

Appeal of Oil & Gas Project PL13-0150 – CRC

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for CFROG to:
Ventura County Planning Commission

GHG Considerations

June 11, 2015

County of Ventura

Planning Commission Hearing

PL13-0150

Exhibit J - Steven Colome for CFROG PowerPoint

GHG Targets & Dates

- Gov. Schwarzenegger in 2005 issued **Executive Order S-3-05**: reduce GHG emissions to 1990 levels by 2020 and by 2050 reduce emissions 80% below 1990 emissions
- The 2020 goal was codified during 2006 in **AB-32**
- Gov. Jerry Brown on **April 29, 2015** issued **Executive Order B-30-15**: GHG target to reduce emissions 40% below 1990 levels by 2030.

10. Greenhouse gases: *Public testimony was provided that expressed concern regarding the potential impact of greenhouse gas emissions generated by the proposed project.*

Staff response: The proposed project involves the installation of up to nine new oil wells on the Harth Lease drill pad. The quantity of greenhouse gas emissions from these wells can be estimated from the anticipated Reactive Organic Compound (ROC) emissions. As stated in the analysis of issue 7 above, the annual ROC emissions would rise to 4.37 tons/year (4.8 metric tons/year) with the proposed project. According to the VCAPCD (K. Zozula, pers. comm., 4-10-13), a reasonable estimate is that 90 percent of oil field emissions are methane (a GHG) and 10 percent are ROC. With these parameters, the estimated GHG emissions from the proposed project would be 43.2 tons/year of methane ($4.8 \times 9 = 43.2$). These methane emissions are equivalent to 909 tons/years of CO_2 ($43.2 \times 21 = 909$). As explained in the following discussion of climate change, this level of greenhouse gas emissions is below the applicable Threshold of Significance of 10,000 metric tons/year of CO_2 equivalents (CO_2e).

Dissecting 2013 Mirada GHG Analysis-1

“...the annual ROC emissions would rise to 4.37 tons/year (4.8metric tons) with the proposed project”

- Estimates based on fugitive emission factors per well
- Emission factors are only an average, and are subject at times to high variability and error
- Estimates used by VCAPCD are from limited data from older measurements – newer measurements often find emission estimates to be under-predicted
- Emission estimates **assume** all wells in compliance

Dissecting 2013 Mirada GHG Analysis-2

“(K. Zozula, pers. comm., 4-10-13), a reasonable estimate is that 90 percent of oil field emissions are methane and 10 percent are ROC”

- This is a very crude rule-of-thumb and subject to variability
- It is an indirect attribution for methane as a GHG. Methane is specifically excluded from the ROC label
- The applicant will most likely have more detailed, accurate and specific information on the gas composition
- Site-specific data are necessary

Dissecting 2013 Mirada GHG Analysis-3

“With these parametersproject ..43.2 tons/year of methane (4.8 x 9)”

- No recent VC methane-specific measurements (leak-detection method is non-specific for hydrocarbons)
- Assumes continuous compliance with air standards -- not reflecting human behavior or actual operations
- Geologic formations have different oil/gas ratios and gas compositions
- Site-specific data are necessary
- It would not be surprising for the real value to be 3-4 times this projection

Dissecting 2013 Mirada GHG Analysis-4

“These methane emissions are equivalent to 909 tons/year of CO₂ [sic] (43.2 x 21=909)”

- Methane is a far more potent GHG than CO₂ but is released in fewer tonnes on a global basis
- Half-life of CO₂ in the atmosphere is measured on the century scale while methane has a half-life of 7 years
- Multiplier of 21 for methane-to-CO₂e is grossly out of date—current estimates on 100-year period is 25-34
- During its atmospheric life-span methane is 100x more potent a GHG compared with CO₂
- **Methane emission reductions are needed to meet short-term GHG goals**

Dissecting 2013 Mirada GHG Analysis-5

“...this level of greenhouse gas emissions is below the applicable Threshold of Significance of 10,000 metric tons/year of CO² [sic] equivalents (CO²e)”

- VC (to my understanding) has no local plan for reduction of GHG nor has the county formally established a GHG significance threshold
- Project evaluation should be on whether it contributes or detracts from the emission reduction goals and whether mitigations are considered
- Recent Executive Order B-30-15 needs to be considered along with CARB ongoing evaluation of GHG emissions from oil & gas operations
- **County analysis is in error and proposed project may exceed (non-existent) 10,000 tonne Threshold of Significance**

Thumbnail Re-analysis of VC Planning Calculations

$(4 \text{ tonnes/yr} \times 9) \times 2.1 (\text{Mirada to CRC conversion}) \times 2 (\text{emission factor error}) \times 100 (\text{methane to CO}_2 \text{ equivalents to meet short-term GHG goals}) \approx$

15,000 tonnes CO₂e

GHG and CEQA Practice

- Analysis of climate change impacts moving rapidly
- Lead agency should make good-faith effort to describe, calculate or estimate GHG emissions from a project
- Feasible means of mitigating GHG effects is responsibility of lead agency
- Best practice to compare project emissions with baseline emissions and consistency with California GHG goals