
JEFFREY D. MARSHALL, PE

Education

B.S. - Chemical Engineering, VA Polytechnic Institute and State University, 1982

Professional Licenses and Affiliations

Professional Engineer - VA, MD, WV, NC and SC
Certified in Hazardous Waste Operations and Emergency Response (HAZWOPER) by
USEPA's Hazardous Materials Incident Response Class (1986)
American Institute of Chemical Engineers

Professional Experience

Mr. Marshall is a vice president and the practice leader for the Environmental Services Practice for SCS offices in the mid-Atlantic coastal region. He has a diversified background in project engineering and management, with emphasis on the environmental chemistry and human health aspects of hazardous materials/waste management, site investigations, waste treatment, risk-based remediation and redevelopment, and environmental compliance/permitting issues.

Clients have included scores of state and local governments throughout the US (e.g., Fairfax County, VA; Loudoun County, VA; Arlington County, VA; Prince William County, VA; Town of Herndon, VA; Norfolk, VA; City of Chesapeake, VA; City of Suffolk, VA; Virginia Beach, VA; Campbell County, VA; Shenandoah County, VA; Page County, VA; Montgomery County, MD; Howard County, MD; Baltimore County, MD; City of Baltimore, MD; Harford County, MD; Prince Georges' County, MD; Newberry County, NC; Kansas City, MO; etc.), municipal maintenance facilities, active and closed landfills, waste-to-energy plants, recycling facilities, airports, R&D facilities, electronics manufacturers, coal-fired and dual-fueled electric power plants and cogeneration plants, potable water treatment facilities and distribution systems, printing plants, plating shops, petroleum refineries and bulk storage & distribution facilities, fertilizer manufacturing plants, adhesives formulators, polymer manufacturing and extrusion lines, hospitals and healthcare facilities, aluminum extrusion and machining facilities, auto parts manufacturers, explosives manufacturers, electric motor production plants, rocket motor (propellant) manufacturing and testing, ore refining facilities, tool manufacturers, metal and wire products manufacturers, steel mills, a lead battery recycling facility, indoor and outdoor firing ranges, nuclear fuel rod manufacturing plants, gasoline stations, dry cleaners, office parks, strip malls, agricultural facilities, pesticide/herbicide sites, a radioactive healthcare products manufacturing facility, pharmaceutical manufacturers, rail lines and railroad maintenance facilities, concrete and refractory manufacturers, and RCRA waste treatment, storage and disposal facilities.

Department of Defense clients and facilities have included Fort Belvoir, VA; Fort Eustis, VA; Fort Monroe, VA; Fort Story, VA; Fort Lee, VA; Naval Station Norfolk, VA; MCB Quantico, VA; Oceana Naval Air Station, VA; Fort Detrick, MD; Aberdeen Proving Grounds, MD; Naval Surface Weapons Center, Dahlgren, VA; Naval Surface Warfare Center, White Oak, MD; National Naval Medical Center, MD; Naval Ship Research and Development Center, Annapolis,

MD; USCG Baltimore, MD; Charleston Naval Complex, SC; Dover AFB, DE; Picatinny Arsenal, NJ; Walter Reed Army Medical Center, DC; Fort McClellan, AL; FEMA, Mount Weather, VA; Newport Army Ammunition Plant, IN; Ravenna Army Ammunition Plant, OH; Lockbourne AFB, OH; Cape Lisburne, AK; the Pentagon; dozens of GSA facilities; numerous Veterans Administration hospitals and facilities; numerous National Guard facilities, and DoD facilities in Panama, Japan, Puerto Rico, and Italy.

Superfund/CERCLA Services

Mr. Marshall provides over three decades of experience with CERCLA sites, including:

- Remedial Investigation, Risk Assessment, Feasibility Study, Remedial Design, Remedial Action oversight, five-year review for Fulbright and Sac River Landfill sites, Springfield, MO.
- Provide assistance in identifying waste generators (i.e., potential responsible parties) at NPL landfills.
- Remedial Investigation, Risk Assessment, Feasibility Study, interim measures design, construction oversight, and remedial design for Hosier Road Landfill, Suffolk, VA.
- Remedial Investigation and Endangerment Assessment, Riverfront Park Landfill, Kansas City, MO.
- Remedial Investigation, Risk Assessment, Feasibility Study for multiple New York State Superfund sites, including:
 - Union Road, a former railroad yard and rail maintenance facility, Buffalo.
 - Booth Oil, an inactive oil reclamation facility, Buffalo.
 - Storonske Cooperage, a drum and container reclamation facility, Rensselaer County.
 - Village of Bedford Wells, a shopping mall with chlorinated solvent contamination.
- Review background documents, prepare independent Hazard Ranking System score, perform supplemental site characterization, and submit comments in response to proposed NPL listing, City of Chesapeake Landfill, VA.
- Review background documents, prepare independent Hazard Ranking System score, and submit comments in response to proposed NPL listing, inactive landfill in Baltimore, MD.
- Supplemental Remedial Investigation to evaluate source of groundwater contamination, and litigation support, Odessa Chromium #2, TX.
- Assist National Gypsum, a PRP, in estimating response actions and costs at six NPL sites.
- Preliminary Assessment, Site Investigation, and Expanded Site Investigation services for several CERCLIS sites being considered for addition to the NPL, including a fertilizer manufacturing facility in VA.

- Assist Virginia Department of Transportation in evaluating human health risks associated with the proposed highway improvements and recreational facility construction at the Camp Allen Salvage Yard, Norfolk Naval Base, VA.
- Third party review of response actions and costs to evaluate consistency with CERCLA requirements and protocols.

Landfill Services

Mr. Marshall provides over 30 years of experience in landfill-related services, including the design and implementation of multi-media (groundwater, surface water, storm water, soil, landfill gas) investigations for closed landfills, preparation and implementation of Groundwater Monitoring Plans, statistical evaluation of monitoring data, groundwater remediation (design, permitting, construction, O&M, peer review), permitting and compliance audits, leachate control and management, closure/post-closure care issues, odor investigations, and subsurface heating events (e.g., subsurface fires, exothermic aluminum dross reactions). He has also provided technical support for several landfill redevelopment projects.

Landfill experience covers a broad range of sites, including municipal solid waste (i.e, RCRA Subtitle D) landfills, industrial waste landfills, mixed-waste landfills, construction and demolition debris landfills, vegetative waste disposal sites, DoD disposal areas, open dumps, and CERCLA Superfund sites. Landfill locations include Virginia, Maryland, New York, New Jersey, North Carolina, South Carolina, Massachusetts, Ohio, Missouri, Pennsylvania, Kansas, Illinois, Florida, Texas, California, Washington, Japan, Israel, and Canada.

Innovative Technology Evaluation

Mr. Marshall's chemical engineering capabilities, combined with several decades of experience in the environmental industry, have been used to support the technical and economic evaluation of dozens of new and innovative environmental technologies. Such evaluations have been performed for potential investors, technology developers, and potential users - i.e., commercial firms and government agencies that are interested in purchasing and applying new and innovative environmental systems. Mr. Marshall's experience includes evaluation of groundwater remediation systems, wastewater treatment technologies, soil remediation systems, air emission control systems, hazardous waste treatment systems, solid waste conversion technologies, and waste-to-energy systems.

Site Investigations

Mr. Marshall has performed hundreds of site investigations, ranging from Phase I and II Environmental Site Assessments to multi-media, multi-year investigations (e.g., CERCLA Remedial Investigations, RCRA Facility investigations, and several state voluntary cleanup and remediation programs). He has planned, managed, and implemented scores of investigation and remediation projects associated with asbestos (both construction materials and naturally occurring asbestos), lead-based paint, underground and above ground storage tanks, radon, and dozens of industrial chemicals, including PCBs, heavy metals, chlorinated solvents, pesticides and herbicides. Many of these projects included extensive negotiations and coordination with

EPA and state environmental agencies (e.g., Virginia, Maryland, DC, New Jersey, New York, Pennsylvania, North Carolina, South Carolina, etc.).

Mr. Marshall has provided arsenic investigation and risk assessment services for several residential sites located in the Spring Valley neighborhood in Washington, DC, an area that was used by the Department of Defense for ordnance activities during the World War I era.

Brownfields and Voluntary Remediation

Projects have included investigation and remediation of a former rail yard in conjunction with the construction of the new Time Life headquarters building in Alexandria, VA; investigation and remediation of arsenic-based herbicide contamination along an inactive rail corridor being re-developed as a vintage trolley system in Charlotte, NC; investigation of two inactive landfills to support the design and construction of a new access road at Fort Belvoir, VA; site investigation and risk assessment at an inactive landfill to support redevelopment for use as sports fields, Winston-Salem, NC; investigation and remediation of a former construction maintenance yard during re-development and construction of a new newspaper printing and distribution facility in College Park, MD; and preparation of a feasibility study for a former used oil recycling facility in Buffalo, NY; investigation, risk assessment, and remediation of a former fertilizer and concrete manufacturing facility contaminated with arsenic, mercury, chromium, and lead in Portsmouth, VA; investigation and remediation of former industrial sites (brewery, plastics manufacturing, dry cleaner, sign shop, auto junk yard, rail maintenance facility) for the Norfolk Redevelopment and Housing Authority; redevelopment of a closed landfill into a major commercial freight delivery facility .

Similar investigation, risk assessment and remediation projects performed under state voluntary remediation programs include several dry cleaners, auto repair facilities and gas stations, a nursery, warehouses, a fertilizer manufacturing plant, a concrete plant, a municipal maintenance facility, former orchards, and several urban lead sites. Experience includes the development and implementation of deed restrictions and engineering controls to limit human exposure to residual contamination.

Human Health and Environmental Risk Assessment

Mr. Marshall has prepared dozens of qualitative and quantitative risk assessments (RAs), and has provided peer review of RAs prepared by others. The RAs are typically used to assess the need for remediation, engineering controls, and institutional controls at sites where contamination has been identified. RA experience includes active and closed landfills, chemical manufacturing facilities, dry cleaners, a former concrete and fertilizer manufacturing plant, UST and AST sites, DoD facilities, a 66-acre junkyard located on Lake Manassas, PCB-release sites, and miscellaneous active and inactive industrial sites. RA protocols have included CERCLA, RCRA Subtitle C, RCRA Subtitle D, and several state voluntary remediation and cleanup programs. In conjunction with an air emissions permit application, he prepared a human health RA for hazardous air pollutant emissions from a landfill-gas-to-energy facility. Ecological RA experience includes an evaluation of aquatic risks resulting from PAHs in various fuel oil compositions. Mr. Marshall is also experienced in the design and implementation of laboratory studies to evaluate the toxicological effects of chemicals.

Environmental Compliance Audits

Mr. Marshall is experienced in the performance of multi-media environmental compliance audits addressing regulations promulgated under RCRA, CERCLA, TSCA, CAA, SDWA, CWA, FIFRA, OPA, EPCRA, AAI, and numerous state regulatory programs. Examples include audits at about 20 Virginia Department of Transportation facilities throughout the Commonwealth; a tungsten carbide ore refining facility in Nevada; rubber and silicone products manufacturing facilities in Bedford and Buchanan, VA; a nuclear fuel rod manufacturing facility in VA; a fiberglass resin boat manufacturing plant in TN; aluminum extrusion and machining facilities in VA; an electric motor manufacturing plant in NC; aviation repair, remanufacturing, and warehouse facilities in TX, FL and GA; a large rotogravure printing facility in TN; commercial off-set printing plants in VA, WV and PA; the Oceana Naval Air Station, VA; watch manufacturing and distribution facilities in AR and CT; four printed circuit board, computer component, and communications equipment manufacturing plants in CO and KS; a municipal hospital, regional cancer center, and medical waste incinerator in VA; an Army hospital and medical waste treatment center at Fort Belvoir; newspaper printing and distribution facilities in VA, MD and DC; and about a dozen General Services Administration facilities including offices, an indoor firing range, warehouses, a courthouse, and a motorcycle storage and maintenance facility.

Environmental Permitting

Mr. Marshall has prepared dozens of permit applications for many federal, state and local environmental regulatory programs. Examples include Part A and Part B permit applications for RCRA Subtitle C (hazardous waste) and Subtitle D (solid waste) facilities, NPDES (wastewater and storm water), industrial pre-treatment (wastewater), permit-by-rule (vegetative waste composting, transfer stations, C&D material recovery facilities, medical waste management, etc.), air emissions including Title V (e.g., medical waste incinerators, fumigation facilities, landfill gas-to-energy plants) and State Operating Permits, groundwater extraction/water appropriations, and groundwater injection.

Air Emissions Compliance Evaluations and Permitting

Mr. Marshall has considerable experience in air emissions issues, including preparation and negotiation of permit applications, evaluation of permitting requirements and exemptions, performance of compliance assessments, preparation of emissions inventories and annual statements, development of permit compliance plans, and consulting regarding a broad range of greenhouse gas issues.

Subject systems and facilities have included over a dozen environmental remediation systems (groundwater pump-and-treat/air stripping, soil vapor extraction systems, vapor intrusion control systems); scores of landfills; several hospitals, including two medical waste incinerators (Title V); an aerospace manufacturing facility and plating shop in Iowa; a large commercial plating facility in VA; commercial printing plants in VA, TN, WV and PA; a Coast Guard facility in Baltimore; an electric motor manufacturing facility in North Carolina; an electronic instrumentation manufacturer in MD; two metal products fabrication plants in MD; a plastic products (polystyrene) extrusion and blow molding facility in VA; several emergency power

generators; and numerous fumigation facilities located along the east coast (VA, NC, MD, NJ, DE, GA, and FL). Fumigation facility experience includes Title V permitting, case-by-case MACT evaluations, and synthetic minor permitting.

Mr. Marshall has assisted many facilities with NESHAP applicability reviews and compliance. NESHAP experience includes Subpart XXXXXX (Metal Fabrication and Finishing Source Areas); Subpart ZZZZ (Reciprocating Internal Combustion Engines); Subpart T (Halogenated Solvent Cleaning); Subpart MMMM (Surface Coating of Miscellaneous Metals Parts and Products); Subparts DDDDD and JJJJJ (Industrial, Commercial and Institutional Boilers); Subpart VVVV (Boat Manufacturing); Subpart II (Shipbuilding and Repair).

Vapor intrusion (VI) experience includes the design and implementation of scores of subsurface (shallow soil gas, deep soil gas, soil and groundwater) and indoor air investigations to evaluate the VI pathway for VOCs and radon, performance of quantitative risk assessments, and VI modeling (Johnson & Ettinger and others). Design experience includes active and passive VI control systems for dozens of buildings, including the new VDOT Camp 30 administration building, Fairfax County Public Safety Transportation Operations Center, industrial facilities, dry cleaners, a new condominium development with a sub-grade parking garage, luxury townhomes on the eastern shore, and a variety of residential and commercial developments.

Industrial Hygiene and Indoor Air Quality

Mr. Marshall has provided IH and IAQ services for dozens of industrial, commercial, governmental, and residential facilities. Projects have included a chlordane assessment at a residential rental unit owned by the Folger Theater in Washington, DC; multiple indoor air quality assessments for various areas within Rockingham Memorial Hospital, including the operating room suite; mold assessment and remediation services for the new Leesburg courthouse and dozens of other facilities; assessment of airborne lime dust and treated sludge/metals at a municipal wastewater treatment plant in Manassas, Virginia; scores of VOC assessment and remediation projects; assessment and remediation of hydrogen sulfide emissions produced by anaerobic degradation of wallboard at landfills; assessment of IAQ impacts from a commercial printing facility; assessment of hydrogen cyanide emissions from an industrial waste landfill; and Anthrax sampling and analysis services for private mail rooms in Washington, DC.

Environmental Management Systems (EMS)

Environmental Management experience includes ISO 14001 seminars, preparation of SPCC Plans for scores of oil storage facilities, SPCC training programs, Oil Discharge Contingency Plans, Stormwater Pollution Prevention Plans, Integrated Contingency Plans and Emergency Response Plans, O&M Plans, Waste Minimization Audits and Plans, Waste Characterization and Management Programs, Loss Prevention Plans, Environmental Training Programs, and miscellaneous permit compliance assistance and negotiations for facilities nationwide. Mr. Marshall worked with the VA Department of Transportation to develop a compliance auditing program and environmental management system for implementation throughout the organization.

Petroleum

Mr. Marshall has extensive experience in the environmental aspects of petroleum management, release investigation, and remediation. He has prepared Spill Prevention, Control and Countermeasures Plans, Facility Response Plans, Oil Discharge Contingency Plans (Virginia), Spill Prevention and Response Plans (West Virginia), and Integrated Emergency Response Plans. Permitting experience for petroleum facilities includes UST/AST registrations, preparation of stormwater permit applications, stormwater management plans, air emissions permit applications, and annual air emissions statements. Design and inspection experience includes UST systems, AST systems, and secondary containment systems.

Mr. Marshall has worked on scores of investigation and remediation projects under the Virginia Petroleum Storage Tank Program. He has investigated releases of gasoline, diesel fuel, various grades of heating oil, and other specialty petroleum products (e.g., mineral spirits, Stoddard solvent, jet fuel, avgas, Bunker C/No.6 fuel oil, etc.) at bulk petroleum storage and distribution facilities, service stations, commercial and industrial facilities, railroad maintenance facilities, residences, DoD facilities, hospitals, landfills, etc., and has closed scores of USTs and ASTs.

Remediation experience includes soil, groundwater, surface water and sediments. Soil remediation experience includes excavation, in-situ and ex-situ bioremediation, low temperature thermal desorption, soil vapor extraction, stabilization, and cover systems. Groundwater remediation experience includes free product removal systems, dual phase recovery systems, air stripping, carbon adsorption systems, and a variety of enhanced, in-situ bioremediation technologies.

In the late 1990s, Mr. Marshall provided support to the Virginia Department of Environmental Quality, Underground Storage Tank group in researching and developing investigation and remediation approaches for MTBE at storage tank sites.

Chlorinated Solvents

Mr. Marshall has extensive experience in the investigation and remediation of chlorinated solvent contamination at dry cleaners, commercial facilities and industrial plants, having performed assessment and remediation projects at scores of such sites. Examples of his project experience include:

- **Cambridge, Inc., MD.** Site investigation of soil, groundwater, surface water and sediments contaminated with 1,1,1-TCA and degradation products; prepare design plans for groundwater remediation and soil vapor extraction system; obtain environmental permits (NPDES, air emissions, groundwater extraction); provide construction assistance; prepare and implement O&M plans; provide quarterly reporting and annual performance evaluation reports; provide regulatory negotiations; design and implement a natural attenuation evaluation for a small chlorinated solvent plume at an adjacent warehouse.
- **Clifton Precision, Murphy, NC.** Multi-media onsite and offsite investigations of TCE and degradation products; design and permit groundwater and soil remediation systems, and treatment systems to provide potable water for manufacturing plant, daycare center, convenience store, and several private residences; regulatory negotiations; design, permitting

and O&M of remedial systems; implement several UST removals; close wastewater treatment systems.

- **In-situ Bioremediation, Dry Cleaners, Hampton, VA.** Design and implement an in-situ groundwater treatment program to provide accelerated in-situ bioremediation of chlorinated solvents in groundwater, using injection of an emulsified oil substrate. Site-wide chlorinated solvent concentrations were reduced by over 85%, and concentrations in several wells were reduced over 99%.
- **Design/Build In-situ Biowall, USDA, Beltsville, Maryland.** Design/build services for an innovative in-ground biowall to promote biodegradation of chlorinated solvents in groundwater, downgradient of the Beaver Dam Road Landfill Superfund site.
- Perform Phase I and II Environmental Site Assessments, risk assessments, and remediation assessments at dozens of dry cleaners, industrial laundry facilities, spill sites, and an industrial park that houses the International Fabricare Institute.
- Provide site investigation, regulatory negotiations, design and construct soil and groundwater remediation systems for industrial facilities with TCE and PCE contamination in Virginia, Maryland, North Carolina, South Carolina, New Jersey, Missouri, and others.

RCRA Closure

Experience includes several Department of Defense Sites (Naval Surface Warfare Center - Dahlgren, NSWC- White Oak, the Ravenna Army Ammunition Plant, and the Cape Lisburne Long Range Radar station located on the north slope of AK), two fertilizer manufacturing facilities, and scores of storage tank sites. Waste management units have included a hazardous waste tank mixing facility, indoor and outdoor waste piles, and a 360,000 gallon waste storage tank system for a fertilizer manufacturer in Chesapeake, VA; a hazardous waste surface impoundment for a metal finishing facility in South Boston, VA; a hazardous waste storage area and a wastewater treatment system for a metal parts manufacturer in Blairsville, GA; a waste treatment system and several underground storage tanks for metal plating wastes at a metal parts manufacturing site in Murphy, NC; a waste solvent tank at a manufacturing facility in Tidewater, VA; two paint waste disposal areas at a municipal yard in Chesapeake, VA; a hazardous wastewater treatment system at a steel plant in California; five surface impoundments at two cutting tool manufacturing facilities in Pennsylvania; ordnance heat deactivation furnaces; and several open burning and open detonation systems for treatment of ordnance wastes.

National Environmental Policy Act

NEPA experience includes:

- Detailed engineering support for preparation of NEPA Environmental Impact Statements for Army binary chemical production facilities. Specific issues included hazardous materials, hazardous waste, water consumption, wastewater treatment and disposition, air emissions, energy consumption, and environmental permitting.

- Provided third party review and public comments regarding the Environmental Impact Statement for relocation of the U.S. Patent and Trademark Office from Crystal City to Alexandria. Specific issues included environmental contamination resulting from historic site uses.
- Primary author, Environmental Impact Review (Virginia's equivalent of an Environmental Assessment under the federal NEPA program) for the redevelopment of the Virginia Department of Transportation's regional service center and administrative facility at the new McConnell Public Safety and Transportation Operations Center, Fairfax County.

Remediation and Waste Treatment

Projects have addressed groundwater, surface water, wastewater, leachate, soil, sediments, air, landfill gas (LFG), and LFG condensate. Remediation systems have employed chemical, physical, thermal, and biological approaches, including bioremediation, air stripping, carbon adsorption, thermal treatment, soil vapor extraction, air sparging, scrubbing, settling, filtration, catalytic destruction, chemical conversion (redox reactions), neutralization and precipitation, encapsulation, capping, UV enhanced oxidation, chemical oxidation, and monitored natural attenuation. Contaminants have included cyanides, chlorinated solvents, petroleum constituents, pesticides, herbicides, heavy metals (e.g., arsenic, chromium, lead, mercury), PCBs, PAHs, radionuclides, VOCs, semi-volatile organic compounds, and energetic materials.

Polychlorinated Biphenyls (PCBs)

Mr. Marshall has performed dozens of projects involving the management of PCBs, and the investigation and remediation of PCB releases under the TSCA Spill Cleanup Policy and CERCLA. For example, Mr. Marshall managed a multi-media investigation of indoor and outdoor releases of PCB dielectric fluid associated with a dedicated electrical system for a research laser at the National Naval Medical Center, Bethesda, MD. The release investigation included sampling and analysis of indoor and outdoor concrete surfaces, indoor equipment surfaces, groundwater seeps into the basement, soil, and surface water and sediments in an adjacent stream. The investigation results were used to prepare plans and specifications for remediation, including surface decontamination and soil removal. SCS assisted in the selection of a remediation contractor, provided oversight of remediation, and prepared the final remediation report for submittal to USEPA. Other PCB projects performed by Mr. Marshall include an assessment and remediation of PCB transformer releases at the Virginia-American Water Company, Hopewell, Virginia; RI/FS for a former used oil reclamation facility in Buffalo, New York; assessment of PCBs in soil at a metals recycling facility in Virginia, and environmental compliance audits of multiple GSA facilities with known PCB contamination at indoor electrical control rooms. Guidance has been provided to numerous commercial property owners, management firms, and demolition firms regarding the characterization and disposal of fluorescent light ballasts and used oil. Mr. Marshall has prepared and presented various training sessions on PCB management and spill response.

Asbestos

Asbestos experience includes both asbestos containing building materials (ACBM) and naturally-occurring asbestos. Mr. Marshall has managed and directed scores of ACBM projects, including building inspections, O&M Plans, abatement plans, and asbestos removal projects. Subject facilities have included industrial facilities (electronics, fertilizer, metal products, etc.), government facilities, office buildings, communications centers, hospitals and healthcare facilities, and hotels. He has also provided health protection and monitoring programs for several construction projects in areas underlain by actinolite and tremolite veins. Services have included preparation of specifications and project work plans to control employee exposures during drilling, blasting, excavation, utility line installation, and concrete and steel construction. Additional services included preparation of Health and Safety Plans, employee training programs, ambient air monitoring services, airborne asbestos dust control, waste disposal service, and assistance in addressing concerns raised by regulatory agencies.

Environmental Claims

Mr. Marshall has provided third-party review, litigation support, depositions and expert testimony for several dozen environmental claims.

U.S. EPA

Mr. Marshall has been involved in several environmental regulatory development programs including an evaluation of the Superfund program and recommendations for development of the RCRA Corrective Action Program, performed for the Office of Solid Waste; a nationwide investigation of leaking underground storage tanks; household hazardous waste studies for EPA's Land Disposal Branch in relation to the 1984 Hazardous and Solid Waste Amendments to RCRA; and an evaluation of location standards for Subtitle D facilities. He also provided public comment on the draft Environmental Impact Statement for the relocation of the U.S. Patent and Trademark Office.

Chemical Process Design Engineer

Prior to joining SCS in 1985, Mr. Marshall spent three years with the U.S. Army Chemical Research and Development Center at the Aberdeen Proving Ground, MD. Responsibilities included the design of handling, treatment, storage, transportation, and disposal systems for the many hazardous substances (e.g., nerve gas and precursors) used and wastes generated at DOD chemical manufacturing facilities. Mr. Marshall also assisted in the preparation of NEPA Environmental Impact Statements for various chemical production facilities. Much of this work was related to phosphorus, organophosphate and sulfate chemicals. Such compounds are very similar to many of the pesticides currently of environmental concern.

Subsequent process design engineering experience includes:

- Industrial wastewater and storm water treatment systems
- Sanitary wastewater treatment systems
- Anaerobic organic waste digestion and chemical synthesis systems

- Aerobic bioremediation systems for soil and groundwater
- Groundwater pump-and-treat systems covering a wide range of organic and inorganic contaminants, including chemical, biological, and physical treatment methods
- Thermal desorption and incineration systems
- Used solvent recovery and reclamation systems
- Ordnance and energetic materials treatment and disposal technologies
- Air emissions capture and control technologies
- Medical waste treatment
- Solid and hazardous waste treatment – minimization, neutralization, stabilization, solidification, thermal treatment, chemical treatment, etc.
- Waste-to-energy and waste-to-fuel technologies

Publications and Presentations

Marshall, Jeffrey D. “Hydrogen Sulfide Issues at CCR and MSW Co-disposal Sites” [Presented at] Coal Ash Management Forum. Sponsored by the Environmental Research and Education Foundation, and National Waste and Recycling Association. July 21, 2016. (Charlotte, NC).

Marshall, Jeffrey D. “Coal Combustion Ash” [Presented at] Maryland Recycling Network/Solid Waste Association of North America Mid-Atlantic Conference. June 16, 2011. (Linthicum, Maryland).

Marshall, Jeffrey D. “Ash Management” [Presented and published in the proceedings of] The 13th Annual Landfill and Landfill Gas Seminar. Sponsored by SCS Engineers. April 14 (Baltimore, MD), April 29 (Roanoke, VA), and April 30, 2010 (Richmond, VA).

Marshall, Jeffrey D. and Michelle Leonard. “Landfills and LEED Certification” in Brownfield News, Volume 11, Issue 4, August 2007, published by Environomics Communications, Inc. and the National Brownfield Associations, page 22.

Marshall, Jeffrey D. “Green Construction Opportunities at Landfills” [Presented and published in the proceedings of] The 14th Annual Landfill and Landfill Gas Seminar. Sponsored by SCS Engineers. April 24, 2007 (Baltimore, MD) April 26 (Roanoke, VA), and April 27 (Richmond, VA).

Marshall, Jeffrey D. “Applicability of the ACGIH Hydrocarbon Limit to Landfill Gas” [Presented and published in the proceedings of] The 13th Annual Landfill and Landfill Gas Seminar. Sponsored by SCS Engineers. April 27 (Roanoke, VA), April 28 (Richmond, VA) and May 17, 2006 (Baltimore, MD).

Marshall, Jeffrey D. “Traversing the Medical Waste Permit process” [Presented at] WASTEEXPO/The Medical Waste Conference sponsored by the Environmental Industries Association, May 5, 2005 (Las Vegas, NV).

- Marshall, Jeffrey D. “Hydrogen Sulfide Generation, Prevention, and Mitigation” [Presented and published in the proceedings of] The 12th Annual Landfill and Landfill Gas Seminar. Sponsored by SCS Engineers. April 21 (Roanoke, VA) and April 22, 2005 (Richmond, VA).
- Marshall, Jeffrey D. “Emerging Remediation Technologies: Microturbines, Metals Stabilization, Nanoscale Zerovalent Iron, Phytoremediation, Update on Monitored Natural Attenuation” [Published in] Environment, Energy and Resources Law, The Year in Review 2004, The American Bar Association, Section of Environment, Energy and Resources. 2005.
- Marshall, Jeffrey D. “Does Your Landfill Need an Environmental Management System?” [Presented and published in the proceedings of] The 10th Annual Landfill and Landfill Gas Seminar. Sponsored by SCS Engineers. April 24 (Roanoke, VA) and April 25, 2003 (Richmond, VA).
- Marshall, Jeffrey D. “Exposure Pathways Assessment for Landfills”. [Presented and published in the proceedings of] The Eighth Annual Landfill and Landfill Gas Seminar. Sponsored by SCS Engineers. March 26 (Roanoke, VA) and March 27, 2001 (Richmond, VA).
- Marshall, Jeffrey D. “New Clean Water Act Regulations for Wastewater Discharges from Landfills”. [Presented and published in the proceedings of] The Seventh Annual Landfill Seminar. Sponsored by SCS Engineers. April 11 (Roanoke, VA) and April 12, 2000 (Richmond, VA).
- Marshall, Jeffrey D. “Spill and Release Reporting”. [Presented and published in the proceedings of] the Executive Enterprises Environmental Regulations Course. April 2000 (Alexandria, VA); October 1999 (Washington, DC); August 1999 (Philadelphia, PA); June 1998 (Virginia Beach, VA); June 1997 (Virginia Beach, VA); December 1995 (Baltimore, MD); August 1995 (Baltimore, MD); June 1995 (Baltimore, MD).
- McLaughlin, Michael W. and Jeffrey D. Marshall. “Resource Conservation and Recovery Act”. [Presented and published in the proceedings of] the Government Institutes Environmental Laws and Regulations Course, December 1999.
- Marshall, Jeffrey D. and John Kinsella. “Should You Pursue ISO 14000?” in FOCUS, published by Virginia Manufacturers Association, Volume 4, Number 1, Spring-Summer 1998.
- Ward, Christopher G. and Jeffrey D. Marshall. “Risk Assessment Approaches for Evaluation of Groundwater Impacts at Subtitle D Landfills.” [Presented by C.G. Ward and published in the proceedings of] The Fourth Annual Landfill and Landfill Gas Seminar in Richmond, VA. Sponsored by SCS Engineers. February 25, 1997.
- Marshall, Jeffrey D. “Virginia Voluntary Remediation Program.” [Presented at] Seminar: Technical and Legal Overview of the Virginia Voluntary Remediation Program. Sponsored by SCS Engineers and Williams, Mullen, Christian & Dobbins. Virginia Beach, VA; Richmond, VA; Roanoke, VA; and Tysons Corner, VA. December 1995.

Marshall, Jeffrey D. "Corrective Action for Solid Waste Landfills in Virginia". [Presented and published in the proceedings of] The Third Annual Landfill Seminar. Sponsored by SCS Engineers. June 6, 1995 (Virginia Beach, VA) and June 7, 1995 (Richmond, VA).

Shaffer, Robert J. and Jeffrey D. Marshall. "Using Consolidated Emergency Planning as a Catalyst for Pollution Prevention." [Presented by R. J. Shaffer at and published in the proceedings of] 13th Annual Virginia Waste Management Conference, sponsored by the Solid Waste Association of North America (SWANA). April 26, 1995.

Marshall, Jeffrey D. "Soil Remediation Strategies". [Presented at and published in the proceedings of] Second Annual Aboveground and Underground Storage Tank Conference - Advanced Course. Sponsored by SCS Engineers and McGuire, Woods, Battle & Boothe. UST/AST Remediation Presentation. November 9, 1994.

Marshall, Jeffrey D. and Andre Fontaine. "Emerging Treatment Technologies for VOC Contaminated Groundwater." [Presented at and published in the proceedings of] Twelfth Annual Virginia Waste Management Conference (SWANA). Richmond, VA. April 27, 1994.

Marshall, Jeffrey D. and Aileen C. Smith and Michael W. McLaughlin. "Remedial Investigation and Feasibility Study at the Hosier Road Landfill." [Presented at and published in the proceedings of] Twelfth Annual Virginia Waste Management Conference. Sponsored by Solid Waste Association of North America and Virginia Department of Environmental Quality. Richmond, VA. April 26, 1994.

Forbes, Charles D. and Jeffrey D. Marshall. "Developing Defendable Air Emission Estimates Using Available Literature". [Proceedings of] AESF Week 1994. American Electroplaters and Surface Finishers Society. Co-sponsored by U.S. Environmental Protection Agency.

Ward, Christopher G. and Pamela D. Emmons and Jeffrey D. Marshall. "The Site Characterization and Corrective Action Process at a DoD Facility on the Chesapeake Bay in Virginia". [Presented at] Geotechnical Seminar, Environmental and Geotechnical Site Characterization. The Geotechnical Committee, National Capital Section, American Society of Civil Engineers. January 27, 1994.

Forbes, Charles D. and Jeffrey D. Marshall and Christopher G. Ward. "Groundwater Treatment with Air Emissions Control - A Case Study". [Presented at and published in the proceedings of] Eighty-Sixth Annual Meeting, Air and Waste Management Association. Denver, CO. June 17, 1993.

Marshall, Jeffrey D. and Peter J. Carrico and Wayne Blake-Hedges. "LFG Condensate Treatment at the I-95 Landfill, Lorton, VA". [Presented at] Sixteenth Annual Landfill Gas Symposium, Solid Waste Association of North America. Louisville, KY. March 23-25, 1993.

Marshall, Jeffrey D. "Corrective Action Program for Municipal Solid Waste Landfills." [Presented at and published in the proceedings of] Virginia Landfill Seminar - March 16, 1993, and Maryland Landfill Seminar - April 13, 1993. Sponsored by SCS Engineers.

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