

STEPHEN L. WAMPLER, P.E., P.G.

QUALIFICATIONS

Mr. Wampler is an Independent Consultant and Registered Geological Engineer with more than 40 years of experience in engineering geology, hydrogeology, geotechnical engineering, and environmental consulting. His primary responsibilities have included project management and technical oversight of projects dealing with municipal and industrial solid waste and, hazardous, toxic, and radioactive waste (HTRW) management and response to releases of hazardous or radioactive constituents into the environment. included in Mr. Wampler's project experience are the design and permitting of HTRW landfills and geologic/geohydrologic site characterization investigations for mines, hazardous and solid waste management facilities, commercial disposal sites, municipal solid waste landfills, underground storage tank sites; environmental site assessments; environmental regulation compliance reviews; and geotechnical engineering studies. These projects involved the characterization of site geology, surface-water hydrology and groundwater hydrology, development of groundwater and surface-water monitoring programs, water quality assessment programs, state and federal environmental permit applications (including RCRA hazardous waste TSD and solid waste facility permits), facility closure plans, human and environmental risk evaluation, evaluation of remediation methods, and inter-relationship with state and federal regulatory agencies on these issues. In addition, Mr. Wampler has an extensive background in managing projects with attention to project costs and schedules, and managing subcontracts.

PROFESSIONAL LICENSES AND CERTIFICATIONS

Professional Engineer: Arizona, Arkansas, Colorado, Georgia, Idaho, Illinois, Indiana, Kansas, Missouri, Nebraska, Nevada, New Mexico, Ohio, Oregon, Utah, Washington, and Wyoming
Professional Geologist: Arkansas, Georgia, Mississippi, Missouri, North Carolina, Texas, and Wyoming

EDUCATION

B.S., Geological Engineering, University of Missouri at Rolla
M.S., Geological Engineering, University of Missouri at Rolla

PROFESSIONAL EXPERIENCE

2017 – Present *SLWampler LLC, Sedalia, Colorado. Independent Consultant, Profession Engineer, and Hydrogeologist*

2014 – 2017 *Swift River Environmental Services, LLC, Denver, Colorado. General Manager, Lead Engineer, and Hydrogeologist.*

1997-2014 *AquAeTer, Inc.; Denver Colorado. Vice President, Chief Engineer, and Hydrogeologist*

1984-1997 *James L. Grant and Associates Inc./Grant Environmental; Denver, Colorado. Vice President, Senior Engineer, Senior Geologist, and Project Manager*

1972-1984 *Law Engineering Testing Company; Marietta, Georgia and Denver, Colorado. Senior Engineer, Geological Engineer, and Project Manager*

Mr. Wampler has been responsible for several large and complex projects, including HTRW landfill design and permitting, regulatory compliance for environmental media monitoring for solid and hazardous waste landfills, preliminary geological evaluation of potential radioactive waste repositories; the completion of major portions of several RCRA permit applications; RCRA Corrective Action (including Facility Investigation and Corrective Measures Studies); facility Closure Plans and groundwater remedial action programs for RCRA, CERCLA, LLRW, MSW and LUST sites; risk assessment; and geotechnical evaluations for construction of buildings and dams. Project experience also includes pre-acquisition and regulatory compliance assessments for commercial and industrial properties.

Geology and Engineering Geology. Mr. Wampler has 1) performed numerous geological evaluations, including exploratory drilling for commercial and municipal solid and hazardous waste management facilities and nuclear power plants in the southeastern U.S.; 2) served as project geologist for the evaluation of Mississippi salt domes for radioactive waste repositories; 3) deep borings and geophysical logging for Colorado oil shale development; 4) geological mapping for slope stability evaluation at Peruvian copper mines; 5) geologic mapping and drilling for evaluation of alternative dam sites in eastern Montana; geophysical investigations for underground military facilities in Saudi Arabia, geological 6) evaluation and expert affidavit for a subsurface pipeline river crossing in northern Alabama; and 7) geological characterization for hazardous waste, radioactive waste, and municipal solid waste landfills.

Groundwater and Surface-Water Hydrology – Mr. Wampler has been involved in hydrologic investigations for waste management or contaminant releases at several commercial, industrial, and mining operations. He has been responsible for characterizing geohydrologic conditions; determining aquifer properties; developing monitoring systems; collecting baseline and post-development water quality data; data evaluation and assessment; and reporting. For several facilities, he evaluated groundwater corrective action alternatives, and prepared corrective action plans incorporating the selected alternatives. In addition to evaluation of groundwater affected by industrial operations, Mr. Wampler has evaluated groundwater resources for potential water supply development. For surface-mined areas, he has developed surface-water drainage systems for reclamation of mined topography. Facilities include municipal solid waste landfills in Colorado, California, Missouri, New Mexico, Nebraska, and Utah, industrial facilities in several states, oilfields in Nebraska and Colorado, and mine facilities in Colorado and Wyoming.

Surface and Underground Mining Experience – Mr. Wampler has been involved in investigations for several surface and underground mines. This work included soil engineering evaluations for foundations and slope stability, geohydrologic characterization of Utah and Colorado oil shale properties, evaluation of groundwater supply, and development of stable surface-water drainage patterns for reclaimed mine areas.

Management of Data Collection Programs – Mr. Wampler has planned and managed field data collection programs in many parts of the country. He developed, implemented and directed these programs and analyzed the collected data develop site characterizations, designed long-term monitoring systems and determined groundwater flow characteristics. Mr. Wampler possesses considerable experience in development of investigation reports responsive to client and regulatory requirements. These field investigations included field mapping, subsurface investigations, geophysical surveys, installation of groundwater monitoring systems at HWM facilities, aquifer tests, and soil and groundwater sampling. He has planned, contracted, and supervised the activities of drilling firms and support services for projects across the country.

Risk-Based Corrective Action - Several of the projects with which Mr. Wampler has been involved include the development and presentation to regulatory agencies of corrective action approaches that are based on consideration of realistic future property uses and likely human and environmental exposures. This work has included planning and direction of site characterization and numerical modeling approaches to support his client's proposal of risk-based corrective action levels for former wood treating facilities and other facilities where organic contaminants are of concern.

Hazardous and Radioactive Waste Management and Disposal – Mr. Wampler has provided consultation in the geological and geohydrologic aspects of hazardous and radioactive waste management and disposal. He directed site assessments, including RFI/CMS and other RCRA and CERCLA studies, for several hazardous waste sites, including landfills and impoundments, and developed closure plans and post-closure monitoring programs for those sites. He is experienced in responding to the requirements of federal and state regulators and participated in the development of reports and permit applications for environmental regulation compliance, groundwater assessment programs, corrective measures studies, remedial action plans, and assessment of solid waste management units at HWM facilities, industrial landfills and impoundments in several states, and commercial hazardous waste disposal facilities in Idaho, Illinois, Texas, Nevada, Washington, and California.

Geotechnical Engineering – Mr. Wampler has been involved in geotechnical and geophysical investigations for designing earth structures and foundations. These investigations have been made for buildings, dams, bridges, nuclear and conventional power plants, and other engineered structures. He has also performed evaluations of slope stability for natural slopes potentially affecting development; man-made spoil pile slopes in mined areas; and embankment, excavation, and cover slopes for waste disposal cells. He also developed impoundment and landfill disposal cell and cover designs and specifications for industrial and hazardous waste management facilities.

Litigation Support – Mr. Wampler has consulted with client attorneys in preparation for litigation or negotiation concerning environmental issues. He provided technical support provided with regard to environmental permits, site investigation protocol, contamination characterization and migration, and remedial design.

REPRESENTATIVE PROJECT EXPERIENCE:

Environmental Media Monitoring for Colorado, Nebraska, New Mexico, and Utah landfills – Mr. Wampler provided technical review for detection, assessment, and corrective action monitoring at active and closed municipal waste landfills in western states, including monitoring, data evaluation, statistical analyses, and reporting.

Geotechnical evaluation for expansion of commercial waste disposal facility, Nye County, Nevada. Mr. Wampler is responsible for planning and conducting a subsurface investigation for design of deep stable, excavations for hazardous and radioactive waste disposal. This work included slope stability investigations. Mr. Wampler participated in preparation of various RCRA corrective action documents for this facility, including the RFI Work Plan, RFI Report, and Corrective Measures Study Work Plan.

Design of hazardous waste landfill – Mr. Wampler served as design engineer for commercial chemical waste disposal landfill cells in Nevada, including liner and leachate collection system, excavated slopes, compacted earthen berms, and final landfill cover. He oversaw preparation of drawings and specifications, and construction quality assurance for landfill earthwork and liner construction.

Design of solid waste landfill final cover – Mr. Wampler served as design engineer for municipal solid waste landfill cover in Utah. He oversaw preparation of drawings and specifications.

Design of reclaimed topography, surface coal mine, Campbell County, Wyoming – Mr. Wampler was responsible for preparation of reclaimed surface topographic maps for major coal mine, including design of drainage patterns based upon analysis of pre-mining drainage. (Project Engineer)

Quantitative Risk Assessment, Western New York Nuclear Service Center, West Valley NY. Mr. Wampler quantified the risks of hydrogeologic aspects of closure of low-level radioactive waste disposal trenches at the West Valley site. Radionuclide release scenarios considered in the QRA included

groundwater and surface-water pathways originating at disposal trenches that are complicated by hypothetical major storm and seismic events and slope instability.

Geological and geotechnical study for slope instability, Cobriza Copper Mine, Peru – Mr. Wampler was responsible for geological field reconnaissance and aerial photograph review to evaluate the potential for major slope stability problems at an operating mine. (Project Geologist)

Geohydrologic investigation of subsurface oil shale mine, Seep Ridge Oil Shale Company, Uintah County, Utah - Responsible for performing regional geological and hydrological review and planning site subsurface investigation for operating oil shale mine. (Project Geologist)

Decommissioning of a LLRW and former rare earth elements manufacturing facility in West Chicago, Illinois. Mr. Wampler was the project geologist for the geohydrologic characterization of this low-level radioactive waste in an urban area. He was responsible, as client's representative, for significant portions of an extensive subsurface investigation program involving drilling of over 300 borings and installation of several monitoring wells. Mr. Wampler also was the supervising engineer for design of components of a groundwater remediation system for this facility. (Project Geologist)

Site Investigation for groundwater impact at oil fields in western Colorado and western Nebraska: Mr. Wampler managed a site investigation, risk assessment, and remedial measure feasibility study for organic and inorganic compound contamination in groundwater. (Project Manager)

Industrial plant closure, northwest Ohio: Mr. Wampler managed groundwater investigation and installation of monitoring program for a 30-acre industrial plant where asbestos and organic chemicals were present. He managed all site closure activities including underground tank removal, closure plan development, asbestos building materials removal, building demolition, and site closure activities including earthwork and revegetation. (Project Manager)

Preparation of RCRA permit applications for wood preserving plants in WA, TX, LA, MS and MO – Mr. Wampler was responsible for geohydrologic aspects of RCRA permit applications. Work has included planning and conducting a series of subsurface investigations and aquifer testing programs at several facilities. Continuing work includes preparation of responses to regulator comments on the geohydrologic aspects of the applications. (Project Manager/Geologist)

RCRA Facility Investigation, chemical plant, north central Arkansas: Mr. Wampler developed RFI Work Plans and RFI Report. Management of RFI field investigation and development of RFI Report. (Project Manager)

RCRA Facility Investigation, wood treating plant, west central Missouri: Mr. Wampler developed RFI Work Plans, RFI Report, and RCRA permit consulting. Also directed preparation of Corrective Measures Studies, including quantitative evaluation of facility remediation alternatives. (Project Manager)

RCRA Facility Investigations and Corrective Measures Studies, wood preserving plants, MO, MS and TX. Mr. Wampler developed of work plans and management of field investigations. Development of RFI and CMS Reports, subsequent corrective action performance monitoring. (Project Manager)

Design of groundwater monitoring systems – Mr. Wampler was involved in the planning and implementation of monitoring programs at several facilities across the country. Facility types include: wood treating plants, low-level radioactive waste sites, and commercial HWM and radioactive waste disposal sites. He was responsible for planning and installing over 300 monitoring wells. (Project Manager/Geologist)

Development of groundwater remediation plans – Mr. Wampler participated in the development of plans for recovery, treatment, and disposition of contaminated groundwater at HWM and UST facilities. His participation included interaction with regulatory agencies regarding remedial planning and technical support for injection permit applications. (Project Manager/Geologist)

Environmental Compliance Review – Mr. Wampler performed a pre-acquisition review of compliance with environmental regulations for Colorado underground coal mine. He also presented and reviewed results to potential purchaser. (Project Manager)

Geohydrologic investigation of Lurgi process demonstration site, Rio Blanco Oil Shale Company – Mr. Wampler was responsible for field investigations, installation of groundwater monitoring system, and geohydrologic reports for potential surface oil shale mine and waste shale disposal area. (Project Geologist)

Groundwater exploration for wells; White River Shale Project, Utah – Mr. Wampler was responsible for geological investigation, well installation, and pump tests to design construction-period water supply. (Project Manager)

Groundwater monitoring supervision and training, central Alaska – Mr. Wampler was responsible for oversight of groundwater sampling effort and training of new technicians, U.S. Army facility.

Groundwater quality assessment, monitoring and reporting for active and closed wood treatment facilities – Mr. Wampler was responsible for supervising staff in preparing reports and reviewing technical content of reports. Assessments are prepared according RCRA requirements for post-closure care of hazardous waste management units. (Project Manager)

Gulf Coast Salt Domes Project, Mississippi – Mr. Wampler was responsible for directing staff geologists in collecting data, analysis, and reporting or preliminary evaluation of the interior salt dome basin of Mississippi as potential repository for nuclear wastes.

Nuclear power plant investigations - Responsible for geological characterizations and seismicity evaluations for nuclear power plant siting investigations in several southeastern states. (Project Geologist)

Nuclear power plant investigations FL, GA, NC, TN, LA, and AL. Mr. Wampler participated in geological characterization and seismicity evaluations for nuclear power plant siting investigations in several southeastern states. His responsibilities included evaluation of remote sensing data, including satellite imagery, for structural geologic features.

Seismic surveys for underground structure design, Royal Saudi Air Forces bases, Saudi Arabia – Mr. Wampler was responsible for conducting seismic surveys at five air bases for the design of underground command centers. The work scope included data collection, interpretation, and reporting. (Project Geologist)

Water storage reservoirs; off-channel storage, Yellowstone River, Montana – Mr. Wampler was involved in the development of plans off-channel water reservoirs, including planning and executing subsurface exploration, dam site and reservoir geological interpretation, soil mechanics analyses, feasibility review. (Project Manager)

SPECIALIZED TRAINING AND CERTIFICATIONS

Certified Environmental Manager in Nevada
Certified Petroleum Release Remediator in South Dakota
OSHA 40-hr, 8-hr Supervisor Training, and 8-hr Annual Refresher Training

PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS

- American Society for Testing and Materials (ASTM)
 - International Committees
 - D18 (Soil & Rock)
 - D34 (Waste Management)
 - E50 (Environmental Assessment, Risk Management & Corrective Action)
- Association of Engineering and Environmental Geologists
- Geological Society of America
- National Ground Water Association

PRESENTATIONS AND PUBLICATIONS

- 2012 Groundwater Statistical Methodology Approaches. C. Stewart and S. Wampler. SWANA-Colorado, Annual Meeting,
- 2008 Quantitative Risk Assessment of the State-Licensed Radioactive Waste Disposal Area, Western New York Nuclear Service Center, by Garrick, B. J.; J.W. Stetkar, A.A. Dykes, T.E. Potter, and S.L. Wampler.
- 2006 Landfill Gas Impacts to Shallow Groundwater, What is the Real Issue? Wampler, S.L. and L.P. Bull, SWANA Rocky Mountain Annual Meeting.
- 2004 Reducing Potential for Landfill Gas Impacts to Groundwater, Another Potential Advantage of Alternative Landfill Covers. Bull, L.P., J. Obereiner, M. Verwiell, and S. Wampler. SWANA Annual Landfill Symposium.