RENEE D. TRENSHAW, P.E.

Education

B.S. Civil Engineering, Missouri University of Science and Technology, 2011

Professional Licenses

Professional Engineer
- Kansas
- Missouri

Specialty Certifications

Mid-West CAD, Civil 3D 2011 Fundamentals, 32 hours
University of Wisconsin-Madison, Sanitary Landfill Design, 16 hours
Aquaterra Environmental Solutions, Inc., Hazardous Waste Training, 16 hours

Professional Experience

Ms. Trenshaw is a registered professional engineer with approximately eight years of experience in the environmental and civil engineering fields. She currently holds the position of Project Engineer at SCS Engineers in the Fairview Heights, Illinois (St. Louis) office. Her project experience includes landfill design and permitting, landfill and landfill gas well construction, storm water and environmental plans, and air compliance.

Examples of projects she has worked on are listed below.

Landfill Engineering

Lee's Summit Resource Recovery Park, Lee's Summit, Missouri: Ms. Trenshaw is a project engineer for the on-going activities at this facility. She works closely with the Project Manager to complete work and provide support for the facility. Projects she has been involved in include:

- Annual and quarterly volume calculations and life estimates with survey coordination
- Annual financial assurance updates
- Quarterly NPDES reporting
- Semi-annual leachate reports
- Composting facility permitting assistance and operations plan
- Soil balance and evaluation for the landfill and borrow sources
- Vertical expansion
- Alternative daily cover permitting
- National Pollutant Discharge Elimination System (NPDES) permit review and renewals
- Publicly Owned Treatment Works (POTW) permitting
- Construction drawings

City of Salina Municipal Solid Waste Landfill Facility, Salina, Kansas: Ms. Trenshaw is the Project Manager role for this facility. She works on the facilities annual projects and site specific on-going projects. Annual services typically include air services, permit renewal, groundwater monitoring, regulatory review, budget coordination, and planning assistance. Other projects she has coordinated to date include gas probe installation and abandonment, a pump installation, headwall construction, and an alternative liner design permit modification. She lead the team in preparation of the design for the landfill's Cell 20 construction which included design drawings, project manual, and bidding assistance, construction management and oversight.

Springfield Sanitary Landfill, City of Springfield, Missouri: Ms. Trenshaw performs quarterly volumetric calculations on the sanitary landfill in southwestern Missouri using the permit designs, aerial surveys, and topographic surveys. The calculations provide the client with information such as remaining landfill airspace available and airspace consumed. She has also designed intermediate waste elevations for assisting with site operations and remaining life calculations

City of Washington Landfill, Washington, Missouri – City of Washington: Ms. Trenshaw is assisted the facility with a proposed final cover design modification to meet regulatory requirements. She has also been in on-going communication with the state regarding the final cover design modification and waste relocation activities.

Show-Me Landfill, Warrensburg, Missouri – Republic Services, Inc.: Ms. Trenshaw assisted in preparation of a major permit modification for the Show-Me Landfill in Warrensburg, Missouri. The major permit modification included a file review of the landfill's permit history, revision of their Engineering Report and Operations Plan, update of their Closure and Post-Closure Plan and Gas Monitoring Plan, revisions to their permit drawings, and finalizing remaining minor permit modifications. The end result was a series of documents and letters which compiled various historical permit modifications, removed non-relevant information, included new pertinent information, and provided a set of current documents to reference. In addition, Ms. Trenshaw has been involved with other assistance for the facility including quarterly storm water reporting which included coordination with the laboratory and preparation of the reports. Ms. Trenshaw has also completed volumetric calculations for the facility showing the airspace consumed, airspace remaining, earthwork remaining, areas of overfill, areas of settlement, and areas at final grade.

Proposed Yellowstone Disposal Facility, Richland County, Montana – IHD Solids Management, LLC: The proposed Yellowstone Disposal Facility is a greenfield site located in Montana which is proposed to have a municipal solid waste landfill and a special waste landfill. Ms. Trenshaw was involved in the preliminary landfill siting evaluation, preliminary site layout, engineering design, permit drawings, and permit application. The preliminary landfill siting assessment was used to determine whether the property was worth pursuing as a potential landfill facility. The assessment involved knowledge of Montana solid waste regulations and preliminary evaluation of the property from a preliminary landfill siting and design standpoint. Ms. Trenshaw assisted in the siting evaluation, site investigation coordination, and preliminary design of the new disposal facility. With the site investigation, her roles included preliminary site layout, coordination with the preliminary drilling team, and depths of borings. Her involvement with the permit application included design of landfill final cover system and final cover storm water management system, preparation of permit drawings and details, storm water and erosion calculations, construction quality assurance plan, closure and post-closure plan, and supporting reports.

Volumetric Calculations, Various Landfills in Missouri and Kansas – Republic Services, Inc.: Ms. Trenshaw performed volumetric calculations on several different sanitary landfills in Missouri

and Kansas using the permit designs and aerial surveys. The calculations provided the clients with information such as the remaining landfill airspace available, airspace consumed, amount of settlement experiences, and amount of remaining excavation required for future site construction. These calculations were used in determining the amount of construction required for the next phase of development.

10-Year Phasing Plans, Landfills in Arkansas, Kansas, and Colorado – Waste Connections, Inc.: Ms. Trenshaw prepared phasing plans for the Cherokee Village Landfill in Arkansas, Plumb Thicket Landfill in Kansas, and the Southside Landfill in Colorado. The phasing plans included layout of future cell construction, cell capacity, and projected life of each phase based on site operations. Material quantities such as earthwork and rock excavation and area of liner were determined. Excavated materials not used in construction will be put into stockpiles. Stockpile areas with preliminary grading were developed for two facilities to assist in managing the material. Preliminary suggestions for managing storm water were considered. A summary report and drawings were prepared and submitted for each facility.

Barton County Municipal Solid Waste Landfill, Great Bend, Kansas: Ms. Trenshaw assists with annual volume calculations for the facility using design documents, aerial surveys, and topographic surveys to determine information such as the airspace consumed, remaining airspace, and required earthwork quantities. Ms. Trenshaw has also prepared a rough grading plan and survey points for the landfill. Using permitted design documents, she determined the approximate layout for the next phase of construction. Once the layout was determined, survey points were placed throughout the next phase of construction to assist the facility in higher locations for soil removal.

BRAKDEN® Industrial Landfill, Atchison, Kansas – Bradken® - Atchison/St. Joseph, Inc.: Ms. Trenshaw assists with annual landfill services which includes coordination of topographic surveys; volume calculations to determine information such as airspace consumed, remaining airspace, and project landfill lifespan; and Kansas's annual permit renewal and financial assurance updates.

Buckskin Landfill, Ft. Berthold Indian Reservation, North Dakota: Ms. Trenshaw assisted in the design process of this proposed special waste landfill facility. She contributed to the engineering design report, storm water pond design, and landfill design details. The design process took place prior to a change in regulations by the Three Affiliated Tribes (TAT) which prohibited the long-term disposal of any waste on reservation land, so construction of this project was not completed.

Private Proposed Special Waste Landfill, North Dakota – Private Client: Ms. Trenshaw assisted in the preliminary design and permitting for this special waste landfill. Her involvement included preparation of a conceptual design for the facility including the landfill footprint, operating areas, buffer areas, storm water ponds, and leachate ponds. She assisted in preparation of a pre-application for submittal to the North Dakota Department of Health (NDDH) which included landfill siting criteria, proposed operations, proposed waste volumes and types, preliminary geologic and hydrogeologic information, and supporting figures and drawings. Ms. Trenshaw also assisted in the preparation of figures for presentations.

Lemons Landfill, Dexter, Missouri – Republic Services, Inc.: Ms. Trenshaw has assisted in several projects for the Lemons Landfill including land reclamation annual permit renewal and status report, land reclamation request for land release, and well variance request of well certification record.

Butler County Landfill, Poplar Bluff, Missouri – Republic Services, Inc.: Ms. Trenshaw has assisted in construction quality assurance (CQA) for 38.2 acres of landfill final cover. Her involvement included

daily reviews of the construction progress, review of the required construction and conformance testing, and preparation and review of the final CQA report.

Private Landfills, Illinois – Private Client: Ms. Trenshaw assisted in the landfill cell CQA process for two landfill cells at a subtitle D landfill located in Illinois. She assist in the final cover and storm water letdown construction CQA process of a different landfill located in Illinois. Her involvement included daily reviews of the construction progress, review of the required construction and conformance testing, and assistance in preparation and review of the final CQA reports.

Landfill Gas Management

Springfield Sanitary Landfill, City of Springfield, Missouri: Ms. Trenshaw assisted in construction quality assurance for landfill gas extraction well construction. Her involvement included assistance in daily project reviews, preparation of as-constructed drawings, and preparation of the CQA Report.

Private Landfill, Iowa – Private Client: Ms. Trenshaw was the Project Manager for two landfill gas projects at this landfill. One was the design and construction quality assurance for the installation of eighteen landfill gas extraction wells, one horizontal extraction well, and corresponding landfill gas collection piping. Her involvement varied throughout the project but included placement of the gas extraction wells and piping, design documentation, coordination with the on-site technician, daily review, well depth verification prior to drilling, coordination with the surveyor, and preparation of a final report. The second project was construction quality assurance for the installation of a landfill gas pipeline from the landfill to a methane recovery facility. Her involvement included coordination with the on-site technician, daily reviews, and preparation of a final construction quality assurance report.

Prairie View Regional Waste Facility, Lamar, Missouri – Republic Services, Inc.: Ms. Trenshaw was Project Manager for a construction quality assurance project for the expansion of the existing landfill gas extraction system. Her involvement included assistance in daily project reviews, well depth verification, preparation of as-constructed drawings, preparation of the CQA report, and project management tasks.

Emissions Inventory Questionnaire (EIQ), Various Facilities, Missouri – Multiple Clients:
Ms. Trenshaw has assisted in preparation of EIQs for Missouri facilities including the St. Joseph Sanitary Landfill and Lee's Summit Resource Recovery Park Landfill. Typical calculations and data summary activities include determination of the operating status for each emissions unit, emission calculations and verification based on annual throughputs, and when applicable gas flare volume and capture efficiency. Ms. Trenshaw has prepared EIQs using either spreadsheets or Missouri Emissions Inventory Systems (MOEIS) as applicable for the specific facility.

Greenhouse Gas (GHG) Reporting, Various Facilities in Illinois, Iowa, Missouri, Nebraska, and Oklahoma – Multiple Clients: Ms. Trenshaw has assisted in determining the GHG generation quantities and reporting from landfill facility records at various facilities.

Collection, Transfer Station, Recycling Facilities

Proposed Andrew County Transfer Station, Savannah, Missouri – Central Disposal Service: Ms. Trenshaw helped prepared a preliminary design submittal for a proposed C&D transfer station. The design submittal was requesting an exemption for the transfer station under Missouri regulations and included coordination with the air, solid waste, and water departments within the Missouri

Department of Natural Resources. The submittal included a preliminary transfer station design and permit drawings, a C&D management plan, application for a general storm water permit, and air applicability determination. The C&D management plan discussed the facility, operations, design, waste handling, and contingency planning.

St. Louis Transfer Station, St. Louis, Missouri – Republic Services Inc.: Ms. Trenshaw prepared an expansion of the pilot project for recyclables for this facility. The submittal included preparation of the transfer station recyclables management plan and additional information and drawings required by the Missouri Department of Natural Resources (MDNR) to begin the pilot project. The pilot project was approved for a specific amount of time where it will be evaluated for potential incorporation into the standard operating procedures. The pilot project for recyclables allowed the facility to expand their current recycling operations. The facility accepts specific waste streams and commingled recyclables at separate areas within the facility. The pilot project for recyclables allowed the facility to visual screen the waste stream for identifiable recyclables easily accessible for removal. Once the recyclables were removed from the waste stream on tipping floor, they are moved to the appropriate location in the recyclables area. This pilot project allowed the facility to test a new method of recycling operations to determine if they will permanently incorporate it into their permit.

Town & Country Transfer Station, Harrisonville, Missouri: Ms. Trenshaw assisted in preparation of minor permit modifications for the facility with regards to facility upgrades for the road, scales, and recycling facility.

Two Transfer Stations, Northern Arkansas: Ms. Trenshaw assisted in preparing the operating permit renewal for the Carroll County Solid Waste Authority Transfer Station in Berryville Arkansas and the Marion County Transfer Station in Yellville, Arkansas. Her participation included completing the permit applications and providing subsidiary information such as siting requirements justification, updates to the facilities' current operations plans, and corresponding with Arkansas Department of Environmental Quality (ADEQ) about regulatory requirements for each facility. Ms. Trenshaw has also prepared an application for a general NPDES permit for the facility in Berryville which included completion of a Notice of Intent (NOI), a site map, and the preparation of a SWPPP.

Electric Utility

CCR Impoundment Closure Implementation, Blue Valley Power Station, Independence Power & Light: Ms. Trenshaw was on the team that completed the closure of two fly ash and one bottom ash impoundments at the BVPS. The project included closure of the impoundments using minimal fill grading, dewatering, construction of an alternate caps strategic planning, closure design, and compliance with the federal CCR Rules that were finalized in April 2015. The strategy component of the project included discussions regarding design and construction approaches to allow for efficient and cost effective closure execution as well as approaches to ensure compliance with the new rules. The project also included the permitting and design of a wastewater settling basin to be constructed in a portion of the former bottom ash impoundment. She assisted in various aspects including in monthly site visits and construction progress meetings, construction documentation and oversight review, and closure plan preparation.

CCR Impoundment Closure Design, Blue Valley Power Station, Independence Power & Light: Ms. Trenshaw was part of the team designing the closure of two fly ash and one bottom ash impoundments at the BVPS. Ms. Trenshaw assisted in various aspects of the design including the various design grade scenarios used to minimize the amount of soil required to be brought on site for construction. The project included both drone and bathymeteric surveys of the ash impoundment,

design of the final grading using the SCS inverted bowl plan that minimizes grading of ash, and development of plans and specifications that provided the construction contractor maximum latitude in the field to achieve the closure objectives. The project also included the permitting and design of a wastewater settling basin to be constructed in a portion of the former bottom ash impoundment.

Environmental Services

Lee's Summit Municipal Airport – Lee's Summit, Missouri: Ms. Trenshaw is the project manager for the Airport and assists in annual and on-going projects for the facility. Services include storm water permitting, switching from a general to a site specific permit, sampling, and reporting, preparation of SWPPP and SPCC Plans, and on-going coordination with environmental compliance related to the facility's construction projects.

General Minor Source Air Construction Permit, Oklahoma – Private Client: Ms. Trenshaw assisted in preparation of a general minor source air construction permit application for a proposed compressed natural gas station facility in Oklahoma. The application involved potential to emit emissions calculations, facility layout drawings, process flow diagram, and application forms.

Regulatory Applicability Determinations, Three Facilities in Midwest – Various Clients: Ms. Trenshaw has completed regulatory applicability determinations for various facilities with emphasis on federal, state, and county regulations. The regulatory applicability determinations pertained to greenhouse gas (GHG) applicability for a specific facility, 40 CFR Part 63 Subpart ZZZZ applicability for various facilities, and permit applicability for two different facilities.

Storm Water Training – Various Clients: During the summer of 2016, Ms. Trenshaw presented at a Storm Water Training to educate clients about the increased regulatory scrutiny associated with storm water compliance at industrial facilities, including landfills. The training emphasized the importance of managing risk associated with storm water management at landfill facilities and the difference in expectations between Missouri Department of Natural Resources Water Protection Program staff and EPA staff. This training has started a dialogue with SCS clients and has spurred significant action and site improvements at various facilities.

Storm Water Pollution Prevention Plans (SWPPP) – Various Clients in Missouri, Kansas, and Arkansas: Ms. Trenshaw has assisted and prepared a numerous SWPPPs for public and private facilities for storm water, industrial activities, land disturbance permits, and site specific permits. Facility types have included landfills, transfer stations, hauling facilities, and recycling facilities. She has conducted site visits, coordinated with site personnel, checked the site for potential pollutants, and completed material inventories for potential onsite pollutants. The SWPPPs are written to comply with the facility's NPDES.

Spill Prevention Control and Countermeasures (SPCC) Plans – Various Clients in Missouri, Kansas, and Arkansas: Ms. Trenshaw has prepared of dozens SPCC Plans for both public and private facilities including landfills, transfer stations, hauling, recycling, landfill gas to energy, airport, emergency back-up generators, fuel co-operatives, and other facility types. SPCC Plans have included routine SPCC Plans, Tier 1 and Tier 2 limited requirements. Facilities have included underground and above ground storage tanks for various operations, configurations, and sizes. She has conducted site visits, coordinated with site personnel, and collected inventory of the oil products on site. The SPCC Plans are prepared which discuss the potential for petroleum releases, spill prevention and response procedures, reporting procedures, evaluation of secondary containment

sizing, and recommended facility modifications to comply with the SPCC regulations. Plans are written to follow the law while maintaining flexibility and usefulness to the client as appropriate.

Biodiesel Manufacturing Facility, Missouri: Ms. Trenshaw was on the project team that prepared the Facility Response Plan (FRP) and Spill Prevention Control and Countermeasure (SPCC) Plan for a biodiesel manufacturing facility in Missouri. The plan addressed the spill prevention and countermeasures to be implemented by the facility as they exceeded the 1 million gallons of oils at their facility which was located next to a wetland. The plan included the containment calculations for the tank farms, evaluation and determination of which tanks were regulated under SPCC rule, and worst case discharge evaluations. Information regarding drinking water intake and downstream impacts were also considered. Updates were prepared to these plans as needed with site operational changes.

Ethanol Manufacturing Facility, Missouri: Ms. Trenshaw assisted in the review and update of the Facility Response Plan (FRP) and Emergency Response and Action Plan (ERAP) and Spill Prevention Control and Countermeasure (SPCC) Plan for an ethanol manufacturing facility in Missouri. The facility exceeded the 1 million gallons of oil and triggered the FRP rule. Ms. Trenshaw assisted in preparing the updates for the plans, evaluating the changes, discussing training requirements with the client, and corresponding with the EPA Region 7 representative regarding these changes.

SWPPP and SPCC Employee Training, Lee's Summit, Missouri – Lee's Summit Resource Recovery Park: Ms. Trenshaw provided training to the landfill personnel to meet the requirements of their SWPPP and SPCC Plans. The training included a summary of the regulations, overview of the facility's plans, and a discussion on site specific items including inspections, storm water flow, outfalls, spill response, and others.

National Pollutant Discharge Elimination System (NPDES) Permitting – Various Missouri Clients: Ms. Trenshaw has assisted in preparation of National pollution Discharge Elimination System (NPDES) renewals in Missouri for general and site specific permits for landfills and transfer stations. She has also assisted in the review of the draft landfill's specific permits and provided comments to the MDNR.

404 and Missouri 401 Permitting, Lone Jack, Missouri – Radmacher Excavating: Ms. Trenshaw assisted in the preparation and coordination with an Army Corps of Engineers 404 Permit for the AA Quarry in Lone Jack, Missouri. She also completed and submitted a Missouri 401 Permit.

Groundwater Monitoring, Gas Station, St. Louis, Missouri – Private Client: Ms. Trenshaw has assisted in groundwater monitoring at site in Missouri that was previously a gas station. Her participation included measurement of groundwater levels, purging of groundwater wells, and sample collection.

Phase I Environmental Site Assessments of Oil and Gas Leases, Miscellaneous Locations in Illinois – EOS Petro: Ms. Trenshaw has assisted in several Phase I Environmental Site Assessments for EOS Petro. Her participation included multiple site evaluations to determine the presence of recognized environmental conditions at the subject properties and writing portions of the corresponding Phase I reports.

Ricker Method Plume Stability Analysis, Three Various Gas Stations, Missouri – QuikTrip: Ms. Trenshaw assisted in a Ricker Method Plume Stability Analysis for three different facilities. Her participation included preparation and compilation of data for mapping; creation of the plume concentration maps; and calculating the plume mass, concentration, and center of mass over the

designated monitoring periods. The concentration maps covered two to six different contaminants over six to eight monitoring events.

Presentation

Trenshaw, R.D. "What You'll Wish You Had: A Consultant's Take on Recordkeeping", Missouri Waste Control Coalition Conference, July 14, 2015.

Trenshaw, R.D. "Volume Calculations, More than Just Math", Missouri Waste Control Coalition Conference, July 17, 2018.