

December 5, 2023

**Subject: Health risk screening of the monthly continuous air monitoring and discrete air sampling data for October 2023**

CTEH has been hired by Chiquita Canyon Landfill to evaluate air quality and public health risks in communities near the Landfill. Air quality evaluations include continuous air monitoring and discrete air sampling strategies conducted by a separate consultant, SCS Engineers. SCS Engineers has provided the October 2023 data to the Los Angeles County Department of Public Health and made the data publicly available at [https://chiquitacanyon.com/wp-content/uploads/2023/11/Final-October-2023-CAMP-Air-and-Odor-Sampling-Report\\_11-21-23.pdf](https://chiquitacanyon.com/wp-content/uploads/2023/11/Final-October-2023-CAMP-Air-and-Odor-Sampling-Report_11-21-23.pdf). The following summarizes our findings from real-time air monitoring and analytical air sampling conducted in October 2023 and provides an aggregate analysis of the August, September, and October 2023 data.

Based on our review of the continuous air monitoring and discrete air sampling data from August through October 2023, no adverse health effects are anticipated across the community. Average hydrogen sulfide (H<sub>2</sub>S) levels at MS-08 in Val Verde were slightly above the intermediate Minimal Risk Level (MRL)<sup>1</sup>. However, a margin of safety analysis indicates ambient air concentrations at MS-08 are more than twenty times below the Agency for Toxic Substances and Disease Registry (ATSDR) exposure level at which no harmful effects are anticipated in humans.

Continuous air monitoring readings and discrete air sampling results were compared against the health-protective National Ambient Air Quality Standards (NAAQS) and Residential Air Regional Screening Levels developed by the U.S. Environmental Protection Agency, Minimal Risk Levels (MRL) developed by ATSDR, Reference Exposure Levels developed by the California Office of Environmental Health Hazard Assessment (OEHHA), and other short- and intermediate-duration health-based air quality standards or guidance values, where available. Evaluations of long-term exposures (greater than one year) are ongoing.

**Analytical Air Sampling:** 24-hour and grab air samples were collected on a weekly basis at 10 locations throughout the community (Appendix A), resulting in a total of 194 discrete air samples collected in August, September, and October 2023. Air samples were collected and analyzed by an accredited laboratory for 90 individual analytes, including 22 total reduced sulfur (TRS) compounds, and 68 volatile organic compounds (VOCs). Out of more than 15,000 air sampling results collected across the community between August and October, none were detected above short- or intermediate-term health protective screening levels. Evaluations of long-term exposures (greater than one year) are ongoing.

**Continuous Air Monitoring:** The continuous air monitoring readings are compiled from seven fixed stations throughout the community, labeled as MS-06 to MS-12 (Appendix A). Each fixed air monitoring station is set to continuously evaluate H<sub>2</sub>S and particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>) over

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<sup>1</sup> The intermediate Minimal Risk Level (MRL) is a health protective screening level protective of the general population (including sensitive individuals) of continuous exposures over 365 days, intended to serve as a screening tool to help public health professionals decide where further review may be needed.

24-hour periods to assess real-time detections. Real-time monitoring at the seven fixed stations in October 2023 produced 5,208 hourly readings for each of the following constituents: H<sub>2</sub>S, PM<sub>2.5</sub>, and PM<sub>10</sub>, for a total of 15,624 readings. Between the months of August, September, and October 2023, a total of 46,261 real-time readings were collected for H<sub>2</sub>S and particulate matter. In addition, real-time air monitoring for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) was conducted over 1-hour periods at MS-12, southeast of Val Verde, producing 545 readings throughout the month of October.

- No 24-hour average measurement for PM<sub>10</sub>, or PM<sub>2.5</sub> exceeded the NAAQS health-based standards.
- No 1-hour measurements for benzene, toluene, or xylene across MS-12 exceeded the OEHHA Acute REL, protective over 1-hour exposure periods. OEHHA has not established an Acute REL for ethylbenzene, thus, no comparisons to acute exposure values for ethylbenzene were conducted. It is notable that no detections of ethylbenzene were recorded at MS-12 throughout the month of October.

**H<sub>2</sub>S Evaluation Against ATSDR Intermediate MRL:** CTEH further evaluated the H<sub>2</sub>S data against the ATSDR intermediate MRL of 0.02 parts per million (ppm). The average H<sub>2</sub>S concentrations between August and October 2023 was below the ATSDR MRL at all locations except MS-08, with rolling average readings between 0.0199 and 0.0277 ppm. A margin of safety analysis indicates ambient air concentrations are significantly (more than 20 times) below the exposure level at which no harmful health effects are anticipated in humans<sup>2</sup>. While these levels of H<sub>2</sub>S do not represent a human health risk for the community near MS-08, additional monitoring or sampling may be warranted to better characterize air quality.

**H<sub>2</sub>S Screening Against CAAQS:** CTEH conducted an evaluation of the H<sub>2</sub>S data against the California Ambient Air Quality Standard (CAAQS) of 0.03 ppm over a 1-hour average, which is a standard based on the concentration at which a human may be able to smell an odor but is not a level at which adverse health effects would be anticipated. To evaluate data collected throughout the months of August, September, and October 2023, H<sub>2</sub>S data were reviewed by location to assess the potential variability in odor impacts across nearby communities, as summarized in Table 1. Whereas there were exceedances of the CAAQS at various locations, the ATSDR Intermediate MRL was only exceeded at MS-08. This is because the CAAQS is based on a 1-hour average, while the ATSDR Intermediate MRL averages data over a longer period of time, up to one year.

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<sup>2</sup> Human Equivalent Concentration at which No Observable Adverse Health Effects are anticipated (NOAEL<sub>HEC</sub>)

Table 1. Percentage of H<sub>2</sub>S CAAQS Exceedances by Location

Location	Percentage of Readings that Exceed the CAAQS (0.03 ppm) – October 2023
MS-06 (US Postal Service – Castaic)	27%
MS-07 (Fire Department – Del Valle)	0%
MS-08 (Val Verde NW)	35%
MS-09 (Castaic)	2%
MS-10 (Hasley Canyon Park)	7%
MS-11 (West Ranch High School)	22%
MS-12 (Val Verde SE)	21%
Exceedances by Month (Average)	16%

Given the observed exceedances of the CAAQS across six of the seven fixed air monitoring locations across the community, it is likely that odors were perceived near the vicinity of the Chiquita Canyon Landfill.

Cordially,



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## Appendix A. SCS Community Air Sampling Locations in Proximity to Chiquita Canyon Landfill

