

LINDSAY E. JAMES, R.G.

## Education

M.S. Geoscience, University of Iowa, 2007  
B.A. Geoscience, University of Iowa, 2004

## Professional Licenses

Professional Geologist: Kansas, Missouri, Arkansas

## Specialty Certifications

40-HR HAZWOPER

Wetlands Training Institute Basic Delineation, Soils and Hydrology Training, Omaha, NE, 2014  
ASTM Risk-Based Corrective Action Certification  
Missouri Well and Pump Installers Permit

## Professional Affiliations

City of Overland Park, Environmental Advisory Council  
MARC Solid Waste Grant Review Committee

## Professional Experience

Professional Geologist with 20 years of broad-based geologic, hydrogeologic, remediation, compliance, and wetland experience that includes detailed hydrogeological site characterization; quarry reserve estimation; groundwater monitoring, statistical analysis, monitoring network design/modeling, and fate and transport investigations; wetlands delineation and 404 permitting; due diligence and hazardous materials surveys; leaking underground storage tank assessment and removal; and groundwater remediation including feasibility studies and risk-based corrective action assessments.

## Groundwater Compliance

**St. Joseph Landfill, St. Joseph, Missouri:** Manage engineering, stormwater, hydrogeological, and groundwater projects for the City's Engineering Services Contract. Responsible for routine groundwater monitoring services and hydrogeological investigations associated with horizontal landfill expansions. Supervised installation and oversight activities for a site-wide nested gas probe monitoring system that included multiple unsaturated zones. Executed two complex hydrogeological investigations including work planning; installation of numerous monitoring wells and borings; lithological logging of continuous bedrock core; packer and slug tests; data analysis including hydraulic conductivity calculations, groundwater modeling, preparation of cross sections, and reporting; and regulatory coordination and organization of community involvement sessions. Manage semi-annual groundwater monitoring and statistical analysis for the landfill to ensure compliance with regulatory and permit requirements. Investigated fluctuating water levels within several monitoring wells that included down-hole camera inspection and installation of pressure transducers. Performed a VOC source analysis including geochemical evaluation and LFG headspace



sampling. Assist with and complete reporting for routine stormwater compliance monitoring and stormwater inspections. Coordinate staff and resources for engineering services.

**Green for Life (GFL)/Waste Corporation of America, Multiple Sites:** Manage groundwater and leachate compliance monitoring and reporting for up to 9 landfills in Missouri, Kansas, Oklahoma, Arkansas, and Colorado. Responsibilities include organization of semi-annual field sampling and laboratory coordination; staff supervision; data validation; report preparation and statistical analysis; interaction with regulatory personnel; and client management. Designed and performed a volatile organic compound (VOC) source analysis for Central Missouri and Black Oak Landfills. Prepared Alternate Source Demonstrations for the Sooner and Bondad Landfills. Prepared sampling and analysis plans and provided stormwater monitoring assistance. Prepared an Assessment of Corrective Measures and Selection of Remedy report for the Union County Landfill and presented results at a community involvement meeting. Assisted with hydrogeological analysis to support the design of a passive cutoff trench system.

**Multiple Sites, Kansas, Solid Waste Landfill Groundwater Monitoring:** Manage groundwater compliance monitoring and reporting for multiple landfills throughout Kansas including Hamm, APAC, Coffey County, McPherson, Chanute, Clay County, Rush County, and Woodson County.

**Holliday Sand and Gravel, Nearman Bottoms Project:** Manage soil, groundwater, and surface water sampling and data evaluation for a sand dredging operation in Kansas City, Kansas. The objective of the monitoring is to ensure that dredging operations are not impacting intake wells for the power plant through the collection of robust background data and statistical analysis. Provided comment on the draft Work Plan and installed a monitoring network within the alluvial aquifer adjacent to the Missouri River.

**Meridian Waste Solutions, Eagle Ridge Landfill:** Serve as the client and project manager for all aspects of routine and non-routine groundwater and leachate compliance monitoring. Performed slug testing and determined hydraulic conductivity in support of ongoing expansion activities. Conducted groundwater modeling using ModFlow to assist with the design of an expansion groundwater monitoring system. Performed statistical background analysis on existing groundwater data in support of updating the statistical database.

**Atchison Strategic Storage Facility C&D Landfill, Atchison, Kansas:** Managed and performed annual groundwater monitoring and cap inspection activities. Prepared an annual Field Activities Data Report and Quality Control Summary Report detailing the results of the monitoring and inspection for submittal to the KDHE. Monitored regional and on-site rainfall information to determine if additional cap inspection activities were required.

**Kansas Department of Health and Environment, Petroleum Trust Fund, Multiple Sites:** Manage groundwater monitoring, monitoring well installation, monitoring well abandonment, and associated reporting for approximately 100 KDHE Trust Fund Sites. Manage and perform Limited Site Assessments and Kansas Risk-Based Corrective Action including work plan preparation, drilling oversight, collection of geotechnical samples, collection of soil and groundwater samples, data analysis and validation, and final report preparation in accordance with KDHE regulatory requirements.

**Confidential Client, Coffeyville, Kansas:** Installed multiple monitoring wells, supervised quarterly groundwater sampling, and performed statistical analysis and reporting at a site under RCRA Corrective Action for chlorinated solvent contamination. Performed a pilot study to evaluate the potential use of enhanced anaerobic bioremediation. Assisted with the analysis of pump and treat technology as part of a larger-scale feasibility study including review of pump test data,

hydrogeological site information, researching permit and waste-water discharge requirements, and system/operations costing.

**Lexington Bluegrass Army Depot Landfill, Kentucky:** Performed annual groundwater and landfill gas monitoring and reporting. Prepared an annual report detailing the results of the annual groundwater and landfill gas monitoring at the Fort Benjamin Harrison closed landfill including a review of ADR data validation reports. Prepared an annual report detailing the results of the annual groundwater and landfill gas monitoring at the Fort Benjamin Harrison closed landfill including data validation and statistical analysis.

**Waste Management, Multiple Sites, Kansas, and Missouri:** Responsible for routine groundwater and leachate compliance monitoring at the Farmers (Chillicothe, MO), Rumble I/II (Sugar Creek, MO), and Indian Hills (Topeka, KS) closed landfills. Conducted several gas migration evaluation investigations at the Rumble I landfill including drilling supervision, lithological logging, installation of perimeter landfill gas monitoring probes and gas wells, review of historical data, and preparation of reports. Supervised gas well installation trenching activities for the potential presence of asbestos at the Indian Hills landfill.

**NABORS Landfill, Mountain Home, Arkansas:** Managed and conducted quarterly water quality monitoring of springs, seeps, leachate, and groundwater utilizing low-flow sampling techniques and prepared reports in accordance with Arkansas

**Department of Environmental Quality regulations.** Report preparation includes quality control and statistical analysis of laboratory data, preparation of time-series graphs, and final report preparation for regulatory submission.

**NABORS Landfill, Mountain Home, Arkansas:** Managed and conducted a Nature and Extent investigation into a volatile organic compound and metals detections in groundwater at the Landfill including collection of groundwater and leachate samples, performed data analysis, and submitted a report to regulatory officials detailing the anticipated source of the compounds in the groundwater and proposed corrective action for the Landfill.

## Hydrogeological Site Characterization

**Green for Life (GFL), Black Oak Landfill Detailed Site Investigation:** Executed a two-phase Detailed Site Investigation for the vertical and horizontal expansion of the Black Oak Landfill. The project included work planning; installation of numerous monitoring wells and borings; lithological logging of continuous bedrock core; packer and slug tests; data analysis including hydraulic conductivity calculations, groundwater modeling, preparation of cross sections, and reporting; and regulatory coordination and organization of community involvement sessions. The Detailed Site Investigation was approved by the Missouri Geological Survey as submitted without comment or required revision. Provided geochemical and hydrologic information and analysis in support of a permit modification demonstrating GCL equivalency. Performed wetland delineation and habitat assessment in support of jurisdictional determination and permitting with the USACE in support of the permit expansion application.

**Presidio, Detailed Site Investigation:** Executed a Detailed Site Investigation for a Greenfields landfill site in Pettis County, Missouri. The project included work planning; installation of numerous monitoring wells and borings; lithological logging of continuous bedrock core; packer and slug tests; data analysis including hydraulic conductivity calculations, groundwater modeling, preparation of cross sections, and reporting; and regulatory coordination and organization of community

involvement sessions. The Detailed Site Investigation was approved by the Missouri Geological Survey as submitted without required revision.

**Confidential Client, Spring Evaluation and Production Well Installation:** This project included the evaluation of an existing site to determine the best placement for an additional production well for a bottled water company. The site had several productive wells and one that was not producing. Initial site work included a review of existing hydrogeological information and site reconnaissance. The site area was deeply dissected and based on the review of available information and site observation; it was apparent that it was also part of a moraine complex. Determined the low-yielding well needed to be abandoned and identified proper placement for a new production well. The Client's objective was to produce an additional 10 gallons per minute of water; however, due to proper understanding of the area and well placement, capacity was increased by 50 gallons per minute.

**Quarry Reserve Estimates, Multiple Sites, Missouri, and Kansas:** Conducted multiple quarry reserve studies in Missouri and Kansas to evaluate the quantity and quality of potential limestone aggregate. The quarry reserve studies included the following: drilling oversight, logging, and determination of Rock Quality Designation; collection of representative limestone aggregate samples for laboratory analysis; archiving of geologic core samples; determination of key elevations of the top and base of rock units; calculation of material volumes; and preparation of a report describing the findings.

**Austin Park, LLC, Quarry Reserve Study:** Conducted a quarry reserve study to evaluate the quantity and quality of potential limestone aggregate located on an undeveloped property in Gardner, Kansas. The quarry reserve study included the following: drilling oversight, logging, and determination of Rock Quality Designation; archiving of geologic core samples; determination of key elevations of the top and base of rock units; calculation of material volumes; and preparation of a report describing the findings. This study was conducted to support a mineral rights appraisal and required a high degree of detailed evaluation.

**Central Plains Cement Company/Kansas City Fly Ash:** Performed complex hydrogeological investigation including work planning; installation of numerous monitoring wells and borings; lithological logging of continuous bedrock core and cuttings; data analysis; preparation of potentiometric surface maps; preparation of cross sections, and reporting; and regulatory coordination.

**Stone Canyon, Independence, Missouri:** Performed a detailed hydrogeologic site assessment to characterize the site geology and hydrogeology to determine the probability of methane migration from a closed landfill to a new housing development. The field investigation included bedrock logging, packer testing, installation of nested piezometers, and collection of water level measurements. A final report was prepared including the development of geologic cross-sections, maps, lithologic logs, potentiometric surface maps, and hydraulic conductivity calculations.

## Odor Monitoring and Assessment

**City of Shawnee, Kansas, Odor Study and Evaluation:** Project manager for odor study and evaluation for the City of Shawnee, Kansas. Prepared source evaluation, work planning, and execution of a multi-stage Nasal Ranger® study to evaluate the frequency, intensity, duration, and offensiveness of nuisance odors within the city. The study also included comprehensive meteorological analysis and air modeling. Multiple potential odor sources were evaluated, and recommendations were made for

enhanced odor management practices. Provided community education and outreach through presentations at Shawnee City Council Meetings.

**Confidential Client, Missouri, Odor Evaluation:** Prepared source evaluation, identification of alternative sources, work planning, and execution of a multi-stage Nasal Ranger® study to evaluate the frequency, intensity, duration, and offensiveness of nuisance odors from a manufacturing source. The study also included a comprehensive meteorological analysis. Multiple potential odor sources were evaluated, and data was collected that ultimately resulted in a favorable outcome.

## **Wetland Delineation and Ecological Assessment**

**Talon Concrete and Aggregates:** Performed wetland delineation and habitat assessment in support of 404 Permitting activities on approximately 600 acres of undeveloped property. Coordinated with the USACE on report deliverables and field reconnaissance in support of jurisdictional determination submittal. As part of the same project, additional delineation of a 9,000-foot corridor and 151 acres of pasture was conducted and 404 permitting was completed.

**Wetland Delineation, Multiple Sites, Kansas, Missouri, Iowa:** Performed multiple wetland delineations ranging from 0.25 to more than 100 acres following USACE guidance. Prepared requests for Preliminary and Approved Jurisdictional Determinations and 404 permitting. Assisted with the acquisition of compensatory credits using RIBITS. Prepared habitat assessments and Ipac in support of 404 permitting activities including assessment of potential threatened and endangered species and the presence or absence of habitat. Coordinated several mist net and acoustical surveys for Northern Long-Eared, Gray, and Indian bat species.

**Koch Nitrogen:** Perform required routine mitigation monitoring for a created wetland. Services include wetland delineation, stem counts, evaluation of wetland plant community diversity over time, and preparation of recommendations for interim wetland maintenance activities.

**Lake of the Woods, Kansas City, Missouri:** Designed sample location plan using GIS. Participated in benthic sediment sampling and reporting activities to monitor chlordane concentrations in sediment resulting from historical runoff.

## **Due Diligence and Brownfields**

- Leaking underground storage tank assessments
- Preparation of Site Ownership/Operational Histories (SO/OH)
- Asbestos investigation activities
- Phase I and II Environmental Site Assessments (ESAs)
- Quality Assessment Project Plan (QAPPs)
- Risk-Based Corrective Action (RBCA) assessments
- Hazardous waste and petroleum assessments
- Brownfields grant preparation and oversight

**Grants:** Management of Brownfields grants including project oversight, quarterly updates uploaded to Assessment, Cleanup, and Redevelopment Exchange System (ACRES) online database, submittal of budgets, annual reporting to EPA, assisting in obtaining contractors, coordination and meetings with EPA, and public outreach. Prepared Sampling and Analysis Plans (SAPs), Quality Assurance Project Plans (QAPPs), Site Investigations, EPA Exposure and Fate Assessment Screenings, ABCAs, Remediation Plans, Soil and Groundwater Management Plan (SGMPs), and Closeout Reports for

submittal to EPA. Involved in state cleanup programs, green cleanup design, and site remedy execution.

- ECIA, Iowa: Revolving Loan Fund Remediation and Assessment Grants
- Dubuque, Iowa: Hazardous Substance and Petroleum EPA Assessment Grants
- Blum East, City of Dubuque – Scrapyard with lead in shallow soil at 10,500 ppm
- Blum West 1, City of Dubuque – Scrapyard with PCBs in shallow soil at 9 ppm
- Blum West 2 City of Dubuque – Scrapyard with PCBs in shallow soil at 9 ppm

**City of Kansas City, Missouri, Multiple Sites:** Managed and performed numerous Phase I/II ESAs, prepared Quality Assessment Project Plans, RBCA assessments, hazardous waste assessments, petroleum site assessments, stream water quality analysis, underground storage tank removal activities, and asbestos surveys. Served as the Client Manager for the City of Kansas City's Environmental Services Contract.

**Kansas Department of Health and Environment, Multiple Sites, Kansas:** Serve as the Client Manager for the KDHE Environmental Services Contract. Managed and performed multiple Phase II ESAs, Focused Former Refinery Assessments, Kansas Risk-Based Corrective Action Assessments, and Limited Site Assessments. Site assessment included a review of historical documents, site reconnaissance, subsurface soil logging, soil sampling, and groundwater sampling. In addition, the field assessment in Wilson involved a sewer camera inspection to identify pipe integrity issues in multiple sewer lines and mobile laboratory data analysis to guide field sampling decisions. For each site, laboratory data was analyzed, and final reports were prepared in accordance with KDHE requirements.

**Confidential Client, Limited Phase II ESA, and Survey, New York:** Project management and performance of a Limited Phase II Environmental Site Assessment including groundwater, soil, and wipe sampling, soil logging, and site surveying. Report preparation including contaminant delineation, preparation of boring logs, cross sections, and isoconcentration maps.

**89th Regional Readiness Command, Limited Phase II ESA, Sac City, Iowa:** Assisted with fieldwork and reporting including the installation of temporary piezometers and groundwater sampling, soil sampling, and soil logging for an Army Reserve facility in Sac City, Iowa. Report preparation included contaminant delineation, data analysis, and preparation of a report summarizing the results and conclusions of the investigation.

**89th Regional Readiness Command, Asbestos Inspection Multiple Sites, Kansas and Missouri:** Performed asbestos inspections at multiple Army Reserve facilities throughout Kansas and Missouri. Prepared reports and facility drawings documenting the results of materials testing.

**USACE and GSA, Preliminary Assessment/Site Investigation, Missouri and Ohio:** Assisted with fieldwork and reporting including groundwater sampling, soil sampling, and soil logging for a federal site in St. Louis, Missouri. Report preparation included contaminant delineation, data analysis, and preparation of a report summarizing the results and conclusions. Assisted with initial site visit and work plan preparation for PA/SI activities at the Clinton County Air Force Base and Youngstown Municipal Airport in Ohio.

**88th Regional Readiness Command, Indoor Firing Range Inspections, Multiple Sites:** Performed firing range inspections for the presence of lead at multiple Army Reserve facilities in Illinois, Indiana,

Michigan, Minnesota, and Ohio. Project plans, health and safety plans, and reports were prepared for each facility.

**Multiple Clients, Phase I Environmental Site Assessments, Multiple Sites:** Performed more than 100 Phase I ESAs for government and private commercial, industrial, and multi-tenant residential apartment complex properties throughout the country. The ESAs involved historical research, review of federal, state, and local databases, site reconnaissance, interviews, and report preparation.

**USACE, Former Naval Air Station Site Ownership/Operational History, Kansas:** Assisted in the preparation of a Site Ownership/Operational History (SO/OH) for a former Naval Air Station to identify potential responsible parties associated with groundwater contamination for the Kansas City District of the USACE. Conducted a review of site ownership information based on historical and deed research and prepared a Site Ownership History. This project involved reviewing hundreds of property deeds and ownership documents from multiple sources and creating ownership history maps and a searchable database.

## Remediation and Site Assessment

**BEAerospace, Lenexa, Kansas:** Evaluated existing data for a site contaminated with chlorinated solvents and dioxane that had been operating a pump and treat system and performing bioremediation injection. An extensive review of site hydrogeological information identified preferential pathways within two different bedrock zones. A geoprobe survey was conducted to determine if the previously recommended dig and haul of hotspots was feasible; however, it was determined that contamination was present below an aquitard separating the unconsolidated zone from the bedrock aquifer. Given the limited recovery of the pump and treatment system, it was recommended that the system be temporarily shut down and contaminant rebound monitored. An ISCO pilot study was proposed and approved by KDHE for the targeted injection of sodium persulfate and is currently underway. Routine quarterly groundwater monitoring and semi-annual reporting are also conducted for the site.

**Lockbourne Air Force Base, Columbus, Ohio:** Evaluated in-situ soil mixing (ISSM) technology for application as one of several remedial technologies for light non-aqueous phase liquids at three areas of concern at the former Air Force Base for S&A Environmental Consultants, LLC under a contract with the USACE Louisville District. A detailed evaluation of the implementability, effectiveness, and cost of ISSM was prepared for each area of concern.

## Regulatory Experience

**Iowa Department of Natural Resources/University of Iowa Research Assistant, January 2005 – December 2006:**

- Wetland identification through aerial photograph review.
- Sampling water, vegetation, and invertebrates to determine the overall health and quality of wetlands across northern Iowa.
- Wetland vegetation and invertebrate identification.
- Preparation of wetland assessment reports for public and private wetlands.
- Assisted with wetland grant and fact-sheet preparation.
- Analyzed/modeled stream data to determine the total maximum daily load.

## Publications and Presentations

Missouri Waste Control Coalition Conference: *A Multidisciplinary Approach to Evaluating and Controlling Landfill Odors*, July 2018

University of Kansas, Professional Science Master's Program, Guest Lecturer: *Wetlands Delineation – Understanding Regulations and Permitting*, June 2018

Kansas Solid Waste Association of North America Conference: *A Multidisciplinary Approach to Evaluating and Controlling Landfill Odors*, October 2018

Association of Certified Hazardous Materials Managers (CHMM) Presentation: *Wetland, Archeological, and Habitat Considerations for Permitting and Mitigation plus WOTUS Regulator Updates*, May 2018

Air and Waste Management Environmental Conference: *A Multidisciplinary Approach to Evaluating and Controlling Landfill Odors*, February 2018

Air and Waste Management Association Monthly Meeting: *Wetland, Archeological, and Habitat Considerations for Permitting and Mitigation plus WOTUS Regulator Updates*, January 2018

Missouri Waste Control Coalition Conference: *Wetland, Archeological, and Habitat Considerations for Permitting and Mitigation*, July 2017

University of Kansas Environmental Engineering Conference: *Evaluating and Controlling Landfill Odors and Other Advancements in Landfill Technologies*, April 2017

Air and Waste Management Environmental Conference: *Alternate Source Demonstration for Landfill Gas Related Impacts to Groundwater*, February 2012