Yorke
ENGINEERING, LLC
www.YorkeEngr.com

November 12, 2020

Matthew Buggert
Environmental Planner
Wood Environment & Infrastructure Solutions, Inc.
104 West Anapamu St., Suite 204A
Santa Barbara, CA 93101
Phone: (805) 962-0992 x242

Subject: Odor Nuisance Review for Mendota Cannabis Project - DRAFT

Mr. Buggert:

We understand Valley Agriculture Holdings, LLC (Valley Agriculture) is planning to develop 59 acres for commercial cannabis (the Project) at West Belmont Avenue, Mendota, CA 93640. Valley Agriculture is preparing an Initial Study of Mitigated Negative Declaration for the City of Mendota as part of the Project. As part of the Initial Study, Valley Agriculture would like to understand whether the Project has the potential to cause nuisance of odors to the surrounding community. This letter provides a high-level assessment of the Project potential odor sources, and whether the Project odors may affect nearby residences.

a. Site Location and Topography

The Project entails development of 59 acres of an existing 114-acre parcel (APN 013-030-68ST) to construct and operate a commercial cannabis facility. The topography of the Project Site is generally flat with a slight slope to the northeast. The site is bordered by the City's wastewater treatment plant to the northwest, open land to the north and east, agricultural operations and the idle Covanta Energy Corporation biomass plant to the south, and a solar photovoltaic (PV) facility to the west. The nearest residents are located approximately 0.5 mile to the west of the site, directly across from the William Robert Johnston Municipal Airport (Airport).

Meteorological (MET) data for the City of Mendota was used to develop a wind rose, to identify the prevalent wind directions; this wind rose is included in Attachment 1[1]. The MET data reflects a 5-year period from 2007-2011, which was obtained from the San Joaquin Valley Air Pollution Control District website. Generally, 5-year periods of MET data are used for evaluating wind patterns, since this covers annual and seasonal variability. The wind rose shows the predominant winds from northwest to southeast along California State Route 180 (SR180); this wind blows along the Southern Coast Mountain Range from north to south, away from the residences in Mendota. In addition to the influence of the mountain range, the location and orientation of the airport in a northwest-southeast orientation compliments the wind rose and confirms this as a predominant wind pattern. However, there may be localized downdrafts during low-wind periods that create mild winds (calm periods), which are non-directional or blowing from the southeast to the northwest. This is not expected to be the primary wind flow but may influence the transport

[1] MET data for the City of Mendota was derived from the MM5 numerical model, in accordance with San Joaquin Valley Air Pollution Control District website.

of odor-causing compounds from the Project during these downdraft periods. During these low-wind conditions, odors from the Project have potential to be blown towards the residences.

Growing operations are expected to take place between April and October, which are typically the warmest months of the year. Warm weather conditions are expected to lead to more unstable air and greater mixing in the upper atmosphere. Surface conditions can also be affected by warmer air through the radiant heat (heat islands) as well as increased surface mixing. In general, warm months, which correspond with the grow seasons, will help with the dispersion and mixing of odorous compounds emitted from cannabis flowering.

b. Odor-Emitting Activities

The proposed outdoor cultivation of cannabis is expected to include two cultivation cycles per year- once between April and June and the second between July and October. When plants are mature and flower, plants will then be harvested and taken to two on-site buildings for processing, including drying, trimming, curing, and packaging. No manufacturing will be performed on-site.

Most odors emitted from this Project will be from the flowering, harvesting, and processing of the plants. During the flowering stage of plant growth, cannabis plants are aromatic and will release some odorous compounds to ambient air. During the active grow stage, odorous compounds that may be emitted include terpenes, oils, and other aromatic compounds. During harvesting and processing, other chemicals such as sulfur compounds and aldehydes may also be released. Odors during planting and early stages of plant development are expected to be low to none. The Project currently does not propose any odor abatement for these sources, and therefore this letter does not address any abatement methods.

c. Conclusion

Based on our assessment, Yorke has provided the following conclusions:

- Predominant wind flow is expected to transport odor compounds away from the closest residences and public receptors.
- Grow periods are expected to occur in warmer months and therefore have a potential to increase dispersion of odorous compounds. However, because the higher temperatures will tend to lead to higher volatilization of odorous compounds, any dispersion benefit from seasonal temperatures cannot be expected to reduce odor impacts to below nuisance levels.
- The public traveling on W. Belmont could expect to experience cannabis odors due to the proximity of the grow site.
- Property owners to the northwest and southeast may experience significant odor impacts, specifically during the flowering periods.
- Workers at the facilities located at the idle Covanta Energy Corporation biomass plant and the solar PV facility could be expected to experience noticeable and occasional intense odors.
- As a surface-level emission, low levels of dispersion may be expected resulting in the higher concentration of impacts lasting for a longer distance from the property boundary. It is uncertain, for example, if the odorous plumes will remain strong to the southwest for

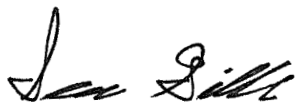
DRAFT

a considerable distance. However, it is not out of the question that odors could be detected across the river to the east because of the prevailing wind direction.

- Processing activities would also generate odor-causing compounds. These could be minimized if they are conducted indoors with air-handling and conditioning systems. Processing activities are not expected to result is as strong of an odor plume as the flowering and harvesting of the cannabis plants.

Should you have any questions or concerns, please contact me at (949) 248-8490.

Sincerely,



Sean Gildea
Senior Engineer, P.E., CPP
Yorke Engineering, LLC
SGildea@YorkeEngr.com

cc: Greg Wolffe, Yorke Engineering, LLC
Daniel Gira, Wood Environment & Infrastructure Solutions, Inc.

Attachment 1: Wind Rose for City of Mendota

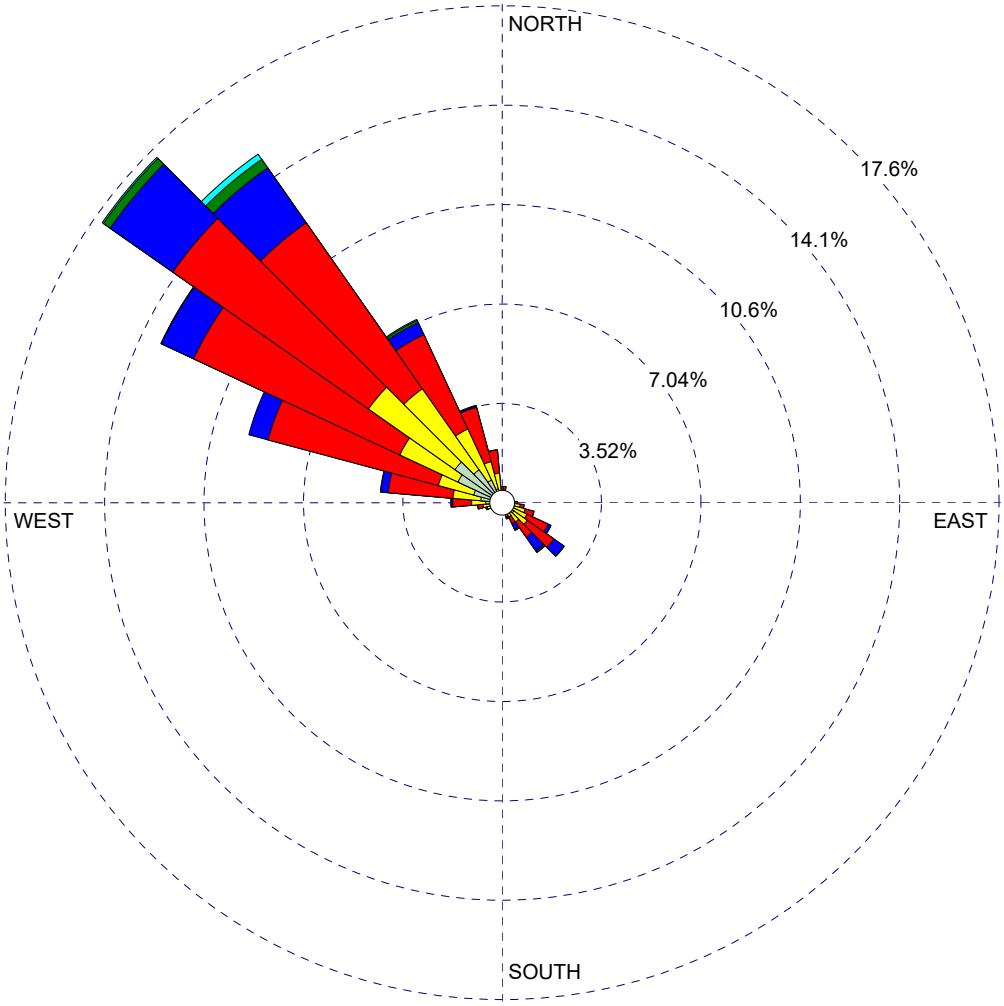
ATTACHMENT 1 – WIND ROSE FOR CITY OF MENDOTA

WIND ROSE PLOT:

Station #99005

DISPLAY:

Wind Speed
Direction (blowing from)



WIND SPEED
(m/s)

- >= 11.10
- 8.80 - 11.10
- 5.70 - 8.80
- 3.60 - 5.70
- 2.10 - 3.60
- 0.50 - 2.10

Calms: 7.97%

COMMENTS:	DATA PERIOD: **Start Date: 1/1/2007 - 00:00** **End Date: 12/31/2011 - 23:59**	COMPANY NAME: Yorke Engineering, LLC	
		MODELER: Sean Gildea	
	CALM WINDS: **7.97%**	TOTAL COUNT: **43824 hrs.**	
	AVG. WIND SPEED: **3.32 m/s**	DATE: **11/12/2020**	PROJECT NO.: