COMMONWEALTH OF KENTUCKY
BEFORE THE KENTUCKY STATE BOARD
ON ELECTRIC GENERATION AND TRANSMISSION SITING

In the Matter of:

ELECTRONIC APPLICATION OF HORUS KENTUCKY 1 LLC FOR A CERTIFICATE OF CONSTRUCTION FOR AN APPROXIMATELY 69.3 MEGAWATT MERCHANT ELECTRIC SOLAR GENERATING FACILITY IN SIMPSON COUNTY KENTUCKY PURSUANT TO KRS 278.700 AND 807 KAR 5:110	)	Case No. 2020-00417

HORUS KENTUCKY 1 LLC'S
PRE-HEARING FILING

Comes now Horus Kentucky 1 LLC ("Horus" or "Applicant"), by and through counsel, pursuant to 807 KAR 5:110, Section 6 and other applicable law, and does hereby give notice of its intent to make the following witnesses available for examination at the hearing for this matter which is scheduled for 1:30 PM on Monday, November 15, 2021:

Braden Houston, Managing Director of Solar Development for OPDEnergy.

Woo Smith, Senior Associate & Regional Environmental Department Manager of Terracon will be available to address general environmental-related issues, whose CV is attached hereto as **Exhibit A**.

Sadra Javadi PhD, Senior Staff Engineer of Terracon will be available to address geotechnical/karst-related issues, whose CV is attached hereto as **Exhibit B**.

William Kaufell, Senior Associate & Acoustics Group Manager of Terracon will be available to address noise-related issues, whose CV is attached hereto as **Exhibit C**.

Richard C. Kirkland, Jr., MAI of Kirkland Appraisals, LLC will be available to testify regarding property valuation issues, whose CV is attached hereto as **Exhibit D**.

Jorge Medina, Development Engineering Director, of OPDEnergy will be available to address design, layout and setback issues.

Charlie Hill, Land Agent of OPDEnergy will be available to address any land related issues.

Respectfully Submitted,

/s/ Randall L. Saunders
Randall L. Saunders, Esq. (KY Bar No. 90911)
NELSON MULLINS RILEY & SCARBOROUGH LLP
949 Third Avenue, Suite 200
Huntington, WV 25701
Telephone: 304.526.3500

Counsel for Horus Kentucky 1 LLC

EXHIBIT A

WOO SMITH

SENIOR ASSOCIATE & REGIONAL ENVIRONMENTAL DEPARTMENT MANAGER

PROFESSIONAL EXPERIENCE

Mrs. Smith is a Senior Associate and Regional Environmental Department Manager for Terracon's Louisville and Lexington Offices in Kentucky. Project duties include National Environmental Policy Act (NEPA) evaluations and documentation, Phase I & II Environmental Site Assessments (ESAs), project scoping and proposal preparation, regulatory agency coordination, staff training and mentoring, technical report writing, and review. Mrs. Smith is the NEPA Division Lead and the Principal Tribal Liaison for Terracon's Nationwide NEPA Program and has extensive experience in government-to-government consultation procedures with respect to Native American consultation and Federal agencies. Mrs. Smith is well-versed in cultural and natural resource issues significant to Native American communities and assessing and mitigating impacts to those resources. Mrs. Smith's NEPA experience includes serving as a project manager, coordinator, resource specialist, and document author for Environmental Assessments (EAs) and Categorical Exclusion (CatEx) documents for proposed actions utilizing guidance and regulatory framework provided required by 40 CFR Parts 1500-1508.

NEPA PROJECT EXPERIENCE

NEPA/EA/ENVIRONMENTAL SERVICES NATIONWIDE – FEDERAL COMMUNICATIONS COMMISSION (FCC) PROPOSED TELECOMMUNICATIONS TOWERS/UTILITY EASEMENTS

Mrs. Smith has performed hundreds of Phase I & II ESA, and NEPA evaluations for telecommunications towers/utility easements in accordance with FCC NEPA Regulations (Title 47 of the Code of Federal Regulations (CFR), Part 1, Subpart I, rule section 1.1307(a)(4), as amended by the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas (47 CFR Part 1, Appendix B) and the Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process (47 CFR Part 1, Appendix C). NEPA scopes included presence/absence of wetlands, floodplains, federal/tribal land, T&E species, critical habitat, historic resources, and archaeological resources impacted by the proposed undertaking. Agency consultations included Section 7 consultation with the United States Fish and Wildlife (USFWS), state wildlife/natural resource agency (when applicable), the State Historic Preservation Offices (SHPOs), and Tribal Historic Preservation Officers (THPOs) as identified through the FCC Tower Construction Notification System (TCNS). Project responsibilities also include performing Section 106 evaluations per the National Historic Preservation Act of 1966 (NHPA). Section 106 responsibilities consist of SHPO file review and consultation, documentation of historic resources within the project view shed and analysis of visual impact, archaeological surveys conducted under the supervision of a Principal Investigator, legal notices, public notification letters, and submittal to the FCC/SHPO. In cases where an adverse environmental impact was identified, Mrs. Smith prepared EAs and/or a Memorandum of Agreements (MOAs) for the proposed projects. As such, the proposed projects were able to move forward under the provisions of the EAs in all cases with a Finding of No Significant Impact (FONSI).

EDUCATION

Bachelor of Arts, Political Science & Environmental Studies, Emory University

CERTIFICATIONS & Training

40-Hour OSHA HAZWOPER Course

NWETC, Writing the Perfect EA, FONSI, EIS

Terracon, 12-Week Fundamentals of Project Management Training

Young Professionals Association of Louisville (YPAL) Emerging Leaders Program, Fall 2019

AFFILIATIONS

President-Elect, YPAL

Board of Trustees, Portland Museum

Board of Directors, International Facility Management Association (IFMA)

Board of Directors, Illinois Association of Environmental Professionals (IAEP)

Education Board, National Association of Environmental Professionals (NAEP)

Board of Directors, Kentucky State Wireless Association (KWA)

ACE Mentor, Southeast

Program Committee, Urban Land Institute

PRESENTATIONS & AWARDS

Kentucky Chamber of Commerce, Environmental Conference Panelist, 2020

Environmental Regulatory Panelist, South Wireless Summit, 2017, 2018, 2019

Recipient of the WWLF Fellowship Program Award, 2017

Terracon's Young Professional Award – Companywide & Central Division, 2016

Presentation at the NAEP Annual Conference, 2019

Presentation at the Railroad Environmental Conference, 2018

WORK HISTORY

Terracon Consultants, Inc., 2013-Present

Terracon

NEPA/ENVIRONMENTAL SERVICES – SOLAR PROJECTS

Mrs. Smith has coordinated environmental, natural, and cultural resource services for multiple proposed solar farm locations in the United States. Coordination and services include Phase I & II ESAs, desktop studies, constraints analyses/critical issues analyses, permitting reviews, wetlands evaluations/delineations, threatened and endangered (T&E) species surveys, and cultural resource surveys. These reports were requested to fulfil client-requested due diligence standards for proposed solar farms. Based on findings, some projects were expanded to include Phase II archaeological testing, wetland permitting, and species-specific surveys. Depending on state or federal requirements, some services included NEPA/EAs or state permitting. These projects added land use planning components such as coastal consistency determinations, farmland conversion impact rating in accordance with USDA requirements, local permit coordination, agency consultations, and public involvement.

NEPA EA – TENNESSEE VALLEY AUTHORITY (TVA)

Mrs. Smith is currently preparing an EA per TVA procedures for compliance with the NEPA of 1969, and the requirements set forth in the CEQ, Title 40, CFR, §§ 1500-1508, Regulations for Implementing the Procedural Provisions of the NEPA. TVA has entered into a Power Purchase Agreement (Renewable Energy PPA) with Horus Renewables, to purchase the power generated by the proposed solar facility. The project is anticipated to be a solar-powered electric generation facility with an installed capacity of up to 69.30 megawatts (MWs) comprised of approximately 500 acres along with two 100-foot wide transmission corridor upgrades totaling approximately 20.96 miles in length in Franklin, Simpson County, Kentucky. The EA report is currently being prepared.

NEPA EA – DEPARTMENT OF NAVY

Proposed Land Exchange (Exchange of an Existing Navy Outlying Landing Field [NOLF] with a Proposed NOLF). Client: Department of Navy and Escambia County, Florida. 2014-2017. Mrs. Smith co-prepared an EA in accordance with the Navy regulations for implementing NEPA (32 CFR part 775), which provides Navy policy for implementing Council on Environmental Quality (CEQ) for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508). The EA evaluates potential environmental consequences associated with carrying out the action alternatives and the no action alternative, as well as considerations for various alternative locations for the land exchange. The following resource areas are addressed in this EA: Air Quality, Water Resources, Geological Resources, Cultural Resources, Biological Resources, Land Use Planning, Visual Resources, Airspace, Noise, Infrastructure, Transportation, Public Health and Safety, Hazardous Materials and Wastes, Socioeconomics, and Environmental Justice. The EA report included coordination with additional specialists, tribes, special interest groups, and other federal agencies. The report was evaluated and reviewed by the lead agency and then posted for public comment. The EA concluded with a FONSI.

NEPA EA – AIR FORCE

Proposed Telecommunications Tower, Arnold Air Force Base, Tennessee, 2016-2017.
Mrs. Smith managed the preparation of an EA conducted in accordance with NEPA, the CEQ for implementing the procedural provisions of NEPA, and the Air Force Environmental Impact Analysis Process (EIAP) Regulations 32 CFR Part 989. The EA evaluation included, but was not limited to, land use and zoning, transportation and circulation, hazardous materials and wastes, socioeconomic issues, air quality, noise, public services and utilities, water resources/quality, geological resources, biological resources, cultural resources, and safety. The report was evaluated and reviewed by the lead agency and then posted for public comment. The EA concluded with a FONSI.

NEPA EAs (3) – DEPARTMENT OF VETERAN AFFAIRS

Department of Veteran Affairs (VA) Proposed Outpatient Clinic Property Lease/Building Rehabilitation; Decatur, Georgia. Client: Carpenter Robins Commercial Real Estate (CR/CRE), 2012 – 2013. Department of Veteran Affairs (VA) Proposed Parking Lot; Fresno, California. Client: CB Richard Ellis (CBRE), 2015 – 2016. Department of Veteran Affairs (VA) Proposed Parking Lot; Sacramento, California. Client: CBRE, 2015 – 2016.
Mrs. Smith has prepared multiple EAs for the VA in accordance with 40 CFR Parts 1500-1508, VA Implementing Regulations, Environmental Effects of VA Actions, 38 CFR Part 26 (51 FR 37182, Oct. 20, 1986), and NEPA Interim Guidance for Projects PG-18-17. Items evaluated per the NEPA analysis included, but were not limited to, land use planning, aesthetics; air quality; cultural resources; geology and soils; hydrology and water quality; wildlife and habitat; noise; land use; floodplains, wetlands, and coastal management; socio-economic/environmental justice issues, community service; solid and hazardous materials; transportation and parking, utilities, cumulative impacts; and potential for generating substantial controversy. The EA reports all included coordination with numerous additional specialists, tribes, and government agencies. All reports concluded with a FONSI.

NEPA EA – HEALTH RESOURCES & SERVICES ADMINISTRATION (HRSA)

Mrs. Smith developed the proposal, scope of work, and completed multiple EAs for Crusader Medical Clinic which were performed in accordance with the Council on Environmental Quality regulations for implementing NEPA (44 CFR Parts 1500 through 1508) and the HHS General Administration Manual Part 30 Environmental Protection (February 25, 2000). The EA reports were evaluated and reviewed by HRSA and were issued FONSIs.

NEPA EA – BUREAU OF LAND MANAGEMENT (BLM)

NM1 Lindrith Proposed Telecommunications Tower, Rio Arriba County, New Mexico, 2012.
Mrs. Smith co-managed the preparation of an EA conducted in accordance with the BLMs U.S. Department of the Interior's guidance manual on the National Environmental Policy Act of 1969 (NEPA) (516 DM 1-7). The EA evaluation included, but was not limited to, land use, air quality, water quality, impact to cultural and natural resources, view shed, recreation, noise, Native American/Tribal concerns, and range. The report was evaluated and reviewed by BLM and then posted for public comment. The EA concluded with a FONSI.

NEPA EAs (2) – BUREAU OF INDIANA AFFAIRS (BIA)

Mrs. Smith is currently preparing an EA per the BIA standards on a proposed gaming facility in Oklahoma. The EA report is currently in review with the BIA and the Apache Tribe of Oklahoma. Mrs. Smith has also prepared an EA per the BIA standards on a proposed telecommunications site in Arizona. The EA report was reviewed by the BIA and the Fort Apache Indian Tribe and was issued a FONSI.

NEPA/ENVIRONMENTAL SERVICES – DCA/HUD-FUNDED PROJECTS

Mrs. Smith has managed multiple proposed housing projects funded by the Georgia DCA LIHTC/HUD program. This work was performed in accordance with the DCA Environmental Manuel and the DCA HOME/HUD Questionnaire (DCA's variation of the HUD Form 4128). Items evaluated for each project included, but were not limited to, wetlands, floodplains, threatened and endangered species, critical habitat, noise, cultural resources, tribal consultation, public participation, environmental justice, hazardous materials, asbestos, lead-based paint, radon, and mold. All reports were submitted for review and approval by the DCA/HUD.

STATE LEVEL NEPA REVIEWS

In addition to the above NEPA projects, Mrs. Smith's experience includes Georgia Environmental Policy Act (GEPA) reviews for state actions, including funding, land transfers, and design-build construction projects. GEPA studies include a review of resource impact items including air quality, historic preservation, archeological resources, state and federal species of concern, and numerous additional categories. Mrs. Smith has performed dozens of GEPA evaluations for a variety of project types.

SECTION 106 REVIEWS & CONSULTATION WITH FEDERALLY RECOGNIZED INDIAN TRIBES

Mrs. Smith has performed numerous Section 106 evaluations per the NHPA consisting of record review studies for the presence of significant cultural resources including archaeological sites and historic structures eligible for or listed in the National Register of Historic Places (NRHP). Mrs. Smith also studied tribal consultation procedures, regulations, policies, protocol, and acts as a liaison among tribal representatives, THPOs, consultants and any other parties involved in the consultation process.

DUE DILIGENCE ASSESSMENTS

Mrs. Smith has served as the Project Manager for numerous Phase I ESA projects involving commercial, industrial, and telecommunications tower sites throughout the U.S. for a board client base including lending institutions, insurance companies, law firms, and private industrial entities using American Society for Testing & Materials (ASTM) and client-specific due diligence guidelines.

ADDITIONAL ENVIRONMENTAL EXPERIENCE

Mrs. Smith has assisted with fieldwork for the City of South Beloit's Brownfield Assessment/Cleanup Projects. Under the Grant, Terracon assisted the City with preparing Remediation Objective Reports and Remedial Action Plans and received IEPA SRP's approval. Terracon also assisted the City with its IEPA MRBG Grant and RLF Application, and USEPA ARC Grant Application. Several sites were entered into SPR for Comprehensive No Further Remediation Letters. In addition, Mrs. Smith served as Program Manager for all USEPA Grant activities in 2019-2020 for the City of Shelbyville, Kentucky USEPA Brownfield Assessment Grant, which included multiple Phase I & II ESAs, Asbestos Assessments, Quality Assurance Project Plans & Health and Safety Plans, implementation of community outreach activities, and development of a site inventory list for assessments. In addition, provided the City with programmatic support including annual reporting forms, ACREs database, and quarterly reporting. Also provided the City with gathering information for the site inventory list and engaging the community with community outreach meetings and activities.

CLIENT MANAGEMENT

Mrs. Smith currently serves as Terracon's National Account Manager for Environmental Services for Verizon Wireless, Norfolk-Southern Railway Company, MetroSite, SMJ International, and OPDEnergy/Horus Renewables. Mrs. Smith is responsible for implementing the clients' scope requirements across Terracon's 150 offices, maintaining a client database, and conducting quality control reviews for environmental due diligence reports prepared by Terracon.

EXHIBIT B

Sadra Javadi, PhD

SENIOR STAFF GEOTECHNICAL ENGINEER

PROFESSIONAL EXPERIENCE

Dr. Javadi is a staff geotechnical engineer in Terracon's Louisville office with over 6 years' experience in the field of geotechnical engineering. He has worked on a variety of transportation, energy, commercial and residential development projects. His geotechnical engineering experience includes subsurface investigations utilizing both traditional drilling and sampling techniques and pressure meter testing, engineering analysis (shallow and deep foundations, slope stability, retaining walls, flexible and rigid pavements), numerical modeling and finite element analysis, recommendations for geotechnical design and construction, and design of geotechnical related aspects of projects.

He has gained experience in designing foundations for bridge and tall rise commercial and residential structures, analyzing/calculating and preparing structural details for foundations.

EDUCATION

PhD, Civil Engineering,
University of Louisville

Master of Science, Geotechnical Engineering, K.N. Toosi University of Technology

Bachelor of Science, Civil Engineering, University of Tabriz

AFFILIATIONS

American Society of Civil Engineers

Deep Foundation Insititute

Geostrata-Geo-Institute

WORK HISTORY

Terracon Consultants, Inc.,
Staff Geotechnical Engineer
August 2021 – Present
Staff Geotechnical Engineer
May 2017 – August 2021

University of Louisville, Teacher Assistant
2013 – 2017

Granteen Geotechnical Engineers,
Staff Geotechnical Engineer
2010 – 2013

K.N. Toosi University of Technologu,
Teacher Assistant
2012 - 2011

PROJECT EXPERIENCE

ENERGY/UTILITY SECTOR

Mariner Pipeline, Various Locations, PA
Fieldwork manager for several drilling crews on new transmission pipeline installation extending through Pennsylvania. Responsible for site visits to evaluate equipment access, coordination of site clearing (if needed), management of drilling and sampling programs, and ensuring the quality of all geotechnical data.
Professional Services: 2017

ML200 Landslide Restoration, Irvine, KY
Fieldwork manager for restoration and mitigation on a landslide feature occurred across in-service CPG gas pipeline in Irvine, Kentucky. Interacted with clients to develop an appropriate scope of work to meet the project needs. Executed the fieldwork, coordinating with client and drilling crew, laboratory, and testing according to the project schedule. Planning and installing instrumentation including piezometers and inclinometers on the restored section and adjacent area and monitor them biweekly.
Professional Services: 2018

Incident Site on Leach Xpress Gas Pipeline, Moundsville, WV
Field engineer assisting project manager to install remote sensing instrumentation including piezocone, weather station, and shapearray. Additional responsibilities included geohazard site assessment and scoping geotechnical site characterization studies for the proposed access road.
Professional Services: 2018, 2019

Leach Xpress Gas Pipeline, Various Locations, WV
Field engineer observation and inspection for construction/improvements involving a new 160-mile long transmission pipeline. Responsibilities included observing and documenting as-built conditions, identifying potential issues, and recommending plans remedial actions. Involvement included identification of geohazards and scoping geotechnical site characterization studies.
Professional Services: 2017, 2018, 2019

Proposed Transmission Pipeline (Vectren), Louisville, KY
Field engineer on the 5-mile Louisville Vectren proposed 24-inch pipeline located in the southwestern corner of Louisville, KY. Coordinated drilling, sampling and provided geotechnical support to design team. Field exploration several 150-foot borings to characterize the subsurface for horizontal directional drilling applications. Professional Services: 2017
Proposed Transmission Line (EKPC) – Elizabethtown, KY
Field manager for the existing EKPC transmission line located in the Elizabethtown, KY. Coordinated drilling, sampling and provided geotechnical support to design team. Field exploration several borings to characterize the subsurface for deep foundation parameters.
Professional Services: 2018

Proposed Transmission Pipeline (LG&E), Louisville, KY
Fieldwork manager/ Field engineer for a major Louisville Gas & Electric (LG&E) gas transmission line project servicing the greater Louisville, KY area. Collaborated with LG&E engineers, LG&E construction representative, the design team, and construction representatives from other utility companies to ensure the project was planned efficiently and safely in an electrical transmission line right-of-way. Provided environmental monitoring services to ensure the safety of field crews. Documented and analyzed field and laboratory data to ensure data quality and accuracy. Assisting senior project manager with stability and settlement analysis.
Professional Services: 2017, 2018

Micro-pile Driving Inspection for Solar Farm, Evansville, IN
Project engineer observation and inspection of micro-pile driving for the proposed solar farm. Responsibilities included observing and documenting pile testing in vertical and lateral loadings, analyzing the obtained results, and preparing geotechnical report.
Professional Services: 2018

Duff-Coleman Transmission Line, Ferdinand, IN
Field engineer on the 30 miles of 345 KV single-circuit transmission line located in Dubois and Spencer Counties, IN. Coordinated drilling, sampling and provided geotechnical support to design team. Field exploration seventy 50 to 100-foot borings to characterize the subsurface for horizontal directional drilling applications. Specialized support for this project included performing of in-situ pressure meter testing (PMT) on 20 borings and Automatic Dynamic Cone Penetration (ADCP) on 40 locations to provide design parameters to design team.
Professional Services: 2017, 2018

I-66 Highway Construction – Fairfax, DC
Fieldwork manager and coordinator for night shift coordination and planning for road closure and scheduling three to five drilling crew per night shift for a 10-mile long of I-66 Highway. Responsibilities includes observing and documenting as-built conditions, identifying potential issues, recommending plans remedial actions, coordinating with traffic control unit and planning road closure, coordinating with security patrol, and planning drilling schedule. Involvement included planning and coordinating for nightly drilling schedule.
Professional Services: 2018

I-69 Highway Design-Build – Henderson, KY
Assisting with the design and analysis of slopes, retaining walls, noise wall, and bridges. Performing numerical and finite element modelings to design earth structures such as cut walls and slopes. Performing settlement and bearing capacity calculation for the bridge foundations and retaining wall structures: 2020 to present

I-35 Highway Design-Build – San Antonio, TX
Assisting with the design and analysis of slopes, retaining walls, noise wall, and bridges. Performing numerical and finite element modelings to design earth structures such as cut walls and slopes. Performing settlement and bearing capacity calculation for the bridge foundations and retaining wall structures: 2021 to present

AEP Transmission Line – Sharples, WV
Fieldwork manager observation and inspection for construction/improvements involving multiple new pole structures for transmission line development. Responsibilities included observing, coordinating drilling, sampling, and provided collaboration with professional engineers. Field exploration included standard penetration testing, Shelby tube sampling, and rock coring. Specialized support for this project included performing of in-situ pressure meter testing (PMT) on multiple locations to provide design parameters to design team.
Professional Services: 2018

Horizontal Directional Drilling (HDD) Projects – Various Locations, KY, WV, IN
Fieldwork manager for several transmission pipeline horizontal directional drilling projects across Kentucky, West Virginia, and Indiana. Interacted with clients to develop an appropriate scope of work to meet the project needs. Executed the fieldwork, coordinating with client and drilling crew, laboratory, and testing according to the project schedule.
Professional Services: 2017, 2018, 2019

Proposed Telecommunication Tower – Various Locations, KY, IN
Project engineer for several telecommunication towers in Kentucky and Indiana area. Assisting the senior project manager with oversighting the geotechnical drilling, laboratory testing, engineering analysis, and reporting.
Professional Services: 2018, 2019

Solar Farm Site Investigation and Inverter Design (over 50 projects)– Various States and different clients
Project Manager for geotechnical services, including geotechnical drilling, pile load testing, laboratory testing, engineering analysis, and reporting and structural design for the proposed structures. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Designing and performing pile load testing program for the solar projects at the design level. Collaborated with design team to ensure an efficient design was implemented. During the design phase, new foundation systems were designed for inverters and solar panels. The project involved the construction for a new solar farm for sifferent solar farm developers.
Professional Services Completed: 2019 to present

Integrity Evaluation for the Operating Marathon pipelines – IN, KY
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting and slope stability analysis for Marathon Right-Of-Way. During the field work phase, guidelines were provided for drilling crew and in-situ testing were performed including ADCP and ERI. Collaborated with design team to ensure an efficient design was implemented. During the design phase, slope stability of the high priority sites was performed using Slide software. The purpose of project was to evaluate the integrity of existing Marathon's Right-Of-Way at high strain sites.
Professional Services Completed: 2019

Storage Tank Design for Petroleum products and Water – IN, KY
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, reporting and design of 50 to 60-foot tall cylindrical storage tanks. During the field work phase, guidelines were provided for drilling crew and in-situ testing were performed including PMT. Collaborated with design team to ensure an efficient design was implemented. During the design phase, different foundation options were evaluated and designed for the new storage tanks. The purpose of project was to design the storage tanks for different clients including Marathon Gas Company, Angle's Envy Distillery Company, and Tyson Food Company.
Professional Services Completed: 2018, 2019

FEDERAL GOVERNMENT SECTOR

Justice Community Center – Indianapolis, IN
Field engineer observation and inspection for construction/improvements involving a new Justice Community Center. Responsibilities included observing, coordinating drilling, sampling, and provided collaboration with professional engineers. Field exploration included

standard penetration testing, Shelby tube sampling, and rock coring. Specialized support for this project included performing of in-situ pressure meter testing (PMT) on multiple locations to provide design parameters to design team.
Professional Services: 2018

HOTEL BUILDINGS

New Tower Addition to the Seelbach Hotel – Louisville, KY
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting and foundation design for the proposed tower addition to the existing hotel structure. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Collaborated with design team to ensure an efficient design was implemented. During the design phase, new foundation systems were designed for the proposed tower. The project involved the new tower structure addition to the existing Seelbach hotel at downtown Louisville.
Professional Services Completed: 2019

HEALTHCARE/OFFICE BUILDINGS

Proposed Passport Health Center – Louisville, KY
Oversaw the geotechnical drilling for multiple drilling locations for a proposed medical facility in Louisville, KY. Responsible for site visits to evaluate access, coordination of access issues, problem solving when site issues surfaced, and recording the subsurface data obtained during drilling. Specialized support for this project included performing of Automatic Dynamic Cone Penetration (ADCP) to provide design parameters to material/construction team.
Professional Services: 2017, 2018

Proposed Building Extension of Animal Clinic – Boonville, IN
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Collaborated with design team to ensure an efficient design was implemented. The project involved the construction for a new Krispy Kreme Doughnut Shop.
Professional Services: 2017

Proposed Development for Notre Dame University – South Bend, IN
Field engineer observation and inspection for construction/improvements involving a new Justice Community Center. Responsibilities included observing, coordinating drilling, sampling, and provided collaboration with professional engineers. Field exploration included standard penetration testing, Shelby tube sampling, and rock coring. Specialized support for this project included performing of in-situ pressure meter testing (PMT) on multiple locations to provide design parameters to design team.
Professional Services: 2018

RESTAURANTS/RETAIL

Krispy Kreme – Louisville, KY
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Collaborated with design team to ensure an efficient design was implemented. The project involved the construction for a new Krispy Kreme Doughnut Shop.
Professional Services Completed: 2017

Burger King Restaurant – Louisville, KY
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Collaborated with design team to ensure an efficient design was implemented. The project involved the construction for a new Burger king restaurant.
Professional Services Completed: 2017, 2019

Starbucks Coffee Company – Louisville, KY
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Collaborated with design team to ensure an efficient design was implemented. The project involved the construction for a new Starbucks Coffee Shop.
Professional Services Completed: 2017

BMW Company – Louisville, KY
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Collaborated with design team to ensure an efficient design was implemented. The project involved the construction for a new inventory parking for existing BMW auto shop.
Professional Services Completed: 2017

Texas Roadhouse – Louisville, KY
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Collaborated with design team to ensure an efficient design was implemented. The project involved the construction for a new Texas Roadhouse Restaurant.
Professional Services Completed: 2018

Discount Tire – Various Locations, IN, KY
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Collaborated with design team to ensure an efficient design was implemented. The project involved the construction for a new Discount Tire store and proposed parking lot extension.

Professional Services Completed: 2018, 2019

CVS Store – Louisville, KY
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Collaborated with design team to ensure an efficient design was implemented. The project involved the construction for a new CVS store.
Professional Services Completed: 2018

Dollar Tree Store – Henderson, KY
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Collaborated with design team to ensure an efficient design was implemented. The project involved the construction for a new Dollar Tree store.
Professional Services Completed: 2018

McDonald's Restaurant – Evansville, IN
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Collaborated with design team to ensure an efficient design was implemented. The project involved the construction for a new McDonald's restaurant.
Professional Services Completed: 2019

U-Haul Store – Louisville, KY
Project Manager for geotechnical services, including geotechnical drilling, laboratory testing, engineering analysis, and reporting. During the field work phase, made alterations to the exploration plan based on the actual results obtained. Geophysics testing including ERI and MASW were performed to determine the karst related features and optimize the seismic site class. Collaborated with design team to ensure an efficient design was implemented. The project involved the addition to an existing U-Haul facility and proposed parking lot extension.
Professional Services Completed: 2019

PRESENTATIONS

Javadi, S.; Ghavami, M.; Zhao, Q.; Bate, B.; Advection and retardation of non-polar contaminants in compacted clay barrier material with organoclay amendment. Applied Clay Science, Volume 142, June 2017, 30-39, https://www.sciencedirect.com/science/article/pii/S0169131716304628

Ghavami, M.; Zhao, Q.; Javadi, S.; Jangam, J. S. D.; Jasinski, J. B.; Saraei, N. ;Change of organobentonite interlayer microstructure induced by sorption of aromatic and petroleum hydrocarbons—A combined study of laboratory characterization and molecular dynamics simulations. Colloids and Surfaces A: Physicochemical and Engineering Aspects Volume 520, May 2017, 324-334, https://www.sciencedirect.com/science/article/pii/S0927775717300705

Moghaddas Tafreshi, S. N.; Javadi, S.; Dawson, A. R.; Influence of geocell reinforcement on uplift response of belled piles. Acta Geotechnica, June 2014, Volume 9, Issue 3, Pages
709- 725, 513-528, https://link.springer.com/article/10.1007/s11440-013-0300-1

Ghavami, M.; Hasanzadeh, B.; Zhao, Q.; Javadi, S.; Yousefi Kebria, D.; Experimental study on microstructure and rheological behavior of organobentonite/oil-based drilling fluid. Journal of Molecular Liquids, Volume 263, August 2018, 147-157, https://www.sciencedirect.com/science/article/pii/S0167732217356349

Yousefi Kebria, D.; Ghavami, M.; Javadi, S.; Goharimanesh, M.; Combining an experimental study and ANFIS modeling to predict landfill leachate transport in underlying soil—a case study in north of Iran. Environmental Monitoring and Assesment, January 2018, 190: 26, https://link.springer.com/article/10.1007/s10661-017-6374-8

Ghavami, M.; Yousefi Kebria, D.; Javadi, S.; Ghasemi-Fare, O.; Cement-Organobentonite Admixtures for Stabilization/Solidification of PAH-Contaminated Soil: A Laboratory Study, Soil and Sediment Contamination: An International Journal, Volume 28, January 2019, Issue 3, 28:3, 304-322, https://www.tandfonline.com/doi/abs/10.1080/15320383.2018.1564734

EXHIBIT C

WILLIAM C. KAUFELL
Senior Associate/Group Manager, Acoustics

EDUCATION:
B.A., Geography, Urban and Regional Planning, 1991, Bloomsburg University

RELEVANT TRAINING:
Advanced Traffic Noise Modeling, University of Louisville, 1992

Fundamentals and Abatement of Highway Traffic Noise, FHWA, 1997

FHWA TNM Short Course, Bowlby & Associates, 1998

PROFESSIONAL AFFILIATIONS:
Member of TRB Committee on Transportation-Related Noise and Vibration (ADC40)

YEARS OF EXPERIENCE:
29 Years

Mr. Kaufell serves as a Senior Associate and Group Manager of Acoustics. He is in charge of managing complex transportation projects, managing open-ended contracts, overseeing the several-member acoustical team, managing and performing environmental acoustical studies, and performing soundscape analyses and abatement evaluations for a variety of clients. He has performed a variety of air quality evaluations and soundscape analyses/noise abatement design for state highway agencies, local governments, and private sector clients in the Mid-Atlantic region.

The thrust of Mr. Kaufell's work during his 29 years at Skelly and Loy has involved acoustical analyses associated with surface transportation improvement projects in Maryland, Virginia, West Virginia, and Pennsylvania. He has completed hundreds of highway traffic noise studies ranging from preliminary assessments to final abatement designs. Mr. Kaufell has designed more than 100 linear miles of noise walls and berms for state highway agencies and is well versed in the use of Federal Highway Administration (FHWA) policy, procedures, and TNM2.5 modeling in the analysis and mitigation of traffic noise. Mr. Kaufell is involved with every facet of each air quality and noise job performed by Skelly and Loy, from scoping to project management, from monitoring to modeling, and from documentation to public involvement presentations and coordination. His air quality and noise evaluation projects ranged from 30-mile bypasses with multiple alternatives to minor widenings with intersection improvements. Mr. Kaufell's expertise in surface transportation noise is illustrated through his policy development work with the Pennsylvania Department of Transportation (PennDOT). He was hired to assist in revising guidance documents for the completion of air/noise studies on PennDOT projects (Publication Nos. 24 and 321). He is a member of the Transportation Research Board for highway noise, and is well respected in the region for his work related to surface transportation noise and mitigation. He has also served as an expert witness related to noise modeling work and abatement design on several projects.

Related to private sector work, Mr. Kaufell has conducted acoustical evaluations for a variety of private development projects. The focus of his environmental acoustic evaluations has been on the industrial and mining industries around the country. These studies include baseline sound level studies involving detailed noise monitoring, noise modeling of proposed facilities, and design of noise abatement devices. In regard to the mining-related work, Mr. Kaufell aids in the design of mining operations to yield a state-of-the-art facility that is acoustically friendly to its neighbors. He has also served as an expert witness related to noise modeling work and abatement design on several mining projects from processing to load out for Martin Marietta Materials and Vulcan Materials. These evaluations included proposed underground and open pit limestone mines, wet and dry sand and gravel quarries, and ancillary operations such as concrete/asphalt batch plants. He has also completed acoustical analyses and expert testimony for existing and proposed industrial facilities such as electrical substations, warehousing, trucking terminals, and shipping facilities involving surface transportation.

WILLIAM C. KAUFELL
Senior Associate/Group Manager, Acoustics

SKELLY AND LOY
A Terracon COMPANY

PROJECT EXPERIENCE

UTILITY EXPERIENCE

Dominion Power Drilling Construction Noise Compliance, Haymarket, Virginia – Mr. Kaufell compiled long term measurements for compliance at residential locations for horizontal drilling during nighttime operations.

Dominion Power Gallows Shreve Road Ambient Noise Measurements, Virginia – Mr. Kaufell performed ambient noise measurements for a proposed substation development.

Dominion Power Noise Compliance, Falls Church, Virginia – Mr. Kaufell completed noise measurements for compliance with local ordinance related to a newly developed substation.

Dominion Power Skiffes Creek Noise Compliance, Virginia – Mr. Kaufell completed noise measurements for compliance with local ordinance related to a newly developed substation.

Dominion Power Substation Noise Model, Tysons Corner, Virginia – Mr. Kaufell performed noise modeling for proposed substation expansion including noise mitigation design.

Dominion Power Substation Noise Monitoring, Clifton, Virginia – Mr. Kaufell completed noise measurements for compliance with local ordinance related to a newly developed substation.

Dominion Power Substation Ambient Noise Measurements, Rawlings, Virginia – Mr. Kaufell completed ambient noise measurements for a proposed substation development.

Dominion Power Substation Ambient Noise Measurements, Lexington, Virginia – Mr. Kaufell completed ambient noise measurements for a proposed substation development.

Dominion Power Substation Ambient Noise Measurements, Valley, Virginia – Mr. Kaufell completed ambient noise measurements for a proposed substation development.

Dominion Power Substation Noise Modeling, Haymarket, Virginia – Mr. Kaufell performed noise modeling for proposed substation expansion including noise mitigation design.

Dominion Power Substation Noise Modeling, Rappahannock, Virginia – Mr. Kaufell performed noise modeling for proposed substation expansion including noise mitigation design.

Dominion Power Substation Ambient Noise Measurements, Brambleton, Virginia – Mr. Kaufell completed ambient noise measurements for a proposed substation development.

Dominion Power Post-Construction Noise Monitoring, Dhalgren, Virginia – Mr. Kaufell completed noise measurements for compliance with local ordinance related to a newly developed substation.

Dominion Power Substation Sound Modeling, Chesapeake, Virginia – Mr. Kaufell completed noise measurements and modeling for compliance with local ordinance related to a newly developed substation.

Dominion Power Substation Ambient Sound Measurements, Lynnhaven, Virginia – Mr. Kaufell completed ambient noise measurements for a proposed substation development.

FHWA/DOT HIGHWAY TRANSPORTATION PROJECTS

Virginia Department of Transportation (VDOT) I-64 Widening Segment 1; Newport News, Virginia – Mr. Kaufell was responsible for managing the design-build final design noise analysis as a subconsultant to Dewberry. This included noise modeling a six-mile-long portion of I-64 which resulted in the design and construction of more than two miles of absorptive noise barriers.

VDOT I-64 Widening Segment III; Williamsburg, Virginia – Mr. Kaufell was responsible for managing the design-build final design noise analysis as a subconsultant to Dewberry. This included noise modeling a ten-mile-long portion of I-64 which resulted in the analysis of over ten miles of barrier evaluation and the design and construction of more than 2.5 miles of absorptive noise barriers.

VDOT State Route 7 Widening; Reston, Virginia – Mr. Kaufell was responsible for managing the design-build final design noise analysis and mitigation design as a subconsultant to Dewberry. This included noise modeling a seven-mile-long portion of State Route 7 from Tysons Corner to Herndon, Virginia. This analysis resulted in the recommendation of seven miles of noise barriers.

VDOT Northstar Boulevard Extension; Loudon County, Virginia – Mr. Kaufell completed preliminary noise and air quality assessment for proposed roadway in a new location east of Dulles International Airport as a subconsultant to Dewberry.

VDOT State Route 10 Widening (Whitepine Road to Frith Lane); Chesterfield County, Virginia – Mr. Kaufell completed preliminary noise and air quality assessment for proposed roadway widening as a subconsultant to Dewberry**.**

VDOT State Route 28 Widening (Phase 3); Prince William County, Virginia – Mr. Kaufell was responsible for managing the design-build final design noise analysis as a subconsultant to Dewberry for the State Route 28 widening in Prince William County.

VDOT Warrenton Southern Interchange, U.S. Routes 15/17/29; Fauquier County, Virginia – Mr. Kaufell completed a final design noise analysis for a new interchange at the junction of U.S. Routes 15/17/29 as part of a design-build project as a subconsultant to Dewberry.

VDOT State Route 7/State Route 690 Interchange Improvements; Loudoun County, Virginia – Mr. Kaufell completed preliminary noise and air quality assessment for a proposed interchange at the current at-grade intersection of State Routes 7/659 as a subconsultant to Dewberry.

VDOT (Northern Virginia District) Logmill Road Improvement; Prince William County, Virginia – Mr. Kaufell performed preliminary design noise analysis and impact assessment as a subconsultant to Dewberry.

VDOT (Northern Virginia District) State Route 7/State Route 659 Intersection Improvement; Loudoun County, Virginia – Mr. Kaufell managed and assisted with final design noise analysis and mitigation design as a subconsultant to Dewberry.

VDOT (Northern Virginia District) Sycolin Road Overpass of State Route 7/U.S. Route 15 (Leesburg Bypass); Loudoun County, Virginia – Mr. Kaufell managed and assisted with final design noise analysis and mitigation design as a subconsultant to Dewberry.

MD SHA OED Open-Ended Contract for Noise-Related Studies – Mr. Kaufell served as the contract administrator and project manager for all assignments issued under MD SHA BCS-98-12c (a five-year, $600,000 contract). He is currently serving as contract administrator and project manager under BCS-07-18a (a four-year, $2,000,000 contract).

PennDOT Open-Ended Contract for Traffic Noise Services; Pennsylvania – Mr. Kaufell served as the project manager and contract administrator for a five-year, $5 million contract involving acoustical research, noise measurement, abatement modeling, and policy development.

PennDOT Noise Policy Development – Mr. Kaufell served as the project manager and lead consultant on re-writing PennDOT's existing noise policy. He co-authored the current PennDOT noise policy for transportation projects throughout the Commonwealth. He also provided internal training for the new policy developed under this contract.

PennDOT Engineering District Training – Mr. Kaufell provided noise training for each of PennDOT's 11 engineering districts on new noise policies and Traffic Noise Modeling (TNM) software. Hundreds of PennDOT

employees were trained in the basics of noise modeling and informed of the policies and procedures for sounds studies in Pennsylvania.

PennDOT I-81 Widening Preliminary and Final Noise Mitigation Design, Harrisburg, Pennsylvania – Mr. Kaufell completed preliminary and final design noise mitigation for a widening project. The corridor contained existing sound walls which were analyzed to determine future performance with the widening in place. Several new noise walls were designed for adjacent impacted communities.

VDOT Woodrow Wilson Bridge Project Independent Noise Inspector, Alexandria, Virginia – Currently acting as an independent construction noise inspector for one of the largest construction projects in the United States, Mr. Kaufell is the prime construction noise inspector for all residential areas in Alexandria, Virginia, abutting the Capital Beltway project south of Washington, DC. His responsibilities include compliance monitoring and community outreach for evening and nighttime construction activities.

Maryland State Highway Administration (MD SHA) Inner County Connector Contract C Construction Noise Inspector; Prince Georges County, Maryland – Mr. Kaufell is currently acting as the construction noise expert for a large-scale highway construction project located within several dense residential areas outside the beltway in Washington, DC. His responsibilities include predicting noise impacts and assessing noise reduction techniques for a variety of construction-related activities and equipment. His team regularly provides compliance noise measurements during day and evening work periods.

West Virginia Division of Highways (WVDOH) Statewide Agreement for Compliance with Highway Traffic Noise Prediction Requirements, Noise Analyses, and Noise Abatement Criteria – Mr. Kaufell is serving as project manager for a statewide agreement with WVDOH to provide noise-related services. The purpose of the agreement is to provide assistance for conducting the appropriate noise studies for highway projects located throughout the state. To date, two work orders have been completed. The first analysis was for a project-specific assignment on Interstate 64 between Exits 11 and 15. The second was a noise analysis conducted as part of the Chief Logan State Park Road Project.

WVDOH Corridor H - Historic Lahman House Noise Analysis, Grant County, West Virginia – Mr. Kaufell served as the primary noise analyst for a post-construction noise study involving sound measurements and TNM modeling for a historic property along U.S. Route 48. Data collected through 24-hour monitoring were used to document sound levels at the property. In addition, TNM modeling was used to determine the effectiveness of a berm and plantings used to mitigate noise at the property.

WVDOH Melissa-Huntington Road Environmental Assessment (EA) and Finding of No Significant Impact (FONSI), Cabell County, West Virginia – Mr. Kaufell served as the primary noise analyst for preparation of an EA in support of a major widening project on WV 10. Melissa-Huntington Road serves a growing section of Cabell County that is shifting from a rural character to a more suburban in nature. The project concluded with a FONSI.

WVDOH Chief Logan State Park Road Project EA and FONSI, Logan County, West Virginia – Mr. Kaufell served as the noise analyst for the development of a new roadway in Chief Logan State Park. With the development of the Chief Logan Lodge, Hotel, and Convention Center outside the boundaries of the park, a need has been created to connect the activity areas of the park with the Convention Center. The project was a finalist for the WVDOH 2013 Engineering Excellence Award in the planning, traffic, and environmental category.

WVDOH New Cumberland WV Route 2 Improvements, Madison Street and Chester Street Improvements, Hancock County, West Virginia – Mr. Kaufell served as the lead noise analyst for several alternatives intended **to** improve traffic flow in New Cumberland, West Virginia.

WVDOH Corridor H Project, Grant, Randolph, and Tucker Counties, West Virginia – Mr. Kaufell was the primary noise analyst for post-Record of Decision (ROD) environmental and natural resources studies and an Environmental Impact Statement (EIS) reevaluation for the Corridor H Project.

- PennDOT S.R. 0322 EA, Microscale Air Quality Modeling; Delaware County, Pennsylvania.
- PennDOT Tunkhannock Bypass EIS, Noise and Microscale Air Quality Modeling; Tunkhannock, Pennsylvania.

- PennDOT Lackawanna Valley Industrial Highway (LVIH) EIS, Noise, and Microscale Air Quality Modeling; Scranton, Pennsylvania.
- PennDOT Central Susquehanna Valley Transportation (CSVT) EIS, Noise, and Microscale Air Quality Modeling; Shamokin Dam, Pennsylvania.
- PennDOT S.R. 0220 EIS, Noise, and Microscale Air Quality Modeling; State College, Pennsylvania.
- PennDOT S.R. 0202 EIS, Noise, and Microscale Air Quality Modeling; Delaware and Chester Counties, Pennsylvania.
- PennDOT Hazleton Beltway EA, Noise, and Microscale Air Quality Modeling; Hazleton, Pennsylvania.
- PennDOT S.R. 6015 EIS, Noise, and Microscale Air Quality Modeling; Tioga County, Pennsylvania.
- PennDOT I-80 Bellefonte Exit 24 EA, Noise, and Microscale Air Quality Modeling; Bellefonte, Pennsylvania.
- PennDOT U.S. Route 322, Corridor O, Noise and Microscale Air Quality Modeling; Port Matilda, Pennsylvania.
- PennDOT S.R. 0030, Section 001/002 EA, Noise and Microscale Air Quality Modeling; York, Pennsylvania.
- PennDOT 7th Street Widening - Downtown Harrisburg, Microscale Air Quality Modeling; Harrisburg, Pennsylvania.
- PennDOT S.R. 0463 Horsham Road Widening, Noise and Microscale Air Quality Modeling; Horsham, Pennsylvania.
- PennDOT I-81 Exit 7, Noise and Microscale Air Quality Modeling; Chambersburg, Pennsylvania.
- PennDOT S.R. 0061 EA, Noise, and Microscale Air Quality Modeling; Hamburg, Pennsylvania.
- PennDOT S.R. 0022 Lehigh River Bridge EA, Noise, and Microscale Air Quality Modeling; Allentown, Pennsylvania.
- PennDOT S.R. 0313 Widening, Noise and Microscale Air Quality Modeling; Doylestown, Pennsylvania.
- PennDOT S.R. 0081 Davis Street Interchange, Noise and Microscale Air Quality Modeling; Scranton, Pennsylvania.
- PennDOT S.R. 0081/0115 Interchange, Noise and Microscale Air Quality Modeling; Scranton, Pennsylvania.
- PennDOT Engineering District Training on Publication No. 24 and TNM.
- PennDOT Acoustical Evaluation of PCC Pavement Noise Emissions; Union County, Pennsylvania.
- PennDOT S.R. 0081/0022 Dauphin County Noise Wall Demonstration Project; Dauphin County, Pennsylvania.
- PennDOT S.R. 0015 Rossmoyne Manor Noise Wall Demonstrations Project; Cumberland County, Pennsylvania.
- PennDOT Post-Construction Noise Wall Measurement Study; Luzerne County, Pennsylvania.
- PennDOT S.R. 0026 Aspinwall Community Demonstration Project; Allegheny County, Pennsylvania.
- S.R. 0222, Warren Street Extension Traffic Noise Analysis and Noise Wall Design; Reading, Pennsylvania.
- PennDOT S.R. 0033 Extension Noise Wall Design; Bethlehem, Pennsylvania.
- Categorical Exclusion Evaluations/Environmental Assessments; Statewide, Pennsylvania
- Pennsylvania Turnpike Commission (PTC) Mon-Fayette Expressway EIS, Microscale Air Quality Modeling; Pittsburgh, Pennsylvania.
- PTC MP 0-10 Preliminary Noise Analysis and Mitigation Design; Lawrence and Beaver Counties, Pennsylvania.
- PTC MP 109-122 Preliminary Noise Analysis and Mitigation Design; Somerset County, Pennsylvania.
- PTC MP 214-222 Preliminary Noise Analysis and Mitigation Design; Somerset County, Pennsylvania.
- MD SHA Open-Ended Contract for Noise-Related Studies, BCS-98-17b.
- MD SHA Office of Environmental Design Open-Ended Contract for Noise-Related Studies, BCS-08-18a.
- MD SHA I-495 Carderock Springs/Evergreen Highway Noise Assessment and Barrier Study.
- MD SHA I-495 Forest Glen Park, Highway Noise Measurement and Barrier Study; Silver Spring, Maryland.
- MD SHA I-495 Al Marah, Highway Noise Measurement and Barrier Study; Silver Spring, Maryland.
- MD SHA I-495 Rock Creek Hills Highway Noise Measurement and Barrier Study; Kensington, Maryland.
- MD SHA I-495 Parkwood Development, Highway Noise Measurement Study; Kensington, Maryland.
- MD SHA I-70 Villa Monticello Highway Noise Measurement Study; Howard County, Maryland.
- MD SHA I-495 Locust Hill Estates Highway Noise Measurement Study; Kensington, Maryland.
- MD SHA I-97 Jabez Run Road Highway Measurement Study; Anne Arundel County, Maryland.
- MD SHA I-695 Loch Raven Boulevard to Perring Parkway Highway Noise Measurement and Barrier Study; Towson, Maryland.

WILLIAM C. KAUFELL
Senior Associate/Group Manager, Acoustics

SKELLY AND LOY
A Terracon COMPANY

MINING-RELATED ACOUSTICAL EXPERIENCE/EXPERT TESTIMONY

Vulcan Materials Prince William Quarry, Manassas, Virginia – Mr. Kaufell completed sound analysis and mitigation evaluation for a proposed limestone quarry located in the suburbs of Washington, DC. This work involved extensive measurement protocols, future conditions modeling, and presentations to the public and local government officials. Expert testimony was provided as part of a conditional use application.

Vulcan Materials Stafford Quarry Expansion/Concrete Plant Noise Evaluation, Manassas, Virginia – Mr. Kaufell completed sound analysis and mitigation evaluation for the expansion of Vulcan's Stafford, Virginia, limestone operation. The expansion required the relocation of an existing concrete plant operated by Virginia Paving. The analysis included computer noise modeling for the quarry and concrete plant and involved berm design to meet local ordinances. This work involved extensive measurement protocols, future conditions modeling, and presentations to the public and local government officials. Expert testimony was provided as part of a conditional use application.

Martin Marietta Materials Anderson Township, Ohio, Underground Limestone Sound Study and Expert Testimony, Newtown, Ohio – Mr. Kaufell performed a sound study for a proposed underground limestone quarry and processing facility. This assessment involved ambient noise measurements, equipment emission measurements, computer modeling, abatement evaluation, and expert testimony at highly controversial public meetings spanning two years. The project was approved by the Zoning Hearing Board.

Martin Marietta Materials Cook Road Quarry Sound Study and Expert Testimony, Spring Valley, Ohio – Mr. Kaufell performed a sound study for a proposed sand and gravel quarry. This assessment involved ambient noise measurements, equipment emission measurements, computer modeling, abatement evaluation, and expert testimony at highly controversial public meetings.

Martin Marietta Materials Boone County, Kentucky, Underground Limestone Mine Noise Study and Expert Testimony – For this proposed underground limestone mining operation, Mr. Kaufell performed a sound study, noise measurement, and abatement study and also provided expert testimony at highly controversial public hearings.

Vulcan Materials James River Barge Mooring Pier, Manassas, Virginia – Mr. Kaufell completed a sound analysis and mitigation evaluation for a proposed mooring pier located on the James River in Virginia. This work included noise measurements, computer noise dispersion modeling for various barge traffic routes and mooring locations, and abatement evaluation.

Martin Marietta Materials Carmel Sand and Gravel/North Indianapolis Limestone Expansion Noise Study and Expert Testimony, Carmel, Indiana – Mr. Kaufell performed ambient monitoring at an existing facility, determined the proposed expansions impact on local acoustical environment through computer modeling, and prepared preliminary abatement recommendation and documentations. Dozens of extraction scenarios were analyzed in order to develop sound contouring for multiple time periods in the quarry's future.

Martin Marietta Materials Franklin Sand and Gravel Noise Emission Study, Franklin, Ohio – Mr. Kaufell conducted facility-wide acoustical measurements for a sand and gravel facility in Ohio. Noise measurements and emissions rates were documented for equipment and operations for use in future quarry expansion projects nationwide. Measurements were taken for an asphalt plant, concrete batch plant, crushers, screening towers, sand and gravel extraction machinery, transfer points, conveyors, etc.

Martin Marietta Materials Hamilton Sand and Gravel Expansion, Butler County, Ohio – Mr. Kaufell performed ambient noise measurements and computer modeling assessment services for a proposed expansion of an existing quarry. This work involved extensive measurement protocols, future conditions modeling, and presentations to the public and county commissioners at zoning hearing boards.

Martin Marietta Materials Fairborn Sand and Gravel, Osborn Road Expansion, Clark County, Ohio – Mr. Kaufell performed ambient noise measurements and modeling assessment services for a proposed expansion of an existing quarry. This work involved extensive measurement protocols, future conditions modeling, and presentations to the public and county commissioners at zoning hearing boards.

Baker Concrete Batch Facility Noise Analysis, Reading, Pennsylvania – Mr. Kaufell performed acoustical monitoring and prediction for an existing and proposed batch concrete facility. This work involved monitoring and computer modeling to simulate future conditions at a site proposed for a batch asphalt plant.

Hawley Flagstone Quarry Expansion, Hawley, Pennsylvania – Mr. Kaufell provided noise measurement and expert testimony for an expansion of an existing flagstone quarry near a residential area.

Genstar Quarry Noise Analysis, Cockeysville, Maryland – Mr. Kaufell performed acoustical measurements and a spectrum analysis to determine the impact of a quarry to the local noise environment. Measurements were taken associated with a batch concrete and asphalt plant which abutted a residential area. He measured frequency components of the equipment and documented the results and mitigation recommendations.

Centex Materials LLC, Buda Texas – Mr. Kaufell conducted facility-wide acoustical measurements for a sand and gravel facility in Texas. Noise measurements and emissions rates were documented for equipment and operations for use in a future quarry expansion project. A noise mitigation plan was developed for implementation on the future expansion project.

Cemex Materials, Fairborn, Ohio – Mr. Kaufell completed a sound analysis and mitigation evaluation for a proposed limestone quarry located in Fairborn, Ohio. This work involved extensive measurement protocols, future conditions modeling, and presentations to the public and local government officials.

Alpha Natural Resources, Bristol, Virginia – Mr. Kaufell conducted sound measurements at homes adjacent to an underground coal operation exhaust fan.

FEDERAL RAILROAD ADMINISTRATION (FRA)/FEDERAL TRANSIT ADMINISTRATION (FTA) DOT RAIL TRANSPORTATION PROJECTS

Port Authority Transit Corporation (PATCO) Ben Franklin Bridge Track Rehabilitation, Construction Noise Assessment, and Specifications, Philadelphia, Pennsylvania – Mr. Kaufell was the project manager as an environmental subconsultant to HNTB as contracted by the Delaware River Port Authority. A noise analysis was completed for both operational and construction noise. The evaluation involved predicting construction-related noise for equipment and activities proposed for use during construction. The need for nighttime and weekend work, coupled with the close proximity to residential areas, resulted in a detailed specification included in the bid package for controlling construction noise. This project involved noise measurements to establish baseline conditions and noise modeling to predict the effect of various construction activities on the surrounding communities. Skelly and Loy was also responsible for hazardous waste evaluation and remediation under this contract which was managed by Mr. Kaufell.

RJ Corman Railroad Company Beech Creek Rail Branch Line EIS, Clearfield and Centre Counties, Pennsylvania – Mr. Kaufell was responsible for the acoustic evaluation for an EIS conducted on behalf of the Surface Transportation Board. The noise analysis focused on construction-related noise as well as operational noise for a new rail line that spans 20 miles. Noise monitoring was performed to assess existing conditions throughout the corridor. FRA methodology was used to predict horn noise impacts, and FTA modeling was completed to assess wayside noise associated with individual train pass-bys. A construction-related noise evaluation was also performed to determine the impacts and avoidance measures associated with the construction of the rail line. Mitigation measures were evaluated for both operational and construction-related noise impacts areas.

PennDOT Bureau of Public Transportation Environmental Open End E02468 – Mr. Kaufell served as the Department's liaison for a statewide open-end contract with the Bureau of Public Transportation. This contract is primarily used for environmental documentation for public transportation projects/agencies throughout the state including SEPTA, FRA, FTA, AMTRAK, COLTS, and YATA. Work orders have included wetland and waterway studies, hazardous waste investigations, cultural/historic Section 106 evaluations and mitigation, noise studies, threatened and endangered species studies, and NEPA documentation.

EIS for Pennsylvania High-Speed Maglev Project, Allegheny and Westmoreland Counties, Pennsylvania – Mr. Kaufell was responsible for the air quality and noise analysis as part of the EIS for a high-speed magnetic levitation rail project near Pittsburgh. The 54-mile project area required extensive noise monitoring and noise modeling in addition to public involvement. The FRA noise analysis procedures were incorporated into a GIS system, enabling timely impact and mitigation calculations and the tabulation of potentially affected residences.

Everest/Silvercare Nursing and Rehabilitation Facility CSX Freight Train Noise Analysis and Mitigation, Philadelphia Pennsylvania – Mr. Kaufell completed a noise analysis for a proposed nursing care facility in Ridley Township, Pennsylvania, sited adjacent to an active CSX freight rail line. Noise levels were measured to document existing conditions, and future conditions were analyzed using computer modeling. A noise mitigation plan was developed for the property. This included a 20-foot-high absorptive sound wall paralleling the rail line coupled with white noise generators (e.g., water gardens) located throughout the property to mask the rail line and as well as other urban noise emitted in the vicinity.

TRUCK NOISE-RELATED EXPERT TESTIMONY

Evans Engineering Keystone Warehouse Truck Noise Assessment; South Middleton Township, Pennsylvania – Mr. Kaufell performed a noise study for a proposed 2.2 million square foot (SF) warehouse project. The sound study focused on truck noise and air quality implications on the local environment. He also provided expert testimony for conditional use applications in South Middleton Township, Pennsylvania.

Evans Engineering IDI Warehouse Truck Noise Assessment, Lower Nazareth Township, Pennsylvania – Mr. Kaufell performed a noise study for a proposed 1 million SF warehouse project. The analysis included noise monitoring, modeling, and expert testimony.

Willow Valley Retirement Sound Wall Analysis and Expert Testimony – Mr. Kaufell provided traffic noise measurements, barrier analysis, and expert testimony for a zoning variance in front of the West Lampeter Township, Pennsylvania, Zoning Board.

Shaffer Trucking Expansion Noise Analysis, New Kingston, Pennsylvania – Mr. Kaufell performed a noise analysis for a trucking facility expansion, including expert testimony for a conditional use application in Silver Spring Township, Pennsylvania.

IDI Lower Nazareth Warehouse Noise Analysis, Lower Nazareth, Pennsylvania – Mr. Kaufell completed a noise assessment for new 1 million SF warehouse facility including truck noise impact, mitigation, and expert testimony for a conditional use hearing.

Kost Tire Sound Study and Expert Testimony, City of Scranton, Pennsylvania – For a business expansion, Mr. Kaufell completed a noise analysis and provided expert testimony for litigation.

New Kingston Warehouse Noise Analysis, New Kingston, Pennsylvania – Mr. Kaufell completed a noise assessment for new 1 million SF warehouse facility including truck noise impact, mitigation, and expert testimony for a zoning variance hearing.

EXHIBIT D

Kirkland Appraisals, LLC

Richard C. Kirkland, Jr., MAI
9408 Northfield Court
Raleigh, North Carolina 27603
Mobile (919) 414-8142
rkirkland2@gmail.com
www.kirklandappraisals.com

Professional Experience

Kirkland Appraisals, LLC, Raleigh, N.C. — 2003 – Present
Commercial appraiser
Hester & Company, Raleigh, N.C.
Commercial appraiser — 1996 – 2003

Professional Affiliations

MAI (Member, Appraisal Institute) designation #11796 — 2001
NC State Certified General Appraiser # A4359 — 1999
VA State Certified General Appraiser # 4001017291
SC State Certified General Appraiser # 6209
FL State Certified General Appraiser # RZ3950
IL State Certified General Appraiser # 553.002633
KY State Certified General Appraiser # 5522

Education

Bachelor of Arts in English, University of North Carolina, Chapel Hill — 1993

Continuing Education

Florida Appraisal Laws and Regulations	2020
Michigan Appraisal Law	2020
Uniform Standards of Professional Appraisal Practice Update	2020
Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book)	2019
The Cost Approach	2019
Income Approach Case Studies for Commercial Appraisers	2018
Introduction to Expert Witness Testimony for Appraisers	2018
Appraising Small Apartment Properties	2018
Florida Appraisal Laws and Regulations	2018
Uniform Standards of Professional Appraisal Practice Update	2018
Appraisal of REO and Foreclosure Properties	2017
Appraisal of Self Storage Facilities	2017
Land and Site Valuation	2017
NCDOT Appraisal Principles and Procedures	2017
Uniform Standards of Professional Appraisal Practice Update	2016
Forecasting Revenue	2015
Wind Turbine Effect on Value	2015
Supervisor/Trainee Class	2015
Business Practices and Ethics	2014
Subdivision Valuation	2014
Uniform Standards of Professional Appraisal Practice Update	2014
Introduction to Vineyard and Winery Valuation	2013
Appraising Rural Residential Properties	2012

Uniform Standards of Professional Appraisal Practice Update	2012
Supervisors/Trainees	2011
Rates and Ratios: Making sense of GIMs, OARs, and DCFs	2011
Advanced Internet Search Strategies	2011
Analyzing Distressed Real Estate	2011
Uniform Standards of Professional Appraisal Practice Update	2011
Business Practices and Ethics	2011
Appraisal Curriculum Overview (2 Days – General)	2009
Appraisal Review - General	2009
Uniform Standards of Professional Appraisal Practice Update	2008
Subdivision Valuation: A Comprehensive Guide	2008
Office Building Valuation: A Contemporary Perspective	2008
Valuation of Detrimental Conditions in Real Estate	2007
The Appraisal of Small Subdivisions	2007
Uniform Standards of Professional Appraisal Practice Update	2006
Evaluating Commercial Construction	2005
Conservation Easements	2005
Uniform Standards of Professional Appraisal Practice Update	2004
Condemnation Appraising	2004
Land Valuation Adjustment Procedures	2004
Supporting Capitalization Rates	2004
Uniform Standards of Professional Appraisal Practice, C	2002
Wells and Septic Systems and Wastewater Irrigation Systems	2002
Appraisals 2002	2002
Analyzing Commercial Lease Clauses	2002
Conservation Easements	2000
Preparation for Litigation	2000
Appraisal of Nonconforming Uses	2000
Advanced Applications	2000
Highest and Best Use and Market Analysis	1999
Advanced Sales Comparison and Cost Approaches	1999
Advanced Income Capitalization	1998
Valuation of Detrimental Conditions in Real Estate	1999
Report Writing and Valuation Analysis	1999
Property Tax Values and Appeals	1997
Uniform Standards of Professional Appraisal Practice, A & B	1997
Basic Income Capitalization	1996