

TIMOTHY P. SMITH, PE

## Education

MS – Environmental Engineering, University of Southern California, 2001

BS – Environmental Engineering, University of Southern California, 1998

## Professional Licenses

Professional Engineer - Alabama Registered Engineer No. 35425, 2015

Professional Engineer - California Registered Engineer No. 62648, 2002

Professional Engineer - Florida Registered Engineer No. 79848, 2015

Professional Engineer - Georgia Registered Engineer No. PE040281, 2015

Professional Engineer - Mississippi Registered Engineer No. 27194, 2016

Professional Engineer - Texas Registered Engineer No. 122648, 2016

## Specialty Certifications

OSHA 40-Hour HAZWOPER Training and 8-Hour Annual Refresher

OSHA 8-Hour HAZWOPER Supervisor Training

OSHA 30-Hour Construction Safety Training

Confined Space Safety Training

First Aid and CPR

## Professional Affiliations

American Society of Civil Engineers, 1999

National Ground Water Association, 2002

Society of American Military Engineers, 2012

Partnership for Environmental Progress, 2017

Air and Waste Management Association, 2019

## Professional Experience

Mr. Smith has over 23 years of experience in civil and environmental engineering, currently focusing on program and operations management. In his project experience, he has specialized in the design, construction, and implementation of remediation systems. Mr. Smith's experience includes various large-scale brownfield redevelopment projects, military projects including munitions response programs, as well as petroleum, aerospace, transportation, and industrial projects. The projects Mr. Smith has been involved in are described below.

**Carbon Steel Production Facility, Program Management, Alabama.** Mr. Smith's responsibilities included management of the client program including the engineering evaluation of an acid regeneration plant (ARP) that processes concentrated pickle liquor generated from the steel manufacturing process, evaluation and remediation of multiple on site releases of hazardous liquids, national pollutant discharge elimination system (NPDES) monitoring of storm water and a nickel flash wastewater treatment process, state indirect discharge (SID) monitoring of industrial wastewater, and a toxicity identification evaluation (TIE) for monitoring points failing whole effluent toxicity testing. The purpose of the ARP evaluation was to assess possible releases of hydrochloric (HCl) acid and particulate iron oxide to the atmosphere and storm water. The evaluation included assessment of the entire ARP process, with particular focus on the effectiveness of the ARP

fugitive dust control system designed for containment of particulate iron oxide, the condition, material compatibility, and design of process components, the condition of the HCl gas recovery system and the potential for inadvertent releases, and the design, condition, and operation of the high density polyethylene lined (HDPE) lined secondary containment storage pond. Mr. Smith was also responsible for review and certification of site compliance documents including storm water pollution protection plans (SWPPPs) and spill prevention, control, and countermeasure (SPCC) plans.

**Alabama State Port Authority (ASPA), Program Management, Mobile, Alabama.** Mr. Smith's responsibilities included management of the ASPA program, including redevelopment of a former wood treating facility impacted with dense non-aqueous phase liquids (DNAPL), investigation and remediation of a solid waste management unit (SWMU) impacted with semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and metals, and CORMIX modeling of industrial waste disposal pond discharges to the Mobile River. Tasks currently being performed for the former wood treating facility include preparation of an updated corrective measures implementation plan (CMIP), preparation of a modified Resource Conservation and Recovery Act (RCRA) permit, evaluation and mitigation of impacts from redevelopment to the existing engineered cap and DNAPL recovery system, and oversight of planned construction activities in accordance with the approved CMIP. Activities at the SWMU included excavation of impacted soil exceeding regulatory threshold concentrations and additional characterization of soil and ground water for use in human health and ecological risk assessments to support future site development. Additional tasks at the industrial waste ponds include evaluation of the process for generating and treatment of leachate, contracting a dive team to prepare bathymetry and as-builts of the discharge outfall structure, and CORMIX modelling of the discharge.

**Design-Build Joint Venture (DBJV), Mobile River Bridge, Mobile, Alabama.** Mr. Smith's responsibilities included the management of environmental consulting activities for the DBJV tender for the Mobile River Bridge and Bayway project with a total contract value with the Alabama Department of Transportation (ALDOT) estimated at \$1.8B. The project scope of work consisted of the public private partnership (P3) construction of a cable stay bridge spanning approximately 1,800 feet across the Mobile River and replacement of approximately seven miles of the Bayway bridge. The project spans an industrial area of Mobile and five rivers, including waters of the United States, wetlands, and threatened and endangered (T&E) species habitat. The environmental scope of work for the current bridge and Bayway alignment includes review and evaluation of 20 industrial sites with impacted soil and/or ground water, review and evaluation of potential impacts to wetlands and T&E species, and identifying and mitigating risks associated with permitting and compliance for the project given the numerous State and Federal agencies that are involved.

**Multistate Environmental Trust, Theodore, Alabama.** Mr. Smith's responsibilities included the evaluation of materials resulting from decontamination and demolition of a former titanium dioxide beneficiation plant containing naturally occurring and accelerator produced radioactive material (NARM). The evaluation of NARM materials included the use of preliminary field screening data to assess the concentrations of impacted debris and non-debris, mass estimate calculations of debris to develop mass weighted concentrations of debris, evaluation of appropriate facilities for disposal, and developing cost estimates for staging, packaging, transporting, and disposing of the waste based on weighted and non-weighted mass concentrations and the waste acceptance criteria (WAC) of each disposal facility. The evaluation of NARM concentrations, WAC, and transportation and disposal costs resulted in the selection of several waste disposal facilities based on the range of NARM concentrations. In addition, the evaluation analysis resulted in further field screening of NARM waste prior to shipment to confirm which of the several disposal facilities was most appropriate and cost effective for disposal, which ultimately resulted in significant cost savings for the client.

**Honeywell International, Chickasaw, Alabama.** Mr. Smith's responsibilities included project management for the characterization of three wastewater ponds filled to capacity with various solids (primarily lime and aluminosilicates) to be dredged, dewatered/treated, and disposed. The three ponds to be dredged included a 1-acre salt pond, a 3-acre caustic pond, and 50-acre pond filled with clarifier solids. The first phase of work included sampling of the 50-acre pond from boats and analysis of the samples for physical and chemical parameters. The sampling and analysis of the 50-acre pond was followed by treatability testing for hydrogen sulfide that was readily released from dredged material. Subsequent dredging and treatment of the 50-acre pond was conducted using a barge dredge and pumping the semi-solid material to a processing plant for dewatering by centrifuge and treatment for high hydrogen sulfide using ferric sulfide. The treated material was subsequently accepted at a local landfill for disposal. Further assessment of the 1-acre and 3-acre ponds is ongoing, with evaluation of treatment of the dredged material by solidification.

**Master Cleaners, Multiple Dry Cleaning Facilities, Mobile, Alabama.** Mr. Smith's responsibilities include managing multiple projects at dry cleaning facilities impacted with tetrachloroethene (PCE). Mr. Smith assumed management of the projects after multiple unsuccessful attempts by others to remediate site ground water with emulsified vegetable oil (EVO) injections in a low pH aquifer with significant clay and silt content. Mr. Smith conducted a subsequent phase of EVO injection focused on specific target ground water zones and incorporating pH adjustment which resulted in significant reductive dechlorination of PCE to ethene. Additional sites have now been targeted for treatment using this approach.

**Gulf Power, Multiple Sites, Alabama and Florida.** Mr. Smith's responsibilities include providing technical oversight for Gulf Power projects, including review and certification of site compliance documents including SWPPPs and SPCC plans.

**Carson Reclamation Agency, AIG, Carson, California.** Mr. Smith's responsibilities included the management, design, and installation of a multi-million dollar ground water remediation system to treat impacted ground water beneath a 157-acre former landfill undergoing redevelopment. Redevelopment included a National Football League (NFL) stadium or up to 2 million square feet of retail/commercial, plus a hotel and 1,500 residential units. Specific responsibilities included managing financial aspects of the project, working with numerous site architects and engineers to integrate treatment plant design and utility needs into overall site plans, oversight and preparation of treatment plant design drawings and specifications, oversight of structural and electrical treatment plant designs, securing required permits from relevant permitting agencies, oversight and preparation of the construction quality assurance plan, coordination and integration with landfill capping and redevelopment construction activities, oversight of subcontractor bidding and selection processes, oversight of treatment plant equipment procurement, and management of all ground water treatment plant construction activities. Mr. Smith's responsibilities also include integration of the relevant landfill gas treatment system components into the ground water treatment plant design and commissioning of the landfill gas and ground water extraction and treatment systems. Mr. Smith was also responsible for ongoing project interaction with the Department of Toxic Substances Control (DTSC), managing and providing direction to junior engineering staff, conducting project management responsibilities, and adherence to stringent Environmental Impact Report (EIR) requirements.

**Eagle's Nest Explosive Ordnance Disposal Area, Department of the Navy, Military Munitions Response Program Concord, California.** Mr. Smith's responsibilities included the evaluation of remedial alternatives for munitions and explosives of concern (MEC)/munitions potentially presenting an explosive hazard (MPPEH) and design of biological enhancements for the site. The evaluation of remedial alternatives included evaluation of MEC/MPPEH excavation methods including shielded and remotely operated equipment excavation and treatment methods including

blow in place (BIP), consolidated shot, contained detonation chamber (CDC), and laser initiation. The design of biological enhancements for the site included storm water and grading design to increase the hydro-period of habitat of threatened species.

**Mare Island Naval Station, Department of the Navy, Installation Restoration Program (IRP) Site 17 and Building 503 Area, Vallejo, California.** Mr. Smith's responsibilities included review and evaluation of the Site 17 and Building 503 Area Remedial Design/Remedial Action Work Plan (RD/RAWP) for soil impacted with lead and chlorinated volatile organic compounds (VOCs) and soil gas and ground water impacted with chlorinated VOCs. His responsibilities also include design and oversight of the post-remedial action verification sampling program and preparation of the final Remedial Action Completion Report (RACR).

**El Centro Naval Air Facility, Department of the Navy, IRP Site 18, El Centro, California.** Mr. Smith's responsibilities included review and evaluation of the Site 18 remedial investigation for soil impacted with burn piles containing lead, polynucleic aromatic hydrocarbons (PAHs), metals, PCBs, pesticides, and dioxins. His responsibilities also included preparation of the final feasibility study (FS) for the site.

**Environmental Trust, Multiple States, Southeast Region.** Mr. Smith's responsibilities included the remedial system evaluation (RSE) of multiple light non-aqueous phase liquids (LNAPL), DNAPL, and ground water pump and treat systems. The treatment systems include polymer assisted DNAPL recovery, LNAPL recovery, and biological treatment of dissolved phase contaminants, prior to discharge of treated ground water to the sanitary sewer. The RSEs included troubleshooting system malfunctions, reducing operating costs, and developing site exit strategies. Mr. Smith is also responsible for review and certification on site compliance documents SWPPPs and SPCC plans.

**Ohio Well Field, Environmental Protection Agency, Ohio.** Mr. Smith's responsibilities included assessment of a municipal drinking water system impacted with PCE. The existing drinking water system is the main drinking water source for a town of over 5,000 residents. The assessment of the municipal drinking water system included evaluation of potential PCE source areas, evaluation of the existing drinking water treatment system, evaluation of a Ranney collection well, assessment of alternative drinking water sources, and evaluation of wellhead treatment alternatives for an approximately one million gallon per day drinking water source. Mr. Smith's responsibilities also include providing recommendations for PCE source removal, modifications to the existing drinking water treatment system, modifications to the Ranney collection well, design of a wellhead treatment system, and providing costs associated with the alternatives.

**Lubricating Specialties, Inc., Vernon, California.** Mr. Smith's responsibilities included providing consulting services and optimization recommendations for a vapor combustion unit (VCU) treating head space vapor vented from seven one hundred thousand gallon petroleum storage tanks. The existing design of the VCU included continuous operation, resulting in substantial unnecessary natural gas consumption. Mr. Smith developed an "on demand" operational mode for the VCU that would allow the VCU to operate only when needed and would result in substantial savings in natural gas costs. Mr. Smith consulted with the South Coast Air Quality Management District (SCAQMD), and it was determined that the "on demand" operational mode met all SCAQMD rules and regulations. The VCU was modified to incorporate the "on demand" operational mode, resulting in greater than 50% reduction in natural gas costs.

**Former Lockheed Martin Facility, Torrance, California.** Responsibilities included managing technical aspects of an Exit Strategy project (guaranteed fixed price remediation) with a multi-million dollar scope of work. Specific additional responsibilities included developing and implementing a

bioaugmentation pilot test to assess the ability of a dehalococcoides ethenogenes culture (DHC) to degrade trichloroethylene in site ground water and developing a path to achieve site closure.

**Atrium Property, Irvine, California.** Responsibilities included performing detailed evaluation of chemical oxidation to assess the effectiveness for destruction of trichloroethylene in ground water. The bench scale test effort included testing of multiple oxidants and the selection of an appropriate oxidant and concentration to be used for field testing. Field testing included assessment of the distribution of the oxidant in the subsurface, assessment of oxidant effectiveness in the destruction of trichloroethylene, and evaluation of potential byproducts of the chemical oxidant application such as production of hexavalent chromium.

**United States Military Site, California.** Responsibilities included the evaluation of multiple military sites impacted with halogenated hydrocarbons. The assessment of remedial alternatives included the evaluation and detailed assessment of a zero-valent barrier, excavation and disposal of impacted soil, soil vapor extraction (SVE), and natural attenuation alternatives.

**Oil Products Terminal, Southern California.** Responsibilities included the evaluation of existing and proposed remedial actions at the site and making recommendations for changes and/or improvements to the interim remedy. Recommendations included the dewatering of the impacted saturated zone and removal and treatment of impacts as soil vapor, resulting in substantial reduction of remedial action costs.

**Multiple Retail Gasoline Sites, Southern California.** Responsibilities included the management of the operation, reporting, and closure of multiple SVE systems at retail gasoline service station sites. The treatment systems were located throughout southern California.

**Western States Petroleum Association, Multiple Sites.** Responsibilities included project management for a tertiary butyl alcohol (TBA) treatment technology evaluation of more than 20 ground water extraction and treatment systems implementing granular activated carbon (GAC), bio-GAC, air stripping, catalytic oxidation, fluidized bed reactors, trickling filters, and advanced oxidation processes, including many sites with LNAPL extraction. Responsibilities also included the evaluation of the design and efficiency of the treatment systems and making recommendations for additional testing and/or improvements to the systems. The project resulted in the increase of the maximum daily effluent limit (MDEL) for TBA in two general NPDES permits issued by the Regional Water Quality Control Board, Santa Ana Region.

**Superfund Site, Kansas.** Responsibilities included the preparation of a Remedial Action Plan (RAP) including evaluation of remedial alternatives for clay, bedrock, and ground water impacted with DNAPL. The testing and/or evaluation of remedial alternatives included injection of chemical oxidant in pneumatic fractures filled with sand, chemical oxidant injection trenches, recovery of free-phase DNAPL in trenches, excavation with on site thermal desorption, and pump and treat alternatives.

**Hazardous Waste Landfill Site, Phoenix, Arizona.** Responsibilities included the independent evaluation of a SVE system to assess the appropriateness of shutdown of the treatment systems due to diminishing returns. Recommendations included additional assessment and likely installation of additional soil vapor extraction locations and installation of a compression/condensation system to recover and treat additional halogenated hydrocarbon and Freon compounds. The result was the recovery of more than a thousand of gallons of additional chemicals from soil.

**Brownfield Site, Burbank, California.** Responsibilities included the design of a multiple phase soil vapor, LNAPL, and ground water extraction system to address heavy metal and chlorinated and petroleum hydrocarbon impacts to the vadose zone and ground water. The final treatment system



design included a 2,400 standard cubic feet per minute (SCFM) SVE system and a 700 SCFM and 20 gallon per minute (GPM) dual phase extraction system.

**Aerospace Client Los Angeles, California.** Responsibilities included preliminary design of a ground water extraction and treatment system, including advanced oxidation processes, capable of treating chlorinated solvents and 1,4-dioxane. Responsibilities also included the demonstrating the impracticability of using treatment options for chlorinated solvents and 1,4-dioxane using carbon adsorption and air stripping modeling.

**State Superfund Site, Ontario, California.** Responsibilities included acting as task manager for the evaluation of treatment systems to address petroleum hydrocarbon and chlorinated solvent impacts to the vadose zone. This included the evaluation of four SVE systems and other available technologies capable of meeting site cleanup goals with respect to the currently operating SVE systems. Responsibilities also included making recommendations for the treatment systems to improve efficiency, should they prove to be the most viable technology for site cleanup. Responsibilities also included the evaluation of treatment technologies for the treatment of impacted ground water.

**Aerospace Client, Torrance, California.** Responsibilities included project management for the pilot testing, construction management, start-up, and operation of a pilot SVE system to address chlorinated solvent impacts to the vadose zone. Responsibilities also included the design of the full-scale SVE system and a ground water monitoring program.

**State of California Building, San Bernardino, California.** Responsibilities included project management for the investigation of soil and ground water impacted with polynucleic aromatic hydrocarbons related to a former manufactured gas plant. Responsibilities also included the evaluation of impacts to soil and assessing the potential for migration of chemicals to ground water.

**Cal Compact Landfill, Carson, California.** Responsibilities included the management of multiple tasks at the landfill; including soil gas, leachate, and ground water sampling, landfill cover repair operations, and installation of ground water monitoring wells and landfill gas probes. Responsibilities also included being on a team of technical specialists providing litigation support that included a regional hydrogeology study, development of a conceptual model for a ground water flow, assisting in generation of a contaminant transport model, support in preparation of expert opinion reports, and review and analysis of opinion reports by opposition experts.

## Professional Affiliations

Associate Engineer, Wood Environment and Infrastructure Solutions, Inc., Mobile, AL, 2017 to 2019  
Senior Project Engineer, Tetra Tech, Inc., San Diego, CA - Mobile, AL, 2009 to 2017  
Senior Project Engineer, TRC Environmental Solutions, Irvine, CA, 2007 to 2008  
Senior Project Engineer, URS Corporation, Santa Ana, CA, 2005 to 2006  
Project Engineer, GeoSyntec Consultants, Huntington Beach, CA, 2000 to 2005  
Senior Staff Engineer, Allwest Remediation, Anaheim, CA, 1997 to 2000