

Taryn Sparacio, R.G.
Senior Scientist

Professional Profile

Ms. Taryn Sparacio is a Senior Scientist in Exponent's Environmental Sciences practice. She has 11 years of experience investigating and analyzing the financial, physical, and regulatory aspects of contaminated sites. Ms. Sparacio has provided technical and litigation support for commercial, legal, and insurance clients at CERCLA, RCRA, state-led, and private sites across the United States. Contaminants at these sites include metals and a variety of organic contaminants including benzene, MTBE, dioxins, furans, PAHs and PCBs.

In support of these projects, Ms. Sparacio has assessed the financial aspects of sites, including reconstructing past site events and practices using historical accounting data, developing methods to allocate past costs, and estimating future remediation costs and their probability. She has planned, conducted, and evaluated geologic and hydrogeologic studies to determine the nature and extent of contamination in soils, groundwater, sediments, and surface water. Ms. Sparacio also is the author or co-author of a variety of data reports, and planning and public documents.

Academic Credentials and Professional Honors

M.B.A., Business Administration, Seattle University, 2005
B.S., Geology, Western Washington University, 1998

Licenses and Certifications

Registered Geologist, Oregon, #G1934
Licensed Geologist, Washington, #2495

Hazardous Waste Operations and Emergency Response 40-hour training program; Field portable x-ray fluorescence training; CPR and first aid training

Publication

Murphy BL, Sparacio T, Shields WJ. Manufactured gas plants—Processes, historical development, and key issues in insurance coverage disputes. *Environ Foren* 2005; 6(2):161–173.

Presentations

McWilliams L, Livermore D, Lamadrid D, Sparacio T, Dodak E. Using a chemical tracer to map groundwater flow in vadose zone soils. Presentation at the National Ground Water Association 2002 Ground Water Expo, Las Vegas, NV, December 2002.

Housen B, Shriver (Sparacio) T, Knowles A, Burgess M, Chase M, Fawcett T, Hults C, Kenshalo S. Transport magnetostratigraphy: Preliminary results from the Cretaceous Nanaimo Group. Poster presentation at the American Geophysical Union Fall Meeting, #GP72A-11, San Francisco, CA, December 1998.

Project Experience

Provided litigation support in a cost recovery case regarding historic contributions of PAHs, PCBs, and metals (cadmium, mercury, and zinc) from a former shipyard into the Hylebos Waterway, part of the Commencement Bay Superfund Site. Reviewed information about historical site operations and chemical use from industrial activities including WWI- and WWII-era ship building, ship repair and maintenance, and ship breaking; wrote sections of the expert and rebuttal reports; and maintained project research documents.

Managed the investigation of a clogging problem in irrigation piping at a vineyard near Santa Maria, California. Results of the investigation were used by the insurer to evaluate an insurance claim.

Provided litigation support in a class action case regarding the transport and fate of an herbicide applied to land adjacent to farm fields in Idaho. Evaluated soil taxonomy, soil erodibility, and assisted in wind erosion modeling; also assisted in preparing expert and rebuttal reports.

Provided litigation support in a litigation regarding the source of cement kiln dust (CKD) dumped at a property in Seattle, Washington. Reviewed documents and regulatory agency files for information on historical operations of cement plants in the area, as well as available chemical data.

Prepared project documents per a Consent Decree for a removal action for PCB- and lead-contaminated sediments and floodplain deposits along a small stream emanating from a former brake manufacturing plant in Crawfordsville, Indiana. Documents included a work plan, a QAPP (according to the Uniform Federal Policy), a request for proposal for subcontractors to perform the removal action, monthly progress reports, a closure report, and letters to the community. All work was completed ahead of schedule, under budget, and was approved by Region 5 U.S. EPA.

Developed a conceptual site model and determined the number and age of petroleum releases for an underground storage tank (UST) system at an active gasoline station in California. Reviewed historical records for equipment failures and spills; evaluated groundwater elevation data; and evaluated benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tert-butyl ether (MTBE) concentrations, ratios, and trends in groundwater chemical data.

Managed a site characterization in support of a risk assessment at a former mining and smelter site in Arizona. Helped to develop a site characterization and risk assessment work plan to evaluate residential, occupational, and recreational exposure scenarios; oversaw the collection of soil samples; and managed the resulting data. Metals of potential concern included arsenic, beryllium, cadmium, copper, chromium, lead, manganese, and zinc.

Planned and implemented a data collection effort to augment a previous human health risk assessment of PCBs in concrete joint compound and on concrete surfaces in the 550,000-square-foot flightline area of a major aircraft manufacturing and maintenance facility in Washington State. Wrote sections of the human health risk assessment addendum.

Age-dated petroleum releases at approximately 10 Florida gasoline stations based on the record of equipment failures, plume development, and ratios of plume constituents. Reviewed another consultant's analysis of gasoline inventory records used to determine the age and magnitude of petroleum releases at these stations.

Provided litigation support in a CERCLA cost recovery and allocation litigation case regarding historic loading of PAHs, PCBs, and metals (arsenic, cadmium, lead, mercury, and zinc) into the Upper Hylebos Waterway, part of the Commencement Bay Superfund Site. Reviewed documents and regulatory agency files for information on historical site operations, chemical use, and industrial and stormwater discharges; estimated contaminant mass contributions from the sites; wrote sections of the expert report; and maintained project research documents.

Developed methods for allocating past environmental investigation costs in support of a litigation project involving a former secondary lead smelter at a CERCLA site in Washington State. Reviewed financial and accounting data to determine appropriate investigation costs to include in the allocation.

Summarized past costs and estimated potential future cost liabilities for 25 sites throughout the United States as part of an insurance litigation project involving secondary lead smelters and landfills. Evaluated potential future cleanup costs, third-party property damage claims, future operating and management costs, and natural resource damage claims and associated costs.

Reconstructed past site practices and events using historical financial and accounting data from the 1890s through the 1930s in support of an insurance litigation project involving a former manufactured gas (MGP) plant in Florida. Maintained project research documents and coordinated their duplication and delivery to counsel prior to depositions.

Assisted in estimating the probability of costs for different remedial alternatives using Monte Carlo methods in preparation of cost allocation negotiations among PRPs for a site in Washington State with PCB-contaminated sediment.

Served as primary author of two effectiveness evaluations of two low-flow groundwater sampling techniques used at a former RCRA hazardous waste management facility in Seattle, Washington. Evaluated water quality parameters and chemical data (i.e., metals and volatile organic compounds) from shallow, intermediate, and deep wells at the facility and downgradient of the facility; assessed available geochemical data; and reviewed client's field procedures for compliance with published low-flow and Micropurge[®] sampling methods.

Assisted in preparation of a preliminary environmental remediation cost estimate for a facility in southern California that manufactured explosives, munitions, and rocket motors. Reviewed historical documents to estimate the nature and extent of potential contamination, and determined a range of possible costs assuming various remediation scenarios.

Prepared sections of a preliminary technology screening memorandum for a former mercury processing and reclamation plant in Carlstadt, New Jersey. Evaluated remediation technologies for groundwater, surface and subsurface soil, and sediments.

Prepared a stormwater study plan for a wood treatment facility in Joplin, Missouri, in support of negotiations with the Missouri Department of Natural Resources regarding renewal of the NPDES stormwater permit for the facility. Developed field sampling procedures to characterize pentachlorophenol (PCP) in stream flow and stormwater runoff, summarized procedures for determining site-specific water quality criteria, and identified potential future best management practices (BMPs) to be implemented at the facility.

Managed the production of seven semiannual RCRA corrective action program effectiveness reports for an active wood-treating facility in Joplin, Missouri. Coordinated receipt of facility groundwater, surface water, sediment, and subsidence data, managed production of figures and summary tables, and wrote sections of the report.

Prepared a RCRA Class I permit modification to allow the use of low-flow groundwater sampling methods at an active wood-treating facility in Joplin, Missouri; the permit modification was approved by the Missouri Department of Natural Resources.

Participated in a two-phase sediment investigation at two shipyards in San Diego Bay. Served as field geologist during collection of sediment cores and assisted in collection of surface sediment samples.

Evaluated a groundwater plume of hexavalent chromium at an industrial property on the Willamette River in Portland, Oregon. Oversaw installation of Geoprobe[®] boreholes, performed groundwater sampling, installed and developed monitoring wells using hollow-stem auger and cable tool drilling methods, logged subsurface soils, and prepared geologic cross-sections.

Provided support to a RCRA Part B permit modification to accelerate closure and allow redevelopment of RCRA-regulated landfarms at an active wood-treating facility in Joplin, Missouri. Assisted in preparing comments on the draft permit issued by the regulatory agency, researched federal and state regulations regarding closure of the landfarms, and updated the facility's post-closure care plan.

Participated in a hydraulic capture-zone evaluation of floating product in a tidally influenced aquifer at the Harbor Island CERCLA site in Seattle, Washington. Assisted in evaluation of the site's groundwater extraction system and development of a three-dimensional model of the site's groundwater.

Served as field team leader for an environmental investigation at an inactive sawmill in Gardiner, Oregon. Collected groundwater, subsurface soil, surface soil, and surface sediment samples.

Coordinated and supervised the installation and groundwater sampling of 25 temporary monitoring wells for a groundwater survey designed to determine effects of a former zinc and cadmium smelter on shallow groundwater in Blackwell, Oklahoma. Prepared sections of the subsequent data report.

Prepared a closure report for a former bulk fuel terminal in Everett, Washington. Discussed site structure demolition, monitoring-well abandonment, trench and site cover construction, and water management issues.

Participated in a two-phase baseline soil study at a silviculture-based phytoremediation pilot project at a decommissioned wood-treating facility in Jena, Louisiana. Prepared sections of the subsequent data report.

Professional Affiliations

- American Geophysical Union
- Association of Environmental and Engineering Geologists
- Geological Society of America