

**VENTURA COUNTY**  
**AIR POLLUTION CONTROL DISTRICT**  
Memorandum

TO: Clerk of the Board – Ventura County Board of Supervisors      DATE: October 19, 2015

CC: Brian Baca  
RMA/Planning Division

FROM: Michael Villegas *MV*  
Air Pollution Control Officer

SUBJECT: CALIFORNIA RESOURCES CORPORATION (CRC) APPLICATION TO RENEW  
CUP 3344

As requested by the Ventura County Planning Department staff, Ventura County Air Pollution Control District (VCAPCD) staff reviewed the greenhouse gas (GHG) emissions estimates for Conditional Use Permit (CUP) 3344, which is a proposal for 19 oil wells. Moreover, Planning District staff provided District staff a Greenhouse Gas Emissions Technical Report prepared by InterAct (InterAct Report) at the request of CRC for the project (October 2015). InterAct is a local environmental consulting firm specializing in management of regulatory, permitting and compliance projects for oil and gas production facilities and drilling projects, with emphases on land use, air quality, water use and health risk assessments.

The InterAct Report estimates of GHG emissions from the project are based on several assumptions, which VCAPCD have determined to be reasonable and provides a conservative estimate of GHG emissions of the project. Since GHG emissions were not historically measured at the subject CRC facilities, the fugitive methane and carbon dioxide emissions from well operations were estimated based on the ratio of GHG emissions to regulated reactive organic gases (ROG) from oilfield production facilities.

VCAPCD staff recently conducted a review of its long-standing oil well ROG emission factor of two pounds of ROG per day per well during development of the upcoming 2016 Air Quality Management Plan. This review confirmed, by comparison to recent field data and modeling methods used by the Air Resources Board (ARB) and Santa Barbara County APCD, that the ROG emission factor used by the VCAPCD and for the InterAct report is appropriate.

The InterAct Report uses several “worst case” estimates in its analysis including methane content, ROG content and CO<sub>2</sub> content of the gas produced by the wells in this project. Using worst case estimates would be expected to significantly overestimate the GHG emissions from the proposed new CRC oil wells.

VCAPCD staff reviewed data from the California Air Resources Board (ARB) and the California Department of Oil, Gas and Geothermal Resources to determine the average methane emissions from oil wells statewide. Based on this review, VCAPCD staff determined the InterAct estimate of methane emissions from this project is more than four times the statewide average. Therefore, VCAPCD believes the estimate of methane emissions for this review is very conservative and thus overestimates the methane emissions that will occur as a result of the proposed 19 oil wells.

Since methane constitutes the vast majority of the direct GHG emissions from oil production activities, VCAPCD staff reviewed currently accepted global warming potential (GWP) estimates for methane. USEPA and ARB currently use a GWP for methane of 25 times that of carbon dioxide (CO<sub>2</sub>) over 100 years for the EPA national inventory and the 2015 California GHG Inventory, respectively. This GWP value is based on the fourth assessment report by the Intergovernmental Panel on Climate Change (IPCC) issued in 2007 and is consistent with the First Update to the AB32 Scoping Plan (May 2014).

IPCC issued its fifth assessment report in 2014, which increased the GWP estimate of methane to 34 times that of CO<sub>2</sub> over 100 years. Others have advocated for shorter GWP time frames which would increase the GWP of methane and methane emission estimates even further. However, for official inventories and impact assessments, VCAPCD recommends using the GWP of 25 currently used by USEPA and ARB for regulatory inventories and related activities.

Based on these assumptions, VCAPCD staff conducted an independent analysis of the GHG emissions increase from this project. The VCAPCD analysis of project GHG emissions correlated very closely with the analysis presented in the InterAct Report. Therefore, VCAPCD staff agrees with the conclusion of the InterAct Report that the GHG emissions increase of the project will be less than significant.

If you have any questions, please contact me at (805) 645-1440.