

SAM COOKE, PE, CEM, MBA

Education

M.B.A., Quantitative Methods concentration, Loyola University of Chicago, Illinois, 1986

B.S., Chemical Engineering, Washington University, St. Louis, Missouri, 1981



Sam Cooke

Professional Licenses

Professional Engineer in Wisconsin, Illinois, Indiana, and Colorado
Certified Energy Manager (Association of Energy Engineers - AEE)

Professional Affiliations

Solid Waste Association of North America (SWANA)
Association of Energy Engineers (AEE)

Professional Experience

Mr. Cooke has over 35 years of professional and project management experience in engineering, with 23 years of environmental engineering consulting with SCS. He is a Vice President and the SCS National Leader in Liquids Management Services. His primary area of technical expertise includes water and wastewater treatment with specialization in industrial wastewater pre-treatment. He is experienced with various wastewater unit processes, permitting, design, feasibility monitoring, operation and maintenance, sampling, and compliance monitoring; and has served as expert witness for multiple wastewater issues. Mr. Cooke has managed over 1,000 wastewater and other environmental engineering projects in 31 states with many industrial/ manufacturing, government agency, and corporate clients.

Water and Wastewater Treatment

Performed wastewater treatment system evaluations to assess the best treatment options based on feasibility, efficiency and cost for multiple industrial wastewater pre-treatment facilities.

Acted as consultant on the use, operation, and inspection of the following wastewater treatment and other equipment: membrane bioreactors, sequencing batch reactors, aerators, clarifiers; settling basins; sludge ponds; scalping tanks; sludge filtration; oil/water separators; deep well injection of wastewater; biological degradation (aerobic and anaerobic); dissolved air flotation of solids; induced air flotation of solids; chemical/fuel tanks and containment, induced draft cooling towers, boilers, chemical injectors, etc.

Evaluated landfill leachate treatment for the removal of ammonia, total Kjeldahl nitrogen, total nitrogen, biochemical oxygen demand (BOD), total suspended solids (TSS), sulfur-based compounds and total dissolved solids (TDS) by biological, physical/chemical treatment methods.

Consulted on the use, operation, and inspection of the following influent water treatment equipment: hot process softeners (lime and soda ash), anthracite filters, sodium zeolite softeners, deaerators,

demineralizers, dealkylizers, clarifiers, and chemical injectors. Consulted on operation and maintenance for specialized industrial water and wastewater applications.

Lead engineer for industrial wastewater pre-treatment system feasibility and design projects, including treatment for: nitrogen compounds, fats, oils and grease, total suspended solids, heavy metals (mercury), sanitary waste, sludge dewatering, pH neutralization, volatile organic compounds, total suspended solids, polynuclear aromatic hydrocarbons, etc. Served as consulting engineer for the feasibility and conceptual design of influent water treatment (demineralizer system) and wastewater discharge for major utility project.

Provided expert testimony regarding water and wastewater treatment for litigation support, utility projects and municipal public hearings. Obtained state, city public works and wastewater treatment facility approval for pre-treatment system designs. Carried out multiple discharges of special wastewater to publicly-owned treatment works (POTWs).

Process / Design Engineering

Prepared detailed design plans and specifications for soil and groundwater remediation systems and underground storage tank (UST)/above ground storage tank (AST) system installations. Plans generally included process flow diagram, piping and instrumentation diagram, equipment layout diagram, site layout, and other mechanical and electrical detail sheets. Permits for construction/installation were obtained and engineering specifications were prepared.

Completed design plans and specifications for 39 UST replacement sites for Air National Guard. Performed numerous bid reviews of vendor quotations for remediation system equipment and subsurface investigation services.

Directed feasibility reviews for remedial options for multiple projects and implemented the chosen technology. Options include bioremediation, soil vacuum extraction, groundwater pump and treat with air stripping (both with and without granular activated carbon), free product recovery with oil/water separation, fluidized bed bioremediation, and soil incineration (both stationary and mobile units).

Energy and Sustainable Engineering Services

Performed sustainability diagnostic evaluations of >100 manufacturing facilities to determine their energy and environmental sustainability baseline. The evaluation included energy, water, toxic materials, lean manufacturing, transportation, wastes, and other triple bottom line sustainability aspects. Also performed >100 follow-up energy and environmental savings evaluations, audits, and assessments, as detailed below.

Completed >100 different energy assessments and energy engineering conceptual design projects including evaluation of boilers, chillers, HVAC equipment, air compressors, lighting, building envelope, wastewater treatment, water use and process equipment (ovens, washers, paint spray booths, conveyors, fabrication, furnaces, air pollution control equipment, molding machines, etc.). The project focus was primarily on maximizing energy savings and reducing energy cost while increasing productivity, human comfort, indoor air quality and energy efficiency. Manufacturing facilities included ferrous and non-ferrous foundries, food manufacturers (including various baking, cheese, pizza, fermented beverages, coffee, seasoning, dairy products and sausage companies), metal fabricators, wood-based manufacturers, plastic injection molders/extruders, fiberglass molders, chemical packagers, electric coil manufacturers, metal stampers, metal die casters, metal extruders, industrial printers, industrial laundries, HVAC equipment manufacturers, metal finishers, printed circuit board manufacturers, etc.

Managed energy/environmental projects involving Lean and Clean industrial assessments, greenhouse gas emission inventories, beneficial reuse of industrial waste, and waste heat recovery projects for multiple mid-size and large manufacturing facilities. Work included analysis of plant data, development of recommendations, and prioritizing projects for maximum return on investment.

Conducted inventory of energy usage and greenhouse gas (GHG) emissions for all commercial, industrial, agricultural, and residential users for a mid-sized mid-western city. Prepared GHG inventory documentation report and completed recommendations for these energy efficiency and sustainability action areas: land use, transportation, renewable energy, buildings, purchasing, electrical efficiency, fleet fuel efficiency, water/wastewater, recycling/reuse, urban forests, and community education. Prepared detailed report and delivered multiple presentations for City leaders, staff, and the community.

Publications and Presentations

“Landfill Leachate: Prevent Generation and Control Disposal,” SWANA NW Region Symposium, April 2018.

“Agricultural Chemicals – Regulatory Update,” Wisconsin Agri-Business Association Magazine Article, December 2017.

“Retro-commissioning – Make Good Buildings Even Better,” Public Works Magazine Article, Nov/Dec 2015.

“Retro-commissioning – Make Good Buildings Even Better,” presentation to the Growing Sustainable Communities Conference, Sept. 2013.

“Manufacturing Energy Efficiency,” presented to the Manufacturing Advantage Conference, 2012.

“Sustainable Manufacturing Overview,” presented to the Non-Ferrous Foundry Society’s Annual Meeting, 2011.

“Profitable Sustainability Initiative for Manufacturers,” presented to the Manufacturing Matters! Wisconsin Conference, 2011.

“Greenhouse Gas Emissions and Recommendations Report,” presented at a number of government and community group meetings, 2009 and 2010.

“Beneficial Reuse of Construction Waste in ‘Green Building’ Projects,” presented to WDNR, 2008.

“Petroleum and Hazardous Materials Spill Response,” presented at the Southern Wisconsin Claim Adjusters Meeting, Madison, Wisconsin, 1998 and 2001.

“Airport Fuel Spills Prevention, Preparation and Cleanup,” presented at the Wisconsin Aviation Conference, Wausau, Wisconsin, 1994.

“Soil and Groundwater Recovery and Treatment Systems,” presented to a major utility meeting, Washington, DC, 1993.

“Soil Vapor Extraction,” presented to a major utility meeting, Michigan, 1990.

“Ammonia Stripping Towers Optimization,” presented at Western States Blast Furnace and Coke Plant Association Annual Meeting, 1983 (Won award for best presentation at conference).