Brandon C. Tufano
Project Scientist

integral consulting inc.

Education and Credentials

M.S., Geology, Binghamton University, Binghamton, New York, 2016

B.S., Geology, Keystone College, La Plume, Pennsylvania, 2014

Continuing Education and Training

Hazardous Waste Operations and Emergency Response 40-Hour Certification (2016; refreshers 2017 through 2021)

Hazardous Waste Operations and Emergency Response 8-Hour Supervisor Certification (2021)

Occupation Safety and Health Administration 10-Hour Construction Safety Training (2016)

First Aid certified (6/2022)

CPR and AED certified (6/2022)

Transportation Worker Identification Credential (2017–2022)

Professional Affiliations

Member of the American Institute of Professional Geologists (AIPG)—Northeast Section (Acting Editor and Chief of the AIPG–NE Section Newsletter and Executive Committee Member)

Professional Profile

Mr. Brandon Tufano is a geologist with 5 years of experience in the environmental consulting industry. He has broad technical experience planning and conducting site investigations focused on a variety of chemicals of concern, including per- and polyfluoroalkyl substances (PFAS), petroleum hydrocarbons, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals. Mr. Tufano has successfully designed, implemented, and performed Phase II environmental site assessments, remedial investigations/pre-design investigations, light nonaqueous-phase liquid (LNAPL) recovery pilot studies, and soil, groundwater, surface water, and indoor air sampling events and evaluations. In addition, he has experience with freshwater and tidal wetland delineations, PFAS sampling techniques, and various drilling techniques.

Relevant Experience

Technical Evaluations

Superfund Pre-design and Allocation Support, Portland, Oregon—Reviewed EPA Superfund documentation to develop and implement multiple field sampling plans for a client in Portland, Oregon. Responsibilities included interfacing with vendors and subcontractors to develop scopes of work, organizing field equipment and standard operating procedures, evaluating potential issues, leading field data collection investigations, and synthesizing information into cohesive reports including an EPA evaluation report. Allocation support responsibilities included the review of historical site operations to develop offensive and defensive position reports and an in-depth evaluation of sedimentation rates.

PFAS Fate and Transport Evaluation and Support of Groundwater Reconnaissance and Soil Sampling, Confidential Location—Performed a hydrologic and geologic assessment of a site impacted by PFAS. Refined the working conceptual site model (CSM) and developed a work plan to support drilling and sampling activities. Drilling and sampling activities increased site data density and the overall CSM, allowing for optimization of groundwater capture.

LeapFrog Geo Geologic Modeling, Various Locations—Used the LeapFrog Geo modeling software to generate lithological and

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numeric models for various sites across California and Colorado. Models include numeric interpolation of PFAS, VOCs, SVOCs, metals, and PAHs and served to drive informed injection strategies, drilling and sampling work plans, and litigation defensive positions.

Contaminant Fate and Transport, Alberta, Canada—Served as the third-party reviewer for a groundwater contaminant fate and transport modeling investigation of a petroleum spill in northern Alberta, Canada. Verified the overall CSM, re-calculated hydraulic gradients, and developed geologic cross sections across the site. Determined flow paths from identified contaminant "hotspots" to a nearby slough with connection to the Alberta River. Calculated mass loading of benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds to that same slough. Worked directly with the Principal-in-Charge to suggest alternative phytoremediation and hotspot excavation cleanup options for the client.

Conceptual Site Modeling and Fate and Transport Calculations, East Hampton, New York—Coordinated the installation of four monitoring wells and nine piezometer wells in the area surrounding an estuary with connection to the Peconic Bay. Responsible for coordinating the sampling of all monitoring wells and piezometers and 28 surface water samples in a prescribed pattern designed to achieve sampling within ±2 hours of low tide. Also conducted five hydraulic conductivity tests (slug tests) to evaluate aquifer characteristics for conceptual site modeling purposes and used these data to develop a CSM. Using this CSM, calculated the mass loading of nitrogen compounds from upgradient sources to the estuary. This evaluation provided the client with multiple options for mitigating their nitrogen impacts to the Peconic Bay and prepared them for anticipated regulatory-driven total maximum daily load implementation.

LNAPL Transmissivity Testing, Bayonne, New Jersey—Trained a team of six individuals to perform LNAPL transmissivity testing at a former petroleum terminal in Bayonne, New Jersey. Managed the team as they performed more than 30 LNAPL transmissivity tests across 17 individual LNAPL plumes. Following the field investigation, modeled the results of the LNAPL transmissivity tests and then extrapolated the data across the LNAPL plumes, generating a compressive subsurface model for site LNAPL recoverability. The subsurface model was used to secure a favorable determination with the New Jersey Department of Environmental Protection (NJDEP) and site Licensed Site Remediation Professional, enabling the site to progress toward closure and divestment.

PFAS Research Joint Venture, Syracuse, New York—Coordinated a joint venture project between the client and the State University of New York (SUNY) College of Environmental Science and Forestry (ESF) aimed at evaluating phytotechnology as a mechanism for PFAS removal from aqueous systems. Served as the intermediary between the client and SUNY ESF in developing the analysis methods and the experimental setup to test if hydrophytic (i.e., constructed treatment wetland–supported) plants could uptake and sequester perfluorooctanoic acid and perfluorooctane sulfonic acid. Following experimental setup and experiment completion, worked with SUNY ESF to synthesize the data, prepare a report, and prepare a slide deck for the client.

Phytoremediation Evaluation and Up-Keep, East Providence, Rhode Island—Responsible for the monitoring and evaluation of a 45-acre hybrid poplar phytoremediation plot as a component of closure for an active petroleum terminal in East Providence, Rhode Island. The phytoremediation plot is designed to hydraulically control and remediate contaminants (BTEX) from a dissolved-phase groundwater plume. The performance evaluation includes triannual seasonal monitoring of the tree health and growth measurements, modeling of evapotranspiration, evaluating recent groundwater measurements, and authoring annual report for the Rhode Island Department of Environmental Management.

Insurance and Litigation Support

Cost Allocation Support, Brooklyn, New York—Served as the technical lead in a litigation case between two petroleum companies. Responsibilities included generating geologic cross sections, LNAPL elevation contours, and groundwater elevation contours for a 62-acre LNAPL plume. Based on the hydrogeology, calculated LNAPL flux across a contested property boundary. Based on the results, was able to prove that the opposing company was not performing LNAPL capture as required by pre-determined cleanup objectives.

Insurance Claims Evaluation, Portland, Oregon—Served as the technical lead on an insurance claims evaluation for 11 sites located within the Portland Harbor Superfund site. Performed a historical evaluation of the sites, including a review of underground storage tank databases, spill databases, and historic aerials, to determine potential sources of contamination. The compiled data were cross-referenced with known drainage basins and outfalls along the Willamette River to evaluate any connection the client's former activities may have had to the river. Prepared a final report for the client detailing the findings of the investigation.

Project Management

Former Wax and Lube Refinery, Queens, New York—Served as Project Manager for the ongoing investigation and remediation of a former lube and wax refinery and petroleum storage terminal in Queens, New York. Served as technical consultant for this client preparing all regulatory submittals and assisting the Principal-in-Charge with overall strategy to achieve site closure through the New York State Spill Response Program. Associated tasks include scheduling and managing the operation and maintenance team, scheduling and managing the subcontractors, preparing New York State Department of Environmental Conservation (NYSDEC) quarterly monitoring reports and other regulatory deliverables, coordinating facility upgrades and routine equipment maintenance, organizing monitoring and sampling events, developing the remedial action work plan, pre-design investigations, developing and implementing the pilot study work plan, and evaluating endpoint criterion. Annual budget for this work was $1.2–1.7 million.

Bulkhead Installation and Shoreline Stabilization, Queens, New York—Served as Project Manager for the installation of a $1.3 million, 300-linear-foot steel bulkhead along an EPA-designated Superfund creek. Oversaw development of the technical bid package and subsequent bid evaluation, and procurement of material and contractor. Organized and led pre-construction safety meetings and field dry run, and acted as the intermediary between client, subcontractor, and property owners. Managed the project through multiple critical field obstructions, including

devising an engineering solution approved by Engineer-on-Record, which would have otherwise cost the client a $500,000 change order. Following completion of the bulkhead, successfully lobbied the NYSDEC for removal of the absorbent creek boom and promoted discussions to remove the associated hard boom and achieve spill closure.

Key Field Investigations

PFAS Delineation in Groundwater and Soil, Denver Colorado—Served as field manager for a large PFAS delineation effort in Denver, Colorado. Worked with drillers to advance 16 soil borings and collect *in situ* parameters, including hydraulic conductivity, volatility, and soil grain electrical conductivity, using a hydraulic providing tool. Described lithology at each location, and collected groundwater and soil samples, which were analyzed for PFAS compounds, total organic carbon, and grain size. Data were used to refine the CSM and delineate the extents of onsite contamination.

Soil and Groundwater Sampling at a Superfund Site, Portland, Oregon—Planned and implemented a large-scale soil and groundwater investigation aimed at delineating potential contamination along the banks of the Willamette River in Portland, Oregon. Led multiple teams in the collection of specified media. Coordinated the deployment of drilling teams in challenging areas, including using a "landing-craft" style barge to mobilize to beach locations otherwise inaccessible from the upland. Successfully coordinated with laboratory couriers to maintain sample integrity, including delivery of samples with hold times of less than 2 days.

Freshwater Wetland Delineation, Belvidere, New Jersey—Served as field manager for the freshwater wetland delineation of a 600-acre former munitions manufacturing facility in Belvidere, New Jersey. Coordinated field personnel, equipment, and access for a team to perform freshwater wetland delineations for 1 week. Data were collected and retained so a future jurisdictional determination could be requested from the NJDEP.

Tidal Wetland Delineation, Hewlett Harbor, New York—Performed the tidal wetland delineation of a 100-acre golf course in Hewlett Harbor, New York. Responsible for preparing field documents and assisting in performing the 2-day tidal wetland delineation, collecting GPS points, and developing post-delineation report and figures crucial to the sale of the property.

Groundwater Sampling, Brooklyn, New York—Served as field manager for the annual groundwater monitoring of the largest subsurface free-product plume in North America at a former fuel and oil distribution terminal. Activities included collection of groundwater from more than 200 onsite and offsite monitoring wells located within the 62-acre multimillion-gallon petroleum hydrocarbon plume. Work included coordination of personnel, field equipment, sampling, sample delivery, and sampleware inventory.

Soil Vapor Sampling, Brooklyn, New York—Served as field manager for the annual soil vapor monitoring of the largest subsurface free-product plume in North America at a former fuel and oil distribution terminal. Activities included the collection of soil vapor from more than 100 onsite and offsite monitoring points located within the 62-acre multimillion-gallon petroleum hydrocarbon

plume. Work included coordination of personnel, field equipment, sampling, sample delivery, and sampleware inventory.

Indoor Air Sampling, Woodridge, New Jersey—Served as a team lead for a vapor mitigation system performance evaluation and the sampling of approximately 120 indoor air samples for a 1.5-million-square-foot warehouse. The system design includes 645 vapor extraction wells to mitigate elevated levels of chlorinated solvents and petroleum compounds from migrating from the subsurface into the building. In addition to the indoor air sampling, performed flow testing on 320 of the vapor extraction wells.

Publications

Tufano, B.C., and J.T. Pietras. 2017. Coupled flexural-dynamic subsidence modeling approach for retro-foreland basins: Example from the Western Canada Sedimentary Basin. *GSA Bulletin* 129(11-12):1622–1635.

Presentations/Posters

Tufano, B.C., and J.T. Pietras. 2016. Depositional environment map of the Canadian Cordilleran foreland basin in the Middle Aptian. Platform presentation. American Association of Petroleum Geologists, Calgary, Alberta, Canada. June 19–22.

Tufano, B.C., and J.T. Pietras. 2015. Modeling regional versus local subsidence in the Canadian Cordilleran foreland basin. Platform presentation. 2015 Geological Society of America Annual Meeting, Baltimore, MD. November 1–4.