Human Rights by the signature below attests that AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE INC is hereby certified as a contractor under the Minnesota Human Rights Act, §363A.44.

Certificate start date: March 27, 2018

Certificate expiration date: March 26, 2022

Minnesota Department of Human Rights

FOR THE DEPARTMENT BY:

Kevin M. Lindsey, Commissioner

Resident Vendor Form – Attachment H

ATTACHMENT H
STATE OF MINNESOTA
RESIDENT VENDOR FORM

In accordance with Laws of Minnesota 2013, Chapter 142, Article 3, Section 16, amending Minn. Stat. § 16C.02, subd. 13, a "Resident Vendor" means a person, firm, or corporation that:

(1) is authorized to conduct business in the state of Minnesota on the date a solicitation for a contract is first advertised or announced. It includes a foreign corporation duly authorized to engage in business in Minnesota;
(2) has paid unemployment taxes or income taxes in this state during the 12 calendar months immediately preceding submission of the bid or proposal for which any preference is sought;
(3) has a business address in the state; and
(4) has affirmatively claimed that status in the bid or proposal submission.

To receive recognition as a Minnesota Resident Vendor ("Resident Vendor"), your company must meet each element of the statutory definition above by the solicitation opening date and time. If you wish to affirmatively claim Resident Vendor status, you should do so by submitting this form with your bid or proposal.

Resident Vendor status may be considered for purposes of resolving tied low bids or the application of a reciprocal preference.

I HEREBY CERTIFY THAT THE COMPANY LISTED BELOW:

1. Is authorized to conduct business in the State of Minnesota on the date a solicitation for a contract is first advertised or announced. *(This includes a foreign corporation duly authorized to engage in business in Minnesota.)*
   _✓_ Yes ___ No (must check yes or no)

2. Has paid unemployment taxes or income taxes in the State of Minnesota during the 12 calendar months immediately preceding submission of the bid or proposal for which any preference is sought.
   _✓_ Yes ___ No (must check yes or no)

3. Has a business address in the State of Minnesota.
   _✓_ Yes ___ No (must check yes or no)

4. Agrees to submit documentation, if requested, as part of the bid or proposal process, to verify compliance with the above statutory requirements.
   _✓_ Yes ___ No (must check yes or no)

BY SIGNING BELOW, you are certifying your compliance with the requirements set forth herein and claiming Resident Vendor status in your bid or proposal submission.

Name of Company: Amec Foster Wheeler Environment & Infrastructure, Inc. Date: 03/29/2018

Authorized Signature: _____ Telephone: 612-252-3757

Printed Name: Curtis Hudak Title: Branch Manager

IF YOU ARE CLAIMING RESIDENT VENDOR STATUS, SIGN AND RETURN THIS FORM WITH YOUR BID OR PROPOSAL SUBMISSION.

Veteran-owned preference – Attachment I

ATTACHMENT I

STATE OF MINNESOTA
VETERAN-OWNED PREFERENCE FORM

Unless a greater preference is applicable and allowed by law, in accordance with Minn. Stat. §16C.16, subd. 6a, the state will award a 6% preference on state procurement to certified small businesses that are majority owned and operated by veterans.

Veteran-Owned Preference Requirements - *See* Minn. Stat. § 16C.19(d):

1) The business has been certified by the Office of Equity in Procurement as being a veteran-owned or service-disabled veteran-owned small business.

   or

2) The principal place of business is in Minnesota AND the United States Department of Veterans Affairs verifies the business as being a veteran-owned or service-disabled veteran-owned small business under Public Law 109-461 and Code of Federal Regulations, title 38, part 74 (Supported By Documentation).

Statutory requirements and appropriate documentation must be met **by the solicitation response due date and time** to be awarded the veteran-owned preference.

Claim the Preference

By signing below I confirm that:

My company is claiming the veteran-owned preference afforded by Minn. Stat. § 16C.16, subd. 6a. By making this claim, I verify that:

- The business has been certified by the Office of Equity in Procurement as being a veteran-owned or service-disabled veteran-owned small business.
  or
- My company's principal place of business is in Minnesota **and** the United States Department of Veteran's Affairs verifies my company as being a veteran-owned or service-disabled veteran-owned small business (Supported By Attached Documentation)

Name of Company: _____ Date: _____

Authorized Signature: _____ Telephone: _____

Printed Name: _____ Title: _____

Attach documentation, sign, and return this form with your solicitation response to claim the veteran-owned preference.