KOLLAN L. SPRADLIN, P.E., CHMM

Education

BS – Biosystems Engineering, Auburn University, 2011

Professional Licenses

Professional Engineer – Tennessee – License No. 118068
Professional Engineer – Florida - License No. 82852
Professional Engineer – Alabama - License No. PE50877
IIHM Certified Hazardous Materials Manager – License No. 19579

Specialty Certifications

OSHA 29 CFR 1910.120 HAZWOPER, Worker, 2011
OSHA 29 CFR 1910.120 8 Hour HAZWOPER Refresher
US DOT Hazardous Materials: General Awareness Training
US DOT Hazardous Materials: Shipping Papers Training
Interstate Technology Regulatory Council - Vapor Intrusion Pathway Training
Interstate Technology Regulatory Council – LNAPL Remedial Technologies Training
Rutgers University Ecological Risk Assessment Training

Professional Affiliations

Auburn University Student Mentoring Program (2021 – current) – Mentor for Biosystems Engineering students seeking technical, academic, and professional guidance from a program graduate.

Tampa Bay Auburn Club (Board Member) – 501(c)(3) non-profit corporation that raises scholarship funds for local high school students.

Bay Area Manufacturers Association (BAMA) – Fund Raising Committee – As a member of the fundraising committee, Kollan interacts with local companies to facilitate event sponsorships and in-kind donations.

Bay Area Manufacturers Association – Clay Shoot Committee – Clay shoot raises scholarship funds for local veteran education. BAMA itself helps promote and support local manufacturers.

Professional Experience

Kollan is a Project Manager with over 10 years of experience in project management, engineering services support, and environmental consulting throughout Florida, Tennessee, and Alabama. His expertise includes, but is not limited: Environmental Site Assessments, hazardous materials, geotechnical explorations, soil and groundwater contamination delineation and treatment, landfill operations, leachate management, and compliance reporting. His experience as a state regulator in Alabama introduced him to waste management and a variety of remediation techniques used at large-scale industrial facilities. As an engineering consultant in Tennessee and Florida, he has focused on assisting clients achieve their goals by applying lessons learned as a regulator. This has resulted in being well practiced in the major federal environmental regulations with a specialization in solid and hazardous waste management in the Southeastern United States. Kollan currently

manages multiple solid waste consultation and general engineering services contracts for municipal clients in the Tampa Bay area.

Asbestos and Regulated Materials

The Tennessee Department of Transportation (TDOT), Bridge Asbestos Surveys, 2014 – 2017. The Tennessee TDOT is in the process of inventorying asbestos containing bridges scheduled for repair or demolition. Project Engineer conducted the project management, scheduling, field work, and reporting for asbestos surveys on over 75 TDOT bridges. Many of these surveys were conducted with the utilization of a reach-all truck and traffic control. Project Engineer provided sampling plan, health and safety plan, activity hazard analysis, reporting recommendations, and oversight. Conducted asbestos sampling and project management activities on TDOT bridge repair and replacement projects.

The Tennessee Department of Transportation (TDOT), Structure Asbestos and Hazardous Materials Surveys, 2014 – 2017. During road widening and construction projects, TDOT often purchases land with existing structures for Right-of-Way acquisition. Before demolition of these buildings, asbestos and hazardous materials surveys are conducted on structures to ensure compliance with applicable federal and Tennessee Department of Environment and Conservation (TDEC) regulations. Project Engineer conducted the project management, scheduling, field work, and reporting for over 35 TDOT hazardous materials and asbestos surveys on structures scheduled for demolition. Provided sampling plan, health and safety plan, activity hazard analysis, and reporting recommendations and oversight. Conducted asbestos sampling activities and hazardous material surveys on TDOT structure demolition projects.

Nashville Metro Water Services (MWS), Omohundro Water Treatment Plant Hazardous Materials Survey 2016, The MWS Omohundro Water Treatment Plant project included a renovation of the Pumping Station and Boiler House. Staff Professional provided hazardous material survey services including identifying hazardous materials such as asbestos containing material, lead based paint, and mercury containing thermostats. These surveys and the subsequent reports were used to safely conduct repair and renovation activates within these vital MWS structures. Drafted specifications for the removal of various hazardous material for review by a Tennessee Department of Environment and Conservation (TDEC) accredited asbestos project designer.

Clean Water Nashville Overflow Abatement Program (OAP), Ewing Creek Pump Station. 2015. The Clean Water Nashville OAP is an initiative lead by Nashville Metro Water Services in coordination with partner agencies including EPA and Tennessee Department of Environment and Conservation (TDEC) for the purpose of meeting Clean Water Act requirements and ensuring the environmental health of the Cumberland River by addressing combined sewer overflows. Part of this project included the construction of a new pumping station, the Ewing Creek Pump Station. Staff Engineer provided project management, field services, and reporting for both an asbestos and hazardous materials survey and an AAI Phase I ESA at the proposed pumping station location.

Nashville Metro Public Works (MPW), Regulated Material, Lead Based Paint, and Asbestos Surveys + Air Monitoring 2016. The Nashville MPW regulated material, lead based paint, and asbestos survey included evaluations of the interior (only) of nine MPW owned buildings. Field representatives provided on-site inspections for universal waste products, conducted sampling and inspections for asbestos, and used a Niton X-Ray Fluorescence (XRF) device to conduct a lead containing material survey. During these inspections field personnel discovered multiple human health hazards related to damaged and mismanaged asbestos-containing materials. As a Project Engineer, alerted MPW officials to remedy the problem and provided guidance for the emergency abatement of pipe insulation and damaged ceiling texture. Additionally, field personnel identified multiple areas of lead-

containing tile, paint, and coatings throughout the facilities. Project Engineers oversaw the production of maps, photo logs, and written reports delivered to the client prior to the requested due date. The reports and recommendations were used by MPW to develop an Asbestos Management Program.

Additionally, MPW issued a direct purchase order to complete personal air monitoring for use in determining indoor air quality. Project Engineer conducted personal air monitoring for use as part of the Asbestos Management Program. All sampling was in accordance with OSHA and USEPA guidelines for Transmission Electron Microscopy (TEM) analysis of personal air monitoring samples so that MPW could use the results in a negative exposure assessment (NEA). All sampling and reporting was completed on schedule and under budget. Project Engineer was responsible for coordinating and conducting field work, producing deliverables that included hazardous material recommendations, and ensuring that the project was on schedule and under budget.

The Tennessee Department of Transportation (TDOT), SR-112 Road Widening Project AAI Phase I ESA and Phase II ESA 2015. The SR-112 Road Widening Project included both an asbestos survey on a bridge located on SR-112 in Nashville, Tennessee and an AAI Phase I ESA the length of the corridor. Staff Professional also conducted Phase II ESA soil sampling at three sites that he identified for further investigation in the Phase I ESA Report. Staff Professional conducted project management activities, coordinated subcontractors, conducted field activities, reviewed records, communicated between stakeholders, and provided reporting services on all parts of the project.

All Appropriate Inquiry

Tennessee Department of General Services (TNDGS) AAI Phase I ESAs. 2016 – 2017. Project Engineer managed All Appropriate Inquiry Phase I Environmental Site Assessments conducted for the TNDGS. Coordinated the following phases of the projects; received bid requests, developed project schedules and cost estimates, submitted bids, coordinated subcontractors, conducted field activities, reviewed records, communicated between stakeholders, and drafted reports for submission. Conducted over a dozen AAI Phase I ESAs for the TNDGs.

Nashville Metropolitan Development and Housing Agency (MDHA), Bordeaux Sidewalk Construction AAI Phase I ESA 2014. The MDHA Sidewalk Construction project consisted of implementing new sidewalks along a corridor in the Bordeaux neighborhood in Nashville, TN. Staff Professional conducted the records review, field activities, and drafted the deliverable report for the environmental site assessment of the proposed construction corridor.

The Tennessee Department of Transportation (TDOT), SR-112 Road Widening Project AAI Phase I ESA and Phase II ESA 2015. The SR-112 Road Widening Project included both an asbestos survey on a bridge located on SR-112 in Nashville, Tennessee and an AAI Phase I ESA the length of the corridor. Staff Professional also conducted Phase II ESA soil sampling at three sites that he identified for further investigation in the Phase I ESA Report. Staff Professional conducted project management activities, coordinated subcontractors, conducted field activities, reviewed records, communicated between stakeholders, and provided reporting services on all parts of the project.

The Tennessee Department of Transportation (TDOT), Sevier Co Phase II ESA 2016. The TDOT Sevier County Phase II ESA consisted of evaluating subsurface soil conditions within the proposed construction area of a TDOT project that was located adjacent to a gas station with known historic releases of petroleum products. Project Engineer advanced five soil borings within the right of way. Continuous samples were collected from all holes from 0-10 fbgs. Soil samples were field screed using a PID and were submitted for laboratory analysis of VOCs. Additionally, the laboratory was instructed to analyze the soil samples for SVOCs and RCRA regulated metals. Project Engineer coordinated additional environmental analysis in order to account for the presence of chromium.

Project Engineer communicated initial findings to the client and provided recommendations regarding how to limit the scope of the project while completing all due diligence in order to reduce total project cost. Project Engineer was responsible for the project management responsibilities including subcontractor coordination, personnel coordination, budgeting, and product delivery. Additionally, Project Engineer was responsible for developing the Health and Safety Plan, Activity Hazard Analysis, Sampling Plan, and Final Report that included findings and recommendations.

Clean Water Nashville Overflow Abatement Program (OAP), Ewing Creek Pump Station 2015. The Clean Water Nashville OAP is an initiative lead by Nashville Metro Water Services in coordination with partner agencies including EPA and Tennessee Department of Environment and Conservation (TDEC) for the purpose of meeting Clean Water Act requirements and ensuring the environmental health of the Cumberland River by addressing combined sewer overflows. Part of this project included the construction of a new pumping station, the Ewing Creek Pump Station. Staff Engineer provided project management, field services, and reporting for both an asbestos and hazardous materials survey and an AAI Phase I ESA at the proposed pumping station location.

The Tennessee Department of Transportation (TDOT), I-40/65 Fast Fix 8 Bridge Repair. 2016. The TDOT I-40/65 Fast Fix 8 bridge repair project included the accelerated repair of eight bridges that entailed the replacement of all bridge decks. Staff Professional provided environmental consultation, sampling, and oversight services throughout the project. These services included soil sampling during a Phase II investigation, environmental consultation and sampling related to the removal of an unregistered Underground Storage Tank discovered during construction, and the observation and oversight of arsenic and polycyclic aromatic hydrocarbons (PAH) contaminated soil removal and disposal. Staff Professional was involved in drafting the health and safety plan and the activity hazard analysis for environmental activities at the construction site, participated in daily safety briefings, and coordinated all environmental field activities. Staff Professional also conducted field activities and reporting in addition to his project management responsibilities for environmental activities related to the TDOT Fast Fix 8 Bridge Repair Project.

Assessment and Remediation

Confidential Client (Duke), PCB Excavation 2018.

Confidential Client (Duke), Landfill Delineation and Conceptual Site Model 2017. The Landfill Delineation and Conceptual Site Model was performed for a confidential client in Central Florida. The assessment consisted of soil and groundwater sampling through the use of test pits and direct push technology. Soil and groundwater were analyzed for Volatile Organic Compounds (VOC), Semi-Volatile Organic Compounds (SVOC), RCRA metals, and PCBs. Through analysis of the samples and complimentary studies of the site, a site conceptual model was developed. This model was used to assess human health risks and ecological risks associated with the contaminants found on the site. SCS then incorporated supplementary studies into a submittal to FDEP that detailed the findings, conclusions, and environmental recommendations. Project Professional provided technical recommendations to the reporting team that included verification of the validity of laboratory data as well as analysis and interpretation of the laboratory data.

Lennar Homes, LLC, Manny Diaz Property Assessment 2017. Project professional performed groundwater monitoring data analysis and drafted a report detailing the findings of the laboratory analysis results for submission to the client. The laboratory analysis results were interpreted, organized, and compared to regulatory compliance limits. The findings and technical recommendations were provided in the deliverable report.

The Tennessee Department of Transportation (TDOT), I-40/65 Fast Fix 8 Bridge Repair 2016. The TDOT I-40/65 Fast Fix 8 bridge repair project included the accelerated repair of eight bridges that

entailed the replacement of all bridge decks. Staff Professional provided environmental consultation, sampling, and oversight services throughout the project. These services included soil sampling during a Phase II investigation, environmental consultation and sampling related to the removal of an unregistered Underground Storage Tank discovered during construction, and the observation and oversight of arsenic and polycyclic aromatic hydrocarbons (PAH) contaminated soil removal and disposal. Staff Professional was involved in drafting the health and safety plan and the activity hazard analysis for environmental activities at the construction site, participated in daily safety briefings, and coordinated all environmental field activities. Staff Professional also conducted field activities and reporting in addition to his project management responsibilities for environmental activities related to the TDOT Fast Fix 8 Bridge Repair Project.

Metro Nashville Government, West Riverfront Park Redevelopment Project 2014 – 2016. The West Riverfront Park Redevelopment project included repurposing an EPA Brownfields Site (formerly a thermal transfer station) located in the Lower Broadway area of Downtown Nashville for the construction of the Leed Silver Certified Amphitheater as well as a riverfront public park and greenway. Staff Professional provided soil and groundwater sampling plan design and field services as well as hazardous waste consulting and disposal recommendations throughout project construction. Staff Professional conducted field sampling and drafted multiple letters maintaining communication between the client, Metro Nashville Government, and TDEC. This project was featured as Music City Makeover in the July 2016 ASCE publication "Civil Engineering."

Lose & Associates, Inc., Riverfront Lawn Development Phase III 2014. The Riverfront Development Phase III Lawn project consisted of constructing a lawn area for public recreational purposes and kayak launching in a former barge construction yard located on the eastern side of the Cumberland River in Downtown Nashville. A soil management plan had previously been developed for the site. Staff Professional was contacted after the contractor encountered soil contaminated with creosote treated timbers. Staff Professional advised the project team that the Soil Management Plan that had been approved by the Tennessee Department of Environment and Conservation (TDEC) included surficial soil sampling and the installation of engineering and/or institutional control to limit exposure to the public should regulated constituents be found in the soil. Staff Professional worked with the project team to develop a soil sampling grid for the contaminated soil area in accordance with the soil management plan. Staff Professional then conducted composite soil sampling field activities according to applicable rules and regulations.

The Tennessee Department of Transportation (TDOT), I-24 Bridge over CSX Railroad and Oldham Street 2016. The soil sampling project conducted at the I-24 bridge over CSX Railroad and Oldham Street consisted of assessing and delineating potential contaminants in the soil at proposed construction excavation locations. Project Engineer developed a project work plan to simultaneously identify contamination, delineate potential contaminates at each bridge bent, and coordinate sampling with geotechnical drilling activities that were to be conducted near the CSX railroad. Three soil borings were advanced at each bent. A tractor mounted direct push technology rig (Geoprobe 220) was utilized to drill at the bents along Oldham Street. A track mounted Diedrich 550 hollow stem auger rig was used to drill along the bents located on CSX property concurrent with geotechnical investigation borings. Continuous samples were collected from all holes from 0-10 fbgs. Eight composite samples 0-5 fbgs for each bent were submitted for laboratory analysis of Semi-Volatile Organic Compounds (SVOCs) and Resource Conservation and Recovery Act regulated (RCRA) metals. Additionally, soil samples from each boring were field screened with a photoionization detector, and two additional samples were submitted for laboratory analysis of Volatile Organic Compounds (VOCs). Challenges included coordinating with geotechnical staff to conduct concurrent environmental sampling and coordinating CSX easement access. KSWA also coordinated additional environmental analytical data in order to account for the presence of chromium and to provide disposal recommendations that required Toxicity Characteristic Leaching Procedure (TCLP) analysis.

Project Engineer compared laboratory analytical results to USEPA Regional Screening Levels (RSLs) and Oak Ridge Risk Assessment Information System (ORRAIS) risk assessment calculations for excavation worker exposure. Project Engineer provided TDOT disposal and health and safety guidance and recommendations with regulatory documentation to support our conclusions. Project Engineer was involved in drafting the health and safety plan, the activity hazard analysis, and the work plan for environmental activities conducted at the project site. Project Engineer also conducted field sampling activities, project management responsibilities, personnel coordination, and subcontractor coordination for environmental activities related to the TDOT I-24 Bridge over CSX Railroad and Oldham Street Project.

The Tennessee Department of Transportation (TDOT), French Broad River Sediment Sampling. 2016. The subject project included a planned bridge construction over the French Broad River in Cocke County, TN for a new bypass. The Tennessee Department of Environment and Conservation (TDEC) Office of Information Resources (OIR) Geographic Information System (GIS) website indicated that the proposed bridge crossing location spanned an area of the French Broad River that may have been contaminated by the atmospheric deposition of mercury. No information regarding the potential source was discovered reviewing records in preparation of the sampling plan. With the assistance of field technicians, Project Engineer launched a 15 ft jon boat with 25 hp outboard motor approximately 5 miles downstream of the sampling point. Fast moving, shallow whitewater provided unexpected challenges in reaching the sampling area. Project Engineer used a WILDCO petite ponar clamshell dredge to collect river sediment samples from the proposed bridge pier locations. Although only 1 sample from mid-channel was collected, Project Engineer made over 100 attempts to collect sediment using the dredge. Lack of recovery was likely due to a rock and boulder stream bottom and fast moving currents that caused the dredge to close premature to reaching the river bottom. In order to obtain the required sediment information for TDOT, Project Engineer collected samples from sediment near each of the riverbanks where the abutments were to be constructed. Project Engineer was involved in drafting the health and safety plan, the activity hazard analysis, and the work plan for environmental activities conducted at the project site. Project Engineer also conducted field sampling activities, project management responsibilities, personnel coordination, and subcontractor coordination for environmental activities related to the TDOT Cocke County SR-35 Bypass over the French Broad River Sediment Sampling Project.

Travel Plaza 101, Petroleum Release Investigation 2016. The subject project included the environmental assessment of an operational commercial fuel facility in accordance with Tennessee Department of Environment and Conservation (TDEC) -Division of Underground Storage Tanks (DUST) rules and regulations. The subject fuel center had received a notice of violation following an inspection that revealed that seven of the diesel pumps were leaking product. Project Engineer conducted fieldwork and coordination with stakeholders to bring the facility back into compliance. Project Engineer completed an Initial Response and Hazard Management Report (IRHMR), soil sampling using direct push technology, monitoring well installation, and groundwater sampling. Project Engineer completed all field work and all environmental investigation forms to be submitted to the state regulatory agency.

Alabama Department of Environmental Management (ADEM), 3M Company, Decatur, AL 2011 – 2014. 3M is a film and polymer production facility located on the Tennessee River in Decatur, Alabama. Through small chemical releases and normal operating procedures, multiple Solid Waste Management Units (SWMUs) came under the regulation of RCRA. Environmental Engineering Specialist provided engineering and project management support for the RCRA regulated landfill that contained VOCs and SVOCs. Adjacent to the SWMU, was a 350-acre sludge field which previously held an NPDES permit for the application of PFOS contaminated industrial wastewater sludges. Environmental Engineering Specialist oversaw the stabilization and application of an HDPE closure cap over the PFOS sludgefield.

In addition,3M also maintains a Voluntary Cleanup Program site that was formerly an off-spec chemical and waste disposal site that was operated prior to the formation of environmental regulations. In addition to regulating activities at the main facility, Environmental Engineering Specialist oversaw investigative and characterization activities at the Voluntary Cleanup Program site.

Alabama Department of Environmental Management (ADEM), Koppers/Beazer East Coke and Tar, Dolomite, Alabama 2011 – 2014. Beazer East maintains the environmental liability for two former Koppers Industries facilities in Dolomite, Alabama. These facilities operated in conjunction with each other. The coke facility produced coke for the local steel industry, and piped the tar byproduct to the Koppers Tar facility located adjacent to the coke facility. The tar was used to produce construction material such as tar paper and asphalt. Both facilities operated well before the formation of environmental regulations, and contain polyaromatic hydrocarbons (PAH), VOCs, and SVOCs in soil and groundwater. In addition, historic contamination has affected a nearby creek (Opossum Creek). Environmental Engineering Specialist oversaw regulatory actions and provided engineering and design recommendations for the characterization, remediation, and environmental monitoring of the sites. Activities included the oversight of soil sampling, groundwater sampling, surface water sampling, and monitoring well installation.

Alabama Department of Environmental Management (ADEM), Koppers/Beazer East Wood Treating Facility, Montgomery, AL 2011 – 2014. Koppers Montgomery is a historic wood treating facility that was formerly operated by Koppers Industries. The site features multiple SWMUs, and a RCRA regulated landfill. The soil and groundwater in the production area of the facility is contaminated with VOCs, SVOCs, Dioxins, and Furans. Environmental Engineering Specialist provided regulatory and remedial support and design recommendations related to characterization, containment, and remediation of soil and groundwater contaminants related to historical wood treatment processes. Environmental Engineering Specialist also facilitated the division of the property so that non-affected areas could be sold to a recycling operation development company. The recycling company entered their parcel into the Voluntary Cleanup Program through all applicable investigative requirements, use of administrative controls, and implementation of engineering controls.

Alabama Department of Environmental Management (ADEM), SABIC Innovative Plastics, Burkville, AL 2013 – 2014. SABIC Innovative Plastics is a large plastics manufacturing facility in Burkville, Alabama. ADEM was contacted by SABIC to report a release of tetrachloroethylene from a heat exchanger. Approximately 25 gallons of PCE flowed out of containment and onto bare soil. Excavation soil samples continued to exhibit elevated concentrations of chlorinated solvents following additional soil removal. After further investigation of soil and groundwater, SABIC and the Department concluded that historic releases of chlorinated solvents throughout the 25 year life of the facility had led to widespread contamination of soil and groundwater. Environmental Engineering Specialist managed remedial, characterization, and delineation expectations during site pilot studies and site investigations. Additionally, Environmental Engineering Specialist provided design recommendations and engineering support for the human health risk assessment and drafted the cleanup agreement into which the ADEM and SABIC entered.

Alabama Department of Environmental Management (ADEM), United Plating, Inc., Huntsville, AL. 2011 – 2014. United Plating is a chrome and zinc plating facility located in Huntsville, Alabama. When Environmental Engineering Specialist began managing this project, United Plating was removing aboveground storage tanks (AST) associated with their former Waste Water Treatment Plant. Following removal, confirmatory soil samples confirmed that the tanks had released chrome and zinc into soil and groundwater. While acting as the ADEM facility project manager, Environmental Engineering Specialist oversaw soil excavation, remedial activities, and groundwater monitoring. Environmental Engineering Specialist facilitated the entry of United Plating into a groundwater

monitoring program to determine if soil source removal activities would result in acceptable groundwater concentrations of chrome and zinc.

Alabama Department of Environmental Management (ADEM), TR Miller Mill Company, Brewton, AL. 2011 – 2014. TR Miller Mill Company is a large wood treatment facility in southern Alabama. The facility maintains former spray ponds and surface impoundments as three separate RCRA landfills. These landfills were closed in place with wood treatment sludges that contained VOCs, SVOCs, and other contaminates. Additionally, the soil and groundwater throughout the site contained creosote contamination in free product form. TR Miller Mill Company operated multiple Non-Aqueous Phase Liquid (NAPL) extraction wells. These wells operated on hydro-phobic, oleophillic skimming belts that collected free product. While managing and providing engineering recommendations for the ongoing remediation and monitoring activities, Environmental Engineering Specialist oversaw the renewal of TR Miller Mill Company's RCRA Post-Closure Permit.

Alabama Department of Environmental Management (ADEM), EWS (Environmental Waste Services) Alabama Emergency Permit, Glencoe, AL 2013. EWS Alabama is a RCRA permitted Treatment, Storage, and Disposal Facility in Glencoe, Alabama. As their project manager, Environmental Engineering Specialist was contacted due to a potential emergency situation involving what was suspected to be crystallized tetrahydrofuran, an extremely reactive material. Together, EWS Environmental Engineering Specialist formed an analysis and neutralization plan. This plan included determining the percentage of peroxides within the unidentified substance, a flammability test, and a pH test. Environmental Engineering Specialist drafted an emergency permit for this analysis and neutralization plan should the unidentified material have been identified as tetrahydrofuran. Through analysis, it was determined that the unidentified material was non-reactive in nature. EWS Alabama rejected the material back to the generator as it did not arrive at the facility as the waste manifest described.

Underground Storage Tanks

The Tennessee Department of Transportation (TDOT), SR-46 UST Removal Services, Dickson, TN 2015. The TDOT SR-46 project in Dickson, Tennessee included road widening as well as burying existing utilities within the construction easement. During utility burial activities, two unregistered underground storage tanks (USTs) were discovered within the construction easement. Staff Professional provided environmental sampling, oversight, and recommendations for one 6,000 gallon tank. An additional 500 gallon UST associated with a historic auto-maintenance facility was discovered during road construction activities. Staff Professional provided project management services including communicating between the stakeholders, scheduling and selecting subcontractors, and reporting for both the 6000 gallon UST and the 500 gallon UST.

City of Dickson, UST Removal Services, Dickson, TN 2015. During a sidewalk construction and downtown rehabilitation project, The City of Dickson, TN discovered two unregistered USTs located in the construction easement. Staff Professional provided project management, environmental sampling, observation, environmental recommendations, and reporting services to The City of Dickson, TN during their removal of the USTs.

The Tennessee Department of Transportation (TDOT), I-40/65 Fast Fix 8 Bridge Repair 2015. The TDOT I-40/65 Fast Fix 8 bridge repair project included the accelerated repair of eight bridges that entailed the replacement of all bridge decks. Staff Professional provided environmental consultation, sampling, and oversight services throughout the project. These services included soil sampling during a Phase II investigation, environmental consultation and sampling related to the removal of an unregistered Underground Storage Tank discovered during construction, and the observation and oversight of arsenic and polycyclic aromatic hydrocarbons (PAH) contaminated soil removal and

disposal. Staff Professional was involved in drafting the health and safety plan and the activity hazard analysis for environmental activities at the construction site, participated in daily safety briefings, and coordinated all environmental field activities. Staff Professional also conducted field activities and reporting in addition to his project management responsibilities for environmental activities related to the TDOT Fast Fix 8 Bridge Repair Project.

Lebanon Municipal Airport, UST Removal and Closure Services, Lebanon, TN 2015. The Lebanon Municipal Airport UST removal consisted of closing two registered 5,000 gallon USTs located next to an operable runway. One tank formerly held AV Gas, and the other formerly held Jet A fuel. Project Engineer oversaw and conducted tank removal activities, fuel system component closure, soil sampling, groundwater sampling, regulatory correspondence, client and owner coordination, and site safety measures. Additionally, Project Engineer oversaw special considerations regarding the adherence to Federal Aviation Administration (FAA) rules with regards to open pits and obstructions near operational runways. Field work was able to be completed within one working day in order to prevent prolonged closure of the runway, and a letter of "No Further Action" was obtained from the state regulatory agency within 30 days of the commencement of field activities.

Geotechnical, Safety, Independent Confidential Review

Kentucky Transportation Cabinet (KYTC), Mountain Parkway, Wolf/Morgan County, KY 2014 – 2015. The KYTC Mountain Parkway extension project included widening and extending portions of Mountain Parkway in Morgan and Wolf Counties, Kentucky. Additionally, new structures and intersections were being designed for construction. KYTC was provided with geotechnical exploration findings and recommendations for design and construction. Staff Professional conducted geophysical laboratory analysis of soil samples and worked with the project team to complete draft reports of findings and geotechnical borings logs.

Oak Ridge National Laboratory Y-12 National Security Complex, Uranium Processing Facility Electrical Substation, Oak Ridge, TN 2016. The consulting firm provided geotechnical exploration findings and recommendations for the construction of an electrical substation to be used at the Y-12 NSC Uranium Processing Facility. Staff Professional completed General Employment Training (G.E.T.) and was approved for site entry. Staff Professional provided support to the health and safety manager during field activities and during development of the health and safety plan and activity hazard analysis.

Confidential Client, External Review of Hazardous Materials Documents 2016. A confidential client was contracted with to conduct a confidential independent review for the hazardous materials survey documents and abatement plan produced by environmental service contractors for a coal power generation facility. The site was one of the first of a series of fossil fuel plant decontamination and demolition projects for client, and the client anticipated using this project as a basis for future work at other facilities that were to undergo the same process. The scope of the project included an evaluation of whether the surveys and abatement plans were technically appropriate, evaluating abatement cost estimates, and providing recommendations that may reduce abatement and demolition costs during future facility decontamination and demolition activities. Project Engineer's review included over 700 pages of documents, including the Project Work Plan and Hazardous Materials Survey produced by an environmental consultant and the Asbestos Abatement Plan produced by the client's selected contractor tasked with performing the abatement work at the fossil fuel plant site. Project Engineer was responsible for conducting the review of the documents and producing a deliverable report that included cost reduction and regulatory compliance recommendations.

Clean Water Nashville Overflow Abatement Program (OAP), Mill Creek Trunk Improvements – Limited Geotechnical Review 2016. The Mill Creek Tunnel project consisted of a geotechnical study of an approximately 4 square mile project area in southeast Nashville, TN. The project area was evaluated for the construction of a sanitary trunk sewer tunnel that would help alleviate some of the combined sewer system overflow issues for which Metro Nashville had received a USEPA consent decree. A tunnel boring machine and multiple access shafts were to be utilized during the construction of the trunk sewer. Project Engineer was tasked with gathering historic geotechnical data from various sources and historical knowledge throughout the project area. Project Engineer sourced drilling logs for UST stations, drinking water wells, USGS wells, quarry information, previous reports, and limited field observations of known rock cuts. Additionally, Project Engineer collected previous geotechnical reports from Nashville Metro Water Services and other outside sources. GIS data was used to verify findings, organize reports, map potential karst hazards, depict geologic contacts, and identify suspected fill areas that may have affected the proposed alignment or construction plans. A report of geologic considerations was produced to be used as an amendment to the construction bid documents. Project Engineer was responsible for managing the project which consisted of coordinating personnel, subcontractors, the client, and outside parties while ensuring that the quality of the deliverables, schedule, and budget remained on target.

Landfills

City of Key West, Cudjoe Key Landfill 2017. Project professional performed groundwater monitoring data analysis, the production and interpretation of graphics that depicted groundwater constituent trends, and drafted a groundwater monitoring technical report that contained findings and recommendations.

Town of Palm Beach, Okeechobee Landfill 2017. Project professional performed groundwater monitoring data analysis and the production and interpretation of graphics that depict groundwater constituent trends. Laboratory data from multiple years were used to illustrate changes over time. Drafted a quarterly groundwater monitoring report that contained findings and recommendations related to groundwater monitoring and permit compliance.

Town of Palm Beach, Skees Road Landfill 2017. Project professional performed groundwater monitoring data analysis and the production and interpretation of graphics that depict groundwater constituent trends. Laboratory data from multiple years were used to illustrate changes over time. Drafted a quarterly groundwater monitoring report that contained findings and recommendations related to groundwater monitoring and permit compliance.

Hillsborough County Florida, Hillsborough Heights Landfill Statistical Report 2017. Project professional performed groundwater monitoring data analysis and the production and interpretation of graphics that depict groundwater constituent trends. Laboratory data from 20 years were used to illustrate changes over time. Statistical software was utilized to identify statistical outliers, groundwater consistent trends, well trends, seasonality, and variance. Drafted a five-year groundwater monitoring statistical report that contained findings and recommendations related to groundwater monitoring and permit compliance.

Hillsborough County Florida, Southeast County Landfill 2017. Project professional provided technical recommendations of data interpretation, boring logs, and construction specifications related to an analysis of soil conditions beneath the landfill and the implementation of two dewatering wells within the landfill.

Oleta Partners, Sole Mia Landfill 2017. Project professional performed groundwater monitoring data analysis and the production and interpretation of graphics that depict groundwater constituent trends. Laboratory data from multiple years were used to illustrate changes over time. Drafted a

biennial groundwater monitoring report that contained findings and recommendations related to groundwater monitoring and permit compliance.

2017, Advanced Disposal Services, Construction Quality Assurance at Stone's Throw Landfill Project professional acted as on-site design engineers representative to ensure that a landfill gas collection system expansion was constructed according the specifications. Coordinated with the design engineer, project manager, client, and contractor to recommend and oversee design recommendations and installation.

2017, Manatee County, Hurricane Irma Debris Acted as assistant project manager for oversight of debris removal services throughout Manatee County following Hurricane Irma landfall. Coordinated with stakeholders to prioritize school and pedestrian safety, clear public and private roads of hurricane-generated debris, and supervised over 100 field personnel while maintaining FEMA disaster debris management reimbursement eligibility. Was responsible for daily field operations that resulted in collection, processing, and disposal of over 17,000 hazardous limbs and trees as well as over 600,000 cubic yards of yard waste and construction and demolition debris from private roads and Manatee County right-of-way.

Pinellas County, Toytown Landfill Waste Volume Estimate 2017 – 2018. Toytown Landfill Waste Volume Estimate, Pinellas County, FL.

Project Manager for the Toytown Waste Volume Estimate project. The Toytown Landfill is a historic closed landfill characterized by a slurry wall, leachate toe drain, and a series of groundwater monitoring locations. The landfill situated near the western terminus of the Howard Frankland Bridge, is highly visible and in a prime location for redevelopment. As project manager, project professional coordinated with stakeholders, conducted historical review, drafted the work plan, directed field operations, conducted historical review, and oversaw project deliverables. Over 2,500 feet of drilling casing was advanced through waste and over 600 geotechnical data points were collected while allowing unimpeded operations on site and adjacent County-owned facilities. This resulted in a valuable document that compiles subsurface conditions for prospective redevelopers to use in the evaluation of the property as a beneficial reuse candidate.

Hillsborough County, Southeast County Landfill 2017 – Present. Senior project professional works directly with the client and project team to manage the general engineering services and consultation contract. Senior project professional provides technical assistance with landfill operations. In addition to assisting with general landfill operations, Project professional provided services for the following tasks:

- **Dewatering Well Installation and Assessment** Project professional assisted in the final installation, development, assessment, and adjustment of two pairs of dewatering wells designed to remove liquid from Phases I and II of the landfill. Project professional conducted field tests, analyzed results, provided recommendations to the client and performed hardware adjustment to maximize the quantity of liquid removed by the dewatering wells.
- Minor Modification for an Alteration of Filling Sequence Project professional assisted in the preparation of a Minor Modification submittal to the Florida Department of Environmental Protection (FDEP) that allowed the client to alter the permitted filling sequence. The submission and subsequent responses to FDEP allowed the client to continue accepting waste with no interruption.
- Phase II Cut-Off Trench Construction Project professional assisted in the construction quality assurance of the Phase II Cut-Off Trench. Coordinated with construction contractors, the client, and the project team to provide third party verification that the trench was constructed according to the design specifications.

- Pump Station 2 Containment Pad Design Project professional coordinated with client and sub-contractors to design a concrete containment pad and the associated piping for Pump Station – 2. The additional pump station acts as an untraditional compliance point, with automated pumping to remove approximately 25,000 gallons of leachate a day from the header.
- Leachate Collection and Recovery System Dye Test Project professional provided on-site observations during the Leachate Collection and Recovery System Dye Test. Following on-site observations, project professional coordinated with the client and subcontractors to analyze results and present additional recommendations.
- Piezometer evaluations
- Phase III and Northern Phase II Header exploration and extension
- GASB Report X3
- Alternate Procedure
- Closure of Consent Agreement
- Conceptual accelerated closure plan
- Fill Sequence Modification to regain Phase II airspace
- Tank Inspections
- Leachate treatment technology evaluation and contractual negotiations
- Biosolids composting facility ops plan
- Waste tire permit renewal
- Borrow area mulch
- NWTS, SCTS, HH/TR and RRF Stormwater
- Yard Waste Processing Areas

Manatee Co GASB Report

- Lena Road and Erie

Hillsborough Heights Landfill Stormwater Conveyance System Improvements, 2018.

Orange County, Florida Porter Transfer Station, 2017. The Porter Transfer Station Improvements Project consisted of designing a new scalehouse and citizen drop off area as well as redesigning the site's traffic pattern and infrastructure. Project professional assisted in subsurface geotechnical exploration of the site in preparation of structure placement and design.

South County Transfer Station Pump Station Improvements, Hillsborough County, Florida. 2018. The South County Transfer Station Pump Station Improvements Project consisted of redesigning an existing pump station to accept a connection to leachate haul trucks from the local landfill. The design called for new pumps that discharged into an existing forcemain and adding a sewer line that connected the pump station vault to a containment pad and camlock connection where the leachate trucks unloaded. Project professional recommended and coordinated the installation of design alterations, oversaw the final installation inspection, and coordinated with local regulatory agencies to receive approval for operation.

Northwest Transfer Station Lighting System Improvements, Hillsborough County, Florida 2018. The Northwest Transfer Station Lighting System Improvements Project consisted of replacing the existing light fixtures in the Transfer Station Tunnel and erecting new flood lights around the structure. Project professional coordinated with subcontractors and the client to draft construction specifications and bid documents in preparation of the bidding process.

Northwest Transfer Station Stormwater Improvements, Hillsborough County, Florida 2018.

Northwest Transfer Station Tipping Floor Improvements, Hillsborough County, Florida 2018

Heart of Florida Subcell 3 Expansion, ACMS, Inc., Panasoffkee, FL.

Senior Project Professional provided landfill disposal cell design services and engineering calculations in support of permit application preparation. The design and engineering services included conducting leachate generation modeling, designing the leachate collection layer and piping, sizing leachate conveyance trenches, designing the cell's sump and riser system, and verifying leachate collection piping resistance to crushing from overburden forces. The project resulted in a disposal cell design that would drastically reduce the gravel required to construct the cell, saving the client millions of dollars in construction costs.

Guantanamo Bay Solid Waste Facility, US Navy, Guantanamo Bay Naval Base, Cuba.

Senior Project Professional provided solid waste disposal facility design services and engineering calculations for the design-build team. Senior Project Professional provided design and engineering services including modeling leachate generation, designing the leachate collection layer and piping, sizing leachate conveyance trenches, and ensuring appropriate safety factors were utilized throughout the design process. The design will result in the ability to continue self-sufficient base operations through unimpeded solid waste management practices.