
STEVEN C. LAMB, PE

Education

B.S. - Civil Engineering, University of Arizona, 1987

Registrations and Certifications

Registered Professional Engineer – Arizona, North Carolina, South Carolina, Tennessee, and Ohio
40-hour CFR §1910.120 Health and Safety

Professional Affiliations

American Society of Civil Engineers
Solid Waste Association of North American

Professional Experience

Steve Lamb, PE provides SCS with over 27 years of experience in solid and hazardous waste management, environmental engineering, civil engineering, hydrology and hydraulics, landfill engineering, remedial design, and regulatory compliance. He has managed over 400 landfill projects for design, permitting, and construction quality assurance (CQA) activities. Mr. Lamb is a Vice President and director of SCS's Charlotte, NC office. Examples of his project experience include:

Landfill Gas and Landfill Gas to Energy Projects

Berkeley County Water & Sanitation Landfill, Moncks Corner, SC. Certifying engineer and engineering manager of a design-build project for a landfill gas collection and control system (GCCS). The project included over 45 new landfill gas extraction wells, header and lateral pipe, and a 2,500 scfm utility flare. Managed air, solid waste, and NESHAP (asbestos) permit applications and notifications.

Spartanburg County, Wellford Landfill, Wellford, SC. Managed engineering activities associated with an expansion to the Wellford landfill's landfill gas collection and control system (GCCS), and for a 6.5 mile landfill gas transmission pipeline. Prepared construction drawings and bid documents for both the GCCS expansion and LFGE pipeline. Following installation, prepared required plans in accordance with 49 CFR Part 192 including the Public Awareness Plan, Integrity Management Plan, and Emergency Response Plan.

Republic Services, Lee County Landfill, Bishopville, SC. Since 2002, served as Project Manager for landfill gas (LFG) and Title V/NSPS related projects. Prepared construction drawings and specifications for several landfill gas collection and control system (GCCS) expansion projects totaling over 125 extraction wells. Prepared permit to construct applications for a 3,000 scfm utility flare and for a 6,000 scfm enclosed flare. Prepared Title V and NSPS Semi-Annual Reports, annual emissions inventories, and Title V Annual Compliance Certifications.

Allied Waste, Anderson Regional Landfill, Belton, SC. Designed and permitted several expansions to the landfill's gas collection and control system. Assignments included the preparation of construction drawings, specifications, permit applications, and certification reports. Managed Clean Air Act assignments, including the initial Title V permit application, emission inventories, semi-annual Title V reports, and Tier 2 non-methane organic compound (NMOC) emission report.

Ameresco/BMW LFG Pipeline, Wellford, SC. Provided construction engineering during the construction of 9.5-mile long 12-inch diameter landfill gas transmission pipeline from the Palmetto Landfill to the BMW plant. Following installation, prepared required plans in accordance with 49 CFR Part 192 including the Public Awareness Plan, Integrity Management Plan, and Emergency Response Plan.

Waste Management, Palmetto Landfill and Recycling Center, Wellford, SC. Prepared Title V and NSPS Semi-Annual reports, emissions inventories, and certifications in accordance with the facility's Title V Air Operating Permit and the NSPS.

Johnson County Landfill, Smithfield, NC. Certifying Engineer and Project Manager for the permitting and design of the initial landfill gas collection and control system at the Johnson County Landfill. The GCCS included over 40 extraction wells and a 2,000 scfm utility flare. Prepared solid waste permit modification application and asbestos control plans in support of the GCCS construction. The project also includes a landfill gas to energy (LFGE) plant. The entire project was constructed by SCS Field Services under a design-build contract with the LFGE developer.

New Hanover County Landfill, Wilmington, NC. Prepared Landfill Gas to energy (LFGE) Feasibility Study for the New Hanover County Landfill. We evaluated several options for the beneficial use of landfill gas generated by the landfill.

White Street Landfill, Greensboro, NC. Managed Clean Air Act and Title V air permitting assignments including preparation of a Tier 2 non-methane organic compound (NMOC) report, NSPS GCCS Design Plan, and Initial NSPS Annual Report.

White Street Landfill, Greensboro, NC. Managed engineering activities in support of a design/build project for the landfill gas collection and control system (GCCS). The project included installing over 25 vertical LFG extraction wells and associated LFG piping in Phases 1 and 3. The design in Phase 2 (existing system) involved replacing all existing LFG pipe and 85 wellheads. Managed construction quality assurance (CQA) services including preparation of the Construction Certification Report.

Republic Services, Charlotte Motor Speedway Landfill, Concord, NC. Since 2002, served as Project Manager for all LFG-related projects. Prepared construction drawings and specifications for (7) seven major landfill GCCS expansions. Prepared air permit to construct applications for 3,000 scfm utility flare and for a 6,000 scfm enclosed flare. Prepared Title V and NSPS Semi-Annual Reports, annual emissions inventories, and Title V Annual Compliance Certifications.

Anson County Landfill, Polkton, NC. Permitted and designed the initial landfill gas collection and control system (GCCS) including a 2,000 scfm utility flare at the Anson County Landfill.

Assignments included preparing construction drawings, specifications, GCCS Master Plan, and related air and solid waste permitting.

Wellford, South Carolina, Bayerische Landesbank – Performed due diligence activities for the landfill gas to energy (LFGE) project located at Waste Management’s Palmetto Landfill and the BMW facility in Spartanburg County, South Carolina. Activities included preparing the Due Diligence Report, reviewing LFG projections, and providing independent engineering certifications in support of construction draws on the construction loan.

Republic Services, Swift Creek Environmental Landfill, Macon, GA. Since 2004, served as engineer and project manager several assignments including the permitting and design of several expansions to the landfill’s landfill gas collection and control system; preparation of LFG migration mitigation plans, conducting a Tier 2 non-methane organic compound (NMOC) emissions report, Title V renewal application, and Title V/CAA reporting. Prepared construction drawings, specifications, and bid documents. Managed construction quality assurance (CQA) services including preparation of the Construction Certification Report.

Republic Services, Broadhurst Environmental Landfill, Wayne County, GA. Served as engineer and project manager for the design and permitting of the initial LFG collection and control system. Prepared construction drawings, specifications, and bid documents. Managed construction quality assurance (CQA) services including preparation of the Construction Certification Report.

Landfill Gas Transmission Pipeline, Tucson, AZ. Prepared construction drawings and bid documents for a 4-mile long landfill gas transmission pipeline. The pipeline was constructed of 14-inch diameter HDPE pipe and traversed through Pima County, ADOT, and Union Pacific Railroad properties and supplied gas to the Tucson Electric Company. This was a design-build project with SCS Field Services.

Newberry County, Newberry County Landfill, Newberry, SC. Prepared a Corrective Measures Study to address groundwater contamination and landfill gas migration at the closed MSW landfill. The selected remedy design consisted of an active soil gas extraction system with 25 active soil gas extraction wells. prepared construction drawings, bidding documents and provided construction quality assurance and construction administration services.

Republic Services, Sunrise Mountain Landfill, Las Vegas, NV. Prepared Gas Collection and Control (GCCS) Design Plan for the 700-acre closed Sunrise Mountain Landfill

Landfill Closure, Design, Permitting, and CQA Projects

Berkeley County Water & Sanitation Landfill, Moncks Corner, SC. Certifying engineer for the preparation of the construction drawings, specifications, and bidding documents for a 5.5-acre MSW landfill cell. The cell is part of the Berkeley County Class 3 landfill. The liner system included a geosynthetic clay liner (GCL) and a 60-mil HDPE geomembrane liner. Managed CQA activities and prepared construction certification report.

Berkeley County Water & Sanitation Landfill, Moncks Corner, SC. Certifying engineer for the preparation of the construction drawings, specifications, and bidding documents for a 10-acre

closure of the east slope at the Berkeley County MSW landfill. The closure system consisted of a 18-inch thick compacted soil liner and the ClosureTurf lining system. Managed CQA activities and prepared construction certification report.

Allied Waste, Anson County Landfill, Polkton, NC. Managed all CQA activities in accordance with the landfill's CQA Plan and NCDENR regulations associated with the construction and certification of Cell 1C, Subcell 2, constructed in 2007. This cell is a 5.5-acre composite-lined solid waste cell. The composite liner included prepared subgrade, compacted soil liner, HDPE geomembrane liner, geocomposite, and leachate collection layer.

SALT and LG Aerobic Systems, Fort McMurray Landfill, Wood Buffalo, Canada. Provided engineering and technical support for the development of design drawings and equipment requirements for an aerobic bioreactor landfill. The project area is approximately 62 acres (238,000 square meters) of landfill area. The areas include three phases. The initial construction and majority of the design SCS reviewed was the design of the system to be installed in Phase 3. Phase 3 is designed to have 335 vent wells spaced on a 20-meter grid for the extraction of landfill gas (LFG). The LFG will be extracted through the vents using associated HDPE pipe and using two 40HP blowers rated at 4,000 scfm. In addition to LFG extraction, air will be injected into the landfill using 281 injection wells spaced on a 20-meter grid

Duke Energy, Lee Steam Station Landfill, Anderson County, SC. Managed all engineering, permitting, and hydrogeologic work related to the preparation of the Site Suitability Study and Engineering Permit Application for an 18-acre Class 3 landfill. The landfill was designed for the disposal of coal combustion residuals (CCR) generated at the station. The hydrogeological assessment involved drilling/installation of 12 groundwater piezometers, water level measurements, and aquifer testing.

Republic Services, Lee County Landfill, Bishopville, SC. Prepared permit modification to the landfill's Solid Waste Permit to modify the landfill's final cover system. The alternative final cover system included a landfill gas collection layer (geocomposite) placed beneath the cap geomembrane. Prepared construction drawings, bid documents, and provided construction quality assurance (CQA) services for an 15-acre partial closure in 2007 and for a 20-acre partial closure in 2010.

Cincinnati Gas & Electric, Zimmer Station Landfill, Moscow, OH. Prepared final grading plans, stormwater management, and closure plan drawings for a 200-acre fly ash landfill for Cincinnati Gas & Electric.

Former Celanese Plant Industrial Landfills, Rock Hill, SC. Prepared solid waste permit modification to revise the closure plan and final grading plans for an industrial landfill. Calculated disposal volumes for revised final cover grades. Prepared annual post closure care engineer's cost estimate in accordance with facility's RCRA Part B permit.

Shoosmith Brothers Landfill, Chesterfield County, VA. Prepared drawings and calculations for the cell layout, cell grading plans, leachate management system, and stormwater controls for a 52-acre lateral expansion for the landfill.

Allied Waste, Charlotte Motor Speedway Landfill V, Concord, NC. Prepared construction drawings, CQA Plan, and specifications for Cells 1A and 1B. Both cells included a Subtitle D composite liner system.

Cherokee County Landfill, SC. Prepared solid waste landfill permit for 80-acre Cherokee County Landfill. Prepared permit drawings and performed engineering calculations for leachate management system and for stormwater control systems.

Rumpke Sanitary Landfill, Cincinnati, OH. Prepared Permit-to-Construct application for 120-acre lateral expansion. Prepared permit drawings and performed engineering calculations for leachate management system and stormwater control systems.

Browning-Ferris Industries, Big Foot Run Sanitary Landfill, Warren County, OH. Managed and served as Engineer-of-Record for preparation of construction drawings and specifications for a 7.5-acre landfill closure project located in southern Ohio. The design, completed in 1996, included a 4.5-foot-thick composite cap, rock-lined surface water control structures, and sedimentation basin. Developed bid documents, bid quantities, and QA/QC procedures.

Brown County Landfill, OH. Prepared permit to construct application for a 80-acre lateral expansion. Prepared grading plans and landfill phasing plans. Performed engineering calculations for leachate management system and for stormwater control systems.

Los Reales Landfill, Tucson, AZ. Performed an evaluation of erosion control Best Management Practices (BMPs). The evaluation focused on erosion control measures and re-vegetation alternatives for landfill slopes, diversions channels, and downchutes. The report included several recommended BMPs and a pilot test program to evaluate BMPs.

Allied Waste, Southwest Regional Landfill, Buckeye, AZ. Prepared construction drawings, specifications, and bid documents for Cell 4, an 8-acre composite-lined solid waste cell that was constructed in 2001.

Santa Cruz County Landfill, Santa Cruz AZ. Prepared engineering, permitting documents and a Solid Waste Facility Plan (SWFP) for two county operated solid waste landfills. Duties included drawing preparation, stormwater management design, and the development of the Technical Specifications.

Waste Management, Inc., Northwest Regional Landfill, Surprise, AZ. Provided construction quality assurance activities associated with the construction and certification of the Module 6 landfill cell. The Module 6 cell construction included a composite liner system consisting of a geosynthetic clay liner, HDPE geomembrane liner, geocomposite, and leachate collection layer.

City of Winslow Landfill Closure, Winslow, AZ. Provided construction quality assurance services associated with the closure of the City of Winslow Landfill. Closure activities included the construction of a 2-ft-thick low permeable soil barrier layer and preparation of a detailed Construction Documentation Report.

Allied Waste, Apache Junction Landfill Projects, AZ. Prepared construction drawings, specifications, and bid documents for Cells 2B and 4B. The liner system for both cells included a

geosynthetic clay liner, 60-mil HDPE geomembrane liner, and leachate collection layer. Managed a 17-acre lateral expansion, including obtaining a 404 Permit and 401 Permit from the Army Corps of Engineers and ADEQ, respectively.

Solid Waste Facilities and Studies

Berkeley County Water & Sanitation Landfill, Moncks Corner, SC. Certifying engineer and engineering manager for the design and permitting of a leachate storage and pre-treatment plant. The project included (3) three 240,000-gallon above ground tanks. Pretreatment included aeration and mixing.

Republic Services, Five North Carolina Landfills. Provided master life-of-site planning services and budget modeling for the development of the site's landfill gas systems.

Numerous Solid Waste Facilities. Prepared over twenty-five (25) Stormwater Pollution Prevention Plans (SWPPP) and over twenty (20) Spill Prevention Control and Countermeasures (SPCC) Plans for various solid waste management hauling facilities and solid waste transfer stations in North Carolina, South Carolina, and other states. Conducted site evaluation and provided employee training.

Rumpke Waste Systems, Dayton, OH. Prepared designs to modify an existing solid waste transfer system. The designs improved the stormwater management system and increased the tipping floor capacity.

Landfill Post-Closure, Redevelopment and Brownfield

Greens of Rock Hill, Rock Hill, SC. Prepared Closure and Post Closure Plan for two landfills located on the former Celanese Plant. The Plan, which was approved by SCDHEC, included engineering and permitting requirements to allow for the construction of athletic fields (BMX track, soccer and softball) on top of the closed landfills. Prepared construction drawings and specifications for the fields and also performed construction quality assurance during the construction. The final capping included a 30-mil LLDPE liner to minimize infiltration of irrigation water.

Holston Landfill, Charleston, SC. Evaluated the potential for methane gas migration from the landfill into the proposed residential development planned on top of the closed Holston landfill. Prepared a Methane Gas Migration Control Plan as part of the Voluntary Cleanup Contract (VCC) between the owner and SCDHEC.

Elk Mountain Landfill, Woodfin, NC. Designed remedial measures to control methane migration from the landfill to a planned 500-unit residential development for the Elk Mountain Brownfields Project. Worked closely with NCDENR to develop language in the Brownfields Agreement that addresses investigation, engineering and development with respect to methane gas.

ABCO Desert Market, Phoenix, AZ. Prepared construction drawings for a LFG migration barrier control system for a 100,000 square-foot commercial development constructed over an old solid

waste landfill. The barrier controls included a geomembrane liner installed below the concrete foundation, passive vent pipes, and internal methane sensors.

Renaissance Park Golf Course, Charlotte, NC. Prepared construction drawings and specifications for remediating settlement and drainage problems at the golf course, which was constructed in 1986 over the closed York Road Sanitary Landfill. The design covered areas on the Driving Range, and Holes 6 and 8. SCS Field Services performed the remediation.

Del Rio Landfill, Phoenix, AZ. Managed the environmental aspects of the feasibility study to construct a municipal golf course on top of the existing landfill. The project involved evaluating the infiltration potential of irrigation waters on the new golf course, investigating LFG issues, and negotiating with City and State regulators.

City of Henderson Landfill, Henderson, NV. As a consultant to the golf course architect, evaluated the impacts of constructing and operating a golf course at this closed landfill site. Developed designs and construction cost estimates to mitigate landfill gas impacts and floodplain issues.

City Landfill, Calgary, Alberta. Evaluated the impacts of constructing and operating a golf course at the City Landfill. Items evaluated includes: landfill gas impacts, infiltration of irrigation waters through the golf course cover, and construction cost estimates for landfill-related work.

Miscellaneous Engineering Projects

Duke Energy, Ash Basin Third Party Engineering Review, Sixteen Coal-Fired Stations, North Carolina, South Carolina, Ohio, Indiana, and Kentucky. Served as Project Manager to provide third-party engineering review of ash basin assessments and engineering reports prepared by others at 16 coal-fired power generating facilities across five states. The primary two engineering issues SCS reviewed included the stability of the existing ash basin embankments, and hydrological and hydraulic conditions of ash basin outlet structures.

Duke Energy, Cliffside Steam Station, North Carolina. Conducted site assessment and provided third-party engineering review of a hydraulic and hydrologic analysis of Suck Creek and the potential impacts to an inactive ash basin. SCS also conducted a third-party engineering review of slope stability analyses of three existing ash basin impoundment dams.

Rumpke Sanitary Landfill, Cincinnati, OH. Managed and served as Engineer-of-Record for preparation of construction plans and specifications for a 4,000-linear-foot stream enclosure project. The enclosure included a 7.5-foot-diameter and 9.5-foot-diameter corrugated steel and structural plate pipes. Federal, state, and local permits were obtained.

Fire Station No. 10, Tucson, AZ. Prepared construction drawings, specifications, and bid documents for a soil vapor extraction system and a total fluids recovery system to treat petroleum-impacted soils and groundwater. The treatment system included 19 soil vapor extraction wells, a total-fluids extraction wells, a thermal oxidizer for vapor phase treatment, and granular activated carbon for groundwater treatment.

Air National Guard Base, Sky Harbor International Airport, AZ. Provided engineering oversight/construction management during the construction, operation, and maintenance of a full-scale soil vapor extraction (SVE)/air sparging system.

Colony Bay Coal Company, Beckley, WV. Managed and served as the Engineer-of-Record for preparation of a 1,470-acre surface mine permit revision. The revision included redesigning six durable rock fills (80,000,000 cubic yards of capacity); redesigning sediment ponds and ditches; and developing a new mining plan.