

November 5, 2021

Project 02576.00032.001

Mr. Scott Johnson, AICP  
Planning Manager  
City of Folsom, Community Development Department  
50 Natoma Street  
Folsom, CA 95630

**Subject: Addendum to the Folsom Lakeside Crematorium Project Air Quality and Greenhouse Gas Emissions Assessment**

Dear Mr. Johnson:

HELIX Environmental Planning, Inc. (HELIX) completed the *Folsom Lakeside Crematorium Project Air Quality and Greenhouse Gas Emissions Assessment* in July 2021 (HELIX 2021). Following the completion of the July 2021 analysis, Caring Services Group (Applicant) has requested alterations to the operating hours and number of daily cremations to occur on site. This Addendum provides an updated analysis based on these alterations.

## PREVIOUS ANALYSIS

The July 2021 letter report assessed the air quality and greenhouse gas (GHG) emissions associated with the construction and operation of the proposed Folsom Lakeside Crematorium Project (project), including a health risk assessment (HRA) to evaluate potential community health risks from the project's emissions. The analysis was prepared to support environmental review under the California Environmental Quality Act (CEQA).

The analysis assumed a maximum cremation process rate of 200 pounds per hour, 400 pounds per day, and 100,000 pounds per year based on information provided by Applicant. The project's emissions of criteria pollutants and precursors were found to be below Sacramento Metropolitan Air Quality Management District (SMAQMD) thresholds and result in a less than significant impact. Community health risks resulting from emissions of toxic air contaminants (TACs) from the project's operation of a crematory were evaluated in an HRA following the Office of Environmental Health Hazard Assessment (OEHHA) guidelines. Project TAC emissions were found to result in less than significant impacts. The project was not found to be a substantial source of objectional odors and odor impacts were disclosed as less than significant. The project was found to be consistent with the City's integrated General Plan and GHG Strategy and GHG emissions impacts were disclosed as being less than significant. The project was found to not conflict with an applicable plan adopted for the purposes of reducing GHG emissions and the impact was disclosed as less than significant.



## REVISED ANALYSIS

As discussed previously, the Applicant has requested alterations to the operating hours and number of daily cremations to occur on the site. The Applicant has requested an increase in the daily process rate from the previously analyzed 400 pounds per day to a new value of 800 pounds per day. There are no changes to the project that would affect the construction analysis previously conducted. The analysis that follows focuses on daily operational emissions.

The HRA previously conducted to evaluate potential community health risks from the project's TAC emissions relies on the maximum hourly emissions rate and the average annual emissions generated by project operations. The hourly cremation process rate was previously set based on the maximum hourly capacity of the crematory; therefore, there is no change to the hourly process rate or maximum hourly emissions. The Applicant has not requested alteration to the total number of cremations to occur per year; therefore, there is no change to the annual cremation process rate or average annual emissions profile. Therefore, the potential health risks from the project would remain the same as previously disclosed.

## Methods

Criteria pollutant and precursor emissions for long-term operation of the proposed crematory were calculated using propane combustion emissions factors from the USEPA AP-42 Compilation of Emissions Factors Chapter 1.5 (USEPA 2008), and crematory emissions factors provided by the SMAQMD, which combined USEPA AP-42 data and the USEPA Factor Information Retrieval Program (SMAQMD 2020a).

## Air Quality Impact Analysis

Operation of a propane-fired crematory would be considered a new stationary source of emissions. The project may be subject to SMAQMD's Rule 201, *General Permit Requirements*, and Rule 202, *New Source Review*. The project would be required to implement best available control technology (BACT) for the minimization of emissions. BACT for crematories is incorporated into the product design in the form of controls which ensure maintenance of the correct temperatures and cycle times, and a secondary combustion chamber which ensures oxygenation and complete combustions of all fuels. As described in the Methods sections, above, criteria pollutant and precursor emissions for long-term operation of the proposed crematory were calculated using propane combustion emissions factors from AP-42 and crematory emission factors provided by SMAQMD. The project's calculated criteria and precursors operational emissions are compared to the SMAQMD thresholds in Table 1, *Operational Criteria Pollutant and Precursor Emissions*, and the calculation output sheets are included in Attachment A to this letter.



**Table 1**  
**OPERATIONAL CRITERIA POLLUTANT AND PRECURSOR EMISSIONS**

Pollutant	Project Emissions	SMAQMD Threshold	Exceed Threshold?
<i>Daily Emissions (pounds per day)</i>			
ROG	0.2	<b>65</b>	<i>No</i>
NO <sub>x</sub>	2.4	<b>65</b>	<i>No</i>
CO	1.8	<b>None</b>	<i>No</i>
SO <sub>x</sub>	0.9	<b>None</b>	<i>No</i>
PM <sub>10</sub>	0.5	<b>80</b>	<i>No</i>
PM <sub>2.5</sub>	0.5	<b>82</b>	<i>No</i>

Source: SMAQMD 2020a; SMAQMD 2020b

As shown in Table 1, the project's operational emissions of criteria pollutants and precursors would not exceed the SMAQMD daily thresholds. Therefore, the project's operational emissions would not result in a cumulatively considerable net increase of any criteria pollutant and impacts would be less than significant.

## SUMMARY

The project's daily emissions of criteria pollutants and precursors would remain below SMAQMD thresholds and would result in a less than significant impact. All other quantified emissions and significance determinations remain unchanged from what was presented in the July 2021 *Folsom Lakeside Crematorium Project Air Quality and Greenhouse Gas Emissions Assessment*.

Sincerely,



Victor Ortiz  
Senior Air Quality Specialist

## Attachments:

Attachment A: Emissions Calculation Sheets



## REFERENCES

Sacramento Metropolitan Air Quality Management District (SMAQMD). 2020a. Electronic communications between HELIX Environmental Planning (Victor Ortiz) and the Sacramento Metropolitan Air Quality Management District (Venk Reddy); attachments to communications containing crematory emissions calculations. August and November.

2020b. SMAQMD Thresholds of Significance Table. April. Available at:  
<http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable4-2020.pdf>.

U.S. Environmental Protection Agency (USEPA). 2008. AP 42, Fifth Edition, Volume I Chapter 1: External Combustion Sources, 1.5 Liquefied Petroleum Gas Combustion. Available at:  
[https://www.epa.gov/sites/production/files/2020-09/documents/1.5 liquefied petroleum gas combustion.pdf](https://www.epa.gov/sites/production/files/2020-09/documents/1.5%20liquefied%20petroleum%20gas%20combustion.pdf).



# Crematory Criteria Pollutant Emissions

## Emissions from Propane Combustion

KBTU/Cycle	1,800
KBTU/Gallon	91.502
Gallons/Cycle	19.672
Cycles/Day	4
Cycles/Year	500

Pollutant	Emission Factor (lbs/1000 gal) <sup>1</sup>	Emissions (lbs/day)
ROG <sup>3</sup>	1	0.08
NOx	13	1.02
SOx	0.054	0.00
PM10	0.7	0.06
PM2.5 <sup>4</sup>	0.7	0.06
CO	7.5	0.59

## Emissions from Combustion of Human Remains

	lbs/day
Maximum Throughput	800

Pollutant	Emission Factor (lbs/ton) <sup>2</sup>	Emissions (lbs/day)
ROG	0.299	0.12
NOx	3.560	1.42
SOx	2.170	0.87
PM10	1.130	0.45
PM2.5 <sup>4</sup>	1.130	0.45
CO	2.950	1.18

## Total Emissions

Pollutant	Emissions (lbs/day)
ROG	0.2
NOx	2.4
SOx	0.9
PM10	0.5
PM2.5	0.5
CO	1.8

### Notes:

1. Emissions factors for propane from USEPA AP-42 Chapter 1, External Combustion Sources, Section 1.5 Liquefied Petroleum Gas Combustion, Table 1.5-1.
2. Emissions from combustion of human remains provided by SMAQMD and are from USEPA Factor Information REtrieval (FIRE) Program Data System (3/08).
3. ROG fraction of TOC for propane combustion unavailable, ROG assumed to be equal to