

J. JUSTIN STEVENSON, E.I.T.

Education

B.S.E. – Mechanical Engineering, Messiah College, 2013

Training / Certifications

40-hour Health and Safety Training OSHA 29 CFR 1910.120

John Zink Landfill Gas Flare School

Waste Management Contractor Safety Orientation Training

Energy Developers, LLC. Contractor Safety Orientation Training

Drilling Atop Lined Landfills Training by SCS Engineers

Engineer in Training (NCEES FE Mechanical, Pennsylvania)



Professional Experience

Mr. Stevenson is a Project Manager with SCS Engineers based in the Harrisburg, Pennsylvania office. Mr. Stevenson is one of SCS's National Experts in Landfill Gas Control. Since joining SCS Engineers in 2013, he has designed landfill gas (LFG) collection and control systems for energy recovery, odor/emissions control, and migration control. His designs have included phasing and master plans for budgetary planning as well as construction level design drawings for gas collection and control system expansions. Mr. Stevenson has designed LFG treatment systems for removal of hydrogen sulfide and siloxanes. Mr. Stevenson has designed and performed start-up of multiple LFG blower/flare stations and has performed construction oversight for the installation of numerous LFG collection systems, LFG flare systems, and LFG treatment systems. His work has included detailed analysis of landfill gas monitoring data and liquid level monitoring data for work on elevated temperature landfills.

Examples of Mr. Stevenson's project experience include:

Landfill Gas Collection and Control System Design

Republic Services Conestoga Landfill, Morgantown, PA – Prepared the design of thirteen LFG system expansions by developing site plans and details to meet Republic Services standards, reviewing monitoring data to evaluate new vertical extraction well and horizontal collector placement as well as design new header and lateral LFG piping, compressed air piping, and force main piping. The Gas Collection and Control System (GCCS) expansion designs included a focus on vertical communication features for enhanced liquid management and LFG collection, including stone targets for extraction wells, caisson wells, and hybrid horizontal collectors. Prepared the design of a dewatering liquids lift station to segregate dewatering liquids from leachate, including modifications to the existing leachate treatment plant. Provided CQA for well drilling and pipe construction events, documented construction activities, organized and led construction progress meetings and Monthly Landfill Gas SOP meetings, and prepared the Annual Construction Certification Reports. Developed Surface Emission Monitoring routes and drawings for NSPS compliance, as well as evaluated compressed air

equipment for dewatering wells, and prepared 5-year Gas Collection and Control System designs and cost estimates for budgetary planning.

Republic Services Modern Landfill, York, PA – Prepared the design of twelve gas system expansions by developing site plans and details to meet Republic Services standards, reviewing monitoring data to evaluate new vertical extraction well and horizontal collector placement as well as design new header and lateral LFG piping, compressed air piping, and force main piping. Reviewed data and assembled monthly data packages for the Enhanced Monitoring Program related to elevated temperatures within the waste mass, including monthly LFG sampling, quarterly liquid level measurements, H₂ and CO monitoring, and temperature profile data. Provided CQA for well drilling events and pipe work construction events, documented construction activities, organized and led construction progress meetings and Monthly Landfill Gas SOP meetings, and prepared the Annual Construction Certification Reports. Prepared design for a utility flare relocation and assisted in the design of a new flare system. Sized and specified compressed air equipment for dewatering wells and prepared 5-year Gas Collection and Control System designs and cost estimates for budgetary planning.

Republic Services Pine Avenue Landfill, Niagara Falls, NY – Prepared the design of a gas collection and control system expansion targeting areas with hydrogen sulfide. Design work included preparing construction drawings for the installation of vertical gas extraction wells, horizontal collectors, slope collectors, and gas conveyance piping. Provided project management during CQA, including documenting construction activities, leading construction progress meetings and preparing the Construction Certification Report.

Republic Services Honeygo Run Landfill, White Marsh Station, MD – Prepared the design of a gas collection and control system expansion targeting areas with hydrogen sulfide. Design work included preparing construction drawings for the installation of vertical gas extraction wells and gas conveyance piping.

Chester County Solid Waste Authority Lanchester Landfill, Narvon, PA – Performed analysis of wellfield monitoring data and recommendations for dewatering and gas collection system expansion. Prepared construction level drawings, technical specifications and bid documents for a Gas Collection and Control System Expansion, including landfill gas extraction wells, gas conveyance piping, and dewatering system infrastructure. Provided CQA services for vertical extraction well drilling for two LFG system expansions, including monitoring drilling activities and gas collection piping installation.

Greater Lebanon Refuse Authority, Lebanon, PA – Assisted in the planning and design of a mining investigation study to determine waste depths and approximate waste composition in an existing closed and unlined landfill. Provided CQA oversight and documentation of the drilling of test boreholes and oversaw the installation of vertical LFG wells and piezometers as well as the liner repair work. Developed a preliminary design for the proposed new landfill to replace the existing unlined landfill by working within the constraints of the existing waste depth, groundwater contours and property boundaries to design a new landfill consisting of multiple cells to fit the regulatory

standards. Designed the gas collection and control system modifications for the Pad 8 landfill expansion including new wells, LFG piping, compressed air and force main piping.

Burlington County Resource Recovery Complex, Columbus, NJ – Prepared the design of two gas collection and control system expansions, including site plans and detail drawings and assisting with bid specifications. Assisted in the design of a LFG horizontal collector system for LFG collection and odor control and assisted in routine Surface Emissions Monitoring. Assisted in the implementation of a blower station expansion, including providing design drawings, cost estimation and technical specifications. Work included the design of a conceptual organic waste cell design by preparing conceptual 3D drawings and attending planning meetings regarding the organic waste cells with the site.

Cumberland County Improvement Authority, Cumberland County Landfill, Millville, NJ – Prepared the design of the Phase VII and Phase VIII LFG Collection System Expansions and served as Project Manager for Phase VIII. Design work included preparing construction drawings for bid as well as site visits to prepare for the pending work. Assisted in the design and implementation of the Phase VI LFG Collection System Expansion. Work included pre-bid work designing the system Site Plans and details on AutoCAD, helping assemble Bid Documents and Construction Contracts, providing LFG field services including HDPE pipe welding and the design/installation of LFG header expansions and cleanouts in preparation for the Phase VI Expansion. Work entailed providing CQA for the system expansion for both extraction well drilling and LFG system collection piping installation. Reviewed contractor's submittals and provided assistance in developing change orders.

Gloucester County Improvement Authority, Gloucester County Landfill, Swedesboro, NJ – Prepared the design of two gas collection and control system expansions, including site plans and detail drawings and assisting with bid specifications, submittal reviews, and engineering during construction. Prepared the design of an enclosed flare system expansion including a new blower skid, condensate management system, LFG piping, and new enclosed flare.

Casella Waste Systems, McKean County Landfill, Kane, PA – Assisted in the design of a gas collection and control system expansion, including the installation of vertical gas extraction wells, gas conveyance piping, horizontal collectors, and slope collectors.

Guilford Township Landfill, Chambersburg, PA – Prepared the design of a gas collection and control system, including site plans and detail drawings for the conversion of passive vents to active gas collection with the installation of gas conveyance piping and a blower station.

Delaware Solid Waste Authority (DSWA) Sandtown and Jones Crossroads Landfills – Assisted in the design of the gas collection and control system end-of-life plans for new cells and prepared the CAD drawings.

Anne Arundel County, Millersville Landfill, Severn, MD – Prepared an evaluation as well as conceptual designs and profiles for expansion of the perimeter landfill gas header piping at the Millersville Landfill.

Regional Service Commission, NW, SW, and SE Landfills, New Brunswick, Canada – Prepared the design of gas collection and control system expansions for three landfills, including preparing LFG generation and recovery models, evaluating the existing gas collection and control system performance, preparing bid level site plans and detail drawings. Assisted with bid documentation by reviewing specifications and developing quantity take-offs.

Afik Environmental Engineering, Efe'e Landfill, Mishor Rotem, Israel - Prepared design drawings, details and bid documents and report for two phases of the landfill gas collection system expansion and flare system.

Benny Shimon Regional Council, Dudaim Landfill, Beer Sheva, Israel - Prepared design drawings and details for a landfill gas collection system expansion.

Tahal Group, Hagal Landfill, Or Yehuda, Israel - Prepared design drawings and details for a landfill gas collection system expansion and blower/flare station relocation.

Ayalon Biogas, Hiriya Landfill, Tel Aviv, Israel - Prepared design drawings and details for a landfill gas collection system expansion including the installation of vertical gas extraction wells, horizontal collectors, and gas conveyance piping at the Ariel Sharon Park.

Methane Abatement, Rutherford, NJ - Assisted in providing technical drawings and specifications for a sub-slab passive methane abatement system to protect a service center garage and claims processing center to be built in an area with methane from marsh gas. Tasks performed also included estimation of construction costs.

Hydrogen Sulfide and Siloxane Treatment Design

Republic Services Carleton Farms Landfill – H₂S Treatment, Siloxane Treatment & Centralized Blower/Flare Station, New Boston, MI – Performed an H₂S treatment system evaluation and design to remove hydrogen sulfide upstream of a blower/flare station and gas to energy facility. Performed a siloxane treatment system evaluation and design to remove siloxanes upstream of the gas to energy facility. Designed a centralized blower/flare station.

Waste Connections LRI Landfill – H₂S Reduction System, Puyallup, WA – Performed emissions calculations and treatment system evaluation for H₂S reduction from the landfill. Designed a hydrogen sulfide treatment system for partial treatment of H₂S prior to a flare station.

BRADS Landfill – H₂S Treatment System, Saint Clair, PA – Evaluated treatment options for hydrogen sulfide in landfill gas by reviewing monitoring data, performing calculations and cost analysis and coordinating with vendors. Compared performance and cost analysis of solid scavenger type media and a direct fired thermal oxidizer. Designed and oversaw installation and operation of a hydrogen sulfide treatment system as part of the design-build project. Designed a gas collection and control system consisting of horizontal collectors and slope collectors for managing hydrogen sulfide odors.

Republic Services Honeygo Run Landfill – H₂S Reduction System, White Marsh Station, MD –

Prepared the design and facilitated the installation and start-up of a temporary hydrogen sulfide reduction system by evaluating monitoring data, performing a cost analysis and performance evaluation of media treatment options, and coordinating with vendors to procure temporary treatment vessels and media. Provided engineering assistance during construction and facilitated media loading and start-up activities of the treatment system and utility flare. Prepared media change-out procedure documentation.

Republic Services Pine Avenue Landfill – H₂S Reduction System, Niagara Falls, NY – Prepared the design and construction bid documents for a hydrogen sulfide reduction system by evaluating monitoring data, performing a cost analysis and performance evaluation of media treatment options, and designing an automated hydrogen sulfide reduction system to accommodate current and future flows. Performed engineering calculations for condensate management, head-loss calculations, and LFG flow through the system. Provided bidding assistance including coordination with vendors and contractors, reviewed submittals and processed bid documents. Facilitated weekly construction progress meetings and provided engineering assistance during construction and helped oversee system start-up activities.

Ada County Landfill – H₂S Scrubber System, Boise, ID – Provided design drawings for the mechanical portion of the hydrogen sulfide scrubber system including condensate management piping, sump design, gas flow & head loss calculations. Work included working with subcontractors to assemble, review and approve submittals for the design build project. Participated in weekly construction progress conference calls and provided design updates for the client when needed. Work included assembling System Start-Up instruction documents for equipment and the system as a whole, as well as assembling O&M Manuals for operator use.

CES Landfill - H₂S Reduction System, Hegins, PA– Assisted in the design of a hydrogen sulfide treatment system upstream of an energy facility. Prepared pressure loss calculations and design of the gas conveyance piping system for partial treatment of the landfill gas stream.

Gloucester County Landfill - H₂S Reduction System, Swedesboro, NJ – Prepared an evaluation of hydrogen sulfide removal technology and performance estimate. Assisted in the design of the H₂S treatment system installed upstream of an existing blower/flare station.

Lordstown Landfill - H₂S Reduction System, Warren, OH – Prepared design drawings and details as part of a design-build project for partial treatment and hydrogen sulfide reduction upstream of a new flare.

Blower and Flare Station Design

Waste Management Fairless Landfill, Morrisville, PA – Designed a gas compression and dehydration system rated for 12,000 cubic feet per minute. Provided CQA services and facilitated start-up activities for the installation of two phases of gas compression and dehydration equipment, and two enclosed flares. Prepared the Construction Certification Report. Prepared subsequent designs for

modification of the system to accommodate the installation of an RNG facility downstream of the compressor station.

Waste Management Tullytown Landfill, Morrisville, PA – Performed an evaluation and cost analysis of gas compression equipment for a closed landfill with declining gas flows. Served as project manager to coordinate the removal, repair and reinstallation for a 1,000 HP blower and motor.

Waste Management GROWS Landfill, Morrisville, PA – Assisted in the design and procurement of a coalescing filter for the removal of oily condensate downstream of a landfill gas blower. Served as project manager, prepared bid documents, and coordinated the installation of the coalescing filter upstream of the existing flare compound.

Waste Management Pottstown Landfill, Pottstown, PA – Assisted in the mechanical portion of the design for the installation of a new utility flare by providing CADD drawings. Provided CQA services for the flare system installation for both the mechanical and electrical contractors and assisted in the Construction Certification Report.

Republic Services Modern Landfill, York, PA – Assisted in the design of a new blower/flare station including the installation of a new blower skid and enclosed flare and refurbishment of an existing enclosed flare. Prepared design for the refurbishment and relocation of a utility flare.

Republic Services Sycamore Landfill, Santee, CA – Assisted in the design of a new blower/flare station including the installation of a new blower skid and ultra-low emissions flare. Design work included developing a phased construction and demolition plan to the final buildout, performing pressure loss calculations, and developing a 3D design of the proposed piping layout.

Republic Services Pine Avenue Landfill, Niagara Falls, NY – Prepared design for the installation of a blower and utility flare skid as part of a design-build project. Design included gas conveyance piping, a condensate pump station, and thermal radiation calculations for positioning of the new utility flare. Performed start-up and construction quality assurance.

Waste Connections LRI Landfill – Blower & Flare Station Design, Puyallup, WA – Designed modifications to a blower and flare system to retrofit a new blower skid, controls building and enclosed flare into the existing system.

Waste Connections Blue Ridge Landfill, Scotland, PA – Prepared the design for a new enclosed flare and blower skid, including process piping and transmission piping to an existing LFG to energy facility.

Waste Connections Bethlehem Landfill, Bethlehem, PA – Prepared the design for a new utility flare and blower skid to be installed at the existing enclosed flare compound.

3D Renderings and Conceptual Models

Queens Botanical Gardens Concept Compost Facility, New York, NY – Prepared conceptual 3D renderings of the proposed compost facility in the Queens Botanical Gardens for public review and

comment. Conceptual plans highlighted compost windrows, compost bays and facility equipment at various angles from the Botanical Gardens.

Lincoln Transportation and Utilities Solid Waste Management Division, Lincoln, NE – Prepared conceptual 3D renderings of two proposed citizens recycling facilities for public review and comment.

Waste Management Best Practices Manual Development – Assisted in the development of 3D Drawing Details for portions of the WM Best Practices Manual development.

Construction Quality Assurance and Start-Up Services

Waste Management GROWS North Landfill, Morrisville, PA – Provided CQA services for a blower system start up and monitored testing of different segments of the blower system in preparation for operation. Provided CQA services for the installation and start-up of an enclosed LFG flare system at GROWS North and assisted in the preparation of the Construction Certification Report.

Waste Management Fairless Landfill, Morrisville, PA – Provided CQA services for the installation of the Train 1 and Train 2 compression and dehydration station. Construction included the installation of large diameter HDPE and stainless steel piping, condensate pump station, positive displacement blower skids, intercoolers and aftercoolers, glycol cooled heat exchanger, an overhead crane, controls building, air compressor and compressor building.

Lanchester Landfill, Narvon, PA – Provided CQA services for vertical extraction well drilling for two LFG system expansions, including monitoring drilling activities and gas collection piping installation.

Broome County Landfill, Binghamton, NY – Provided CQA services for vertical extraction well drilling for a LFG system expansion. Work included coordinating with the site representatives, reviewing survey data, and documenting the installation of vertical gas extraction wells.

Granger Energy Plant, Morgantown, PA – Provided CQA services for sump modifications to the Swamp Creek Pump Station and Intermediate Pump Station by overseeing construction, coordinating client meetings, reviewing safety documentation. Documented construction and provided as-built record drawings.

Monroe Township Landfill, Monroe Township, NJ – Conducted routine liquid level monitoring with SCS Field Services. Provided remediation planning, soil sampling and emergency response. Worked with SCS Field Services to install three LFG well dewatering pumps and three solar panels to provide them power. Work included non-routine site visits for maintenance and repair as well as quarterly, semi-annual and annual site inspections.

South Brunswick Landfill, South Brunswick, NJ – Performed routine and non-routine maintenance and monitoring of liquid levels on site. Prepared and performed quarterly, semi-annual and annual site inspections. Performed CQA during a fence relocation project, providing site plans and information to the fence contractor.

Publications/Presentations

“Planning, Operating and Maintaining Bottom-Up Caisson Wells”, SCS Annual Landfill Seminar, Harrisburg, PA, June 5, 2024.

“GIS for Landfill Gas Data, Operations and Maintenance”, SCS Annual Landfill Seminar, Harrisburg, PA, June 6, 2023.

“Optimizing Landfill Technologies for Improved Efficiencies,” SCS National Webinar (Virtual) December 1, 2022.

“3D Modeling of Landfill Gas Systems,” SWANA Annual Landfill Gas and Biogas Symposium, Denver, CO, March 5, 2018.

“3D Modeling of Landfill Gas Systems,” SCS 9th Annual Landfill Seminar, Harrisburg, PA, June 9, 2017.