

JOHN TSUN

Education

BE – Mechanical Engineering, City College of New York, 1987



Specialty Certifications

40-Hour OSHA Hazardous Waste Health and Safety
8-Hour OSHA Hazardous Waste Health and Safety Refresher
10-hr OSHA Construction Safety and Health
OSHA HAZWOPER – initial and refresher
OSHA Confined Space

Professional Affiliations

Air & Waste Management Association (AWMA), Director
Chemical Council of New Jersey (CCNJ)

Professional Experience

John Tsun is a Project Director and SCS's National Practice Leader for Industrial Clean Air Act (CAA) Services, with more than 35 years of experience leading complex environmental compliance projects. His background spans a wide range of industrial sectors, including petroleum, pharmaceutical, chemical, power generation, manufacturing, and government agencies.

John specializes in air-quality and emissions-related programs, providing expertise in ambient air monitoring, air dispersion and consequence modeling, soil vapor dispersion modeling, vapor intrusion barrier installation, vapor intrusion sampling, vibration and structural movement monitoring, and environmental noise assessments.

He is highly experienced in regulatory compliance strategy, preparation of state and federal air permit applications, computer-based air-quality modeling, and Title V reporting. John has deep technical proficiency with major EPA-approved dispersion models, including CALPUFF, ISC-Prime, and AERMOD.

As SCS's national lead for Industrial CAA services, John oversees the development and execution of permitting, compliance, and modeling strategies for industrial clients across the U.S. Notable projects in which he has played a key role are highlighted below.

Regulatory Compliance and Permitting

Confidential Client, Technology Evaluation for Environmental & Operational Risks, USA. Served as the technical lead overseeing environmental and regulatory compliance for the evaluation of an emerging advanced-materials technology applied to coal combustion residual (CCR) processing and rare earth element (REE) recovery. Conducted detailed reviews of potential-to-emit (PTE) particulate emissions, assessed air-quality impacts, and determined applicable state and federal permitting requirements for planned equipment installations.

Aberdeen Proving Ground, Title V Compliance Program, Aberdeen, MD. Technical lead for the Title V Compliance Program at a military base located in Maryland. Work includes QA/QC of all regulatory

submittals, preparation of Title V renewal, permitting support, emissions audit, and PHA and RMP audit.

Regulatory Compliance/Emissions Testing/Pollution Control/Permitting, Stratford, CT. Provided regulatory compliance support for a global manufacturer of specialty low molecular weight functional additives based on various unique chemistries that serve multiple applications in the adhesives, rubber, and thermoplastics industries. As the technical lead, work includes QA/QC of all emission calculations, emission test results, and regulatory submittals; support during emissions testing; BACT analysis; and development of emission factors for the different batch processes and an emission model for permit compliance.

Hillman State Park, Methane Capture Protocol, Burgettstown, PA. Technical advisor to the development team that designed a prototype flux chamber to ensure adherence to Department of the Interior (DOI) and American Carbon Registry (ACR) methane monitoring protocol guidelines, and the sampling expert at the testing event. The purpose of the sampling event was to compare prototype flux chamber results with existing monitoring wells maintained by DOI and methane-monitoring equipment approved by other State Environmental Agencies, and to determine whether the results met the DOI and ACR methane monitoring protocol guidelines. Performed QA/QC for the methane calculation spreadsheet and assisted in developing an internal SOP for methane monitoring.

New Jersey Department of Environmental Protection (NJDEP), Title V Programs Supervision, Trenton, NJ. Developed and implemented the Operating Permit Program in NJ. Duties included coordinating work assignments with prime contractor(s) and NJDEP; manpower loading projections and budgeting; development of model operating permits for different Standard Industrial Classification (SIC) codes; pre-application meetings with affected facilities; technical evaluations of operation permit applications; review of permits from surrounding states; public hearing support; development and execution of work plans; training of NJDEP/vendor personnel regarding operating permit elements as promulgated under 40 CFR Part 70; and meetings with different industry advisory groups.

Facility-Wide Air Permitting and Compliance, West Deptford, NJ. Provided regulatory compliance support for an international company that produces polyesters and polyols, polyurethanes (coatings, adhesives, sealants, and elastomers), and specialty resins for composites and coatings. As the technical lead, I focused on QA/QC of all regulatory submittals and facility-wide audits, developing permit strategies for existing and future expansion operations, and leading the on-site support team to ensure air emissions compliance with regulatory requirements.

Facility-Wide Air Permitting and Compliance, New Castle, DE. Provided regulatory compliance support for an international company that develops and manufactures high-performance ingredients and technologies in consumer brands and health and crop care products. As the technical lead, work includes 3rd-party observation and support during emissions testing, review of emission testing reports, QA/QC of all Regulatory submittals, facility-wide audit, development of permit strategies for existing and future expansion operations, and leading the on-site support team to ensure air emissions compliance with regulatory requirements.

Air-Permit Assistance for Quarry Operation, St. Thomas and St Croix, US Virgin Islands. Conducted facility-wide air emission audits and provided air permit assistance for quarry operations. Worked alongside DPNR to develop initial draft permits for review and comments. Additionally, I represented the client during the DPNR site visit to confirm emissions points and equipment and answered any questions before DPNR issued the draft permit for review and comment.

Steel Mills, Permitting and Environmental Compliance Support, PA. Provided permitting and environmental compliance support; this included emissions inventory, air permitting, fence line impacts, and regulatory compliance audits.

Superfund Site, Air-Monitoring Oversight, Borough of Edgewater, NJ. As part of construction oversight, I represented the Borough of Edgewater during air-monitoring Q&A sessions and managed the air-monitoring program. The program addressed odors and dust prevention and incorporated best practices to meet air-quality health standards. A one-mile-radius air-monitoring network included on-site and perimeter monitoring, as well as air monitors at residential properties adjacent to the site.

Industrial Coatings Facility, Air Emissions Limits Evaluation, Ocean Township, NJ. Based on the projected production volume of coating metal finishes on plastic bottle caps, calculations were used to determine if this process would exceed the volatile organic compound (VOC) emissions limits under the existing approved NJDEP air permit. If permitted, VOC limits are exceeded, provide a strategy to avoid any exceedance of the permitted VOC limits and present long-term options to increase production volume to meet future market demands.

Facility-wide Air Permitting and Compliance at Shipyards, NJ. Prepared facility-wide air permits for the leading NJ shipyard and Spill Prevention, Control, and Countermeasure/Storm Water Pollution Prevention Plans (SPCC/SWPPP). Work included preparing emission inventories, negotiating with regulatory agencies, and preparing air permits. In addition, NO_x (nitrogen oxide) emission calculations were verified and certified.

Model Simulation for Operating Permit Renewal, Ewing Township, NJ. NJDEP requested a facility-wide risk assessment of air toxics emissions above reporting thresholds as part of the facility's operating permit renewal process. This included the submittal of an air dispersion model protocol, in conformance with the Department's Technical Manual 1002, "Guidance on Preparing an Air Quality Modeling Protocol," and Technical Manual 1003, "Guidance on Risk Assessment for Air Contaminant Emissions," to NJDEP for review and approval. Executed model simulation in accordance with the approved protocol and prepared the final report.

Air-Permit Assistance for Quarry Operation, Lafayette Township, NJ. Provided air permit assistance for a quarry operation. Assisted in resolving a field notice of violation/notice of potential violations. This included obtaining a 30-day extension to submit a RADIUS permit application and obtaining an approved air permit within 180 days. The RADIUS permit application included three feeder conveyors and one two-bin hopper for crushed stone.

Air-Monitoring Plan and Dust Control Mitigation/Monitoring Plan for Sewerage Authority, Hoboken, NJ. Developed an air-monitoring plan and a dust control mitigation and monitoring plan to identify fugitive dust sources at a construction site. Described dust-control measures to be implemented before, during, and after any dust-generating activity for the project's duration. This plan was specifically prepared for the construction activities performed during the wet-weather pump station installation.

Refinery VOC-Emissions Control, NJ. Developed conceptual designs and operating cost estimates to control VOC emissions from the refinery wastewater treatment system. Design alternatives included fixed and floating covers, thermal oxidizers, and carbon absorption.

Ambient Air Monitoring at Former Manufactured Gas Plant (MGP) Site, New York City, NY. Prepared, implemented, and maintained an ambient air-monitoring network for an MGP site to comply with community air monitoring requirements. In addition, developed and implemented a pilot test

program to test real-time ambient air monitoring technology in conjunction with the existing monitoring program.

Air Permitting and Computer Model Development at Pharmaceutical Facility, Indianapolis, IN.

Obtained air permits for organic synthesis processes. Tasks included developing a computer model to calculate point-source and fugitive emissions. Processes included charging, transfers (gravity, pumped, and pressure), depressurizing/evacuation, tank bleed, centrifuge nitrogen sweep, reactor nitrogen sweep, heating/atmospheric distillation, gas evaluation, vacuum distillation, and vacuum drying and blowing lines. Performed stack height analysis, air dispersion modeling, and air-quality analysis.

Air-Dispersion Modeling, Sugar Creek, MO. Conducted extensive air-dispersion modeling by utilizing on-site meteorological data for bioremediation operations.

Regulatory Compliance Support, NJ. Provided regulatory compliance support; this included Title V permitting and negotiation with regulatory agencies for a steel drum and pail reconditioning process.

Cogeneration Facilities, Regulatory Compliance, Hackettstown and Rockaway, NJ, and Elizabethtown, PA. Provided regulatory compliance support, which included Title V permitting and negotiation with regulatory agencies. Projects included replacing the existing cogeneration facility with a Cogen natural gas/No. 2 fuel-oil-fired duct burner system. Before the Title V Operating Permit renewal, a thorough review of the facility operating procedures was suggested to increase plant operation flexibility for the Hackettstown facility. A specific strategy was developed and negotiated with NJDEP, which allowed the client to obtain a renewed Title V permit with increased plant operation flexibility and minimum disruption to plant operations.

Regulatory Compliance Support for University, Lawrenceville, NJ. Provided regulatory compliance support, which included permitting, Title V, and negotiation with regulatory agencies for a university campus.

Recycling Permit Application at Terminal, Elizabeth, NJ. Completed Class "D" recycling permit application for used antifreeze and oil. Project included conducting a file review and regulatory review; regulatory consulting for Class D Permit; NJDEP solid waste permitting; obtaining City of Elizabeth zoning approvals; and preparing application for the Union County Solid Waste Plan.

Regulatory Compliance Support for Paint Company Sites, US and Canada. Responsible for regulatory compliance support for US and Canadian facilities, including stack testing, SPCC/Discharge Prevention, Containment and Countermeasure (DPCC), RADIUS permit applications, Title V, and negotiation with regulatory agencies.

Regulatory Compliance Support for Biopharmaceutical Company, Somerset, NJ. Responsible for regulatory compliance support, including right-to-know, Title V permitting, facility audits, and negotiation with regulatory agencies.

Regulatory Compliance Support for Pharmaceutical Company, Kenilworth, NJ. Responsible for worldwide regulatory compliance support, including development of corporate-wide air standards, permitting, process engineering, consequences modeling, and dispersion modeling.

Heating-Plant Permitting and Multi-Source Modeling at University Campus, MN. According to the Title V program, permits for new heating plants, including cogeneration, were obtained. Tasks included emissions inventory development; multi-source modeling (complex and simple terrain) for point, area, and volume source, which included SO₂ State Implementation Plan (SIP); netting/offset

analysis for SO₂, NO_x and total suspended particles (TSP) with a kinetic diameter less than or equal to 10 microns (PM₁₀); ambient air-quality analysis; and technical support for environmental impact statement (EIS).

Sustainable Energy Partnership, CA. Served in a partnership to develop sustainable energy projects utilizing microturbines for universities and other private industries.

Landfill Gas Management

Landfill Gas Monitoring, Sampling, and Reporting, Borough of Westwood, NJ. Responsible for yearly landfill activities, including quarterly methane gas monitoring, quarterly groundwater gauging, annual groundwater sampling, semi-annual Title V deviation reporting, and annual Title V compliance reporting. In addition, worked with NJDEP in obtaining approval for the installation of a redesigned passive methane extraction system.

Landfill Gas Monitoring, Sampling, and Pollution Control Device Consideration, Jersey City, NJ. Responsible for yearly activities at the 87-acre landfill, which included methane and VOC emissions monitoring, established a replacement schedule of carbon barrel filters based on the monitored breakthrough rates, and was involved in the conceptual design of the methane and VOC emissions control for the entire landfill.

Landfill Gas Monitoring, Ledgewood, NJ. Responsible for monitoring hydrogen sulfide (H₂S) gas from the landfill at the nearby residents due to complaints of rotten egg odors. Erosion and inadequate cover contributed to the formation and release of landfill gas.

Site Studies and Monitoring

Noise Study for Remediation System Operation, West Deptford, NJ. Implemented a noise study that took sound and frequency measurements for a hydraulic containment treatment system at property boundaries during system operation. In addition, the material selection for the composite acoustical curtain panel design was based on tabulated frequency data.

Dust and Noise Control Program for Intrusive Activities, NYC. Developed dust-monitoring plans to incorporate the requirements of the NYC Department of Environmental Protection (NYCDEP) Dust Mitigation Plan, along with bid specifications. The plan identified the needs outlined in 15 RCNY 13-01 and provided acoustical consulting engineering services regarding construction activities involving various intrusive activities. Developed noise-monitoring plans for residential and commercial properties adjacent to the proposed construction area and a sound-level model of the noise contours of the construction activities on site to compare the results of the sound measurements to the NYCDEP noise code. Developed recommendations for noise-control measures and prepared the appropriate documentation where needed. In addition, sound source compliance certification was completed for all proposed on-site construction equipment.

Vibration-Monitoring Program for Historic Structures, NYC. Developed and implemented a vibration-monitoring program, including vibration monitoring for structures classified as historical landmarks and commercial buildings. Projects were located in Brooklyn, midtown Manhattan, and the Historic Landmark District in lower Manhattan.

Site Settlement Monitoring Program Oversight, NJ. Provided input on the overall instrumentation, sensors, and methodology selections for the site settlement monitoring program. This included on-site supervision during instrumentation installation and monitoring of the entire project site once the system was operational.

Vapor Intrusion

Chlorinated Compounds Vapor Intrusion Pathway Study, Township of Sparta, NJ. Elevated concentrations of chlorinated compounds in groundwater above the NJDEP's Vapor Intrusion Groundwater Screening Levels prompted evaluation of the vapor intrusion pathway to determine whether chlorinated vapors were migrating into the building. Based on the Vapor Intrusion Technical Guidance, January 2018, Version 4.1, sub-slab soil gas/indoor air sampling was performed to determine whether any samples exceeded the applicable NJDEP vapor intrusion screening levels. Vapor intrusion sampling indicated no issues.

Gasoline Vapor Intrusion Pathway Study at Dry Cleaners, Borough of Midland Park, NJ. Elevated concentrations of petroleum hydrocarbons in groundwater above the NJDEP's Vapor Intrusion Groundwater Screening Levels resulted in the vapor intrusion pathway being evaluated to determine if gasoline vapors were migrating into the building. Based on the Vapor Intrusion Technical Guidance, January 2018, Version 4.1, sub-slab soil gas/indoor-air sampling was performed to determine whether any samples exceeded the applicable NJDEP vapor intrusion screening levels. Vapor intrusion sampling indicated no issues.

Gasoline Vapor Intrusion Pathway Study at Municipal Building, Borough of Elmwood Park, NJ. Due to elevated concentrations of petroleum hydrocarbons in groundwater exceeding NJDEP's Vapor Intrusion Groundwater Screening Levels, the vapor intrusion pathway was evaluated to determine whether gasoline vapors were migrating into the building. Based on the Vapor Intrusion Technical Guidance, August 2016, Version 4, sub-slab soil gas/indoor air sampling was performed to determine whether any samples exceeded the applicable NJDEP vapor intrusion screening levels. Vapor intrusion sampling indicated no issues.

Vapor Intrusion Barrier Installation and Preparation of Bid Specifications, Elizabeth, NJ. Assisted in preparing vapor intrusion barrier bid specifications for submittal to the New Jersey Schools Development Authority (NJSDA). Bid specifications were for Geo-Seal installations at various new school construction sites in NJ. As a certified Land Science Technologies Geo-Seal Inspector, was on site to certify the application of the Geo-Seal product and to witness the smoke testing of the Geo-Seal installation. Upon completion of the smoke test, an official certification letter was issued to obtain the 15-year warranty from Geo-Seal's manufacturer.

Petroleum Management

Model Simulations for Sewer Study at Petroleum Sites, NJ. Conducted facility study to determine the cause of periodic sewer-system backups and to define short-term/long-term strategies to prevent sewer overflows from recurring. Based on model simulations, we provided the client with a cost-saving solution that required less extensive construction than initially planned.

Petroleum Refinery Tulsa, OK. Conducted a drainage system study to identify root causes and solutions to address oil surfacing at a utility hole during a flush out of the drainage system. If not mitigated, oil and vapors at this location presented a fire and/or explosion hazard. Iterative modeling identified that adjusting sump pumping set points and increasing flow into the system would prevent oil and vapors from entering the sewer system. This solution offered the client a lower-cost alternative to the initially planned purchase and installation of additional equipment.

Conceptual Design and Estimating for Optional Controls at Petroleum Refinery, NJ. Developed conceptual designs, capital cost, and operating cost estimates for the options to control volatile organic compound (VOC) emissions, including methane, associated with one of the refinery's

wastewater treatment systems. Provided options to the client include passive (e.g., fixed and floating covers) and active (e.g., thermal oxidation, carbon adsorption) techniques.

Industrial Oil and Gas

Feasibility Study for Construction of Biofuel Processing Facility, NY. Worked with local legislators to identify feasible locations to construct a biofuel processing facility. The project involved a feasibility study. Provided engineering support and coordination with the biofuel equipment manufacturer during construction and startup.

Process Hazard Analysis

Consequence Analysis at Resins Plant, Greenville, OH. Performed offsite consequence analysis for a resin plant. The Process Hazard Analysis Software Tools (PHA_{ST}) model was used to verify and compare scenario results using Fauske. After model verification, additional studies included determining the wind speed that will result in plume touchdown at the LEL for different chemicals; droplet size; final liquid fraction, liquid and vapor mass; effects of low flow on vapor cloud dispersion; effects of varying release durations; and determining ignitable vapor mass at a known ignition point.

Process Hazard Analysis for Petroleum Refinery Toledo, OH. Conducted a process hazard analysis using PHA_{ST} (Process Hazard Analysis Software Tools). This included determining the consequences of potential catastrophic releases for a control room design study at the refinery. The model included evaluating hazardous and/or explosive vapor plumes, including methane, and possible effects on human health and the risk of fire and explosion. Tasks included creating a database system to manipulate model simulation results and merge multiple databases to predict impacts and probabilities.

Process Hazard Analysis, Houston TX. Conducted a process hazard analysis for potential emergency releases using PHA_{ST}. Tasks included stack height analysis, building wake effects, determination of vent locations/configuration for emergency releases, determination of air intake locations, determining which ignition source might cause potential hazards due to emergency catch tank releases, and determining catch tank size and the consequences of storage tank overfilling.

Fogging Condition Study, China. Conducted a fogging condition study using PHA_{ST} for an explosives environmental company. Tasks included predicting winter conditions where fogging and possible icing/snow may occur, and a sensitivity analysis was performed to determine the temperature at which the flue gas must be reheated to eliminate the possibility of fogging.

Steam Fumigation Study, China. Conducted a steam fumigation study using PHA_{ST} for a power utility company. The task included determining the potential for icing/snow problems from a steam discharge for a 30-foot stack.

Process Hazard Analysis, Perth Amboy, NJ. Conducted a process hazard analysis for potential emergency release using PHA_{ST}. The task included determining the consequences/results of emergency gas releases from reactor/catch tank assemblies in chemical refineries.

Risk Assessment Screening and Air Permitting at Naval Station, Woodbridge Township, NJ. Performed risk assessment screening, developed emission factors, and prepared air-permit applications for a soil vapor extraction system and groundwater treatment system.

Risk Analysis due to Ruptured Fuel Line at Bulk Storage Facility, Sacramento County, CA. Determined potential health risks to an adjacent school due to a ruptured gasoline line. Analysis included

determination of different fence line concentrations for various wind speeds and stability classes; effects due to winter and summer meteorological conditions; impact from various spill sizes; evaporation and vapor-flow rates for various spill sizes; and ignitable vapor mass at a known ignition point.

RMP Offsite Consequence Analysis

Offsite Consequence Comparative Study, Society of Chemical Manufacturers & Affiliates (SOCMA). To support SOCMA's Guide for Complying with Section 112(r) of the Clean Air Act Risk Management Program Rule, a comparative study was conducted to evaluate the offsite consequences of different release scenarios. The analysis compared the impacts calculated using PHAST with those derived from the EPA's "RMP Offsite Consequence Analysis Guidance." The release scenarios examined included: 1) a mitigated release of refrigerated chlorine, 2) an unmitigated release of acrylonitrile, and 3) a propane cloud explosion.

Fuel Bulk Storage Facility Sacramento County, CA. Responsible for determining the potential health risks to an adjacent school from released vapors in the event of a gasoline pipeline rupture. The analysis included the determination of 1) different fence line petroleum vapor concentrations at various wind speeds and atmosphere stability classes, 2) effects due to winter and summer meteorological conditions, 3) impacts from various spill sizes, 4) evaporation and vapor flow rates for various spill sizes, and 5) ignitable vapor mass at a known ignition point. The evaluation identified risks in specific scenarios in which the facility's engineering department used the data to incorporate mitigation procedures into the facility's O&M Manual.

Offsite Consequence Analysis, Sutter County, CA. Conducted an offsite consequences analysis to assist the Sutter County Department of Community Services and the Office of Emergency Services in assessing the potential risks of accidental release of anhydrous ammonia. This analysis aimed to evaluate the risk to human health at various distances from a proposed project site in the event of a spill or rupture from an anhydrous ammonia storage tank.

Indoor and Outdoor Release Scenarios, New York City. Conducted indoor and outdoor release scenarios for sulfuric acid spills from battery/drum storage facility. Tasks included determining impacts 1) from a stack discharge due to a natural draft and 2) outdoor spill from drums.

Ammonia Solution Release Preliminary Studies, Cosmetic Industry Association. Prepared preliminary studies using PHAST, and released parameters calculated based on "RMP Offsite Consequence Analysis Guidance" for different weight percent ammonia solution releases for the Cosmetic Industry Association.

Prior Experience

Regional Director and Principal Engineer, Air Quality Services, Groundwater & Environmental Services, Inc., 2021 – May 2025. Responsible for the expansion, management, and execution of air quality consulting projects across the Northeast & Mid-Atlantic Regions, focusing on permitting, compliance, regulatory and policy issues, and greenhouse gas/carbon emissions/sustainability services in support of existing Oil & Gas, Utility, Chemical and Manufacturing clients.

Senior Program Manager, ECC Horizon, 2020 – 2021. Responsible for building a new air quality practice in the Northern region.

Senior Project Manager, Matrix New World Engineering, 2018 – 2020. Responsible for the expansion, management, and execution of air quality consulting projects nationwide, serving clients from the industrial, federal, and state sectors.

Senior Project Manager, Boswell Engineering, Inc., 2015 – 2018. Responsible for the expansion, management, and execution of air quality consulting projects in the New York Tri-State area, serving clients across the industrial, state, and municipal sectors.

Managing Principal, E2 Project Manager, LLC 2008 – 2015.

Managing Principal, NeXergy Engineering & Environmental, LLC 2009 – 2014.

Manager, Tetra Tech EM Inc. 2003 – 2008.

Manager, Foster Wheeler Environmental 1990 – 2003.

Mechanical Engineer, Air Recon Systems 1987 – 1990.

Professional Development and Training

Various Training Sessions, Rutgers Health Center for Public Health Workforce Development, New Jersey.

- Noise Seminar,
- Air Pollution Meteorology
- Hazardous Materials Chemistry
- Air Pollution Dispersion Modeling Courses
- SESOIL and AT122D Model