San Diego County Air Pollution Control District

SDAPCD Governing Board Applications received as of 03.28.25

San Diego County Air Pollution Control District

APPLICATION FOR SERVING AS A PUBLIC MEMBER ON THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT GOVERNING BOARD

***INSTRUCTIONS**: Please complete this form in its entirety. Note the additional requirements listed on the third page.*

Submit the completed application and your resume to the Clerk of the Air Pollution Control District Governing Board at APCDPublicComment@sdapcd.org or, you may send your application to 10124 Old Grove Road, San Diego, CA 92131. ***Applications are due no later than March 28, 2025.***

Hess	Joe
Last Name	*First Name*

The SDAPCD Governing Board meets at times mutually satisfactory to the members. Day meetings are more common than evening meetings. The current schedule is the second Thursday of each month. Will you be able to schedule your time accordingly?

■ Yes ☐ No

Have you ever been affiliated with an entity that is regulated by the San Diego County Air Pollution Control District?

■ Yes ☐ No

If yes, please list them here:

Gilead Sciences, Genentech, Idec, Biogen Idec, STMicroelectronics, General Dynamics Space Systems

What required area of expertise are you seeking to represent on the SDAPCD Governing Board?

☐ Physician/Public Health Professional
☐ Environmental Justice Interests
■ Science/Technology Background in Air Pollution

***Candidates are required to submit evidence of their qualifications by including a resume with this application and may be asked to provide additional information, as needed**.

Please summarize your experience that demonstrates your interest and proven ability in the field of air pollution control and your understanding of the needs of the general public in connection with the air pollution problems of San Diego County. *If additional space is required, attach additional pages.*

Bachelor of Science in Environmental Science from UC Riverside
Masters of Public Health in Occupational and Environmental Health from SDSU

This education built a strong scientific foundation for understanding how mobile and point sources, combined with weather and geography, contribute to air quality challenges in Southern California.

Over 30 years of experience in environmental, health, and safety in a variety of industry types including aerospace, semi-conductor, and life sciences. Air emission permitting with the APCD and control including coating, solvent wipe cleaning, boilers, and emergency generators. This includes being the site point of contact for APCD inspections and reporting.

STATEMENT OF OCCUPATIONAL EXPERIENCE

Gilead	
Current Employer	
Sr. Director, EH&S	2016 - Present
Job Title	*Dates of Employment*

Previous Employers	*Position Title*	*Dates of Employment*
C&W Services	Director	2012 - 2016
Genentech/Biogen/Idec	Sr. Manager EHS	2002 - 2012
ST Microelectronics	Manager EHS	1996 - 2002

List past county appointments with dates served, and other past or present community or public service appointments.

Committee/Organization Name	*Dates Served*
CA Commercial, Industrial, Institutional Water Use Best Practices Task Force	2011- 2013

Membership qualifications for the APCD Governing Board are as follows:

Qualifications. All public members shall reside within the boundaries of San Diego County and shall be appointed on the basis of their demonstrated interest and proven ability in the field of air pollution control and their understanding of the needs of the general public in connection with the air pollution problems of the San Diego County. Specific qualifications for each of the three (3) public Board members, as established by Health & Safety Code section 40100.6(a)(4)(A)–(C), are as follows:

1. One public member shall be a ***physician or public health professional*** actively practicing within the boundaries of the San Diego County. The member's specialty shall be in the health effects of air pollution on vulnerable populations.

2. One public member shall be a ***person representing environmental justice interests*** and who works directly with communities within the boundaries of the San Diego County that are most significantly burdened by, and vulnerable to, high levels of pollution, including communities with diverse racial and ethnic populations and communities with low-income populations. This member may be a resident of that community and have a demonstrated record of community leadership.

3. One public member shall be a ***person with a scientific or technical background in air pollution***, such as an environmental engineer, chemist, meteorologist, or air pollution specialist.

NOTE: Public members will be appointed by the San Diego County Air Pollution Control District Governing Board. Each public member will serve a four-year term. All members are entitled to receive compensation for participation on the Governing Board. Please review California Health and Safety Code Section 40100.6 for details.

Please note that this application is a public record subject to disclosure. *This application will be maintained for a period of one year.*

By signing below, I declare that the information provided above is accurate and complete to the best of my knowledge.

Joe Hess

Applicant's Name

Applicant's Signature

Date

CONTACT INFORMATION

Last Name *First Name*

Note: Personal information may be withheld from public view as allowed by law.

[redacted] *Home Street Address* [redacted] *City* [redacted] *State* *Zip*

Mailing Address (if different than home address) *City* *State* *Zip*

[redacted] *Business Street Address* [redacted] *City* [redacted] *State* *Zip*

Home Phone # *Business Phone #*

[redacted] *Mobile Phone #*

[redacted] *E-Mail Address*

Joseph R. Hess

[redacted]

Professional Summary

Accomplished environmental, health, safety, and sustainability (EHS&S) leader with extensive expertise in environmental compliance, risk management, employee safety and sustainability initiatives. Over 30 years of experience specializing in regulatory compliance, pollution prevention, risk management, and air quality & waste management. Proven ability to drive strategic policy initiatives, engage stakeholders, and implement data-driven solutions to protect public health and the environment. Passionate about advancing science-based air quality policies to enhance sustainability and community well-being.

Core Competencies

- Air quality management, pollution control, and sustainability initiatives
- Expertise in environmental and safety regulations, including EPA, DTSC, California Air Resources Board, Cal-OSHA, SDAPCD, Regional Water Quality Board
- Leadership in environmental policy development, compliance, and enforcement
- Strategic risk management and mitigation of industrial emissions
- Effective communicator and collaborator with public agencies, industry, and community groups
- Implementation of ISO 14001 environmental management systems
- Experience in air permitting, emissions monitoring, and environmental impact assessments
- Leadership in sustainable development, energy efficiency, and green building initiatives

Education & Certifications

- **Master of Public Health (MPH)** – San Diego State University, Thesis: The Progress of Pollution Prevention in San Diego County
- **Bachelor of Science in Environmental Science** – University of California, Riverside
- **Certified Safety Professional (CSP #30922)**

Professional Experience

Gilead Sciences/Kite – Sr. Director, Environmental, Health, Safety, and Security (2016 – Present)

Lead environmental and safety programs ensuring compliance, sustainability, and risk management across manufacturing, laboratory, and warehouse operations. Develop and implement strategies for air quality management, emissions reduction, and environmental protection in a cGMP environment.

Cushman & Wakefield – Director, Health, Safety, Security, and Environmental (2012 – 2016)

Oversaw EHS programs across life science facility management operations, ensuring compliance with safety regulations and environmental standards.

Genentech/Biogen-Idec – Sr. Manager, Environmental, Health, Safety, and Sustainability (2002 – 2012)

Directed EHS programs with a strong focus on sustainability, emissions control, and environmental compliance in biopharma manufacturing.

STMicroelectronics – Safety, Security, and Environmental Manager (1996 – 2002)

Managed the first U.S.-certified ISO 14001 system, addressing environmental impacts including air emissions, water quality, and waste reduction.

Dames & Moore – Project Manager (1993 – 1996)

Conducted environmental compliance audits, compliance, and environmental assessments for industrial and commercial clients.

General Dynamics – Facilities Environmental Engineer (1989 – 1993)

Managed environmental compliance programs, including air quality management for aerospace operations.

Affiliations & Community Involvement

- Past President and Board Member, San Diego Industrial Environmental Association
- Planning Committee Member, Phylmar Biopharma Annual EHS Forum
- Eagle Scout Counselor, Boy Scouts of America

Public Service Commitment

Dedicated to using science and technology expertise to enhance air quality management, sustainability, and public health initiatives in San Diego County. Committed to fostering collaboration between regulatory agencies, businesses, and the community to advance policies that improve air quality and environmental health.

San Diego County Air Pollution Control District

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Zupo	Corrie
Last Name	*First Name*

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■ Yes ☐ No

Have you ever been affiliated with an entity that is regulated by the San Diego County Air Pollution Control District?

■ Yes ☐ No

If yes, please list them here:

I am currently on the SDCAPCD Hearing Board

What required area of expertise are you seeking to represent on the SDAPCD Governing Board?

☐ Physician/Public Health Professional
☐ Environmental Justice Interests
■ Science/Technology Background in Air Pollution

***Candidates are required to submit evidence of their qualifications by including a resume with this application and may be asked to provide additional information, as needed**.

Please summarize your experience that demonstrates your interest and proven ability in the field of air pollution control and your understanding of the needs of the general public in connection with the air pollution problems of San Diego County. *If additional space is required, attach additional pages.*

I have an extensive background in air permitting for portable, mobile, offroad, and stationary emission sources, along with testing using portable analyzers, continuous emission monitoring systems (CEMS), and 3rd party verifiers. I also serve on the San Diego County Air Pollution Control District Hearing Board with expertise in managing air emissions, including criteria pollutants, air toxics, and source testing.

STATEMENT OF OCCUPATIONAL EXPERIENCE

AES Clean Energy
Current Employer

Sr. Program Manager - Environmental Compliance — 5/20/2024 - Current
Job Title — *Dates of Employment*

Previous Employers	*Position Title*	*Dates of Employment*
Mainspring Energy	Head of Air Compliance	1/2022-4/2024
United Airlines	Sr. Manager - Air	2014-2022
AES	Environmental Coordinator	2010-2014
Almega Environmental	Quality Engineer & source testing	2009-2010

List past county appointments with dates served, and other past or present community or public service appointments.

Committee/Organization Name	*Dates Served*
SDAQCD Hearing Board	1/2024 - Present
Solana Beach School District Parent Advisory Committe (PAC)	8/2024 - Present
County of San Diego - Los Penasquitos Ranch House Volunteer	10/2024 - Present
Committee Co-Chair Member of the City of El Segundo Environmental Committee	6/2014 - March 2023

Membership qualifications for the APCD Governing Board are as follows:

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By signing below, I declare that the information provided above is accurate and complete to the best of my knowledge.

Corrie Zupo

Applicant's Name

DocuSigned by:
Corrie Zupo
27D08F5465EB427...

Applicant's Signature

3/6/2025

Date

CONTACT INFORMATION

Zupo	Corrie
Last Name	*First Name*

Note: Personal information may be withheld from public view as allowed by law.

[redacted]	[redacted]	[redacted]
Home Street Address	*City*	*State Zip*
Mailing Address (if different than home address)	*City*	*State Zip*
Business Street Address	*City*	*State Zip*
Home Phone #	*Business Phone #*	
[redacted] *Mobile Phone #*		
[redacted] *E-Mail Address*		

Certificate Of Completion

Envelope Id: EAC1E1BB-C170-4B49-9163-A806564963B0
Subject: Complete with Docusign: 2025 APCDGB Public Member Application_Form.pdf
Source Envelope:
Document Pages: 4
Certificate Pages: 1
AutoNav: Disabled
EnvelopeId Stamping: Disabled
Time Zone: (UTC-08:00) Pacific Time (US & Canada)

Signatures: 1
Initials: 0

Status: Completed

Envelope Originator:
Corrie Zupo
[redacted]
IP Address: [redacted]

Record Tracking

Status: Original
3/6/2025 8:36:16 PM

Holder: Corrie Zupo
[redacted]

Location: DocuSign

Signer Events	Signature	Timestamp
Corrie Zupo [redacted] Security Level: Email, Account Authentication (None)	DocuSigned by: Corrie Zupo 27D08F5465EB427...	Sent: 3/6/2025 8:36:27 PM Viewed: 3/6/2025 8:36:31 PM Signed: 3/6/2025 8:37:03 PM Freeform Signing
	Signature Adoption: Pre-selected Style Using IP Address: 104.129.199.46	

Electronic Record and Signature Disclosure:
Not Offered via Docusign

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	3/6/2025 8:36:27 PM
Certified Delivered	Security Checked	3/6/2025 8:36:31 PM
Signing Complete	Security Checked	3/6/2025 8:37:03 PM
Completed	Security Checked	3/6/2025 8:37:03 PM

Payment Events	Status	Timestamps

Corrie Zupo

Professional Resume

Contact Information

- **Email:** [redacted]
- **Phone:** [redacted]
- **Location:** San Diego, California, United States
- **LinkedIn:** linkedin.com/in/corriezupo

Professional Summary

I am a results-driven environmental compliance and air quality management professional with over 18 years of experience. I have an extensive background in air permitting for portable, mobile, offroad, and stationary emission sources, along with testing using portable analyzers, continuous emission monitoring systems (CEMS), and 3rd party verifiers. I have actively participated in rule making for Title V, RECLAIM, PERP, permit exemptions, warehouses, and linear generators. Proven expertise in leading large-scale environmental programs, ensuring regulatory compliance, and managing complex projects. Adept at collaborating with diverse stakeholders to achieve sustainable partnerships.

Professional Experience

The AES Corporation
Senior Project Manager, Environmental Compliance
May 2024 - Present

- Led Engineering, Procurement, and Construction (EPC) teams to ensure compliance with environmental regulations and standards.
- Itemized cost tracking and executive leadership reporting
- Ensure compliance with Storm Water Pollution Prevention Plans (SWPPP), biological resources, cultural aspects, and vegetation soil management plans.
- Utilize tools such as ArcGIS, Procore, Quickbase, Bluebeam, Ironclad, SAP, and Box for program management.

Mainspring Energy
Head of Air Permitting & Compliance
January 2022 - April 2024

- Guided organizations through complex regulatory requirements while exceeding environmental commitments.
- Managed permitting processes, including applicability analysis, permit exemptions, and compliance with federal and state air regulations.
- Developed emission calculators and supported Health Risk Assessments (HRAs) and air dispersion modeling.

United Airlines
Senior Manager - Environmental EMS & Audit Program
October 2020 - January 2022

- Enhanced Environmental Management System (EMS) and audit program through actionable data analytics.
- Conducted state and international multi-media environmental audits and compliance tracking.
- Managed budget and itemized cost tracking for environmental programs.

Southern California Air Compliance & Strategy Manager
November 2018 - September 2020

- Spearheaded program management initiatives to align with California's greenhouse gas reduction goals.
- Managed permitting for on-road and off-road engines, portable and stationary generators, and various fuels.
- Conducted CEQA/NEPA environmental applicability determinations and developed mitigation measures.

Southern California Air Specialist
November 2014 - 2018

- Managed environmental compliance for California stations, overseeing mobile, portable, and stationary emission sources.
- Conducted permitting and reporting for greenhouse gas emissions and EPA Title V/RECLAIM programs.

AES Southland
Environmental Coordinator
March 2010 - October 2014

- Managed multi-media environmental programs under the National Pollutant Discharge Elimination System (NPDES) permit and served as the Environmental Laboratory Accreditation Program (ELAP) Laboratory Director.
- Conducted stormwater inspections, environmental site assessments and managed permitting for various fuels and emission sources.

Almega Environmental & Technical Services
Quality Control Engineer
June 2009 - March 2010

- Conducted initial and annual compliance source testing and quality assurance reviews.
- Managed Continuous Emission Monitoring System (CEMS) and prepared source test reports.

Essentia Management Services, LLC
Staff Scientist
June 2007 - March 2009

- Managed environmental programs for the Port of Los Angeles Clean Marinas and Clean Trucks Programs.
- Conducted stormwater inspections, environmental site assessments and prepared discharge monitoring reports.

Education

California State University-Fullerton
Master of Science in Environmental Studies
2008 - 2012

University of California, Riverside
Bachelor of Science in Environmental Science
2002 - 2007

University of California, Riverside
Minor in Economics
2002 - 2007

Skills

- Source Testing
- Rulemaking
- Environmental Compliance
- Stormwater Management
- Air Quality Management
- Permitting and Regulatory Affairs
- Project Management
- Stakeholder Engagement
- Data Analysis and Reporting
- Continuous Improvement
- Budget Management

Certifications

- Certified Erosion, Sediment and Storm Water Inspector (CESSWI), Credential ID 00012902, Expires October 2025
- LEED AP BD+C, Expires January 2026
- ISO 14001:2015 EMS Lead Auditor Training
- Procure Certified: Project Manager , Credential ID smjcdgo9cq7p
- EPA Construction General Permit (CGP) Part 6.3a, Expires May 2027

Volunteering

- Hearing Board Member – San Diego County Air Pollution Control District (January 2024 – Present)
- Parent Advisory Committee (PAC) - Solana Beach School District (April 2024 – Present)
- Los Penasquitos Ranch House Volunteer – Goat Care (October 2024 – Present)
- Committee Co-Chair Member – City of El Segundo Environmental Committee (June 2014 – March 2023)
- El Segundo Kiwanis Club (January 2019 – June 2023)
- Los Angeles Area Advisory Committee (March 2022 – June 2023)

San Diego County Air Pollution Control District

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Birkbeck-Garcia	Anne Marie
Last Name	*First Name*

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■ Yes ☐ No

Have you ever been affiliated with an entity that is regulated by the San Diego County Air Pollution Control District?

☐ Yes ■ No

If yes, please list them here:

What required area of expertise are you seeking to represent on the SDAPCD Governing Board?

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I am a native of South East San Diego, an area drastically impacted by air pollution. Starting in 2007, I worked for eight years as a pediatrician in Otay Mesa, where the effect of air pollution was exhibited through increased rates of respiratory issues, including asthma, in my pediatric patients and their families. In 2015, I became a Pediatric Hospitalist, where I take care of children so sick, they need to be hospitalized. In my line of work, I see a disproportionate number of patients with respiratory diseases from San Diego areas most impacted by poor air quality. I am passionate about our most vulnerable San Diego communities, environmental justice, and the impact of air quality on our county's health. I am currently a member of San Diego Pediatricians for Clean Air, the American Academy of Pediatrics Climate Change and Health Committee, and the Medical Society for Consortium on Climate Health.

I have served as the public health member for APCD since 2021. I am currently the Vice Chair for our Planning and Policy committee and was recently unanimously appointed as the Vice Chair for the Governing Board. I have been able to voice concerns about health impacts for our vulnerable communities discussing health issues that are results of poor air quality including but not limited to

STATEMENT OF OCCUPATIONAL EXPERIENCE

Southern California Permanente Group	
Current Employer	
Pediatric Hospitalist (Medical Doctor)	2007-present
Job Title	*Dates of Employment*

Previous Employers	*Position Title*	*Dates of Employment*
Loma Linda Childrens Hospital	Resident/Fellow	2003-2007

List past county appointments with dates served, and other past or present community or public service appointments.

Committee/Organization Name	*Dates Served*
SD APCD Governing Board Public Health Member	2021-present
SD APCD Planning and Policy Commitee Vice Chair	2024-present

Membership qualifications for the APCD Governing Board are as follows:

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By signing below, I declare that the information provided above is accurate and complete to the best of my knowledge.

Anne Marie Birkbeck-Garcia, MD

Applicant's Name

March 14, 2025

Applicant's Signature *Date*

CONTACT INFORMATION

Birkbeck-Garcia	Anne Marie
Last Name	*First Name*

Note: Personal information may be withheld from public view as allowed by law.

[redacted]	[redacted]	[redacted]	[redacted]
Home Street Address	*City*	*State*	*Zip*
Mailing Address (if different than home address)	*City*	*State*	*Zip*
Business Street Address	*City*	*State*	*Zip*

Home Phone #	*Business Phone #*
[redacted]	
Mobile Phone #	
[redacted]	
E-Mail Address	

Anne Marie Birkbeck-Garcia, MD

[redacted]

EDUCATION & HONORS

LOMA LINDA UNIVERSITY MEDICAL CENTER
Department of Pediatrics

- *Awarded:* The Jeanne Andrews Ambulatory Pediatric Award 2004-2005 & 2005-2006
  (Top Pediatric Resident in Ambulatory Pediatrics)

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE
***Doctor of Medicine*, 2003**

- *Recipient:* Executive Dean Scholarship, 2001 & 2002.
  (Full-time student in the School of Health Professions who demonstrates excellence in academics, leadership, and community service)
- *Awarded:* Dr. Hector Garcia Leadership and Development Workshop Participant, 2002
  (Latino Medical Student Association members who have demonstrated excellence in academics, leadership and community service)

UNIVERSITY OF CALIFORNIA, SAN DIEGO
Bachelor of Science in Molecular Biology

- *Awarded:* Provost Honor's University of California San Diego, Revelle College, 1997.

SOUTHERN CALIFORNIA PERMANENTE MEDICAL GROUP

- *Awarded:* Pediatrician of the Year for San Diego - 2020
  (Partnership vote - for top Pediatric Leader in the department. This award can only be received once throughout the physician's career)
- *Awarded:* Louis Luevanos Mentorship Award - 2021
  (Associate vote - for the Partner physician who has provided mentorship to new physicians in the Pediatric department)

SAN DIEGO MAGAZINE

- *Awarded:* San Diego County Top Doctor - 2013, 2021, 2024

PROFESSIONAL EXPERIENCE

Southern California Permanente Medical Group, San Diego, CA **2007 - Present**

- *Partner Physician Pediatrics and Pediatric Hospital Medicine*
- *Asthma Hospitalist Committee*
- *Physician Chair: Kaiser San Diego Bio-Ethics Committee*
- *Pediatric Representative: Kaiser San Diego Resuscitative Response Committee*
- *Physician Lead: Kaiser San Diego Neonatal Opiate Withdrawal Committee*
- *Instructor: Pediatric in Advanced Life Support*

SD Air Pollution Control District, San Diego, CA **2021 - Present**
Governing Board Physician/Public Health Member

SD Air Pollution Control District, San Diego, CA **2024 - Present**
Vice Chair Planning Policy Committee

Southern California Permanente Medical Group, Riverside, CA **2006 - 2007**
Per Diem Hospitalist, Department of Pediatrics

Loma Linda University Medical Center, Loma Linda, California **2006 -2007**
Fellow, Department of Pediatric Emergency Medicine

Loma Linda University Medical Center, Loma Linda, California **2003 - 2006**
Resident Physician, Department of Pediatrics

LICENSURES

The Medical Board of California, 2005 - Present

- License Number: Available upon request

Controlled Substance Registration Certificate, United States Department of Justice, 2005 - Present

- DEA License Number: Available upon request

American Board of Pediatrics

- Board Certified Pediatrician, 2007 - Present
- Board Certified Pediatric Hospital Medicine 2023- Present

PROFESSIONAL MEMBERSHIPS

- American Academy of Pediatrics
- American Academy of Pediatrics Climate Change and Health Committee
- San Diego Pediatricians for Clean Air
- Medical Society Consortium on Climate and Health
- San Diego County Medical Society

PUBLICATIONS

N. Inoue MD, T. Kim MD, A. Birkbeck-Garcia MD, et al, "Incidence of Serious Bacterial Infections in Ex-premature Infants with Postconceptional Age Less Than 48 weeks Presenting to a Pediatric Emergency Department." West J Emerg Med. 2009 February; 10(1): 37–40.

Domestic Refereed Conferences

A.M. Birkbeck-Garcia, S.P. Daley**, "**The Effect of Didactic Sessions and Supervision on Immunization and Reporting of Children Participating in the Parents as Teachers Program**"** (Poster), *National Hispanic Medical Association National Conference*, 2001.

K. Vance, V. Nguyen MD, H. Lim, A. Birkbeck-Garcia MD, S. Valladolid MD "Asthma Spacer Teaching Decreases 12-Month Total Albuterol Use and Albuterol Dispensing Events in an Outpatient Pediatric Population." (Poster), *Pediatric Academic Societies Annual Meeting*, 2015

LANGUAGES

Spanish Fluency (written and oral)

Please summarize your experience that demonstrates your interest and proven ability in the field of air pollution control and your understanding of the needs of the general public in connection with the air pollution problems of San Diego County. If additional space is required, attach additional pages.

I am a native of South East San Diego, an area drastically impacted by air pollution. Starting in 2007, I worked for eight years as a pediatrician in Otay Mesa, where the effect of air pollution was exhibited through increased rates of respiratory issues, including asthma, in my pediatric patients and their families. In 2015, I became a Pediatric Hospitalist, where I take care of children so sick, they need to be hospitalized. In my line of work, I see a disproportionate number of patients with respiratory diseases from San Diego areas most impacted by poor air quality. I am passionate about our most vulnerable San Diego communities, environmental justice, and the impact of air quality on our county's health. I am currently a member of San Diego Pediatricians for Clean Air, the American Academy of Pediatrics Climate Change and Health Committee, and the Medical Society for Consortium on Climate Health.

I have served as the public health member for APCD since 2021. I am currently the Vice Chair for our Planning and Policy committee and was recently unanimously appointed as the Vice Chair for the Governing Board. I have been able to voice concerns about health impacts for our vulnerable communities discussing health issues that are results of poor air quality including but not limited to fires (wild, vessel and battery) and the recent increase in hydrogen sulfide levels in the Tijuana River Valley. As both a pediatrician and mother, I feel it is my responsibility to be a voice for our community and hope to continue to do this as the Public Health representative for APCD.

March 27, 2025

Re: Anne-Marie Birkbeck-Garcia MD

To Elected Members of the Air Pollution Control District Board

My name is Vi Thuy Nguyen, and I am writing in my capacity as the **American Academy of Pediatrics (AAP) San Diego Climate Change and Health Committee Co-Chair and the American Academy of Pediatrics California State Government Affairs Chair of the Environmental Health Committee**. I am part of a large network of pediatricians and other clinicians who are linked through the AAP, San Diego Pediatricians for Clean Air, and various medical groups working together to advocate on behalf of our children. I am a San Diegan and as a Climate Change and Health Leader in our region, state and in the country. I am part of a group of dedicated pediatricians nationally who are working together on climate change.

I am writing to advocate for **Dr. Anne Marie Birkbeck-Garcia's** reappointment for the Public Health position for the Air Pollution Control District Board because she is the one person I uniquely trust to look out for the interest of San Diego as a whole and our shared children. I have known Anne-Marie for 16 years. We worked in tandem at Kaiser San Diego Otay Mesa Office. For the first parts of our career, we were both paneled general pediatricians taking care of the children in the South Bay. Then we diverged on our leadership paths as she moved to the Pediatric Hospitalist team taking care of our sickest patients and working on Bioethics. In those early years though, when you work side by side with someone – that is when you learn who they truly are.

I believe in the last few years having worked with Anne Marie, you will likely agree that Anne Marie Birkbeck-Garcia MD is the real deal. She is smart and talented, and a phenomenal pediatrician. Someone like Anne-Marie who has practiced as well as she has practiced, and as widely – has left an entire community healthier through the force of her character and the body of her clinical work. She also tackled the most complicated patients, and indeed if they only spoke Spanish and were medically complicated, she embraced them and made them healthier. Through her time at APCD, I believe she has demonstrated that. She puts the community and children first, at great personal and political risk. She is brave and hard-working and makes those of us who work with her and support her inordinately proud. It helps us continue to do our day to day work in clinic and at the bedside, knowing we have one of our own advocating for children's respiratory health at APCD.

The state of air pollution in our area is certainly not good, and the respiratory health of children is at risk. With the continuing threats of worsening climate change and the Tijuana Sewage Crisis, it continues to worsen. I can't thank Anne-Marie enough for her years now of voluntary service at APCD, and it continues to be a big ask to her to continue to be the Public Health Representative. She takes the time out of a busy clinical career and her wonderful family and community to give to public service. But I think she realizes that she is one of the people uniquely qualified to continue to do this important work and at this critical time needs to continue in her position. Our region's children continue to deserve her

love and care. I continue to trust Anne-Marie with our region's children. She brings a balanced approach and bring the full power of her qualifications, community, and professional network to this position.

As pediatricians, we realize how greatly the respiratory health of children will be affected by decisions APCD will make and we are now trying to be present and available to help. I hope you take ABG up on her offer to continue to serve at APCD.

Sincerely and with great respect,

Vi Thuy Nguyen MD, FAAP

Co-Chair AAP-CA3 San Diego Climate Change and Health Committee

C0-Chair AAP-California State Government Affairs Expert Committee on Environmental Health

March 27, 2025

To whom it may concern,

On behalf of the San Diego Pediatricians for Clean Air (SDPCA), we would like to show our support for the reappointment of Dr. Anne Marie Birkbeck-Garcia to the San Diego Air Pollution Control District (SDAPCD) Board.

As the active Public Health Member of the SDAPCD, Dr. Birkbeck-Garcia has proven time and time again that her integrity as a board-certified pediatrician and a long-time community member of San Diego County remains steadfast. She continues to prioritize advocating for environmental justice and equity through the lens of medical necessity, which we all know is an overarching goal of the SDAPCD.

Furthermore, Dr. Birkbeck-Garcia's professionalism remains respected, people continue to enjoy working with her, and her qualifications have only increased since she joined the board. Please consider reappointing Dr. Birkbeck-Garcia to the SDAPCD Board if you want to continue to provide air quality advocacy with excellence and proven expertise.

Sincerely,

Dr. Sabrina Perrino (Co-Founder SDPCA, UC San Diego)

Dr. Sara Valladolid (Pediatrician, Kaiser Permanente)

Dr. Melissa Campbell (Pediatrician, Rady's Children's Hospital Residency Program)

Wayne Mai (Student Director SDPCA, UC San Diego)

Tae Jong Yun (Premedical Student Advocate, UC Berkeley)

San Diego County Air Pollution Control District

APPLICATION FOR SERVING AS A PUBLIC MEMBER ON THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT GOVERNING BOARD

***INSTRUCTIONS**: Please complete this form in its entirety. Note the additional requirements listed on the third page.*

Submit the completed application and your resume to the Clerk of the Air Pollution Control District Governing Board at APCDPublicComment@sdapcd.org or, you may send your application to 10124 Old Grove Road, San Diego, CA 92131. ***Applications are due no later than March 28, 2025.***

Gomez	Georgette
Last Name	*First Name*

The SDAPCD Governing Board meets at times mutually satisfactory to the members. Day meetings are more common than evening meetings. The current schedule is the second Thursday of each month. Will you be able to schedule your time accordingly?

■ Yes ☐ No

Have you ever been affiliated with an entity that is regulated by the San Diego County Air Pollution Control District?

☐ Yes ■ No

If yes, please list them here:

What required area of expertise are you seeking to represent on the SDAPCD Governing Board?

☐ Physician/Public Health Professional
■ Environmental Justice Interests
☐ Science/Technology Background in Air Pollution

***Candidates are required to submit evidence of their qualifications by including a resume with this application and may be asked to provide additional information, as needed**.

Please summarize your experience that demonstrates your interest and proven ability in the field of air pollution control and your understanding of the needs of the general public in connection with the air pollution problems of San Diego County. *If additional space is required, attach additional pages.*

I have over 20 plus-years of experience as a community organizer, advocate, and decision-maker seeking environmental justice in San Diego County. My work-from my time at the Environmental Health Coalition to serving as a Council member and now working at Casa Familiar-has been dedicated to addressing the disproportionate impacts of pollution on low-income communities. Born and raised in Barrio Logan, I have a deep, firsthand understanding of the urgent need for equitable environmental protections that prioritize public. Health, particularly in underserved communities most affected by air pollution.

My deep-rooted commitment to environmental justice, both as an organizer and an elected official, has earned the reputation of an EJ seeker in San Diego.

Please see my resume.

STATEMENT OF OCCUPATIONAL EXPERIENCE

Casa Familiar	
Current Employer	
Community Development and Policy Officer	1/2023
Job Title	*Dates of Employment*

Previous Employers	*Position Title*	*Dates of Employment*
Toyon Strategies LLC	Founder	3/2021 - 12/2022
City of San Diego	Council memeber	12/2016 - 12/2020
Environmental Health Coalition	Associate Director	2004 - 2016

List past county appointments with dates served, and other past or present community or public service appointments.

Committee/Organization Name	*Dates Served*
APCD, Board member, EJ public seat	Currently

Membership qualifications for the APCD Governing Board are as follows:

Qualifications. All public members shall reside within the boundaries of San Diego County and shall be appointed on the basis of their demonstrated interest and proven ability in the field of air pollution control and their understanding of the needs of the general public in connection with the air pollution problems of the San Diego County. Specific qualifications for each of the three (3) public Board members, as established by Health & Safety Code section 40100.6(a)(4)(A)–(C), are as follows:

1. One public member shall be a ***physician or public health professional*** actively practicing within the boundaries of the San Diego County. The member's specialty shall be in the health effects of air pollution on vulnerable populations.

2. One public member shall be a ***person representing environmental justice interests*** and who works directly with communities within the boundaries of the San Diego County that are most significantly burdened by, and vulnerable to, high levels of pollution, including communities with diverse racial and ethnic populations and communities with low-income populations. This member may be a resident of that community and have a demonstrated record of community leadership.

3. One public member shall be a ***person with a scientific or technical background in air pollution***, such as an environmental engineer, chemist, meteorologist, or air pollution specialist.

NOTE: Public members will be appointed by the San Diego County Air Pollution Control District Governing Board. Each public member will serve a four-year term. All members are entitled to receive compensation for participation on the Governing Board. Please review California Health and Safety Code Section 40100.6 for details.

Please note that this application is a public record subject to disclosure. *This application will be maintained for a period of one year.*

By signing below, I declare that the information provided above is accurate and complete to the best of my knowledge.

Georgette Gomez

Applicant's Name

Applicant's Signature

03/25/2025

Date

CONTACT INFORMATION

Last Name	First Name

Note: Personal information may be withheld from public view as allowed by law.

Home Street Address	City	State	Zip
Mailing Address (if different than home address)	City	State	Zip
Business Street Address	City	State	Zip

Home Phone #	Business Phone #
Mobile Phone #	

E-Mail Address

Georgette Gómez
San Diego, CA 92113
[redacted] | [redacted]

EDUCATION

San Diego State University, CA

- Bachelor of Arts in Environmental & Natural Resource Geography Analysis

AWARDS & RECOGNITIONS

- **2020** – California LGBTQ Caucus Pride Honoree
- **2017** – Legislator of the Year, The San Diego Psychological Association
- **2017** – Environmental Justice Leadership Award, California Environmental Justice Alliance
- **2017** – Environmental Justice Champion Award, Environmental Health Coalition
- **2014** – Visionary Award, Cesar Chavez Commemorative Committee
- **2014** – Baker's Dozen: People Who Made San Diego a Better Place, *San Diego Free Press*
- **2013** – FEAT Award, Sierra Club
- **2013** – Voice of the Year, *Voice of San Diego*

PUBLIC SERVICE

- **2021 – Present** – **Board Member**, CA Dept. of Toxic Substances Control, Environmental Safety Board
- **2021 – Present** – **Board Member**, San Diego County Air Pollution Control District
- **2021 – 2022** – **Member**, California Air Resources Board, Environmental Justice Advisory Committee
- **2021 – 2023** – **Board Member**, San Diego Canyonlands
- **2021 – 2023** – **Board Member**, Dreams for Change

PROFESSIONAL EXPERIENCE

Casa Familiar, Community Development & Strategy Officer

2023 – Present

- Oversee planning and implementation of new construction and rehabilitation projects, including affordable housing, civic spaces, arts and culture venues, and green areas.
- Advance environmental justice and climate resiliency through urban greening and alternative energy integration.

Toyon Strategies: Giving Root to the Vibrant, Founder & President

2021 – 2022

- Provided strategic support to nonprofits, developers, and government agencies, advancing social, economic, and environmental justice initiatives.

City of San Diego, Councilmember

2016 – 2020

- **Council President (2019 – 2020)**
- **Chair, San Diego Metropolitan Transit System (2018 – 2019)**
- **Board Member, Metropolitan Transit System & SANDAG (2016 – 2020)**

Environmental Health Coalition

2004 – 2016

- **Associate Director (2010 – 2016)** – Led campaigns on Toxic-Free Neighborhoods, Clean Ports, Transportation Justice, Border Environmental Justice, and Climate Justice.
- **Campaign Director (2009 – 2010)** – Oversaw land-use projects in Barrio Logan, National City, and City Heights.
- **Policy Advocate (2008 – 2009)** – Worked on incorporating community voices into the Barrio Logan Community Plan Update.
- **Community Organizer (2004 – 2008)** – Educated and mobilized residents around key land use and environmental issues in western Chula Vista.

Additional Roles

- **Crisis Counselor, Center for Community Solutions** *(2004)*
- **Special Educator, Southern Arizona AIDS Foundation** *(2002 – 2003)*
- **Summer School Educator, Southeast Secondary School** *(2002)*

ADDITIONAL EXPERIENCE & TRAINING

- **California Climate Leaders Fellow** *(2024 – Present)*

- **Affordable Housing Training**, Community Housing Works *(2005)*
- **Introduction to Transit**, The Mission Group *(2005)*
- Expertise in **land use analysis, urban development, and sustainable transportation planning**

SKILLS

- **Bilingual:** English & Spanish
- **Technical Skills:** Microsoft 365, Excel, SPSS, GIS, Adobe Photoshop, PageMaker

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San Diego County Air Pollution Control District

APPLICATION FOR SERVING AS A PUBLIC MEMBER ON THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT GOVERNING BOARD

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Stigler Granados	Paula
Last Name	*First Name*

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☑ Yes ☐ No

Have you ever been affiliated with an entity that is regulated by the San Diego County Air Pollution Control District?

☐ Yes ☑ No

If yes, please list them here:

What required area of expertise are you seeking to represent on the SDAPCD Governing Board?

☐ Physician/Public Health Professional
☐ Environmental Justice Interests
☑ Science/Technology Background in Air Pollution

***Candidates are required to submit evidence of their qualifications by including a resume with this application and may be asked to provide additional information, as needed**.

Please summarize your experience that demonstrates your interest and proven ability in the field of air pollution control and your understanding of the needs of the general public in connection with the air pollution problems of San Diego County. *If additional space is required, attach additional pages.*

I am an environmental health scientist with over 20 years of experience working on air quality, environmental justice, and environmental health issues. My career began with extensive work in tribal communities, including serving as the Air Quality Specialist for the Pala Band of Mission Indians. In that role, I operated and maintained tribal air monitoring stations, managed our air quality database, and led the development of project plans and standard operating procedures. I successfully secured federal funding to implement clean air programs on tribal lands and participated in numerous EPA and tribal air quality specialist training programs to stay current on evolving air monitoring technologies, regulatory frameworks, and health standards. In addition to my tribal work, I served as Co-Chair of the U.S. EPA's Border 2012/2020 San Diego–Tijuana Border Air Quality Taskforce, where I worked closely with both U.S. and Mexican partners to address cross-border pollution issues. I am currently actively engaged in local air quality challenges and am focused on understanding hydrogen sulfide monitoring efforts and water to air transfer of pollution and their impact on South Bay communities—areas disproportionately affected by industrial emissions and complex environmental exposures.

(SEE ADDITIONAL PAGE)

STATEMENT OF OCCUPATIONAL EXPERIENCE

San Diego State University, College of Health and Human Services	
Current Employer	
Assoiciate Professor, Chair Environmental Health Sciences Division	Aug 2021 to Present
Job Title	*Dates of Employment*

Previous Employers	*Position Title*	*Dates of Employment*
Texas State University	Associate Professor	2018-2021
UTHealth Science Center	Assistant Professor	2014-2018
San Diego State University	Lecturer	2012-2014
The San Diego Foundation	Environmental Program Mgr	2007-2010
Pala Band of Mission Indians	Air Quality Specialist/Program Mgr	2005-2009

List past county appointments with dates served, and other past or present community or public service appointments.

Committee/Organization Name	*Dates Served*
Co-Chair, EPA Border 2012/2020 San Diego Tijuana Air Quality Taskforce	2005-2014
Chair, US Chagas Taskforce	2015 - Present
Board Member, High Tech High Foundation	2022 - Present

Membership qualifications for the APCD Governing Board are as follows:

Qualifications. All public members shall reside within the boundaries of San Diego County and shall be appointed on the basis of their demonstrated interest and proven ability in the field of air pollution control and their understanding of the needs of the general public in connection with the air pollution problems of the San Diego County. Specific qualifications for each of the three (3) public Board members, as established by Health & Safety Code section 40100.6(a)(4)(A)–(C), are as follows:

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2. One public member shall be a ***person representing environmental justice interests*** and who works directly with communities within the boundaries of the San Diego County that are most significantly burdened by, and vulnerable to, high levels of pollution, including communities with diverse racial and ethnic populations and communities with low-income populations. This member may be a resident of that community and have a demonstrated record of community leadership.

3. One public member shall be a ***person with a scientific or technical background in air pollution***, such as an environmental engineer, chemist, meteorologist, or air pollution specialist.

NOTE: Public members will be appointed by the San Diego County Air Pollution Control District Governing Board. Each public member will serve a four-year term. All members are entitled to receive compensation for participation on the Governing Board. Please review California Health and Safety Code Section 40100.6 for details.

Please note that this application is a public record subject to disclosure. *This application will be maintained for a period of one year.*

By signing below, I declare that the information provided above is accurate and complete to the best of my knowledge.

Paula Stigler Granados

Applicant's Name

Applicant's Signature

03/26/25

Date

CONTACT INFORMATION

Stigler Granados	Paula
Last Name	*First Name*

Note: Personal information may be withheld from public view as allowed by law.

[redacted]	[redacted]	[redacted]	[redacted]
Home Street Address	*City*	*State*	*Zip*
Mailing Address (if different than home address)	*City*	*State*	*Zip*
[redacted]1	[redacted]	[redacted]	[redacted]
Business Street Address	*City*	*State*	*Zip*
[redacted]			
Home Phone #	*Business Phone #*		
[redacted]			
Mobile Phone #			
[redacted]			
E-Mail Address			

Continued from previous page:

After receiving my doctorate in Global Health from the SDSU/UCSD Joint Doctoral Program, I relocated to Texas for several years to continue to grow my academic career, but since returning to San Diego I am deeply committed to giving back to our region and applying my expertise to the environmental challenges we face. Currently, I serve as an Associate Professor and Division Head of Environmental Health Sciences in the School of Public Health at San Diego State University. My academic training includes a PhD in Global Health and an MS in Environmental Health Sciences, with focused expertise in air and water pollution monitoring, regulatory policy, and community engagement. I also collaborate with other experts and researchers in our region such as UCSD colleagues from the Scripps Institution of Oceanography and the Center for Aerosol Impacts on Chemistry of the Environment on regional air quality research and monitoring projects, especially in our South Bay region. I bring to this opportunity a rare blend of technical expertise, lived professional experience in both tribal and border communities, and a passionate commitment to environmental justice. I believe in science that is community-centered and policy-relevant, and I'm excited to help shape a healthier, more equitable future for all San Diego County residents.

CURRICULUM VITAE

Paula Stigler Granados
College of Health and Human Services
School of Public Health
Division of Environmental Health and Global Health
San Diego State University
[redacted]

PROFESSIONAL SUMMARY

Environmental health scientist with over two decades of experience in air and water pollution monitoring, environmental justice, and public health practice in tribal, border, and underserved communities. Demonstrated expertise in regulatory compliance, air quality program development, community-based participatory research, and cross-disciplinary collaboration. Extensive record of federal grant leadership, academic instruction, and public service. Committed to promoting environmental health equity and science-driven policy across the San Diego region.

EDUCATION

December 2013 PhD	San Diego State University and University of California, San Diego Public Health, Global Health
May 2009 MS	San Diego State University Environmental Health Sciences
June 1998 BA	University of Texas at Austin Geography

ACADEMIC POSITIONS

August 2023 to Present San Diego State University	Associate Professor Division Head – Environmental Health Dual Appointment with Global Health School of Public Health
September 2021 – August 2023 San Diego State University	Assistant Professor School of Public Health -Divisions of Environmental Health and Global Health
September 2021 - Present Texas State University	Adjunct Associate Professor College of Health Professions - School of Health Administration
August 2020- May 2021 Our Lady of the Lake University	Lecturer Department of Sociology
September 2018 – August 2021 Texas State University	Assistant Professor (received tenure in August 2021) College of Health Professions - School of Health Administration

September 2018 – December 2021 University of Texas Health Science Center	Adjunct Assistant Professor School of Public Health
January 2015 – August 2021 San Diego State University	Adjunct Assistant Professor School of Public Health
January 2014 – August 2018 University of Texas Health Science Center	Assistant Professor School of Public Health - Management, Policy, and Community Health Practice
September 2012 – December 2014 San Diego State University	Lecturer School of Public Health and College of Health and Human Services – Deans Office

Other Relevant Work Experience

Dates	***Position***	***Entity***
2012 - Present	Research/Development/Communications Director	Cigarette Butt Pollution Project
2011 - 2019	Project Lead - El Salvador Rainwater Capture Project	Engineers Without Borders
2007 - 2010	Tribal Liaison and Environment Program Manager	The San Diego Foundation
2007 - 2013	Consultant - Grant Writing and Fund Development	PS Consulting
2007 - 2009	Consultant – Water Engineering	Independent Contractor
2005 - 2009	Project Director – Border Water Infrastructure	Pala Band of Mission Indians
2005 - 2007	Air Quality Specialist	Pala Band of Mission Indians
2001 - 2005	Program Coordinator – Environmental Health and Justice Initiative	The San Diego Foundation

PEER REVIEWED JOURNAL ARTICLES

Forsyth, C., Higuita, N. I. A., Hamer, S. A., Ibarra-Cerdeña, C. N., Valdez-Tah, A., **Stigler Granados, P.** , Hamer, G., Vingiello, M.,& Beatty, N. L. (2024). Climate change and Trypanosoma cruzi transmission in North and central America. *The Lancet Microbe*, *5*(10).

Journal Impact Factor = 20.9

Higuita, N. I. A., Beatty, N. L., Forsyth, C., Henao-Martínez, A. F., Manne-Goehler, J., Bourque, D.,Bowman, N., Carriona, M., Coyle, C., Dauphinais, M., De Toy, K., Gilman, R., Hamer, D., Herick, J., Hernandez, S., Herrera, C., Marcus, R., Meymandi, S., Nolan, M., Reifler, K., Showler, A., **Stigler Granados, P**., Takyar, A., Talaat, K., Waters, S., & Wheelock, A. (2024). Chagas disease in the United States: a call for increased investment and collaborative research. *The Lancet Regional Health–Americas*, *34*.

Journal Impact Factor = 8.0

Dolezel, D., Beauvais, B., **Stigler Granados, P**., Fulton, L., & Kruse, C. S. (2023). Effects of Internal and External Factors on Hospital Data Breaches: Quantitative Study. *Journal of Medical Internet Research*, *25*, e51471.

Journal Impact Factor = 7.4

Betancourt, J. A., Dolezel, D. M., Shanmugam, R., Pacheco, G. J., **Stigler Granados, P.,** & Fulton, L. V. (2023, July). The Health Status of the US Veterans: A Longitudinal Analysis of Surveillance Data Prior to and during the COVID-19 Pandemic. In *Healthcare* (Vol. 11, No. 14, p. 2049).

Journal Impact Factor = 2.8

Fowler, S. P., Gimeno Ruiz de Porras, D., Swartz, M. D., **Stigler Granados, P.,** Heilbrun, L. P., & Palmer, R. F. (2023). Daily Early-Life Exposures to Diet Soda and Aspartame Are Associated with Autism in Males: A Case-Control Study. *Nutrients*, *15*(17), 3772.

Journal Impact Factor = 5.72

Beatty, N. L., Forsyth, C. J., Gilman, R. H., Hamer, D. H., Henao-Martínez, A. F., Hochberg, N. S., & **Stigler Granados, P.** (2022). Neglected Testing for Neglected Tropical Diseases at the CDC. *The American Journal of Tropical Medicine and Hygiene*, *106*(6), 1571.

Journal Impact Factor. = 3.707

Pacheco, G. J., Fulton, L., Betancourt, J., Shanmugam, R., and **Stigler Granados, P.** (2022). Geospatial analysis as a tool to identify target areas for Chagas disease education for healthcare providers. *BMC Infectious Diseases*, *22*(1), 1-11.

Journal Impact Factor = 3.76

Beatty, N.L., Forsyth, C.J., Gilman, R.H., Hamer, D.H., Henao-Martínez, A.F., Hochberg, N., Manne-Goehler, J., Marcus, R., Meymandi, S., Reich, M.R., Showler, A., and **Stigler Granados, P**. (2022). Neglected Testing for Neglected Tropical Diseases at the CDC. *The American Journal of Tropical Medicine and Hygiene*, *2022 Apr 12;1(aop).*

Journal Impact Factor = 2.35

Forsyth CJ, Manne-Goehler J, Bern C, Whitman J, Hochberg NS, Edwards M, Marcus R, Beatty NL, Castro Y, Coyle C, **Stigler Granados P**, Hamer D, Maguire J, Gilman R, Meymandi S. (2021). Recommendations for Screening and Diagnosis of Chagas Disease in the United States. *The Journal of Infectious Diseases*, 225 (9), pp 1601–1610.

Journal Impact Factor = 12.07

Betancourt, J. A., **Stigler Granados, P.**, Pacheco, G. J., Reagan, J. K., Shanmugam, R., Topinka, J. B., Beauvais, B. Ramamonjiarivelo, Z. & Fulton, L. V. (2021). Exploring Health Outcomes for U.S. Veterans Compared to Non-Veterans from 2003 to 2019. *Healthcare*, *9*(604).

Journal Impact Factor = 2.65

Stigler Granados, P. Pacheco, G. J., Nuñez Patlan, E., Betancourt, J. A., & Fulton, L. V. (2020). Assessing the Effectiveness of Chagas Disease Education for Healthcare Providers in the United States. *BMC Infectious Diseases*, *20*(743).

Journal Impact Factor = 3.09

Betancourt, J. A., **Stigler Granados, P**., Pacheco, G. J., Shanmugam, R., Kruse, C. S., & Fulton, L. V. (2020). Obesity and Morbidity Risk in the US Veteran. *Healthcare* 8 (3).

Journal Impact Factor = 2.65

Schneider, J. E., Scheibling, C. M., Peterson, A., **Stigler Granados, P**., Fulton, L. V., & Novotny, T. E. (2020). Online Simulation Model to Estimate the Total Costs of Tobacco Product Waste in Large U.S. Cities. *International Journal of Environmental Research and Public Health*, 17(13).

Journal Impact Factor = 2.47

Hildenbrand, Z., Carlton, D., Wicker, A., Habib, S., **Stigler Granados, P**., & Schug, K. (2020). Characterizing anecdotal claims of groundwater contamination in shale energy basins. *Science of the Total Environment*, 713.

Journal Impact Factor = 7.96

Kruse, C. S., Guerra, D., Gelillo-Smith, R., Vargas, A., Krishnan, L., & **Stigler Granados, P**. (2019). Leveraging Technology to Manage Chagas Disease by Tracking Domestic and Sylvatic Animal Hosts as Sentinels: A Systematic Review. *American Journal of Tropical Medicine and Hygiene*, *101*(5).

Journal Impact Factor = 2.12

Stigler Granados, P., Hildenbrand, Z., Mata, C., Habib, S., Martin, M., Carlton, D., Santos, I., Schug, K., & Fulton, L. V. (2019). Attitudes, Perceptions and Geo-Spatial Analysis of Water Quality and Individual Health Status in a High-Fracking Region. *Water*, *11*(8).

Journal Impact Factor = 2.54

Fulton, L., Dong, Z., Zhan, F., Kruse, C., & **Stigler Granados, P.** (2019). Geospatial-Temporal and Demand Models for Opioid Admissions, Implications for Policy. *Journal of Clinical Medicine*, 8, 993.

Journal Impact Factor = 5.58

Stigler Granados, P., Fulton, L., Nuñez Patlan, E., Terzyk, M., & Novotny, T. E. (2019). Global health perspectives on cigarette Butts and the environment. *International Journal of Environmental Research and Public Health*, *16*(10), 1858.

Journal Impact Factor = 2.46

Forsyth, C. J., **Stigler Granados, P.,** Pacheco, G. J., Betancourt, J. A., & Meymandi, S. K. (2019). Current Gaps and Needs for Increasing Access to Healthcare for People with Chagas Disease in the United States. *Current Tropical Medicine Reports* 6, 13–22.

Journal Impact Factor = 1.21

Martin, M. S., Santos, I., Carlton, Jr, D. D., **Stigler Granados, P.,** Hildenbrand, Z. L., & Schug, K. A. (2018). Characterization of bacterial diversity in contaminated groundwater using matrix-assisted laser desorption/ionization time-of-flight mass spectrometry. *Science of the Total Environment*, 622-623, 1562–1571.

Journal Impact Factor = 5.59

Santos, I., Martin, M., Reyes, M., Carlton, Jr, D., **Stigler Granados, P.,** Valerio, M., & Schug, K.(2018). Exploring the links between groundwater quality and bacterial communities near oil and gas extraction activities. *Science of the Total Environment*, 618, 165–173.

Journal Impact Factor = 5.59

Javadian, S., **Stigler Granados, P.,** Curtis, C., Thompson, F., Huber, L., & Novotny, T. (2015). Perspectives on Tobacco Product Waste: A Survey of Framework Convention Alliance Members' Knowledge, Attitudes, and Beliefs. *International Journal of Environmental Research and Public Health*, *12*(8), 9683–9691.

Journal Impact Factor = 2.15

Quintana, P. J., Ganster, P., **Stigler Granados, P.**, Muñoz-Meléndez, G., Quintero-Núñez, M., & Rodríguez-Ventura, J. (2015). Risky Borders: Traffic Pollution and Health Effects at US–Mexican Ports of Entry. *Journal of Borderlands Studies*, *30*(3), 287–307.

Journal Impact Factor = 1.03

Cuomo, R., Mackey, T., & **Stigler Granados, P.** (2015). The economics of counterfeit Avastin: A geospatial and statistical analysis of demographic correlates to FDA warning letters. *Pharmacoepidemiology and Drug Safety*, *24*(7), 748–756.

Journal Impact Factor = 2.91

Curtis, C., Collins, S., Cunningham, S., **Stigler, P.,** & Novotny, T. E. (2014). Extended producer responsibility and product stewardship for tobacco product waste. *International Journal of Waste Resources*, *4*(3).

Journal Impact Factor = 6.76

Stigler, P., Quintana, P. J., Gersberg, R., Zúñiga, M. L., & Novotny, T. (2014). Comparing health outcomes and point-of-use water quality in two rural indigenous communities of Baja California, Mexico before and after receiving new potable water infrastructure. *Journal of Water Sanitation and Hygiene for Development*, *4*(4), 672–680.

Journal Impact Factor = 1.25

REFEREED BOOK CHAPTERS

1. **Stigler Granados, P**., & Forsythe, C. (2021). Chagas Disease in the United States. In J. Weatherhead (Ed.), *Neglected Tropical Diseases - North America*. Springer Nature. Reviewed by external reviewers beyond the book and press editor.
2. **Stigler Granados, P**. (2017). Public Health Concerns and Unconventional Oil and Gas Development. In *Advances in Chemical Pollution, Environmental Management and Protection: Vol. 1* (pp. 147--166). Elsevier. Reviewed by external reviewers. Reviewed by external reviewers beyond the book and press editor.

NON -REFEREED PAPERS

1. **Stigler Granados, P.,** Quintana, JE, Hoh, E, Sant, K, Zavalos Perez, M, Galvez Lopez, N, Ni, Y, Oren E. "Tijuana River Contamination from Urban Runoff and Sewage: A Public Health Crisis at the Border" White Paper, Released Feb 13, 2024. chrome- https://www.sdsu.edu/_files/tijuana-sewage-contamination-public-health-crisis-white-paper-021424.pdf

REFEREED PROCEEDINGS (limited list)

1. **Stigler Granados, P.** "Chagas Disease in the US Military", SOVE conference, Oral Presentation, Charleston, South Carolina (2023)
2. **Stigler Granados, P.** "Chagas Disease as a Disease of Military Operational Importance", MHSRS conference, Oral Presentation, Orlando Florida (2023)
3. Pacheco, G, Betancourt, J, and **Stigler Granados, P.** "Chagas Disease as a Disease of Operational Military Significance: Lack of Essential Policies Present a Clear and Present Danger to Service Members", AMSUS, Poster Presentation, Washington D.C. (2023)
4. Pacheco, G., Betancourt, J., Eoff, A, Patel, S., **Stigler Granados, P."** Chagas Disease as a Disease of Operational Military Significance: A Review of Existing Policies", College of Health Professions 27th Annual Faculty/Student Research Forum, San Marcos, TX (2023).
5. **Stigler Granados, P.** and McBride, S. "Chagas disease in the U.S. a One Health Approach", American Public Health Association, Oral Presentation, Boston, MA (2022).
6. **Stigler Granados, P.** and Debboun, M. "The Kiss of Death: Chagas Disease and Triatomines in California", Mosquito and Vector Control Association of California, Virtual (2022).

7. Rohde, R. E., **Stigler Granados, P.,** Pacheco, G. J., ASCLS and AGT Joint Annual Conference, "Utilizing Maps to Identify Possible Missed Cases of Chagas Disease," Charlotte, NC, United States. (2019).
8. **Stigler Granados, P.,** Snook, K., Lord, K., Zhou, W., Santa Maria, E., Mangla, A., Texas Osteopathic Medical Association's 63rd Mid-Winter Conference, "A Physicians Guide to Chagas Disease in Texas," Texas Osteopathic Medical Association, Omni Park West, Dallas, TX, United States. (2019).
9. **Stigler Granados, P.,** Houston Global Health Consortium SUSTAIN Conference, "Chagas Disease in the Americas: who is at risk and what do our health care providers know about the disease," Houston, TX, United States. (2017).
10. **Stigler Granados, P.** San Antonio Military Health System & University Research Forum (SURF), "Chagas Disease Education and Outreach for Health Care Providers in the Military.," San Antonio, TX, United States. (2016).
11. **Stigler Granados, P.** International Conference of Entomology, "Healthcare Provider Awareness of Neglected Tropical Diseases in the U.S.," Orlando, TX, United States. (2016).
12. **Stigler Granados, P.** American Veterinary Medicine Association, "Understanding the prevalence and barriers to treatment of Chagas Disease in the U.S.," San Antonio, TX, United States. (2016).
13. **Stigler Granados, P.** San Antonio Military Health System & University Research Forum (SURF), "Chagas Disease Education and Outreach," San Antonio, TX, United States. (2015).
14. **Stigler Granados, P.** Environment Federation Technical Environmental Conference, "Improved drinking water infrastructure: management and community health in rural border indigenous communities of Baja California, Mexico," San Diego, CA, United States. (2007).

INVITED & SELECTED PRESENTATIONS (limited list)

1. **Stigler Granados, P.** California Coastal Commission Meeting, "Health and Environmental Impacts of Tijuana River Sewage Contamination" San Diego, CA (May 2024)
2. **Stigler Granados, P.** SANDAG Borders Committee Presentation, "Public Health Report on Exposure Risks from Contaminated Water in the Tijuana River Valley" San Diego, CA (April 2024)
3. **Stigler Granados, P.** CA Nurses for Environmental Health and Justice, "Tijuana River a Public Health Crisis", Environment and Health Conference, San Diego, CA (April 2024).
4. **Stigler Granados, P.** Imperial Beach City Council Workshop, "Tijuana River a Public Health Crisis", Imperial Beach (March 2024).
5. **Stigler Granados, P**. San Diego Regional Chamber of Commerce, "Tijuana River a Public Health Crisis", Sustainability and Industry Committee (March 2024)
6. **Stigler Granados, P**. Public Health Institute, "Chagas disease in the U.S. – a neglected disease in our backyard", San Diego State University (October 2023).
7. **Stigler Granados, P.** World Chagas Day Seminar, "Chagas Disease in the U.S." San Diego State University. (April 2023).
8. **Stigler Granados, P.**, James Steele Conference on Diseases in Nature Transmissible to Man, "Raising Awareness about Chagas Disease: Challenges, Successes and What's Next," Texas Department of State Health Services, Virtual. (2021).
9. **Stigler Granados, P.**, Rethinking Chagas Disease in the U.S. -2, "Raising Awareness of Chagas Disease in the U.S. - Promoting excellence in the care of people with Chagas disease," Harvard T.H. Chan School of Public Health and Mundo Sano Foundation, Virtual. (2021).
10. **Stigler Granados, P.**, Medical Entomology, "Chagas Disease and the Texas Chagas Taskforce Model," Lecture for Dr. Megan Wise de Valdez - Biology Program, Texas A&M University, San Antonio, TX, United States. (2021).
11. **Stigler Granados, P.**, Flores, E.., Cagle, C., Nuñez Patlan, E., Nguyen, S., Rohde, R. E., Lieneck, C. H., Pacheco, G., Betancourt, J. A., Fulton, L. V., College of Health Professions 25th Annual Research Symposium, Poster. "Utilizing the Extension for Community Healthcare Outcomes Model (ECHO) to Educate U.S. Healthcare Providers on Chagas Disease," Texas State University, Virtual. (2021). Won second place.
12. **Stigler Granados, P.** Flores, E., Cagle, C., Nuñez Patlan, E., Nguyen, S., Rohde, R. E., Lieneck, C. H., Pacheco, G., Betancourt, J. A., Fulton, L. V., 5th Annual Texas State University Health Scholar Showcase, Poster. "Utilizing the Extension for Community Healthcare Outcomes Model (ECHO) to Educate U.S. Healthcare Providers on Chagas Disease," Texas State University, Virtual. (2021).

13. Pacheco, G., Betancourt, J., **Stigler Granados, P.** American Public Health Association Annual Meeting, "A multidisciplinary one health approach to addressing Chagas disease in the United States," American Public Health Association, San Francisco, CA, United States. (2020).
14. **Stigler Granados, P.**, Nuñez Patlan, E., Pacheco, G., Betancourt, J., Fulton, L., Rohde, R., American Public Health Association Annual Meeting, "Raising awareness about chagas disease: Challenges, successes and what's next," American Public Health Association, San Francisco, CA, United States. (2020).
15. Pacheco, G. J., Betancourt, J. A., Fulton, L. V., **Stigler Granados, P.**, James Steele Conference on Diseases in Nature Transmissible to Man, Poster. "Using Geospatial Analysis of Hospital Inpatient Data to Map Diagnosed and Potentially Undiagnosed Chagas Cases in Texas, 2013 to 2016," DSHS, San Antonio, TX, United States. (2020).
16. **Stigler Granados, P.**, Nuñez Patlan, E., Pacheco, G., Betancourt, J., Fulton, L., Rohde, R., James Steele Conference on Diseases in Nature Transmissible to Man, "Raising Awareness about Chagas Disease: Challenges, Successes and What's Next," San Antonio, TX, United States. (2020).
17. **Stigler Granados, P.** and Edwards, M., Chagas ECHO - Awareness for Healthcare Providers, "Chagas for OB/GYN and Pediatrics: screening/diagnostics in pregnant women and newborns," Centers for Disease Control and UTHealth ECHO, Online, San Antonio, United States. (2020).
18. **Stigler Granados, P.** and Marcus, R., Chagas ECHO - Awareness for Healthcare Providers, "Chronic Chagas: insights from Cardiology," Centers for Disease Control and UTHealth ECHO, Online, San Antonio. (2020).
19. **Stigler Granados, P.** and Hochberg, N. Chagas ECHO - Awareness for Healthcare Providers, "Chagas at the Primary Care Level," Centers for Disease Control and UTHealth ECHO, Online, San Antonio. (2020).
20. Pacheco, G., Betancourt, J. A., **Stigler Granados, P.** American Public Health Association Annual Meeting, "Physician Knowledge, Attitudes, and Practices regarding Chagas Disease: Challenges and Experiences of a Mixed Methods Research," American Public Health Association, Philadelphia, PA, United States. (2019).

SCHOLARLY AWARDS

1. Nomination for Presidential Award for Excellence in Scholarly Activity, Texas State University (2021).
2. Presidential Distinction Award for Excellence in Scholarly/Creative Activities, Texas State University - College of Health Professions (2020).
3. Faculty Excellence Award, Outstanding Scholarship Assistant Professor, Texas State University - College of Health Professions (2019).
4. College Achievement Award for Scholarly Activity, Texas State University - College of Health Professions. (2019).
5. San Diego State University Presidents Award for Student Research, San Diego State University (2012).
6. John J. Hanlon Award, San Diego State University (2009).
7. Outstanding Occupational and Environmental Health Student Award (2009).
8. U.S. Environmental Protection Agency Region 9 Environmental Award, U.S. Environmental Protection Agency (2007).

FUNDED RESEARCH GRANTS

1. $300,000 - Tijuana River Contamination Exposure Risks and Public health, Principal Investigator, Conrad Prebys Foundation, (January 2024 - December 2025).
2. $3,000,000 - Nutrition for Underserved Elderly via Application (NUEVA), Co-Investigator, Department of Health and Human Services DHHS - Administration for Community Living, Federal (August 2022 – July 2025).
3. $533,331 - Raising Awareness of Chagas Disease in the United States, Principal Investigator, Centers for Disease Control and Prevention, Federal (September 30, 2020 - September 29, 2024). 5-year Cooperative Agreement 2020-2025.
4. $705,755 - Effective Surveillance of Chagas Disease for US Military Readiness along Southwest US Mexico Border Ports of Entry. Principal Investigator. DoD Global Health Engagement Research Initiative (GHERI) Award, Federal (October 2020 - August 2023).
5. $376,209 - Pilot Newborn Screening Program for Chagas, Principal Investigator, Mundo Sano, Private Foundation, Research Gift (September 30, 2019 - October 1, 2023).
6. $544,329 - Raising Awareness about Chagas Disease in Texas, Principal Investigator, Centers for Disease Control and Prevention, 5-year Cooperative Agreement, Federal (August 1, 2015 - July 31, 2020).
7. $14,495 – Water, Health and Fracking in South Texas, Principal Investigator, UTHealth San Antonio ReACH and Institute for Integrated Medicine and Science, Academic (March 15, 2019 – June 2021).

8. $15,966 - Chagas Disease Prevalence and Associated Risk Factors Among Texas State University Students, Staff and Faculty, Principal Investigator, Texas State University Research Enhancement Committee and Faculty Senate, Texas State University, Academic (February 1, 2019 – May 2021).
9. $50,000 - Assessing groundwater quality impacts of fracking in Frio, County Texas, Principal Investigator, Institute for Integrated Medicine and Science, University of Texas Health Science Center San Antonio, Academic (September 2016 - August 2017).
10. $15,000 - Climate Change and Vulnerable Populations in the US Mexico Border Region, Principal Investigator, The San Diego Foundation, (July 2013 - June 2014).
11. $49,000 - Climate Change and Vulnerable Populations in the US Mexico Border Region, Principal Investigator, The San Diego Foundation, (July 2012 - June 2013).
12. $510,000 - Building Healthy Communities through the Built Environment, Principal Investigator, California Endowment, Foundation (January 2009 - December 2012).
13. $250,000 - Research and development for Environmental Justice Initiatives, Principal Investigator, Ford Foundation (October 2010 - September 2012).
14. $190,000 -San Diego Tribal Environmental Health Initiative, Principal Investigator, The California Wellness Foundation (July 2009 - June 2011).
15. $118,000 -Gastrointestinal Illness as Environmental Indicators in Two Indigenous Communities of Baja California, Mexico, Principal Investigator, Pan American Health Organization (January 2007 - December 2009).
16. $55,000 - Baja California Indigenous Community Solid Waste Management Project, Principal Investigator, U.S. Environmental Protection Agency (March 2008 - February 2009).
17. $420,000 - San Diego Tribal Environmental Health Collaborative Project, Principal Investigator, California Endowment (January 2006 - December 2008).
18. $200,000 - San Diego Tribal Environmental Health Initiative, Principal Investigator, The California Wellness Foundation (July 2006 - June 2008).
19. $100,000 -Baja California, Mexico Community Drinking Water Infrastructure Project, Principal Investigator, U.S. Environmental Protection Agency (May 2006 - April 2007).
20. $56,000 - Baja California, Mexico Community Water System Capacity Building Project, Principal Investigator, U.S. Environmental Protection Agency (May 2005 - April 2006).
21. $15,000 - Nitrate Modeling of the San Luis Rey River in the La Jolla Tribal Reservation, Principal Investigator, The San Diego Foundation (July 2004 - June 2005).
22. $75,000 - Nitrate Modeling of the San Luis Rey River in the La Jolla Tribal Reservation, Principal Investigator, The San Diego Foundation (July 2003 - June 2004).

PARTICIPATION IN PROFESSIONAL ASSOCIATIONS

2018 to Present American Society for Tropical Medicine and Hygiene
2018 to 2020 Association of University Programs in Health Administration
2014 to Present Infectious Disease Society of America
2007 to Present American Public Health Association
2005- 2020 Engineers Without Borders USA

SERVICE

Academic Service

2023 – Present. Member, Public Health Practice Committee, School of Public Health, San Diego State University
2023-2024, Member, Personnel Committee for DrPH Program Director
2022 to Present: Member, CHHS Unity Taskforce, San Diego State University
2021- 2023. Member, Research Committee. School of Public Health, San Diego State University.
2021 – Present. Member, Admissions Committee, Division of Environmental Health, San Diego State University.
2020-2021. Member, MHA Admissions Committee. Health Administration, Texas State University.
2019-2021. Admissions Committee BHA Program. Health Administration, Texas State University.
2019-2021. Member, Interprofessional Education Committee. College of Health Professions, Texas State University.
2019-2021. Member, Executive Advisory Board for Education Abroad. Texas State University.

2019-2021. Member, Environment and Sustainability Committee. Texas State University.
2018-2021. Representative, Texas Society of Allied Health Professions. College of Health Professions, Texas State University.
2017-2018. Member, Department Representative, Faculty Council. UTHealth School of Public Health.
2017-2018. Member, Eliminate Tobacco Campaign Steering Committee. University of Texas Board of Regents.
2016-2018. Chair, Preliminary Exam Committee. MPACH, UTHealth School of Public Health.
2016-2018. Member, Scholarship Committee. MPACH, UTHealth School of Public Health.
2016-2018. Faculty Representative and Advisor, San Antonio Student Leadership Council. MPACH, UTHealth School of Public Health.
2015-2018. Chair, Delta Omega Honorary Society – Alpha Iota Chapter. UTHealth School of Public Health.

Service for the Profession

2014 -Present. Chair. US Chagas Taskforce.
2005 – 2014. Co-Chair, U.S. and Tribal, U.S. Environmental Protection Agency's Border 2012/2020 San Diego-Tijuana Border Air Quality Taskforce.
2005-2010. Member, U.S. Environmental Protection Agency's Border 2012/2020 Tijuana Watershed Water Quality Taskforce.

Service for the Community

2022 to Present. Board Member, High Tech High Foundation
2022 to Present. Committee Member Fields of the Future Advisory Committee, San Elijo Lagoon and the Nature Collective
2009 -2019. Project Lead. Engineers Without Borders. El Salvador Rainwater Capture Project. Link to view the award-winning video about this project the Water in La Chiripa - El Salvador https://vimeo.com/63023020

RECENT MEDIA AND PUBLIC ENGAGEMENT

- KPBS Midday Edition – "New reports highlight public health crisis in border waters," February 21, 2024. Link
- NBC San Diego – "Toxic Tide: Sewage pollution from Mexico poses health risk to kids, elderly, pregnant," February 13, 2024. Link
- NBC San Diego – "New state legislation on the way to address cross-border pollution from Tijuana River," March 10, 2024. Link
- KPBS – "Tijuana Sewage Contamination Public Health Crisis White Paper," February 12, 2024. Link- Interviewee, KPBS Midday Edition – "New reports highlight public health crisis in border waters," February 21, 2024. Link
- NBC San Diego – "Toxic Tide: Sewage pollution from Mexico poses health risk to kids, elderly, pregnant," February 13, 2024. Link
- NBC San Diego – "New state legislation on the way to address cross-border pollution from Tijuana River," March 10, 2024. Link
- KPBS – "Tijuana Sewage Contamination Public Health Crisis White Paper," February 12, 2024. Link

San Diego County Air Pollution Control District

APPLICATION FOR SERVING AS A PUBLIC MEMBER ON THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT GOVERNING BOARD

***INSTRUCTIONS**: Please complete this form in its entirety. Note the additional requirements listed on the third page.*

Submit the completed application and your resume to the Clerk of the Air Pollution Control District Governing Board at APCDPublicComment@sdapcd.org or, you may send your application to 10124 Old Grove Road, San Diego, CA 92131. ***Applications are due no later than March 28, 2025.***

William	Powers
Last Name	*First Name*

The SDAPCD Governing Board meets at times mutually satisfactory to the members. Day meetings are more common than evening meetings. The current schedule is the second Thursday of each month. Will you be able to schedule your time accordingly?

■ Yes ☐ No

Have you ever been affiliated with an entity that is regulated by the San Diego County Air Pollution Control District?

■ Yes ☐ No

If yes, please list them here:

I have provided air quality consulting support to the City of Carlsbad, Children's Hospital, Grossmont Hospital, among others, in proceedings before the San Diego County Air Pollution Control District.

What required area of expertise are you seeking to represent on the SDAPCD Governing Board?

☐ Physician/Public Health Professional
☐ Environmental Justice Interests
■ Science/Technology Background in Air Pollution

***Candidates are required to submit evidence of their qualifications by including a resume with this application and may be asked to provide additional information, as needed**.

Please summarize your experience that demonstrates your interest and proven ability in the field of air pollution control and your understanding of the needs of the general public in connection with the air pollution problems of San Diego County. *If additional space is required, attach additional pages.*

I have four decades of experience in air pollution control. I began my career as a project engineer at the US Navy in the 1980s, responsible for testing, maintaining, and retrofitting air emission control systems at Navy shore power generation facilities. Subsequently I worked at a consulting engineering firm, ENSR, as manager of an air pollution control engineering and testing group. In that capacity I prepared Best Available Control Technology (BACT) assessments, prepared air permit applications, and oversaw air emission testing programs. I founded Powers Engineering in the 1990s, to provide air pollution consulting services in the same areas. I have a professional engineer's registration in mechanical engineering and a BSME from Duke University.

The general public expects sources of air emissions to follow regulations established to protect their health and welfare, and expects the APCD to enforce those regulations. That is my view as well and represents the perspective I would bring to the San Diego County APCD Governing Board.

STATEMENT OF OCCUPATIONAL EXPERIENCE

Powers Engineering	
Current Employer	
Principal	1994 - present
Job Title	*Dates of Employment*

Previous Employers	*Position Title*	*Dates of Employment*
ENSR Consulting	project manager	1989 - 1993
US Navy	project engineer	1982 - 1987

List past county appointments with dates served, and other past or present community or public service appointments.

Committee/Organization Name	*Dates Served*
San Diego County APCD Hearing Board, primary (2017-2023)/alternate	2017 - present
San Diego County APCD Hearing Board, alternate	1995-1998

Membership qualifications for the APCD Governing Board are as follows:

Qualifications. All public members shall reside within the boundaries of San Diego County and shall be appointed on the basis of their demonstrated interest and proven ability in the field of air pollution control and their understanding of the needs of the general public in connection with the air pollution problems of the San Diego County. Specific qualifications for each of the three (3) public Board members, as established by Health & Safety Code section 40100.6(a)(4)(A)–(C), are as follows:

1. One public member shall be a ***physician or public health professional*** actively practicing within the boundaries of the San Diego County. The member's specialty shall be in the health effects of air pollution on vulnerable populations.

2. One public member shall be a ***person representing environmental justice interests*** and who works directly with communities within the boundaries of the San Diego County that are most significantly burdened by, and vulnerable to, high levels of pollution, including communities with diverse racial and ethnic populations and communities with low-income populations. This member may be a resident of that community and have a demonstrated record of community leadership.

3. One public member shall be a ***person with a scientific or technical background in air pollution***, such as an environmental engineer, chemist, meteorologist, or air pollution specialist.

NOTE: Public members will be appointed by the San Diego County Air Pollution Control District Governing Board. Each public member will serve a four-year term. All members are entitled to receive compensation for participation on the Governing Board. Please review California Health and Safety Code Section 40100.6 for details.

Please note that this application is a public record subject to disclosure. *This application will be maintained for a period of one year.*

By signing below, I declare that the information provided above is accurate and complete to the best of my knowledge.

William Powers

Applicant's Name

William Powers

Applicant's Signature

3/28/25

Date

CONTACT INFORMATION

Powers	William
Last Name	*First Name*

Note: Personal information may be withheld from public view as allowed by law.

[redacted] [redacted] [redacted] [redacted]
Home Street Address *City* *State* *Zip*

Mailing Address (if different than home address) *City* *State* *Zip*

[redacted] [redacted] [redacted] [redacted]
Business Street Address *City* *State* *Zip*

[redacted] [redacted]
Home Phone # *Business Phone #*

[redacted]
Mobile Phone #

[redacted]
E-Mail Address

BILL POWERS, P.E.

PROFESSIONAL HISTORY

Powers Engineering, San Diego, CA 1994-
ENSR Consulting and Engineering, Camarillo, CA 1989-93
Naval Energy and Environmental Support Activity, Port Hueneme, CA 1982-87
U.S. Environmental Protection Agency, Research Triangle Park, NC 1980-81

EDUCATION

Bachelor of Science – Mechanical Engineering, Duke University
Master of Public Health – Environmental Sciences, University of North Carolina

PROFESSIONAL AFFILIATIONS

Registered Professional Mechanical Engineer, California (Certificate M24518)
Registered Professional Engineer, Missouri (Certificate 2018039156)
American Society of Mechanical Engineers
Institute of Electrical and Electronics Engineers

TECHNICAL SPECIALTIES

Forty years of experience in:

- Air quality and utility commission proceedings - expert witness
- Distributed solar photovoltaics (PV) siting and regional renewable energy planning
- Power plant cooling system conversion and air emission control assessments
- Combustion equipment permitting, testing and monitoring
- Air pollution control equipment retrofit design/performance testing
- Petroleum refinery air engineering and testing
- Latin America environmental project experience

RECENT AIR QUALITY AND UTILITY COMMISSION PROCEEDINGS

Compressor Station Gas Turbine Air Emission Controls. Assessed the air emission controls and siting issues related to two proposed pipeline compressor station projects in the vicinity of Nashville, Tennessee utilizing Solar Turbines, Inc Titan gas turbines. The result, based on application of a Reasonably Available Control Technology (RACT) requirement, was the reduction of the proposed air permit nitrogen oxides (NOx) emission limit from 25 parts per million (ppm) to 9 ppm.

Combined Heat and Power Plant Gas Turbine Air Emission Controls. Evaluated the air emission controls proposed for a combined heat and power (CHP) plant at Duke University that would utilize Solar Turbines, Inc Titan gas turbine. Applicant proposed a 25 ppm NO_x limit using dry low-NO_x combustion as Best Available Control Technology (BACT) in its Certificate of Public Convenience and Necessity (CPCN) application to the North Carolina Utilities Commission. Argued that NO_x BACT for the CHP plant should be use of selective catalytic reduction (SCR) to achieve a 2 ppm NO_x emission limit. Applicant withdrew its CPCN application.

SDG&E 36-Inch Transmission Pipeline. Expert witness for non-profit client advocating that existing 16-inch pipeline did not require replacement with new $600 million 36-inch pipeline. Underscored in testimony that SDG&E had recently completed extensive inline inspection of existing 16-inch pipeline and found that pipeline was in good condition for long-term operation at 512 psig transmission pressure. Demonstrated that reduction of pressure to 320 psig would not increase safety of existing pipeline, as ILI could no longer be done periodically at lower pressure. Commission accepted this reasoning and denied SDG&E's application.

Cove Point LNG Export Terminal. Expert witness in two separate administrative proceedings before the Maryland Public Service Commission, in 2014 and 2017, regarding air permit conditions for the proposed Cove Point LNG export. The plant site is located in a non-attainment area for ozone. Testimony addressed deficiencies in the proposed air emission limits and proposed control technology for combustion equipment – including gas turbines, auxiliary boilers, and flares, fugitive emission sources, and marine loading vapor recovery systems.

Corpus Christi LNG Expert Terminal. Expert witness in Texas Commission on Environmental Quality contested air permit proceeding in 2013 before the State Office of Administrative Hearings. Testimony addressed deficiencies in the proposed control technology for compressor-drive gas turbines, flares, and fugitive emission sources, and marine loading vapor recovery systems.

DISTRIBUTED SOLAR PV SITING AND REGIONAL RENEWABLE ENERGY PLANNING

Roadmap to 100 Percent Local Solar by 2030 in the City of San Diego. Author of the May 2020 *Roadmap to 100 Percent Local Solar Build-Out by 2030 in the City of San Diego* strategic energy plan for San Diego. The *Roadmap* outlines a strategy to maximize the use of solar energy and battery storage in the City of San Diego (City) to provide 100 percent clean electricity to all San Diegans by 2030. The City's Climate Action Plan sets a mandatory target of 100 percent clean electricity by 2035. The *Roadmap* describes how the City can best deliver lower-cost electricity and provide local job growth by choosing local solar power paired with battery storage, complemented by smart energy efficiency and demand response programs, to reach 100 percent clean energy.

North Carolina Clean Path 2025 Plan. Author of the August 2017 *North Carolina Clean Path 2025* strategic energy plan for North Carolina. *NC Clean Path 2025* implements local solar power, battery storage, and energy efficiency measures to rapidly replace fossil fuel-generated electricity in the state. The plan is substantially less costly than the $40 billion expansion of natural gas infrastructure, nuclear power, and transmission infrastructure being planned for North Carolina. Implementation of *NC Clean Path 2025* would reduce power generated by coal- and natural gas-fired plants by about 60 percent by 2025, and 100 percent by 2030. All in-state coal-fired plants would be closed and gas-fired plants would be used only for backup supply. Existing transmission and distribution infrastructure would be maintained and not expanded.

Bay Area Smart Energy 2020 Plan. Author of the March 2012 *Bay Area Smart Energy 2020* strategic energy plan for the nine-county region surrounding San Francisco Bay. This plan uses the zero net energy building targets in the *California Energy Efficiency Strategic Plan* as a framework to achieve a 60 percent reduction in GHG emissions from Bay Area electricity usage, and a 50 percent reduction in peak demand for grid electricity, by 2020. The 2020 targets in the plan include: 25 percent of detached homes and 20 percent of commercial buildings achieving zero net energy, adding 200 MW of community-scale microgrid battery storage and 400 MW of utility-scale battery storage, reduction in air conditioner loads by 50 percent through air conditioner cycling and targeted incentive funds to assure highest efficiency replacement units, and cooling system modifications to increase power output from The Geysers geothermal production zone in Sonoma County.

Solar PV technology selection and siting for SDG&E Solar San Diego project. Served as PV technology expert in California Public Utilities Commission proceeding to define PV technology and sites to be used in San Diego Gas & Electric (SDG&E) $250 million "Solar San Diego" project. Recommendations included: 1) prioritize use of roof-mounted thin-film PV arrays similar to the SCE urban PV program to maximize the installed PV capacity, 2) avoid tracking ground-mounted PV arrays due to high cost and relative lack of available land in the urban/suburban core, 3) and incorporate limited storage in fixed rooftop PV arrays to maximizing output during peak demand periods. Suitable land next to SDG&E substations capable of supporting 5 to 40 MW of PV (each) was also identified by Powers Engineering as a component of this project.

Rooftop PV alternative to natural gas-fired peaking gas turbines, Chula Vista. Served as PV technology expert in California Energy Commission (CEC) proceeding regarding the application of MMC Energy to build a 100 MW peaking gas turbine power plant in Chula Vista. Presented testimony that 100 MW of PV arrays in the Chula Vista area could provide the same level of electrical reliability on hot summer days as an equivalent amount of peaking gas turbine capacity at approximately the same cost of energy. The final decision issued by the CEC in the case denied the application in part due to failure of the applicant or CEC staff to thoroughly evaluate the PV alternative to the proposed turbines.

San Diego Smart Energy 2020 Plan. Author of October 2007 *San Diego Smart Energy 2020*, an energy plan that focuses on meeting the San Diego region's electric energy needs through accelerated integration of renewable and non-renewable distributed generation, in the form of combined heat and power (CHP) systems and solar photovoltaic (PV) systems. PV would meet approximately 28 percent of the San Diego region's electric energy demand in 2020. Annual energy demand would drop 20 percent in 2020 relative to 2003 through use all cost-effective energy efficiency measures. Existing utility-scale gas-fired generation would continue to be utilized to provide power at night, during cloudy weather, and for grid reliability support.

COOLING SYSTEM CONVERSION AND POWER PLANT EMISSION CONTROL ASSESSMENTS

Closed-Cycle Cooling Alternative at California Nuclear Plant.
Lead engineer on review of Bechtel assessment of wedgewire screens and closed-cycle cooling for Diablo Canyon nuclear plant. Demonstrated that wedgewire screens were not likely to be effective in substantially reducing entrainment at the site, and that lower cost closed-cycle retrofit alternatives could be utilized to allow a "cost reasonable" cooling tower retrofit. Plume-abated back-to-back cooling towers located in secondary parking lots to the southeast of the turbine building were identified as the most cost-effective alternative.

Closed-Cycle Cooling Alternative at Florida Nuclear Plant.
Evaluated closed cycle cooling tower feasibility assessment for Turkey Point Nuclear Units 3 and 4. Closed-cycle cooling would replace the existing closed-cycle cooling canals. Wet cooling towers for Units 3 and 4 are feasible and could be operational within four years of submittal of applications for the necessary permits.

Utility Boilers – Conversion of Existing Once-Through Cooled Boilers to Wet Towers, Parallel Wet-Dry Cooling, or Dry Cooling. Provided expert testimony and preliminary design for the conversion of four natural gas and/or coal-fired utility boilers (Unit 4, 235 MW; Unit 3, 135 MW; Unit 2, 65 MW; and Unit 1,65 MW) from once-through river water cooling to wet cooling towers, parallel wet-dry cooling, and dry cooling. Major design constraints were available land for location of retrofit cooling systems and need to maintain maximum steam turbine backpressure at or below 5.5 inches mercury to match performance capabilities of existing equipment. Approach temperatures of 12 ^{o}F and 13 ^{o}F were used for the wet towers. SPX Cooling Technologies F-488 plume-abated wet cells with six feet of packing were used to achieve approach temperatures of 12 ^{o}F and 13 ^{o}F. Annual energy penalty of wet tower retrofit designs is approximately 1 percent. Parallel wet-dry or dry cooling was determined to be technically feasible for Unit 3 based on straightforward access to the Unit 3 surface condenser and available land adjacent to the boiler.

Utility Boiler – Assessment of Air Cooling and Integrated Gasification/Combined Cycle for Proposed 500 MW Coal-Fired Plant. Provided expert testimony on the performance of air-cooling and IGCC relative to the conventional closed-cycle wet cooled, supercritical pulverized coal boiler proposed by the applicant. Steam Pro™ coal-fired power plant design software was used to model the proposed plant and evaluate the impacts on performance of air cooling and plume-abated wet cooling. Results indicated that a conservatively designed air-cooled condenser could maintain rated power output at the design ambient temperature of 90 ^{o}F. The IGCC comparative analysis indicated that unit reliability comparable to a conventional pulverized coal unit could be achieved by including a spare gasifier in the IGCC design, and that the slightly higher capital cost of IGCC was offset by greater thermal efficiency and reduced water demand and air emissions.

Utility Boiler – Assessment of Closed-Cycle Cooling Retrofit Cost for 1,200 MW Oil-Fired Plant. Prepared an assessment of the cost and feasibility of a closed-cycle wet tower retrofit for the 1,200 MW Roseton Generating Station. Determined that the cost to retrofit the Roseton plant with plume-abated closed-cycle wet cooling was well established based on cooling tower retrofit studies performed by the original owner (Central Hudson Gas & Electric Corp.) and subsequent regulatory agency critique of the cost estimate. Also determined that elimination of redundant and/or excessive budgetary line items in owners cost estimate brings the closed-cycle retrofit in line with expected costs for comparable new or retrofit plume-abated cooling tower applications.

Nuclear Power Plant – Assessment of Closed-Cycle Cooling Retrofit Cost for 2,000 MW Plant. Prepared an assessment of the cost and feasibility of a closed-cycle wet tower retrofit for the 2,000 MW Indian Point Generating Station. Determined that the most appropriate arrangement for the hilly site would be an inline plume-abated wet tower instead of the round tower configuration analyzed by the owner. Use of the inline configuration would allow placement of the towers at numerous sites on the property with little or need for blasting of bedrock, greatly reducing the cost of the retrofit. Also proposed an alternative circulating cooling water piping configuration to avoid the extensive downtime projected by the owner for modifications to the existing discharge channel.

Power Plant Dry Cooling Symposium – Chair and Organizer. Chair and organizer of the first symposium held in the U.S. (May 2002) that focused exclusively on dry cooling technology for power plants. Sessions included basic principles of wet and dry cooling systems, performance capabilities of dry cooling systems, case studies of specific installations, and reasons why dry cooling is the predominant form of cooling specified in certain regions of North America (Massachusetts, Nevada, northern Mexico).

Ameren Missouri Coal Units – Causes of Opacity and Opacity Reduction Alternatives. Lead engineer to assess the root causes of opacity exceedances and evaluate potential alternatives to eliminate opacity violations from the Labadie, Meramec, and Rush Island power plants.

Utility Boilers – Evaluation of Correlation Between Opacity and PM_{10} Emissions at Coal-Fired Plant. Provided expert testimony on whether correlation existed between mass PM_{10} emissions and opacity during opacity excursions at large coal-fired boiler in Georgia. EPA and EPRI technical studies were reviewed to assess the correlation of opacity and mass emissions during opacity levels below and above 20 percent. A strong correlation between opacity and mass emissions was apparent at a sister plant at opacities less than 20 percent. The correlation suggests that the opacity monitor correlation underestimates mass emissions at opacities greater than 20 percent, but may continue to exhibit a good correlation for the component of mass emissions in the PM_{10} size range.

IGCC as BACT for Air Emissions from Proposed 960 MW Coal Plant. Presented testimony on IGCC as BACT for air emissions reduction from 960 MW coal plant. Applicant received air permit for a pulverized coal plant to be equipped with a baghouse, wet scrubber, and wet ESP for air emissions control. Use of IGCC technology at the emission rates permitted for two recently proposed U.S. IGCC projects, and demonstrated in practice at a Japanese IGCC plant firing Chinese bituminous coal, would substantially reduce potential emissions of NO_x, SO_2, and PM. The estimated control cost-effectiveness of substituting IGCC for pulverized coal technology in this case was approximately $3,000/ton.

Analysis of Proposed Air Emission Limits for 600 MW Pulverized Coal Plant. Project engineer tasked with evaluating sufficiency of air emissions limits and control technologies for proposed 600 MW coal plant Arkansas. Determined that the applicant had: 1) not properly identified SO_2, sulfuric acid mist, and PM BACT control levels for the plant, and 2) improperly utilized an incremental cost effectiveness analysis to justify air emission control levels that did not represent BACT.

Eight Pulverized Coal Fired 900 MW Boilers – IGCC Alternative with Air Cooling. Provided testimony on integrated gasification combined cycle (IGCC) as a fully commercial coal-burning alternative to the pulverized coal (PC) technology proposed by TXU for eight 900 MW boilers in East Texas, and East Texas as an ideal location for CO2 sequestration due to presence of mature oilfield CO2 enhanced oil recovery opportunities and a deep saline aquifer underlying the entire region. Also presented testimony on the major increase in regional consumptive water use that would be caused by the evaporative cooling towers proposed for use in the PC plants, and that consumptive water use could be lowered by using IGCC with evaporative cooling towers or by using air-cooled condensers with PC or IGCC technology. TXU ultimately dropped plans to build the eight PC plants as a condition of a corporate buy-out.

Utility Boilers – Retrofit of SCR and FGD to Existing Coal-Fired Units.
Expert witness in successful effort to compel an existing coal-fired power plant located in Massachusetts to meet an accelerated NO_x and SO_2 emission control system retrofit schedule. Plant owner argued the installation of advanced NO_x and SO_2 control systems would generate > 1 ton/year of ancillary emissions, such as sulfuric acid mist, and that under Massachusetts Dept. of Environmental Protection regulation ancillary emissions > 1 ton/year would require a BACT evaluation and a two-year extension to retrofit schedule. Successfully demonstrated that no ancillary emissions would be generated if the retrofit NO_x and SO_2 control systems were properly sized and optimized. Plant owner committed to accelerated compliance schedule in settlement agreement.

Utility Boilers – Retrofit of SCR to Existing Natural Gas-Fired Units.
Lead engineer in successful representation of interests of California coastal city to prevent weakening of an existing countywide utility boiler NO_x rule. Weakening of NO_x rule would have allowed a merchant utility boiler plant located in the city to operate without installing selective catalytic reduction (SCR) NO_x control systems. This project required numerous appearances before the county air pollution control hearing board to successfully defend the existing utility boiler NO_x rule.

Biomass Plant NO_x and CO Air Emissions Control Evaluation. Lead engineer for evaluation of available nitrogen oxide (NO_x) and carbon monoxide (CO) controls for a 45 MW Aspen Power biomass plant in Texas where proponent had identified selective non-catalytic reduction (SNCR) for NO_x and good combustion practices for CO as BACT. Identified the use of tail-end SCR for NO_x control at several operational U.S. biomass plants, and oxidation catalyst in use at two of these plants for CO and VOC control, as BACT for the proposed biomass plant. Administrative law judge concurred in decision that SCR and oxidation catalyst is BACT. Developer added SCR and oxidation catalyst to project in subsequent settlement agreement.

Biomass Plant Air Emissions Control Consulting. Lead expert on biomass air emissions control systems for landowners that will be impacted by a proposed 50 MW biomass to be built by the local East Texas power cooperative. Public utility agreed to meet current BACT for biomass plants in Texas, SCR for NO_x and oxidation catalyst for CO, in settlement agreement with local landowners.

Combined-Cycle Power Plant Startup and Shutdown Emissions. Lead engineer for analysis of air permit startup and shutdown emissions minimization for combined-cycle power plant proposed for the San Francisco Bay Area. Original equipment was specified for baseload operation prior to suspension of project in early 2000s. Operational profile described in revised air permit was load following with potential for daily start/stop. Recommended that either fast start turbine technology be employed to minimize start/stop emissions or that "demonstrated in practice" operational and control software modifications be employed to minimize startup/shutdown emissions.

NON-WIRES ALTERNATIVES TO TRANSMISSION LINES

Ameren Missouri Mark Twain 345 kV Transmission Line. Responsible for evaluating: 1) the expected peak load growth of Ameren Missouri (MO) in general and in Northeast MO specifically over the next decade, 2) the likelihood of wind projects moving forward in the Northeast MO over the next decade, 3) the feasibility and cost of reconductoring with high capacity composite conductors the three 161 kV line segments that would experience NERC violations if 450 to 500 MW of wind power was constructed in Northeast MO, and 4) the feasibility and cost-effectiveness of substituting local solar for wind power to allow Ameren MO to meet its 2021 Renewable Portfolio Standard (RPS) obligation without building the proposed 345 kV transmission line or upgrading the three existing 161 kV lines interconnecting at the Adair Substation.

American Transmission Corporation Badger-Coulee 345 kV Line. Responsible for evaluating: 1) the expected peak load growth of Wisconsin utilities over the next decade, and 2) the feasibility and cost-effectiveness of alternatives including load management, energy efficiency, local solar, biogas, and energy storage as viable no-wires alternatives to the proposed ATC Badger-Coulee 345 kV transmission line.

San Diego Gas & Electric Wood Pole to Steel Pole Replacement Project.
Lead engineer assessing need and alternatives to replacement of existing wooden 69 kV poles with larger steel 69 kV poles as a response to the fire hazard potential of wooden poles in rural, high fire risk areas. Wooden poles in good condition and not a source of fire ignition. Utility would continue to shut off power to customers during low humidity, high wind conditions. Prepared alternative, solar with batteries for the ~10,000 affected customer meters, to allow customers to ride-through high fire hazard preventive grid power shut-offs at far less cost than replacing wood poles with steel poles.

San Diego Gas & Electric 500 kV Sunrise Transmission Line.
Lead engineer assessing the validity of load growth forecasts used by the utility to justify the need for the 500 kV line, and for developing a no-wires alternative, net-metered solar power with some battery support, to meet the identified reliability need at little or no net cost to the utility customer base.

COMBUSTION EQUIPMENT PERMITTING, TESTING AND MONITORING

EPRI Gas Turbine Power Plant Permitting Documents – Co-Author.
Co-authored two Electric Power Research Institute (EPRI) gas turbine power plant siting documents. Responsibilities included chapter on state-of-the-art air emission control systems for simple-cycle and combined-cycle gas turbines, and authorship of sections on dry cooling and zero liquid discharge systems.

Air Permits for 50 MW Peaker Gas Turbines – Six Sites Throughout California.
Responsible for preparing all aspects of air permit applications for five 50 MW FT-8 simple-cycle turbine installations at sites around California in response to emergency request by California state government for additional peaking power. Units were designed to meet 2.0 ppm NO_x using standard temperature SCR and innovative dilution air system to maintain exhaust gas temperature within acceptable SCR range. Oxidation catalyst is also used to maintain CO below 6.0 ppm.

Kauai 27 MW Cogeneration Plant – Air Emission Control System Analysis. Project manager to evaluate technical feasibility of SCR for 27 MW naphtha-fired turbine with once-through heat recovery steam generator. Permit action was stalled due to questions of SCR feasibility. Extensive analysis of the performance of existing oil-fired turbines equipped with SCR, and bench-scale tests of SCR applied to naphtha-fired turbines, indicated that SCR would perform adequately. Urea was selected as the SCR reagent given the local availability of urea. Unit is first known application of urea-injected SCR on a naphtha-fired turbine.

Microturbines – Ronald Reagan Library, Ventura County, California.
Project manager and lead engineer or preparation of air permit applications for microturbines and standby boilers. The microturbines drive the heating and cooling system for the library. The microturbines are certified by the manufacturer to meet the 9 ppm NO_x emission limit for this equipment. Low-NO_x burners are BACT for the standby boilers.

Hospital Cogeneration Microturbines – South Coast Air Quality Management District.
Project manager and lead engineer for preparation of air permit application for three microturbines at hospital cogeneration plant installation. The draft Authority To Construct (ATC) for this project was obtained two weeks after submittal of the ATC application. 30-day public notification was required due to the proximity of the facility to nearby schools. The final ATC was issued two months after the application was submitted, including the 30-day public notification period.

Gas Turbine Cogeneration – South Coast Air Quality Management District. Project manager and lead engineer for preparation of air permit application for two 5.5 MW gas turbines in cogeneration configuration for county government center. The turbines are equipped with selective catalytic reduction (SCR) and oxidation catalyst to comply with SCAQMD BACT requirements. Aqueous urea is used as the SCR reagent to avoid trigger hazardous material storage requirements. The NO_x and CO continuous emissions monitoring systems are covered by a separate permit.

Peaker Gas Turbines – Evaluation of NO_x Control Options for Installations in San Diego County.
Lead engineer for evaluation of NO_x control options available for 1970s vintage simple-cycle gas turbines proposed for peaker sites in San Diego County. Dry low-NO_x (DLN) combustors, catalytic combustors, high-temperature SCR, and NO_x absorption/conversion ($SCONO_x$) were evaluated for each candidate turbine make/model. High-temperature SCR was selected as the NOx control option to meet a 5 ppm NO_x emission requirement.

Hospital Cogeneration Plant Gas Turbines – San Joaquin Valley Unified Air Pollution Control District.
Project manager and lead engineer for preparation of air permit application and Best Available Control Technology (BACT) evaluation for hospital cogeneration plant installation. The BACT included the review of DLN combustors, catalytic combustors, high-temperature SCR and $SCONO_x$. DLN combustion followed by high temperature SCR was selected as the NO_x control system for this installation. The high temperature SCR is located upstream of the heat recovery steam generator (HRSG) to allow the diversion of exhaust gas around the HRSG without compromising the effectiveness of the NO_x control system.

1,000 MW Coastal Combined-Cycle Power Plant – Feasibility of Dry Cooling.
Expert witness in on-going effort to require use of dry cooling on proposed 1,000 MW combined-cycle "repower" project at site of an existing 1,000 MW utility boiler plant. Project proponent argued that site was two small for properly sized air-cooled condenser (ACC) and that use of ACC would cause 12-month construction delay. Demonstrated that ACC could easily be located on the site by splitting total of up to 80 cells between two available locations at the site. Also demonstrated that an ACC optimized for low height and low noise would minimize or eliminate proponent claims of negative visual and noise impacts.

Industrial Cogeneration Plant Gas Turbines – Upgrade of Turbine Power Output.
Project manager and lead engineer for preparation of Best Available Control Technology (BACT) evaluation for proposed gas turbine upgrade. The BACT included the review of DLN combustors, catalytic combustors, high-, standard-, and low-temperature SCR, and $SCONO_x$. Successfully negotiated air permit that allowed facility to initially install DLN combustors and operate under a NO_x plantwide "cap." Within two major turbine overhauls, or approximately eight years, the NO_x emissions per turbine must be at or below the equivalent of 5 ppm. The 5 ppm NO_x target will be achieved through technological in-combustor NO_x control such as catalytic combustion, or SCR or SCR equivalent end-of-pipe NO_x control technologies if catalytic combustion is not available.

Gas Turbines – Modification of RATA Procedures for Time-Share CEM.
Project manager and lead engineer for the development of alternate CO continuous emission monitor (CEM) Relative Accuracy Test Audit (RATA) procedures for time-share CEM system serving three 7.9 MW turbines located in San Diego. Close interaction with San Diego APCD and EPA Region 9 engineers was required to

receive approval for the alternate CO RATA standard. The time-share CEM then passed the annual RATA without problems as a result of changes to some CEM hardware and the more flexible CO RATA standard.

Gas Turbines – Evaluation of NO_x Control Technology Performance. Lead engineer for performance review of dry low-NO_x combustors, catalytic combustors, high-, standard-, and low-temperature selective catalytic reduction (SCR), and NO_x absorption/conversion ($SCONO_x$). Major turbine manufacturers and major manufacturers of end-of-pipe NO_x control systems for gas turbines were contacted to determine current cost and performance of NO_x control systems. A comparison of 1993 to 1999 "$/kwh" and "$/ton" cost of these control systems was developed in the evaluation.

Lead engineer for evaluation for proposed combined cycle gas turbine NO_x and CO control systems. Project was in litigation over contract terms, and there was concern that the GE Frame 7FA turbine could not meet the 3 ppm NO_x permit limit using a conventional combustor with water injection followed by SCR. Operations personnel at GE Frame 7FA installatins around the country were interviewed, along with principal SCR vendors, to corroborate that the installation could continuously meet the 3 ppm NO_x limit.

Gas Turbines – Title V "Presumptively Approvable" Compliance Assurance Monitoring Protocol. Project manager and lead engineer for the development of a "presumptively approval" NO_x parametric emissions monitoring system (PEMS) protocol for industrial gas turbines. "Presumptively approvable" means that any gas turbine operator selecting this monitoring protocol can presume it is acceptable to the U.S. EPA. Close interaction with the gas turbine manufacturer's design engineering staff and the U.S. EPA Emissions Measurement Branch (Research Triangle Park, NC) was required to determine modifications necessary to the current PEMS to upgrade it to "presumptively approvable" status.

Environmental Due Diligence Review of Gas Turbine Sites – Mexico. Task leader to prepare regulatory compliance due diligence review of Mexican requirements for gas turbine power plants. Project involves eleven potential sites across Mexico, three of which are under construction. Scope involves identification of all environmental, energy sales, land use, and transportation corridor requirements for power projects in Mexico. Coordinator of Mexican environmental subcontractors gathering on-site information for each site, and translator of Spanish supporting documentation to English.

Development of Air Emission Standards for Gas Turbines - Peru. Served as principal technical consultant to the Peruvian Ministry of Energy in Mines (MEM) for the development of air emission standards for Peruvian gas turbine power plants. All major gas turbine power plants in Peru are currently using water injection to increase turbine power output. Recommended that 42 ppm on natural gas and 65 ppm on diesel (corrected to 15% O_2) be established as the NO_x limit for existing gas turbine power plants. These limits reflect NO_x levels readily achievable using water injection at high load. Also recommended that new gas turbine sources be subject to a BACT review requirement.

Gas Turbines – Title V Permit Templates. Lead engineer for the development of standardized permit templates for approximately 100 gas turbines operated by the oil and gas industry in the San Joaquin Valley. Emissions limits and monitoring requirements were defined for units ranging from GE Frame 7 to Solar Saturn turbines. Stand-alone templates were developed based on turbine size and NO_x control equipment. NO_x utilized in the target turbine population ranged from water injection alone to water injection combined with SCR.

Gas Turbines – Evaluation of NO_x, SO_2 and PM Emission Profiles. Performed a comparative evaluation of the NO_x, SO_2 and particulate (PM) emission profiles of principal utility-scale gas turbines for an independent power producer evaluating project opportunities in Latin America. All gas turbine models in the 40 MW to 240 MW range manufactured by General Electric, Westinghouse, Siemens and ABB were included in the evaluation.

Stationary Internal Combustion Engine (ICE) RACT/BARCT Evaluation. Lead engineer for evaluation of retrofit NO_x control options available for the oil and gas production industry gas-fired ICE population in the San Joaquin Valley affected by proposed RACT and BARCT emission limits. Evaluation centered on lean-burn compressor engines under 500 bhp, and rich-burn constant and cyclically loaded (rod pump) engines under 200 bhp. The results of the evaluation indicated that rich burn cyclically-loaded rod pump engines comprised 50 percent of the affected ICE population, though these ICEs accounted for only 5 percent of the uncontrolled gas-fired stationary ICE NO_x emissions. Recommended retrofit NO_x control strategies included: air/fuel ratio adjustment for rod pump ICEs, Non-selective catalytic reduction (NSCR) for rich-burn, constant load ICEs, and "low emission" combustion modifications for lean burn ICEs.

Development of Air Emission Standards for Stationary ICEs - Peru. Served as principal technical consultant to the Peruvian Ministry of Energy in Mines (MEM) for the development of air emission standards for Peruvian stationary ICE power plants. Draft 1997 World Bank NO_x and particulate emission limits for stationary ICE power plants served as the basis for proposed MEM emission limits. A detailed review of ICE emissions data provided in PAMAs submitted to the MEM was performed to determine the level of effort that would be required by Peruvian industry to meet the proposed NO_x and particulate emission limits. The draft 1997 WB emission limits were revised to reflect reasonably achievable NO_x and particulate emission limits for ICEs currently in operation in Peru.

Air Toxics Testing of Natural Gas-Fired ICEs. Project manager for test plan/test program to measure volatile and semi-volatile organic air toxics compounds from fourteen gas-fired ICEs used in a variety of oil and gas production applications. Test data was utilized by oil and gas production facility owners throughout California to develop accurate ICE air toxics emission inventories.

AIR ENGINEERING/AIR TESTING PROJECT EXPERIENCE – GENERAL

Reverse Air Fabric Filter Retrofit Evaluation – Coal-Fired Boiler. Lead engineer for upgrade of reverse air fabric filters serving coal-fired industrial boilers. Fluorescent dye injected to pinpoint broken bags and damper leaks. Corrosion of pneumatic actuators serving reverse air valves and inadequate insulation identified as principal causes of degraded performance.

Pulse-Jet Fabric Filter Performance Evaluation – Gold Mine. Lead engineer on upgrade of pulse-jet fabric filter and associated exhaust ventilation system serving an ore-crushing facility at a gold mine. Fluorescent dye used to identify bag collar leaks, and modifications were made to pulse air cycle time and duration. This marginal source was in compliance at 20 percent of emission limit following completion of repair work.

Pulse-Jet Fabric Filter Retrofit - Gypsum Calciner. Lead engineer on upgrade of pulse-jet fabric filter controlling particulate emissions from a gypsum calciner. Recommendations included a modified bag clamping mechanism, modified hopper evacuation valve assembly, and changes to pulse air cycle time and pulse duration.

Wet Scrubber Retrofit – Plating Shop. Project engineer on retrofit evaluation of plating shop packed-bed wet scrubbers failing to meet performance guarantees during acceptance trials, due to excessive mist carryover. Recommendations included relocation of the mist eliminator (ME), substitution of the original chevron blade ME with a mesh pad ME, and use of higher density packing material to improve exhaust gas distribution. Wet scrubbers passed acceptance trials following completion of recommended modifications.

Electrostatic Precipitator (ESP) Retrofit Evaluation – MSW Boiler. Lead engineer for retrofit evaluation of single field ESP on a municipal solid waste (MSW) boiler. Recommendations included addition of automated power controller, inlet duct turning vanes, and improved collecting plate rapping system.

ESP Electric Coil Rapper Vibration Analysis Testing - Coal-Fired Boiler. Lead engineer for evaluation of ESP rapper effectiveness test program on three field ESP equipped with "magnetically induced gravity return" (MIGR) rappers. Accelerometers were placed in a grid pattern on ESP collecting plates to determine maximum

instantaneous plate acceleration at a variety of rapper power setpoints. Testing showed that the rappers met performance specification requirements.

Aluminum Remelt Furnace Particulate Emissions Testing. Project manager and lead engineer for high temperature (1,600 ºF) particulate sampling of a natural gas-fired remelt furnace at a major aluminum rolling mill. Objectives of test program were to: 1) determine if condensable particulate was present in stack gases, and 2) to validate the accuracy of the in-stack continuous opacity monitor (COM). Designed and constructed a customized high temperature (inconel) PM_{10}/Mtd 17 sampling assembly for test program. An onsite natural gas-fired boiler was also tested to provide comparative data for the condensable particulate portion of the test program. Test results showed that no significant levels of condensable particulate in the remelt furnace exhaust gas, and indicated that the remelt furnace and boiler had similar particulate emission rates. Test results also showed that the COM was accurate.

Aluminum Remelt Furnace CO and NO_x Testing. Project manager and lead engineer for continuous week-long testing of CO and NO_x emissions from aluminum remelt furnace. Objective of test program was to characterize CO and NO_x emissions from representative remelt furnace for use in the facility's criteria pollution emissions inventory. A TECO Model 48 CO analyzer and a TECO Model 10 NO_x analyzer were utilized during the test program to provide $\pm$1 ppm measurement accuracy, and all test data was recorded by an automated data acquisition system.

PETROLEUM REFINERY AIR ENGINEERING/TESTING EXPERIENCE

Big West Refinery Expansion EIS. Lead engineer on comparative cost analysis of proposed wet cooling tower and fin-fan air cooler for process cooling water for the proposed clean fuels expansion project at the Big West Refinery in Bakersfield, California. Selection of the fin-fin air-cooler would eliminate all consumptive water use and wastewater disposal associated with the cooling tower. Air emissions of VOC and PM_{10} would be reduced with the fin-fan air-cooler even though power demand of the air-cooler is incrementally higher than that of the cooling tower. Fin-fan air-coolers with approach temperatures of 10 ºF and 20 ºF were evaluated. The annualized cost of the fin-fin air-cooler with a 20 ºF approach temperature is essentially the same as that of the cooling tower when the cost of all ancillary cooling tower systems are considered.

Criteria and Air Toxic Pollutant Emissions Inventory for Proposed Refinery Modifications. Project manager and technical lead for development of baseline and future refinery air emissions inventories for process modifications required to produce oxygenated gasoline and desulfurized diesel fuel at a California refinery. State of the art criteria and air toxic pollutant emissions inventories for refinery point, fugitive and mobile sources were developed. Point source emissions estimates were generated using onsite criteria pollutant test data, onsite air toxics test data, and the latest air toxics emission factors from the statewide refinery air toxics inventory database. The fugitive volatile organic compound (VOC) emissions inventories were developed using the refinery's most recent inspection and maintenance (I&M) monitoring program test data to develop site-specific component VOC emission rates. These VOC emission rates were combined with speciated air toxics test results for the principal refinery process streams to produce fugitive VOC air toxics emission rates. The environmental impact report (EIR) that utilized this emission inventory data was the first refinery "Clean Fuels" EIR approved in California.

Development of Air Emission Standards for Petroleum Refinery Equipment - Peru. Served as principal technical consultant to the Peruvian Ministry of Energy in Mines (MEM) for the development of air emission standards for Peruvian petroleum refineries. The sources included in the scope of this project included: 1) SO_2 and NO_x refinery heaters and boilers, 2) desulfurization of crude oil, particulate and SO_2 controls for fluid catalytic cracking units (FCCU), 3) VOC and CO emissions from flares, 4) vapor recovery systems for marine unloading, truck loading, and crude oil/refined products storage tanks, and 5) VOC emissions from process fugitive sources such as pressure relief valves, pumps, compressors and flanges. Proposed emission limits were developed for new and existing refineries based on a thorough evaluation of the available air emission control technologies for the affected refinery sources. Leading vendors of refinery control technology, such as John Zink and Exxon Research, provided estimates of retrofit costs for the largest Peruvian refinery, La Pampilla,

located in Lima. Meetings were held in Lima with refinery operators and MEM staff to discuss the proposed emission limits and incorporate mutually agreed upon revisions to the proposed limits for existing Peruvian refineries.

Air Toxic Pollutant Emissions Inventory for Existing Refinery. Project manager and technical lead for air toxic pollutant emissions inventory at major California refinery. Emission factors were developed for refinery heaters, boilers, flares, sulfur recovery units, coker deheading, IC engines, storage tanks, process fugitives, and catalyst regeneration units. Onsite source test results were utilized to characterize emissions from refinery combustion devices. Where representative source test results were not available, AP-42 VOC emission factors were combined with available VOC air toxics speciation profiles to estimate VOC air toxic emission rates. A risk assessment based on this emissions inventory indicated a relatively low health risk associated with refinery operations. Benzene, 1,3-butadiene and PAHs were the principal health risk related pollutants emitted.

Air Toxics Testing of Refinery Combustion Sources. Project manager for comprehensive air toxics testing program at a major California refinery. Metals, Cr^{+6}, PAHs, H_2S and speciated VOC emissions were measured from refinery combustion sources. High temperature Cr^{+6} stack testing using the EPA Cr^{+6} test method was performed for the first time in California during this test program. Representatives from the California Air Resources Board source test team performed simultaneous testing using ARB Method 425 (Cr^{+6}) to compare the results of EPA and ARB Cr^{+6} test methodologies. The ARB approved the test results generated using the high temperature EPA Cr^{+6} test method.

Air Toxics Testing of Refinery Fugitive Sources. Project manager for test program to characterize air toxic fugitive VOC emissions from fifteen distinct process units at major California refinery. Gas, light liquid, and heavy liquid process streams were sampled. BTXE, 1,3-butadiene and propylene concentrations were quantified in gas samples, while BTXE, cresol and phenol concentrations were measured in liquid samples. Test results were combined with AP-42 fugitive VOC emission factors for valves, fittings, compressors, pumps and PRVs to calculate fugitive air toxics VOC emission rates.

OIL AND GAS PRODUCTION AIR ENGINEERING/TESTING EXPERIENCE

Air Toxics Testing of Oil and Gas Production Sources. Project manager and lead engineer for test plan/test program to determine VOC removal efficiency of packed tower scrubber controlling sulfur dioxide emissions from a crude oil-fired steam generator. Ratfisch 55 VOC analyzers were used to measure the packed tower scrubber VOC removal efficiency. Tedlar bag samples were collected simultaneously to correlate BTX removal efficiency to VOC removal efficiency. This test was one of hundreds of air toxics tests performed during this test program for oil and gas production facilities from 1990 to 1992. The majority of the volatile air toxics analyses were performed at in-house laboratory. Project staff developed thorough familiarity with the applications and limitations of GC/MS, GC/PID, GC/FID, GC/ECD and GC/FPD. Tedlar bags, canisters, sorbent tubes and impingers were used during sampling, along with isokinetic tests methods for multiple metals and PAHs.

Air Toxics Testing of Glycol Reboiler – Gas Processing Plant. Project manager for test program to determine emissions of BTXE from glycol reboiler vent at gas processing facility handling 12 MM/cfd of produced gas. Developed innovative test methods to accurately quantify BTXE emissions in reboiler vent gas.
Air Toxics Emissions Inventory Plan. Lead engineer for the development of generic air toxics emission estimating techniques (EETs) for oil and gas production equipment. This project was performed for the Western States Petroleum Association in response to the requirements of the California Air Toxics "Hot Spots" Act. EETs were developed for all point and fugitive oil and gas production sources of air toxics, and the specific air toxics associated with each source were identified. A pooled source emission test methodology was also developed to moderate the cost of source testing required by the Act.

Fugitive NMHC Emissions from TEOR Production Field. Project manager for the quantification of fugitive Nonmethane hydrocarbon (NMHC) emissions from a thermally enhanced oil recovery (TEOR) oil production field in Kern County, CA. This program included direct measurement of NMHC concentrations in storage tank

vapor headspace and the modification of available NMHC emission factors for NMHC-emitting devices in TEOR produced gas service, such as wellheads, vapor trunklines, heat exchangers, and compressors. Modification of the existing NMHC emission factors was necessary due to the high concentration of CO_2 and water vapor in TEOR produced gases.

Fugitive Air Emissions Testing of Oil and Gas Production Fields. Project manager for test plan/test program to determine VOC and air toxics emissions from oil storage tanks, wastewater storage tanks and produced gas lines. Test results were utilized to develop comprehensive air toxics emissions inventories for oil and gas production companies participating in the test program.

Oil and Gas Production Field – Air Emissions Inventory and Air Modeling. Project manager for oil and gas production field risk assessment. Project included review and revision of the existing air toxics emission inventory, air dispersion modeling, and calculation of the acute health risk, chronic non-carcinogenic risk and carcinogenic risk of facility operations. Results indicated that fugitive H_2S emissions from facility operations posed a potential health risk at the facility fenceline.

TITLE V PERMIT APPLICATION/MONITORING PLAN EXPERIENCE

Title V Permit Application – San Diego County Industrial Facility. Project engineer tasked with preparing streamlined Title V operating permit for U.S. Navy facilities in San Diego. Principal emission units included chrome plating, lead furnaces, IC engines, solvent usage, aerospace coating and marine coating operations. For each device category in use at the facility, federal MACT requirements were integrated with District requirements in user friendly tables that summarized permit conditions and compliance status.

Title V Permit Application Device Templates - Oil and Gas Production Industry. Project manager and lead engineer to prepare Title V permit application "templates" for the Western States Petroleum Association (WSPA). The template approach was chosen by WSPA to minimize the administrative burden associated with listing permit conditions for a large number of similar devices located at the same oil and gas production facility. Templates are being developed for device types common to oil and gas production operations. Device types include: boilers, steam generators, process heaters, gas turbines, IC engines, fixed-roof storage tanks, fugitive components, flares, and cooling towers. These templates will serve as the core of Title V permit applications prepared for oil and gas production operations in California.

Title V Permit Application - Aluminum Rolling Mill. Project manager and lead engineer for Title V permit application prepared for largest aluminum rolling mill in the western U.S. Responsible for the overall direction of the permit application project, development of a monitoring plan for significant emission units, and development of a hazardous air pollutant (HAP) emissions inventory. The project involved extensive onsite data gathering, frequent interaction with the plant's technical and operating staff, and coordination with legal counsel and subcontractors. The permit application was completed on time and in budget.

Title V Model Permit - Oil and Gas Production Industry. Project manager and lead engineer for the comparative analysis of regional and federal requirements affecting oil and gas production industry sources located in the San Joaquin Valley. Sources included gas turbines, IC engines, steam generators, storage tanks, and process fugitives. From this analysis, a model applicable requirements table was developed for a sample device type (storage tanks) that covered the entire population of storage tanks operated by the industry. The U.S. EPA has tentatively approved this model permit approach, and work is ongoing to develop comprehensive applicable requirements tables for each major category of sources operated by the oil and gas industry in the San Joaquin Valley.

Title V Enhanced Monitoring Evaluation of Oil and Gas Production Sources. Lead engineer to identify differences in proposed EPA Title V enhanced monitoring protocols and the current monitoring requirements for oil and gas production sources in the San Joaquin Valley. The device types evaluated included: steam generators, stationary ICEs, gas turbines, fugitives, fixed roof storage tanks, and thermally enhanced oil recovery (TEOR) well vents. Principal areas of difference included: more stringent Title V O&M requirements

for parameter monitors (such as temperature, fuel flow, and O_2), and more extensive Title V recordkeeping requirements.

RACT/BARCT/BACT EVALUATIONS

RACT/BARCT Reverse Jet Scrubber/Fiberbed Mist Eliminator Retrofit Evaluation. Project manager and lead engineer on project to address the inability of existing wet electrostatic precipitators (ESPs) and atomized mist scrubbers to adequately remove low concentration submicron particulate from high volume recovery boiler exhaust gas at the Alaska Pulp Corporation mill in Sitka, AK. The project involved thorough on-site inspections of existing control equipment, detailed review of maintenance and performance records, and a detailed evaluation of potential replacement technologies. These technologies included a wide variety of scrubbing technologies where manufacturers claimed high removal efficiencies on submicron particulate in high humidity exhaust gas. Packed tower scrubbers, venturi scrubbers, reverse jet scrubbers, fiberbed mist eliminators and wet ESPs were evaluated. Final recommendations included replacement of atomized mist scrubber with reverse jet scrubber and upgrading of the existing wet ESPs. The paper describing this project was published in the May 1992 TAPPI Journal.

Aluminum Smelter RACT Evaluation - Prebake. Project manager and technical lead for CO and PM_{10} RACT evaluation for prebake facility. Retrofit control options for CO emissions from the anode bake furnace, potline dry scrubbers and the potroom roof vents were evaluated. PM_{10} emissions from the coke kiln, potline dry scrubbers, potroom roof vents, and miscellaneous potroom fugitive sources were addressed. Four CO control technologies were identified as technologically feasible for potline CO emissions: potline current efficiency improvement through the addition of underhung busswork and automated puncher/feeders, catalytic incineration, recuperative incineration and regenerative incineration. Current efficiency improvement was identified as probable CO RACT if onsite test program demonstrated the effectiveness of this approach. Five PM_{10} control technologies were identified as technologically feasible: increased potline hooding efficiency through redesign of shields, the addition of a dense-phase conveying system, increased potline air evacuation rate, wet scrubbing of roof vent emissions, and fabric filter control of roof vent emissions.

RACT/BACT Testing/Evaluation of PM_{10} Mist Eliminators on Five-Stand Cold Mill. Project manager and lead engineer for fiberbed mist eliminator and mesh pad mist eliminator comparative pilot test program on mixed phase aerosol (PM_{10})/gaseous hydrocarbon emissions from aluminum high speed cold rolling mill. Utilized modified EPA Method 5 sampling train with portion of sample gas diverted (after particulate filter) to Ratfisch 55 VOC analyzer. This was done to permit simultaneous quantification of aerosol and gaseous hydrocarbon emissions in the exhaust gas. The mesh pad mist eliminator demonstrated good control of PM_{10} emissions, though test results indicated that the majority of captured PM_{10} evaporated in the mesh pad and was emitted as VOC.

Aluminum Remelt Furnace/Rolling Mill RACT Evaluations. Lead engineer for comprehensive CO and PM_{10} RACT evaluation for the largest aluminum sheet and plate rolling mill in western U.S. Significant sources of CO emissions from the facility included the remelt furnaces and the coater line. The potential CO RACT options for the remelt furnaces included: enhanced maintenance practices, preheating combustion air, installation of fully automated combustion controls, and energy efficiency modifications.

BARCT Low NO_x Burner Conversion – Industrial Boilers. Lead engineer for evaluation of low NO_x burner options for natural gas-fired industrial boilers. Also evaluated methanol and propane as stand-by fuels to replace existing diesel stand-by fuel system. Evaluated replacement of steam boilers with gas turbine co-generation system.

BACT Packed Tower Scrubber/Mist Eliminator Performance Evaluations. Project manager and lead engineer for Navy-wide plating shop air pollution control technology evaluation and emissions testing program. Mist eliminators and packed tower scrubbers controlling metal plating processes, which included hard chrome, nickel, copper, cadmium and precious metals plating, were extensively tested at three Navy plating shops.

Chemical cleaning and stripping tanks, including hydrochloric acid, sulfuric acid, chromic acid and caustic, were also tested. The final product of this program was a military design specification for plating and chemical cleaning shop air pollution control systems. The hydrochloric acid mist sampling procedure developed during this program received a protected patent.

BACT Packed Tower Scrubber/UV Oxidation System Pilot Test Program. Technical advisor for pilot test program of packed tower scrubber/ultraviolet (UV) light VOC oxidation system controlling VOC emissions from microchip manufacturing facility in Los Angeles. The testing was sponsored in part by the SCAQMD's Innovative Technology Demonstration Program, to demonstrate this innovative control technology as BACT for microchip manufacturing operations. The target compounds were acetone, methylethylketone (MEK) and 1,1,1-trichloroethane, and compound concentrations ranged from 10-100 ppmv. The single stage packed tower scrubber consistently achieved greater than 90% removal efficiency on the target compounds. The residence time required in the UV oxidation system for effective oxidation of the target compounds proved significantly longer than the residence time predicted by the manufacturer.

BACT Pilot Testing of Venturi Scrubber on Gas/Aerosol VOC Emission Source. Technical advisor for project to evaluate venturi scrubber as BACT for mixed phase aerosol/gaseous hydrocarbon emissions from deep fat fryer. Venturi scrubber demonstrated high removal efficiency on aerosol, low efficiency on VOC emissions. A number of VOC tests indicated negative removal efficiency. This anomaly was traced to a high hydrocarbon concentration in the scrubber water. The pilot unit had been shipped directly to the jobsite from another test location by the manufacturer without any cleaning or inspection of the pilot unit.

Pulp Mill Recovery Boiler BACT Evaluation. Lead engineer for BACT analysis for control of SO_2, NO_x, CO, TNMHC, TRS and particulate emissions from the proposed addition of a new recovery furnace at a kraft pulp mill in Washington. A "top down" approach was used to evaluate potential control technologies for each of the pollutants considered in the evaluation.

Air Pollution Control Equipment Design Specification Development. Lead engineer for the development of detailed Navy design specifications for wet scrubbers and mist eliminators. Design specifications were based on field performance evaluations conducted at the Long Beach Naval Shipyard, Norfolk Naval Shipyard, and Jacksonville Naval Air Station. This work was performed for the U.S. Navy to provide generic design specifications to assist naval facility engineering divisions with air pollution control equipment selection. Also served as project engineer for the development of Navy design specifications for ESPs and fabric filters.

CONTINUOUS EMISSION MONITOR (CEM) PROJECT EXPERIENCE

Process Heater CO and NO_x CEM Relative Accuracy Testing. Project manager and lead engineer for process heater CO and NO_x analyzer relative accuracy test program at petrochemical manufacturing facility. Objective of test program was to demonstrate that performance of onsite CO and NO_x CEMs was in compliance with U.S. EPA "Boiler and Industrial Furnace" hazardous waste co-firing regulations. A TECO Model 48 CO analyzer and a TECO Model 10 NO_x analyzer were utilized during the test program to provide $\pm$1 ppm measurement accuracy, and all test data was recorded by an automated data acquisition system. One of the two process heater CEM systems tested failed the initial test due to leaks in the gas conditioning system. Troubleshooting was performed using O_2 analyzers, and the leaking component was identified and replaced. This CEM system met all CEM relative accuracy requirements during the subsequent retest.

Performance Audit of NO_x and SO_2 CEMs at Coal-Fired Power Plant. Lead engineer on system audit and challenge gas performance audit of NO_x and SO_2 CEMs at a coal-fired power plant in southern Nevada. Dynamic and instrument calibration checks were performed on the CEMs. A detailed visual inspection of the CEM system, from the gas sampling probes at the stack to the CEM sample gas outlet tubing in the CEM trailer, was also conducted. The CEMs passed the dynamic and instrument calibration requirements specified in EPA's Performance Specification Test - 2 (NO_x and SO_2) alternative relative accuracy requirements.

LATIN AMERICA ENVIRONMENTAL PROJECT EXPERIENCE

Assessment of operational deficiencies of Camisa pipeline – Peru. Project leader of multi-year assessment of root causes of ruptures on Camisea 14-inch natural gas liquids pipeline for non-profit client. Determined that primary causes of hurried construction in difficult and unstable terrain, unstable right-of-way in the jungle sector due to inadequate erosion control practices, and inadequate pipe wall thickness to withstand external lateral forces. Two assessments were developed during the course of the project documenting deficiencies and recommending remedial actions.

Evaluation of U.S.-Mexico Border Region Copper Smelter Compliance with Treaty Obligations – Mexico. Project manager and lead engineer to evaluate compliance of U.S. and Mexican border region copper smelters with the SO_2 monitoring, recordkeeping and reporting requirements in Annex IV [Copper Smelters] of the La Paz Environmental Treaty. Identified potential problems with current ambient and stack monitoring practices that could result in underestimating the impact of SO_2 emissions from some of these copper smelters. Identified additional source types, including hazardous waste incinerators and power plants, that should be considered for inclusion in the La Paz Treaty process.

Development of Air Emission Limits for ICE Cogeneration Plant - Panamá. Lead engineer assisting U.S. cogeneration plant developer to permit an ICE cogeneration plant at a hotel/casino complex in Panama. Recommended the use of modified draft World Bank NO_x and PM limits for ICE power plants. The modification consisted of adding a thermal efficiency factor adjustment to the draft World Bank NO_x and PM limits. These proposed ICE emission limits are currently being reviewed by Panamanian environmental authorities.

Mercury Emissions Inventory for Stationary Sources in Northern Mexico. Project manager and lead engineer to estimate mercury emissions from stationary sources in Northern Mexico. Major potential sources of mercury emissions include solid- and liquid-fueled power plants, cement kilns co-firing hazardous waste, and non-ferrous metal smelters. Emission estimates were provided for approximately eighty of these sources located in Northern Mexico. Coordinated efforts of two Mexican subcontractors, located in Mexico City and Hermosillo, to obtain process throughput data for each source included in the inventory.

Translation of U.S. EPA Scrap Tire Combustion Emissions Estimation Document – Mexico. Evaluated the Translated a U.S. EPA scrap tire combustion emissions estimation document from English to Spanish for use by Latin American environmental professionals.

Environmental Audit of Aluminum Production Facilities – Venezuela. Evaluated the capabilities of existing air, wastewater and solid/hazardous waste control systems used by the aluminum industry in eastern Venezuela. This industry will be privatized in the near future. Estimated the cost to bring these control systems into compliance with air, wastewater and solid/hazardous waste standards recently promulgated in Venezuela. Also served as technical translator for team of U.S. environmental engineers involved in the due diligence assessment.

Assessment of Environmental Improvement Projects – Chile and Peru. Evaluated potential air, water, soil remediation and waste recycling projects in Lima, Peru and Santiago, Chile for feasibility study funding by the U.S. Trade and Development Agency. Project required onsite interaction with in-country decisionmakers (in Spanish). Projects recommended for feasibility study funding included: 1) an air quality technical support project for the Santiago, Chile region, and 2) soil remediation/metals recovery projects at two copper mine/smelter sites in Peru.

Air Pollution Control Training Course – Mexico. Conducted two-day Spanish language air quality training course for environmental managers of assembly plants in Mexicali, Mexico. Spanish-language course manual prepared by Powers Engineering. Practical laboratory included training in use of combustion gas analyzer, flame ionization detector (FID), photoionization detector (PID), and occupational sampling.

Stationary Source Emissions Inventory – Mexico. Developed a comprehensive air emissions inventory for stationary sources in Nogales, Sonora. This project requires frequent interaction with Mexican state and federal environmental authorities. The principal Powers Engineering subcontractor on this project is a Mexican firm located in Hermosillo, Sonora.

VOC Measurement Program – Mexico. Performed a comprehensive volatile organic compound (VOC) measurements program at a health products fabrication plant in Mexicali, Mexico. An FID and PID were used to quantify VOCs from five processes at the facility. Occupational exposures were also measured. Worker exposure levels were above allowable levels at several points in the main assembly area.

Fluent in Spanish. Studied at the Universidad de Michoacán in Morelia, Mexico, 1993, and at the Colegio de España in Salamanca, Spain, 1987-88. Have lectured (in Spanish) on air monitoring and control equipment at the Instituto Tecnológico de Tijuana. Maintain contact with Comisión Federal de Electricidad engineers responsible for operation of wind and geothermal power plants in Mexico, and am comfortable operating in the Mexican business environment.

PUBLICATIONS

Bill Powers, "*More Distributed Solar Means Fewer New Combustion Turbines*," Natural Gas & Electricity Journal, Vol. 29, Number 2, September 2012, pp. 17-20.

Bill Powers, "*Federal Government Betting on Wrong Solar Horse*," Natural Gas & Electricity Journal, Vol. 27, Number 5, December 2010,

Bill Powers, "*Today's California Renewable Energy Strategy—Maximize Complexity and Expense*," Natural Gas & Electricity Journal, Vol. 27, Number 2, September 2010, pp. 19-26.

Bill Powers, "*Environmental Problem Solving Itself Rapidly Through Lower Gas Costs*," Natural Gas & Electricity Journal, Vol. 26, Number 4, November 2009, pp. 9-14.

Bill Powers, "*PV Pulling Ahead, but Why Pay Transmission Costs?*" Natural Gas & Electricity Journal, Vol. 26, Number 3, October 2009, pp. 19-22.

Bill Powers, "*Unused Turbines, Ample Gas Supply, and PV to Solve RPS Issues*," Natural Gas & Electricity Journal, Vol. 26, Number 2, September 2009, pp. 1-7.

Bill Powers, "*CEC Cancels Gas-Fed Peaker, Suggesting Rooftop Photovoltaic Equally Cost-Effective*," Natural Gas & Electricity Journal, Vol. 26, Number 1, August 2009, pp. 8-13.

Bill Powers, "*San Diego Smart Energy 2020 – The 21st Century Alternative*," San Diego, October 2007.

Bill Powers, "*Energy, the Environment, and the California – Baja California Border Region*," Electricity Journal, Vol. 18, Issue 6, July 2005, pp. 77-84.

W.E. Powers, *"Peak and Annual Average Energy Efficiency Penalty of Optimized Air-Cooled Condenser on 515 MW Fossil Fuel-Fired Utility Boiler,"* presented at California Energy Commission/Electric Power Research Institute Advanced Cooling Technologies Symposium, Sacramento, California, June 2005.

W.E. Powers, R. Wydrum, P. Morris, *"Design and Performance of Optimized Air-Cooled Condenser at Crockett Cogeneration Plant,"* presented at EPA Symposium on Technologies for Protecting Aquatic Organisms from Cooling Water Intake Structures, Washington, DC, May 2003.

P. Pai, D. Niemi, W.E. Powers, *"A North American Anthropogenic Inventory of Mercury Emissions,"* presented at Air & Waste Management Association Annual Conference in Salt Lake City, UT, June 2000.

P.J. Blau and W.E. Powers, *"Control of Hazardous Air Emissions from Secondary Aluminum Casting Furnace Operations Through a Combination of: Upstream Pollution Prevention Measures, Process Modifications and End-of-Pipe Controls,"* presented at 1997 AWMA/EPA Emerging Solutions to VOC & Air Toxics Control Conference, San Diego, CA, February 1997.

W.E. Powers, et. al., *"Hazardous Air Pollutant Emission Inventory for Stationary Sources in Nogales, Sonora, Mexico ,"* presented at 1995 AWMA/EPA Emissions Inventory Specialty Conference, RTP, NC, October 1995.

W.E. Powers, *"Develop of a Parametric Emissions Monitoring System to Predict NO_x Emissions from Industrial Gas Turbines,"* presented at 1995 AWMA Golden West Chapter Air Pollution Control Specialty Conference, Ventura, California, March 1995.

W. E. Powers, et. al., *"Retrofit Control Options for Particulate Emissions from Magnesium Sulfite Recovery Boilers,"* presented at 1992 TAPPI Envr. Conference, April 1992. Published in *TAPPI Journal*, July 1992.

S. S. Parmar, M. Short, W. E. Powers, *"Determination of Total Gaseous Hydrocarbon Emissions from an Aluminum Rolling Mill Using Methods 25, 25A, and an Oxidation Technique,"* presented at U.S. EPA Measurement of Toxic and Related Air Pollutants Conference, May 1992.

N. Meeks, W. E. Powers, *"Air Toxics Emissions from Gas-Fired Internal Combustion Engines,"* presented at AIChE Summer Meeting, August 1990.

W. E. Powers, *"Air Pollution Control of Plating Shop Processes,"* presented at 7th AES/EPA Conference on Pollution Control in the Electroplating Industry, January 1986. Published in *Plating and Surface Finishing* magazine, July 1986.

H. M. Davenport, W. E. Powers, *"Affect of Low Cost Modifications on the Performance of an Undersized Electrostatic Precipitator,"* presented at 79th Air Pollution Control Association Conference, June 1986.

AWARDS

Engineer of the Year, 1991 – ENSR Consulting and Engineering, Camarillo
Engineer of the Year, 1986 – Naval Energy and Environmental Support Activity, Port Hueneme
Productivity Excellence Award, 1985 – U. S. Department of Defense

PATENTS

Sedimentation Chamber for Sizing Acid Mist, Navy Case Number 70094

San Diego County Air Pollution Control District

APPLICATION FOR SERVING AS A PUBLIC MEMBER ON THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT GOVERNING BOARD

***INSTRUCTIONS**: Please complete this form in its entirety. Note the additional requirements listed on the third page.*

Submit the completed application and your resume to the Clerk of the Air Pollution Control District Governing Board at APCDPublicComment@sdapcd.org or, you may send your application to 10124 Old Grove Road, San Diego, CA 92131. ***Applications are due no later than March 28, 2025.***

Dubbs	William (Bill)
Last Name	*First Name*

The SDAPCD Governing Board meets at times mutually satisfactory to the members. Day meetings are more common than evening meetings. The current schedule is the second Thursday of each month. Will you be able to schedule your time accordingly?

■ Yes ☐ No

Have you ever been affiliated with an entity that is regulated by the San Diego County Air Pollution Control District?

☐ Yes ■ No

If yes, please list them here:

What required area of expertise are you seeking to represent on the SDAPCD Governing Board?

☐ Physician/Public Health Professional
☐ Environmental Justice Interests
■ Science/Technology Background in Air Pollution

***Candidates are required to submit evidence of their qualifications by including a resume with this application and may be asked to provide additional information, as needed**.

Please summarize your experience that demonstrates your interest and proven ability in the field of air pollution control and your understanding of the needs of the general public in connection with the air pollution problems of San Diego County. *If additional space is required, attach additional pages.*

With 20 years of waterfront infrastructure engineering experience, my career plays a significant role in the improvement of air quality. My engineering focus directly and indirectly supports electrification and clean air initiatives at ports. With a waterfront emphasis on my engineering resume, I've worked with ports and tenants on designs of shorepower plug-ins for ocean-going vessels, electrical upgrades and power outlets for large mobile harbor cranes, and charging systems for EVSE and electrification of cargo handling equipment. From an engineering perspective, I understand the challenges associated with planning, power supply, design, construction, and operation of electrification projects along the waterfront. I also understand the importance for reducing DPM, NOx, SOx, and other GHGs, especially in the Portside and International Border Communities. I've lived and worked on the waterfront my entire life, I am witness to the harmful effects of transportation and industrial equipment along the working waterfront. I want to work with SDAPCD Board of Directors to support the administration of the existing CAPP and to nurture a culture of care and responsibility surrounding the CSC's and CARB.

STATEMENT OF OCCUPATIONAL EXPERIENCE

Moffatt & Nichol
Current Employer

Senior Engineer — *Job Title*
06/02/2006 - current — *Dates of Employment*

Previous Employers	*Position Title*	*Dates of Employment*
University California San Diego	BS Structural Engineering	2003-2006

List past county appointments with dates served, and other past or present community or public service appointments.

Committee/Organization Name	*Dates Served*
San Diego Working Waterfront - Board of Directors	2024-current
American Society of Civil Engineers - Active member of multiple committees	2006-current
World Association for Waterborn Transport Infrastructure (PIANC) - US Principal Representative	2019-2024

Membership qualifications for the APCD Governing Board are as follows:

Qualifications. All public members shall reside within the boundaries of San Diego County and shall be appointed on the basis of their demonstrated interest and proven ability in the field of air pollution control and their understanding of the needs of the general public in connection with the air pollution problems of the San Diego County. Specific qualifications for each of the three (3) public Board members, as established by Health & Safety Code section 40100.6(a)(4)(A)–(C), are as follows:

1. One public member shall be a ***physician or public health professional*** actively practicing within the boundaries of the San Diego County. The member's specialty shall be in the health effects of air pollution on vulnerable populations.

2. One public member shall be a ***person representing environmental justice interests*** and who works directly with communities within the boundaries of the San Diego County that are most significantly burdened by, and vulnerable to, high levels of pollution, including communities with diverse racial and ethnic populations and communities with low-income populations. This member may be a resident of that community and have a demonstrated record of community leadership.

3. One public member shall be a ***person with a scientific or technical background in air pollution***, such as an environmental engineer, chemist, meteorologist, or air pollution specialist.

NOTE: Public members will be appointed by the San Diego County Air Pollution Control District Governing Board. Each public member will serve a four-year term. All members are entitled to receive compensation for participation on the Governing Board. Please review California Health and Safety Code Section 40100.6 for details.

Please note that this application is a public record subject to disclosure. *This application will be maintained for a period of one year.*

By signing below, I declare that the information provided above is accurate and complete to the best of my knowledge.

William Dubbs

Applicant's Name

William Dubbs | 02/26/2025

Applicant's Signature | *Date*

CONTACT INFORMATION

Dubbs	William (Bill)
Last Name	*First Name*

Note: Personal information may be withheld from public view as allowed by law.

[redacted]	[redacted]	[redacted]	[redacted]
Home Street Address	*City*	*State*	*Zip*
Mailing Address (if different than home address)	*City*	*State*	*Zip*
Business Street Address	*City*	*State*	*Zip*
Home Phone #	*Business Phone #*		
[redacted] *Mobile Phone #*			
[redacted] *E-Mail Address*			

William F. Dubbs, PE

Professional Engineer

EDUCATION

BS, Structural Engineering, University of California at San Diego, 2007

REGISTRATION

Professional Engineer:
California, Civil, #75931, 2010

CERTIFICATIONS

Merchant Mariner Document – USA000040313 (100GT Master)

Construction Quality Management – U.S. Army Corps of Engineers and NAVFAC

DBIDS Navy Contractor Base Access ID

Bridge Inspector – National Highway Institute (NHI)

EM-385 40-hr Construction Hazard Awareness Safety Training

OSHA 30-hr Construction Safety and Health

ADCI Commercial Diver and Supervisor (USA)

DCBC Commercial Diver and Chamber Operator (Eur/Asia)

ADAS Commercial Diver (Aus/NZ)

Current CPR/1st-Aid/Emergency Oxygen Administration

AFFILIATIONS

American Society of Civil Engineers (ASCE)

Coast, Oceans, Ports, and Rivers Institute (COPRI)

World Association for Waterborne Transport Infrastructure (PIANC)

Society of American Military Engineers (SAME)

DESCRIPTION

William (Bill) Dubbs is a waterfront infrastructure engineer with 20 years of experience. His primary role is developing relationships with partners, public and private stakeholders of waterborne transport assets. Market-facing ability and industry presence are underlain by expertise in program execution. Focused on enabling owners, operators, and stakeholders to make fully informed investment decisions while reducing the cost of asset ownership. Technical background and related areas of expertise include planning, electrification of waterfront facilities, maritime clean air initiatives, marine terminal rehabilitation/upgrade-design, service life modeling, maintenance cost-forecasting, and inspection, and full suite of services related to full project execution including bid-phase and construction-phase support.

Bill Dubbs is a San Diego local who works and recreates on San Diego's waterfront. A former fishing boat captain, he now serves the maritime industry and those that share the shoreline from an **engineering perspective**. His engagement in electrification and clean air initiatives along the waterfront have helped to improve the lives of family and friends who share the waterfront communities. Bill's commitment to California's Low Carbon Fuel Standard credit program and his desire to improve waterfronts through industry sharing of best practices around the globe are tilting the balance of clean air in favor of San Diego's waterfront communities. Electrification project experience includes engaging SDGE in discussion on project demands vs. utility capacity and correspondence with City and agency plan checks/reviews.

Mr. Dubbs has the honorable distinction of serving as the U.S. Principal Representative to World Association for Waterborne Transport Infrastructure (PIANC) Maritime Navigation Commission Working Group 224, "Planning of Fishing Ports – Update MarCom WG 18, 1998."

Active Member of COPRI (ASCE) Asset Management Task Committee. Based on lessons learned, best practices and applied research, the Committee is charged with the development of approaches to the design and implementation of strategic asset management programs that are resource-effective and applicable across port and marine terminal typologies.

San Diego Working Waterfront (SDWW) Board of Directors. The Board of Directors engage the Port Commissioners in discussions regarding the business and development of the Port facilities, leaseholds, and maritime interests.

WORK EXPERIENCE

2006-current – Moffatt & Nichol Engineers, San Diego, CA

PUBLICATIONS

American Society of Civil Engineers, *Double-Decked Piers: A New Reality for West Coast Marine Oil Terminal*

San Diego County Air Pollution Control District

APPLICATION FOR SERVING AS A PUBLIC MEMBER ON THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT GOVERNING BOARD

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ROSS	STERLING
Last Name	*First Name*

The SDAPCD Governing Board meets at times mutually satisfactory to the members. Day meetings are more common than evening meetings. The current schedule is the second Thursday of each month. Will you be able to schedule your time accordingly?

■ Yes ☐ No

Have you ever been affiliated with an entity that is regulated by the San Diego County Air Pollution Control District?

■ Yes ☐ No

If yes, please list them here:

SDG&E - Power Generation Facilities, Microgrids, Emergency Engines, Black Start Engines, Welding
Pio Pico Energy Center, CalPeak Power, Orange Grove Energy - Power Generation Facilities - Turbine Driven
Former San Diego APCD Inspector and Chemist

What required area of expertise are you seeking to represent on the SDAPCD Governing Board?

☐ Physician/Public Health Professional
☒ Environmental Justice Interests
■ Science/Technology Background in Air Pollution

***Candidates are required to submit evidence of their qualifications by including a resume with this application and may be asked to provide additional information, as needed**.

Please summarize your experience that demonstrates your interest and proven ability in the field of air pollution control and your understanding of the needs of the general public in connection with the air pollution problems of San Diego County. *If additional space is required, attach additional pages.*

I am a former SDAPCD Air Pollution Chemist and Inspector. I am a subject matter expert in the field of air pollution regulations and have an in depth understanding of emissions analysis. I worked for the District for 15 years and have spend the last 9 years helping private industry navigate the complexity of air regulations. As a chemist I prided myself on working with permitted facilities as an intermediary in their dealings with the APCD as well as help them utilize the available tools to maintain compliance. As a chemist, I created analysis programs which are still in use to this day. As part of private industry I continue to use that knowledge to ensure compliance with emissions limits and reporting requirements.

I am one of the few people who have worked both for the District and for private industry, which gives me a much more complete understanding of the regulated and regulatory communities. Further, I understand and can provide both insight and understanding as it applies to upcoming/proposed regulatory requirements.

STATEMENT OF OCCUPATIONAL EXPERIENCE

San Diego Gas and Electric (SDG&E)	
Current Employer	
Senior Environmental Specialist	5-1-2023 - Present
Job Title	*Dates of Employment*

Previous Employers	*Position Title*	*Dates of Employment*
NAES - Environmental	Environmental Specialist	12/2021 - 5/2023
NAES - CalPeak Power	Environmental Health and Safety Manager	10/2020 - 12/2021
Southwest Generation - Pio Pico Energy Center	Environmental Health and Safety Manager	5/2016 - 9/2019
San Diego Air Pollution Control District	Associate Air Pollution Chemist	7/2001 - 5/2016

List past county appointments with dates served, and other past or present community or public service appointments.

Committee/Organization Name	*Dates Served*
SDAPCD Hearing Board	7/2024 - Present

Membership qualifications for the APCD Governing Board are as follows:

Qualifications. All public members shall reside within the boundaries of San Diego County and shall be appointed on the basis of their demonstrated interest and proven ability in the field of air pollution control and their understanding of the needs of the general public in connection with the air pollution problems of the San Diego County. Specific qualifications for each of the three (3) public Board members, as established by Health & Safety Code section 40100.6(a)(4)(A)–(C), are as follows:

1. One public member shall be a ***physician or public health professional*** actively practicing within the boundaries of the San Diego County. The member's specialty shall be in the health effects of air pollution on vulnerable populations.

2. One public member shall be a ***person representing environmental justice interests*** and who works directly with communities within the boundaries of the San Diego County that are most significantly burdened by, and vulnerable to, high levels of pollution, including communities with diverse racial and ethnic populations and communities with low-income populations. This member may be a resident of that community and have a demonstrated record of community leadership.

3. One public member shall be a ***person with a scientific or technical background in air pollution***, such as an environmental engineer, chemist, meteorologist, or air pollution specialist.

NOTE: Public members will be appointed by the San Diego County Air Pollution Control District Governing Board. Each public member will serve a four-year term. All members are entitled to receive compensation for participation on the Governing Board. Please review California Health and Safety Code Section 40100.6 for details.

Please note that this application is a public record subject to disclosure. *This application will be maintained for a period of one year.*

By signing below, I declare that the information provided above is accurate and complete to the best of my knowledge.

Sterling Ross

Applicant's Name

Applicant's Signature

3/25/2025

Date

CONTACT INFORMATION

ROSS	STERLING
Last Name	*First Name*

Note: Personal information may be withheld from public view as allowed by law.

[redacted]	[redacted]	[redacted]	[redacted]
Home Street Address	*City*	*State*	*Zip*
Mailing Address (if different than home address)	*City*	*State*	*Zip*
[redacted]	[redacted]	[redacted]	[redacted]
Business Street Address	*City*	*State*	*Zip*

Home Phone #	*Business Phone #*
[redacted]	
Mobile Phone #	
[redacted]	
E-Mail Address	

Sterling Charles Ross

Sr. Environmental Specialist – Air

KEY SKILLS

Power Generation Environmental
SDAPCD, SJVAPCD, YSAQMD
Regulatory Expertise
EPA Regulatory Knowledge
CEMS System Expertise
RATA, CGA, Linearity
CEMS
Team Oriented Execution

KEY STRENGTHS

Strategic Perspective
Teamwork Mindset
Pooling and Leveraging Resources
Rapport Building
Dynamic Interactive Leadership
Continual Process Improvement
Energetic, Positive Attitude
Detail Oriented

EDUCATION

Bachelor of Science:
Colorado State University
Majors: Biology and Zoology

CERTIFICATIONS

OSHA 40 Hour HAZWOPER
OSHA 8 Hour Refresher
Qualified Stack Testing Individual
Groups 1,3,5
DOT Hazardous Materials
Transportation

EXPERIENCE

SENIOR ENVIRONMENTAL SPECIALIST - AIR

SDG&E Environmental Services Division
San Diego, CA ▪ 2023 to Present

Air Compliance Subject Matter Expert (SME):

- Mentor environmental staff to promote and ensure continual compliance with Air regulations in accordance with Federal (EPA), State (California), and Local (San Diego APCD) environmental programs including Criteria Pollutants and Greenhouse Gases
- Create regulatory compliance tools that help ensure facilities understand how to account for complex requirements, stringent due dates, and application of regulatory allowances
- Aid in the development of Enablon software to establish and track regulatory reporting and data abstraction requirements
- Work with CiSCO CEMS to identify, trouble-shoot, and correct CEMS issues to maximize emission monitoring capability including establishing remote emissions monitoring to ensure operational compliance with permit requirements
- Take lead in reviewiing and preparing an analysis of existing and/or proposed federal, state, and local regulations and pending legislation (in collaboration with the law department, and stakeholders when necessary), on issues related to Air/GHG compliance to prevent lost revenues, unfavorable regulatory decisions, or operational delays.
- Work with Team Lead in developing strategies, Air/GHG compliance programs, guidance documents, and standards, to mitigate impacts to company operations and support business objectives to ensure compliant operations.
- Review and analyze existing and/or proposed federal, state, and local regulations and pending legislation (in collaboration with the law department, and stakeholders when necessary), on issues related to Air/GHG compliance to prevent lost revenues, unfavorable regulatory decisions, or operational delays.
- Negotiate and collaborate directly with regulatory agencies (e.g., CARB, San Diego APCD, USEPA, California Public Utilities Commission, and California Energy Commission) on projects, permits, and various types of plans, reports, agency inspections, and Air/GHG compliance issues.
- Provide Air compliance review and approval of SDG&E projects through the Environmental Tracking System (eTS)

Regulatory Knowledge

- Air Pollution Regulation including 40 CFR Parts 60, 63, and 75
- BACT and LAER Requirements
- Greenhouse Gas Reporting

(continued) ▶

ENVIRONMENTAL SPECIALIST

NAES Corporation
San Diego, CA ▪ 2021 to 2023

Power Generation Environmental Program Management:

- Ensure continual compliance with all environmental programs including:
  - Air Pollution: Pollutant and Green House Gas Emissions
  - Hazardous Materials (CERS) and Hazardous Waste
  - Spill Prevention, Containment, and Countermeasures (SPCC)
  - Waste Water and Storm Water
  - California Accidental Release Prevention Program (CalARP)/RMP
- Create regulatory compliance tools that help ensure power generation facilities understand how to account for complex requirements
- Use of Gensuite and Maximo to establish and track all regulatory reporting and data abstraction requirements
- Work with CiSCO CEMS to identify, trouble-shoot, and correct CEMS issues to maximize emission monitoring capability
- Work with remote plant operators to create understanding of environmental compliance using training, computer tools, and hands on applications
- Provide expertise in compiling annual GHG emissions inventories from major facilities and operations for mandatory reporting to California Air Resources Board (CARB) and United States Environmental Protection Agency (USEPA) including calculation of source specific emission factors

Regulatory Knowledge

- Air Pollution Regulation including 40 CFR Parts 60, 63, and 75
- SDAPCD, SJVAPCD, YSAQMD Rules and Regulations
- BACT and LAER Requirements
- Department of Environmental Health (DEH) /CUPA Hazardous Materials and Waste Management 49 CFR 172.101
- California Code of Regulations (CCR), Title 19
- CalARP, California Office of Emergency Services
- Storm Water Regulation through the State(s) of California, Colorado, Idaho and Local Municipalities
- Waste Water Regulation through the Local Municipality

COMPLIANCE MANAGER

CalPeak Power (4 sites/4 units) and Midway Peaking (2 Units)
San Diego, CA ▪ 2020 to 2021

Power Generation Environmental Program Management:

- Ensure continual compliance with all environmental programs including:
  - Air Pollution: Pollutant and Green House Gas Emissions
  - Hazardous Materials (CERS) and Hazardous Waste
  - Spill Prevention, Containment, and Countermeasures (SPCC)
  - Waste Water and Storm Water
  - California Accidental Release Prevention Program (CalARP)/RMP
- Use of Gensuite and Maximo to establish and track all regulatory reporting and data abstraction requirements
- Work with CiSCO CEMS to identify, trouble-shoot, and correct CEMS issues to maximize emission monitoring capability

- Work with remote plant operators to create understanding of environmental compliance using training, computer tools, and hands on applications

Regulatory Knowledge

- Air Pollution Regulation including 40 CFR Parts 60, and 75
- SDAPCD, SJVAPCD, YSAQMD Rules and Regulations
- BACT and LAER Requirements
- Department of Environmental Health (DEH) /CUPA Hazardous Materials and Waste Management 49 CFR 172.101
- California Code of Regulations (CCR), Title 19
- CalARP, California Office of Emergency Services
- Storm Water Regulation through the State of California and Local Municipalities
- Waste Water Regulation through the Local Municipality
- NERC Regulations

Permitting Knowledge

- Title V Permitting
- Department of Toxic Substance Control (DTSC)
- Local Municipalities including County of San Diego: APCD and Stormwater
- California Energy Commission (CEC)
- Significant Industrial User (SIU) Wastewater Permit

Reporting Experience

- EPA quarterly Electronic Data Reporting (EDR's) through Emissions Collection and Monitoring Plan System (ECMPS)
- Yearly Green House Gas reporting along with outside verification through California Electronic Greenhouse Gas Reporting Tool (CalEGGRT)
- Local District CEMS Downtime and Excess Emissions Quarterly Report
- Breakdown Procedure Reporting
- California Energy Commission (CEC) Quarterly Operations Report in accordance with Air Quality (AQ) Components
- California Energy Commission (CEC) Annual Report in accordance with all CEC permit requirements including air quality, hazardous materials, waste management, soil and water, land use, biological resources, and public health
- DTSC Waste disposal tracking reports
- Source Test RATA / Renewal Testing Report Review for accuracy and determination of Emission and Correction Factors

Health and Safety:

- Safety training of NAES SMP's
- Lock Out Tag Out (LOTO) program specialist
- Confined Space program coordinator

Industry Related Training – Power Generation

- NERC Reliability
- LOTO Training

ENVIRONMENTAL HEALTH AND SAFETY MANAGER

Pio Pico Energy Center (PPEC)
San Diego, CA ▪ 2016 to 2019

Power Generation Environmental Program Management:

- Ensure continual compliance with all environmental programs including:
  - Air Pollution: Pollutant and Green House Gas Emissions
  - Hazardous Materials (CERS) and Hazardous Waste
  - Spill Prevention, Containment, and Countermeasures (SPCC)
  - Waste Water and Storm Water
  - California Accidental Release Prevention Program (CalARP)
- Conducted all sampling and on-site analysis according to permit requirements
- Use of MP2 and Sharepoint to establish and track all regulatory reporting and data abstraction requirements
- Work with CiSCO CEMS to identify, trouble-shoot, and correct problematic issues resulting in a fully functional system
- Work with plant operators to create understanding of environmental compliance using training, computer tools, and hands on applications

Regulatory Knowledge

- Air Pollution Regulation including 40 CFR Parts 60, and 75
- San Diego APCD Rules and Regulations including Rules: 19.2, 20, 21, 69.3, 69.3.1, 98
- BACT and LAER Requirements
- Department of Environmental Health (DEH) /CUPA Hazardous Materials and Waste Management 49 CFR 172.101
- California Code of Regulations (CCR), Title 19
- CalARP, California Office of Emergency Services
- Storm Water Regulation through the State of California and County of San Diego
- Waste Water Regulation through the local municipality

Permitting Knowledge

- Title V Permitting
- Department of Toxic Substance Control (DTSC)
- Local Municipalities including County of San Diego: APCD and Stormwater
- California Energy Commission (CEC)
- Significant Industrial User (SIU) Wastewater Permit

Reporting Experience

- EPA quarterly Electronic Data Reporting (EDR's) through Emissions Collection and Monitoring Plan System (ECMPS)
- Yearly Green House Gas reporting along with outside verification through California Electronic Greenhouse Gas Reporting Tool (CalEGGRT)
- APCD CEMS Downtime and Excess Emissions Quarterly Report
- APCD Rule 98 Breakdown Procedure Reporting
- California Energy Commission (CEC) Quarterly Operations Report in accordance with Air Quality (AQ) Components
- California Energy Commission (CEC) Annual Report in accordance with all CEC permit requirements including air quality, hazardous materials, waste

management, soil and water, land use, biological resources, and public health
- City of San Diego Significant Industrial User (SIU) Monthly Self-Monitoring Report
- DTSC Waste disposal tracking reports
- County of San Diego Storm Water inspection reports for Source Control and Treatment Control
- Cooling Tower Drift Calculation Reports
- Source Test RATA / Renewal Testing Report Review for accuracy and determination of Emission and Correction Factors

Health and Safety:
- Conducted ongoing safety training covering safety management policies
- Lock Out Tag Out (LOTO) program specialist
- Confined Space program coordinator
- Contractor safety program administrator

Industry Related Training – Power Generation
- NERC Reliability
- NFPA 70E, Electrical Safety

AIR POLLUTION CHEMIST

San Diego Air Pollution Control District (SDAPCD)
San Diego, CA ▪ 2002 to 2016

Stationary Source Emission Analysis:
- On-site emission analysis of hazardous air pollutants (HAPS), via continuous emissions analyzers, for Oxides of Nitrogen (NOx), Carbon Monoxide (CO), Particulate Matter (PM10 and total), Ammonia (NH_3), Oxygen (O_2), and Carbon Dioxide (CO_2) according to EPA and SDAPCD methodology and guidelines
- Team coordination ensuring proper tasking to produce desired results
- Tracking all assigned components ensuring timely delivery of minutely detailed analysis along with quality control documentation
- Report production pooling numerous resources ensuring adherence with strict quality standards

Regulatory Knowledge
- Acid Rain Program; 40 CFR Part 75
- CEMS Performance Specifications; 40 CFR Part 60
- Title V requirements
- San Diego Air Pollution Control District (SDAPCD) Rules and Testing Methodology
- Permitting according to federal, state and local regulatory parameters
- Regular interaction with EPA authorities on the development and restructuring of current rules and regulations
- APCD Hearing Board acumen on tolerances, deviations, and exceptions

Health and Safety: Safety Officer
- SDAPCD Safety Officer ensuring compliance with County directives

- Integral part in the creation of the SDAPCD Injury Illness and Prevention Plan (IIPP)
- HAZMAT / HAZCOM reporting to San Diego Department of Environmental Health (DEH)
- DTSC
-

AIR QUALITY INSPECTOR San Diego Air Pollution Control District (SDAPCD)
San Diego, CA ▪ 2001 to 2002

Compliance Inspector

- Perform APCD inspections for determination of adherence to Local, State, and Federal air regulations
- Educated permit holders on compliance issues to meet permit conditions
- Liaison between permit holders and permit engineers to foster an atmosphere of practical compliance
- Produce reports detailing permit holders policies and actions

CONTRACT MANAGER Safety-Kleen (Government Services)
Alameda and San Diego, CA ▪ 1999 to 2001

Hazardous Materials Disposal

- Pooling of resources to produce economically feasible disposal options for the United States Military DRMO
- Detailed knowledge of Hazardous Materials shipping; both by land and trans-Pacific
- Coordinated multiple contractors to ensure the completion of the HazMat disposal including, transportation specialists, waste classification specialists, and on-site labor.
- In depth experience establishing new connections utilized in successful goal attainment
- Adherence with United States Customs and the United States Coast Guard evolving policies concerning HazMat handling, storage, and disposal.

MAJOR ACHIEVEMENTS

- Team member for the successful startup and operation of a newly commissioned power plant in San Diego, California
- Created several compliance measurement tools for a startup power generation facility
- CEMS Expertise with analyzers and software
- Produce a QA/QC Plan in conjunction CEMS Vendor to meet SDAPCD, CARB and EPA requirements
- Oversaw the successful replacement of a Sulfur Hexaflouride (SF6) charged breaker with zero fugitive emissions
- Created the PM10 Sampling and Analysis Program at the SDAPCD
- Created the Ammonia Sampling and Analysis Program at the SDAPCD
- Integral part in becoming one of the only accredited Air Emission Testing Body (AETB) Regulatory Agencies in the United States
- Successful start-up of an overseas Hazardous Materials disposal contract