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## PAUL W. SCHAFER: VICE PRESIDENT, PROJECT DIRECTOR

### Education

B.S. Chemical Engineering

*University of California, Santa Barbara*

### Professional Registrations

Council-certified Indoor Environmental Consultant (CIEC #1012011)

Climate Action Reserve (CAR) Lead Verifier

U.S EPA Method 9 Visible Emissions Evaluator (VEE) Certified (ID # 22868)

OSHA HAZWOPER 40-hour Trained (OSHA 29 CFR 1910.120)

### Professional Experience

Mr. Paul Schafer is a Vice President and Project Director at SCS Engineers. During his technical career at SCS and SCS Tracer Environmental, Mr. Schafer has assumed key roles on several nationally significant monitoring efforts. Mr. Schafer has in-depth experience in interfacing with regulatory agencies regarding the performance of monitoring systems, source emission tests, and continuous process monitors which are operated for our clientele. He has had direct working experience with the San Luis Obispo County APCD, San Joaquin Valley APCD, Imperial County APCD, South Coast AQMD, Santa Barbara APCD, San Diego County APCD, California Air Resources Board, EPA Region IX, and the General Services Administration regarding monitoring programs and air quality impact assessments.

Mr. Schafer offers decisive management skills, which contribute to the success of monitoring programs under his purview. Cost control management and defensible technical performance are primary goals integral to all long term monitoring programs managed by Mr. Schafer. Paul has developed close business relationships with manufacturers and vendors in the ambient air quality monitoring field. Paul managed or continues to manage several projects during his employment with SCS Tracer, which include the following:

**California Air Resource Board/U.S. EPA - Ambient Monitoring Program for Cities Along the California/Mexico Border.** Program Manager for a 12 station monitoring network which measured urban baseline impacts for Tijuana and Mexicali, Baja California. Specific tasks include technician management, logistical planning, data review, equipment repairs, and QA/QC oversight. Each network supported criteria pollutant monitoring as well and particulates (PM<sub>10</sub>), VOCs (TO-14) and air toxics (aldehydes, metals). Recently a new contract was awarded to SCs to install and operate PM<sub>2.5</sub> samplers and continuous instrumentation in Mexicali, Mexico.

**California State Parks, Oceano Dunes SVRA:** Project Manager for the installation, operation and maintenance of air quality and meteorological devices at Oceano Dunes State Vehicle Recreation Area (ODSVRA) in San Luis Obispo County, California. OD SVRA is subject to Rule 1001, *Coastal Dunes Dust Control Requirements (Dust Rule)* by the San Luis Obispo County (SLO) Air Pollution Control District (APCD). The *Dust Rule* requires OD SVRA to, among other things, implement dust reduction activities and assess the reduction in particulate matter (PM<sub>10</sub>). The 2013-2015 phase of this project is a short-term effort to measure the effectiveness of specific dust control activities at reducing ambient particulate matter. A comprehensive Quality Assurance Project Plan was also developed as part of the project.

**Los Angeles Department of Water and Power as Subcontractor to ESA:** Project Manager for Air Monitoring related services to show compliance with the SCAQMD Fugitive Dust Rule (Rule 403) as well as providing real time PM-10 and meteorological measurements at Ivanhoe Elementary to assess relative impacts of nearby construction. Duties also included attendance and speaking at public meetings and daily data reporting.

**Los Angeles World Airports (LAWA) Source Apportionment Study:** Mr. Schafer oversaw the design and installation of a multi-station network of ambient air monitors around Los Angeles International Airport. Installation included attainment of permits, procurement of samplers and monitoring hardware, site assessments, equipment integration, as well as calibration. Seasonal collection of multiple data parameters will be used in a source-apportionment modeling study. Paul was directly responsible for the installation and field calibration of all samplers and sensors. He also managed data logging and review of all field data.

**County Sanitation Districts of Los Angeles County:** SCS Engineers established and operated a particulate and meteorological monitoring network at the Mesquite Regional Landfill in Imperial county. Paul Schafer authored an extensive monitoring protocol for the landfill, which was accepted by the Imperial County APCD without revision. The network consists of three medium-volume samplers for PM<sub>10</sub> as well as one BAM-1020 unit for PM<sub>10</sub>. These samplers have also been modified in order to accurately measure PM<sub>2.5</sub> according to EPA protocol and reference methods. The sampling program is supported by a PSD-quality meteorological monitoring station consisting of wind speed, wind direction, and temperature.

**Granite Construction, Rosemary's Quarry:** SCS established and currently operates and maintains a network of particulate samplers surrounding a rock quarry in Fallbrook, CA. These samplers are configured for sampling PM10. Once per quarter, the samplers are reconfigured for PM4 sampling, which is accompanied by analysis for crystalline silica.

**San Joaquin Valley Air Pollution Control District:** SCS has designed and installed a complete PSD quality air monitoring station for the SJVAPCD in Madera, CA. All aspects of the installation including design, construction management, permitting, procurement of equipment, and equipment installation and verification were managed by Paul Schafer. Since this original award, SCS has also been contracted to design, build and install air quality monitoring stations in Hanford, Manteca, and Fresno.

**Freeport McMoRan Oil and Gas:** SCS Tracer designed and constructed a network of PSD stations in support of offshore oil production in Santa Barbara (CA) County. The network currently consists of four air quality and meteorological monitoring sites. The sites operate 24/7 and SCS handles all aspects of the project from operations and maintenance to reporting and regulatory management.

**Venoco, Inc.:** Operation and maintenance of a PSD and odor monitoring network in support of permit conditions for an offshore and onshore oil and gas recovery program. Continuous air quality measurements include ozone, NO/NO<sub>2</sub>/NO<sub>x</sub>, THC, H<sub>2</sub>S and SO<sub>2</sub>. Meteorological monitoring is also included in the program.

**Clean Harbors, Westmoreland:** SCS has been contracted to perform all field work associated with the operation of a network of organic and inorganic samplers at a Class I TSDF in California's Imperial Valley. The work includes preparing all samplers for scheduled sampling runs, collection of all samples and data reporting. SCS is also responsible for the operation and maintenance of a meteorological monitor located on site. All work is performed within the guidelines of a restrictive QA/QC Plan.

## Publications and Presentations

Schafer, Paul W., et. al. "Quality Assurance Project Plan – Arroyo Grande Oil Field, H<sub>2</sub>S and Meteorological Monitoring" SCS Engineers Report to San Luis Obispo County APCD, January, 2016.

Schafer, Paul W., et. al. "Air Monitoring Tips and Technologies, The Power of Defensible Data" SCS Engineers Client Presentation, June 2015.

Schafer, Paul W., et. al. "Quality Assurance Project Plan – Oceano Dunes SVRA" SCS Tracer Environmental Report to California State Parks and San Luis Obispo County APCD, June, 2014 and April, 2015.

Schafer, Paul W., et. al. "Air Monitoring Plan – Blanche Park" SCS Engineers Report to Miami-Dade County Dept. of Environmental Resources Management (DERM), April, 2014.

Schafer, Paul W., et. al. "PSD Monitoring Plan – West Campus" SCS Tracer Environmental Report to Santa Barbara County APCD, January, 2010.

Schafer, Paul W., et. al. "Quality Assurance/Quality Control Program Manual – West Campus/Ellwood Odor" SCS Tracer Environmental Report to Santa Barbara County APCD, February, 2010.

Schafer, Paul W., et. al. "Carpenteria Meteorological Monitoring Site - Quality Assurance/Quality Control Program Manual" SCS Tracer Environmental Report to Santa Barbara County APCD, January, 2009.

Schafer, Paul W., et. al. "Quality Assurance/Quality Control Program Manual – Carpenteria Monitoring Site" SCS Tracer Environmental Report to Santa Barbara County APCD, October, 2008.

Schafer, Paul W., et. al. "Meteorological Monitoring Plan – Carpenteria Gas Plant" SCS Tracer Environmental Report to Santa Barbara County APCD, October, 2008.

Schafer, Paul W., et. al. "PSD Monitoring Plan – Lompoc Oil and Gas Plant – HS&P Monitoring Plan" SCS Tracer Environmental Report to Santa Barbara County APCD, September, 2008.

Schafer, Paul W., et. al. "PSD Monitoring Plan – Lompoc Oil and Gas Plant – Paradise Road Monitoring Plan" SCS Tracer Environmental Report to Santa Barbara County APCD, September, 2008.

Schafer, Paul W., et. al. "PSD Monitoring Plan – Lompoc Oil and Gas Plant – Odor Monitoring Plan" SCS Tracer Environmental Report to Santa Barbara County APCD, September, 2008.

Schafer, Paul W., et. al. "PSD Monitoring Plan – Gaviota Oil Heating Facility – Carpenteria Monitoring Plan" SCS Tracer Environmental Report to Santa Barbara County APCD, September, 2008.

Schafer, Paul W., et. al. "PM-10 Monitoring Protocol for the Mesquite Regional Landfill" SCS Tracer Environmental Report to Imperial County APCD, September, 2007.