NW Cascade HoneyBucket Yard San Martin, CA Facility

**Assessment of Odor Impacts** 

# Report

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Prepared by

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1. Thomas R Card Resume

### 1.0 Introduction

This report is intended to provide sufficient background information to make planning decisions as to the anticipated odor levels of a proposed portable toilet staging facility to be constructed in San Martin, California. This report was completed by Thomas R. Card, an internationally recognized expert in odor assessment and control. Mr. Card's resume is attached to this report.

#### 2.0 Summary

In order to assess the likely odors from a proposed portable toiled staging facility located in San Martin, California, a comparable facility was visited and assessed. This comparable facility was located in Santa Rosa, CA and was similar in size and configuration as the proposed facility. This comparable facility was visited on February 8, 2022. A thorough and complete odor evaluation was undertaken at this facility including olfactometry and chemical analysis.

This site did have occasional detectable odors inside the property line, but the odors were from processes that will not be used at San Martin and they were below the quantification limit for a field olfactometer. The site additionally was assessed for hydrogen sulfide emissions, the most common odor causing chemical from wastewater treatment. The values measured were all non-detect with an instrument detection level of 0.001 ppmv.

The non-detected odor levels at the comparable site suggests that odor will not be an issue for the planning decisions for this project.

### 3.0 Technical Background

Wastewater treatment odor is dominated by hydrogen sulfide in almost all cases. The hydrogen sulfide odors can easily be measured with a Jerome gold film hydrogen sulfide analyzer, that reliably detects hydrogen sulfide down to the human odor threshold (0.001 parts per million by volume). There are also other possible odor causing compounds that are more difficult to detect, however, total odor in the field can be quantified using a field olfactometer such as a Nasal Ranger<sup>®</sup>. Photo 3.1 shows a Jerome analyzer and Photo 3.2 shows a Nasal Ranger<sup>®</sup>. This field olfactometer has six discrete measurement values, 2, 4, 7, 15, 30, and 60 dilutions to threshold.

Most odor complaint thresholds are between 7 and 30 dilutions to threshold, which is equivalent to about 10 to 100 parts per billion by volume of hydrogen sulfide. The most common criteria range for an odor nuisance threshold is to be below the complaint level most of the time. This



Photo 3.2. Nasal Ranger®



usually translates into odors below the threshold level less than between 100 and 1,000 hours per year. This is about 1% to 10% of the time.

For this project, in order to provide an accurate assessment of the likely odors of a future plant, an example comparable plant that is similar in construction, size, and operation was evaluated.

## 4.0 Facility Description

NW Cascade is planning to construct a portable toilet staging facility in San Martin, CA. This facility will store cleaned / ready to deliver Restrooms and empty units waiting to be cleaned at another site with parking for the vehicles that support the operation. The proposed facility layout is provided in Figure 4.1. All the portable toilets and vehicles will be cleaned and serviced at other sites, and not at the proposed San Martin facility.

Figure 4.1 Proposed New Facility Layout.



#### 5.0 Comparable Facility Site Visit

In order to assess any possible odor impacts from the proposed San Martin facility a comparable facility, located in Santa Rosa, CA was visited. This facility was operated by Honey Bucket Portable Restrooms and was located on the corner of Wright Road and Sebastopol Road. During the visit approximately 500 portable toilets (previously used and and ready to deliver protable restrooms) were present at the site. In addition, it had vehicle storage, vehicle maintenance, and cleaning for the portable hand washing devices. The proposed San Martin site will store previously used and ready to go portable restrooms and will have vehicle storage, but no

vehicle maintenance. or washing of the toiletsPhotos 1 through 3 show the Santa Rosa facility appearance at the time of the visit. At the time of visit the wind was blowing lightly (1 - 3 mph) from the southwest.

This facility was visited on February 8, 2022 in the afternoon. During the visit the perimeter and yard was surveyed on foot. Field olfactometry (Nasal Ranger®) and hydrogen sulfide measurements were taken. Figure 5.1 shows the results of these surveys. The site had four to five times the number of portable toilets on site during the site visit than are shown on the aerial photograph.

The figure shows the measured hydrogen sulfide in parts per million by volume (ppmv). All readings were below the detection limit of 0.001 ppmv. Even though some odors were detected (the hand wash station cleaning area and vehicle maintenance), they were not concentrated or sustained enough to get a valid field olfactometry reading. Therefore, all field olfactometry readings were below the detection limit of 2 dilutions to threshold.





The primary odor sources on the site were determined to be:

- 1. Handwash station cleaning.
- 2. Vehicle maintenance.

Odors could be consistently be detected within 25 feet of these activities, but could not be consistently be detected outside of this range. The San Martin site will not have these activities.





Figure 5.1 Santa Rosa Site Aerial Photo With Hydrogen Sulfide Measurements.

Imagery ©2022 Maxar Technologies, Map data ©2022 50 ft

Notes:

- 1. All values are parts per million by volume hydrogen sulfide and were below detection.
- 2. All field olfactometer values were below the detection limit of 2 dilutions to threshold.
- 3. All readings were taken between 3:00 and 4:00 PM on February 8. 2022.

### 6.0 Discussion

Based on the observations at the Santa Rosa site, it is anticipated that there will be no odor impacts at the San Martin site. The only odors detected at the Santa Rosa site were from processes that will not be present at the San Martin site.

#### Attachment 1

Thomas R Card Resume