

# **Understanding Emissions from Control-Related Equipment used in Oil and Gas Production Operations to Support EPA's Air Quality Modeling of Ozone Non-attainment Areas**

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## **ABSTRACT**

Oil and gas production has increased significantly in the United States over the past ten years. Improperly maintained and controlled oil and gas production processes have the potential to emit significant amounts of pollutants that can impact human health and air quality. In particular, oil and gas production processes can generate volatile organic compounds (VOCs), which include air toxics and precursors to the formation of ozone. As a result, it is important to quantify the efficiency of control-related devices used in oil and gas operations and to speciate their emissions. Through a collaborative effort, the EPA Office of Research and Development and EPA Region 8 are investigating the impacts of these emissions with the primary objectives of 1) enhancing EPA's knowledge of VOC control efficiency and 2) characterizing the emissions of highly reactive VOCs emitted at well pads located within the Colorado Denver-Julesburg (DJ) Basin through a measurement campaign and air quality modeling efforts. This paper will describe the application of the data collected during the measurement campaign in EPA's air quality models, and summarize the results of air quality modeling sensitivity studies to changes in emissions of enclosed combustion controls for oil and gas production activities within the DJ Basin. The results of this study will help improve assumptions used in ozone attainment demonstrations and to quantify the possible benefits of improved control devices.