

Mike Pring

Senior Environmental Engineer



A seasoned engineer with expertise in characterizing and managing emissions from the oil & gas sector

- Since 2012, has managed ERG's ongoing oil and gas (O&G) criteria and hazardous air pollutant (HAP) emissions inventory support for U.S. EPA/Office of Air Quality Planning and Standards (OAQPS).
- Currently wrapping up a year-long study evaluating high emitting O&G sources in the Marcellus Shale using state-of-the-art leak identification and measurement technologies.
- Led high-profile urban drilling natural gas air quality monitoring study in the Barnett Shale, presenting findings to the mayor, city council, and citizens of Fort Worth.
- Has supported development of permits for a number of state agencies.

EMPLOYMENT

- 1996–present
Senior Environmental Engineer, Eastern Research Group, Morrisville, NC
- 1991–1996
Environmental Engineer, Radian International LLC, Morrisville, NC

EDUCATION

- B.S., Environmental Engineering, University of Florida, 1991

RELEVANT PROJECTS

Oil and Gas Permitting

Client: Alaska Department of Environmental Conservation and the Allegheny County Health Department. Provided technical leadership and project management for the preparation of Prevention of Significant Deterioration, Title V, and minor source air quality permits for large offshore oil and gas exploration and production platforms, natural gas compressor stations, and natural gas storage facilities. Prepared emissions inventories, performed regulatory analysis, conducted Best Achievable Control Technology analysis, and drafted permit language ensuring compliance with all requirements of the Clean Air Act and state air quality rules.

Regulatory Support for 40 CFR Part 60, New Source Performance Standards (NSPS) OOOOa (Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources)

Client: U.S. EPA/Sector Policies and Programs Division. Managed ERG's analytical support to U.S. EPA in evaluating oil, gas, and coalbed methane well information contained in the DrillingInfo *DI Desktop* database for purposes of informing updates to NSPS Subpart OOOO and OOOOa. Analyses included identifying hydraulically fractured wells based on the EIA formation type crosswalk, identifying hydraulically fractured oil wells for 2011, estimating average associated gas production from the hydraulically fractured oil wells, and summarizing this information at the national and county level. Additionally, determined the total number of existing oil wells, the number of existing oil wells exceeding a specified production rate, and the average daily production rate from those wells exceeding the targeted threshold rate. Conducted similar analysis for condensate production at natural gas wells.

General Permit (GP) and Permit by Rule (PBR) Development for Tribal Areas

Client: EPA/OAQPS. Supported the US EPA in implementing the Federal Implementation Plan for minor source construction permits for Indian country. Developed GPs and PBRs for Rock Crushing facilities, Hot Mix Asphalt plants, Dry Cleaner, Internal Combustion Engines, Auto Body Shops, and Gasoline Dispensing facilities located on Tribal lands. For each source type, conducted research into existing state permitting approaches and permitting

requirements, evaluated the U.S. EPA National Emissions Inventory to develop appropriate permitting thresholds, developed emissions calculations, and drafted the permit and background documents for each category. These documents included a Questionnaire, Application, Permit, Instructions, and supporting calculations.

National Nonpoint Oil and Gas Emission Estimation Tool

Client: EPA/OAQPS. Currently manages ERG's support in developing a national, county-level emissions inventory of nonpoint upstream O&G sources. Developed methodologies to estimate county-level emissions from upstream O&G sources for calendar years 2011, 2014, and 2017 for criteria pollutants, HAPs, and GHGs. Designed and implemented methods to calculate area source emissions based on county-level activity data such as gas production, oil production, condensate production, and drilling activity. Specific source types covered in the inventory include storage tanks (condensate, oil, produced water), drill rigs, well completions, hydraulic fracturing and completion engines, dehydration units, pneumatic pumps and other devices, well venting/blowdowns, fugitives, heaters, truck loading, wellhead and pipeline compressor engines, and flaring.

California Air Resources Board (CARB) Methane Rule Training

Client: CARB. Managed ERG's support to develop and present training on CARB's O&G methane rules. Reviewed the rule and other available information to develop training slides on oil and gas exploration and production emissions processes, federal rules applicable to oil and gas sources, and CARB's rule. Delivered training to CARB, solicited feedback on the course, and addressed all questions and comments to develop a final set of training materials for CARB headquarters staff to use to train California air district personnel on the oil and gas industry, rules applicable to associated sources, and the monitoring equipment used to determine compliance. Monitoring equipment covered in the training included forward-looking infrared cameras, toxic vapor analyzers, and Hi-Flow samplers.

Energy Extraction Initiative Enforcement

Client: U.S. EPA/Office of Civil Enforcement (OCE). Provided technical and field support to OCE to evaluate compliance with federal air quality rules at upstream and midstream O&G production sites. Conducted detailed technical reviews of production site-specific air emissions from oil and condensate tanks and pipeline pigging operations. Prepared an historical regulatory analysis for a large compressor station to document compliance with New Source Review regulations during multi-phase construction activities. Analyzed historical leak detection and repair records to determine compliance with permit requirements for control of emissions from fugitive equipment leaks.

Fort Worth Natural Gas Air Quality Study

Client: City of Fort Worth. Managed study to characterize air toxic emissions and determine the air quality implications of natural gas exploration and production activities in the city. This year-long study included ambient air monitoring to measure air pollution levels near active well pads and natural gas compressor stations; point source testing to measure the pollutants emitted from natural gas drilling, fracturing, production, and processing sites; air dispersion modeling conducted to estimate downwind impacts from these activities; and a public health evaluation of the study's findings. Prepared and delivered presentation and outreach materials for the City of Fort Worth mayor and city council, city staff, and the citizens of Fort Worth.

O&G Emissions Inventory for Upstream Oil and Gas Sources for Texas

Client: Texas Commission on Environmental Quality (TCEQ). Managed support to TCEQ in preparing and updating the Texas emissions inventory of upstream oil and gas emissions sources, including storage tanks, equipment leaks, dehydrators, compressor engines, wellheads, oil/gas well completions, pneumatic devices, heaters, and loading racks. Identified the best emissions estimation methodology for each source type, prepared and implemented several surveys to industry to collect the data needed to implement the methodologies, and developed an MS Excel-based emissions inventory workbook for estimating emissions of criteria pollutants and HAPs (with a focus on formaldehyde and benzene, toluene, ethylbenzene, and xylene) from upstream O&G production sites.