

VALIANO PROJECT

APPENDIX C

AIR QUALITY ANALYSIS REPORT

for the

DRAFT ENVIRONMENTAL IMPACT REPORT

PDS2013-SP-13-001, PDS2013-GPA-13-001,
PDS2013-STP-13-003, PDS2013-TM-5575,
PDS2013-REZ-13-001, PDS2013-ER-12-08-002

APRIL 2015

Prepared for:

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Air Quality Analysis Report

Valiano Project

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Glossary of Terms and Acronyms

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
ADT	average daily trips
AMSL	above mean sea level
ANFO	ammonium nitrate/fuel oil
AQIA	Air Quality Impact Assessment
BAAQMD	Bay Area Air Quality Management District
BMPs	best management practices
CAA	Clean Air Act (Federal)
CAAQS	California Ambient Air Quality Standard
CalEEMod	California Emission Estimator Model
CalEPA	California Environmental Protection Agency
CALINE4	California Line Source Dispersion Model (Version 4)
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CO	carbon monoxide
County	County of San Diego
cy	cubic yards
DPM	diesel particulate matter
du	dwelling unit
ERTC	Escondido Research and Technology Center
F	Fahrenheit (degrees)
f/s	feet per second
g/L	grams per liter
H ₂ S	hydrogen sulfide
HAPs	hazardous air pollutants
HI	hazard index
hp	horsepower
HQ	hazard quotient
I-15	Interstate-15

Glossary of Terms and Acronyms (cont.)

lbs	pounds
LOS	level of service
MEI	maximum exposed individual
mgd	million gallons per day
mph	miles per hour
m/s	meters per second
NAAQS	National Ambient Air Quality Standard
NO	nitrogen oxide
NO _x	oxides of nitrogen
NO ₂	nitrogen dioxide
O ₃	ozone
OEHHA	California Office of Environmental Health Hazard Assessment
Pb	lead
PDS	Planning and Development Services
PM _{2.5}	fine particulate matter (particulate matter with an aerodynamic diameter of 2.5 microns or less)
PM ₁₀	respirable particulate matter (particulate matter with an aerodynamic diameter of 10 microns or less)
ppb	parts per billion
ppm	parts per million
PVC	polyvinyl chloride
RAQS	San Diego County Regional Air Quality Strategy
REL	reference exposure levels
Rincon MWD	Rincon Del Diablo Municipal Water District
RW	Reclaimed Water
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego County Air Pollution Control District
SDG&E	San Diego Gas & Electric
SIP	State Implementation Plan
SLT	significance level threshold
SO _x	oxides of sulfur
SO ₂	sulfur dioxide
SR	State Route

Glossary of Terms and Acronyms (cont.)

TACs	Toxic Air Contaminants
T-BACT	Toxics Best Available Control Technology
TIA	Traffic Impact Analysis
TIF	Traffic Impact Fee
TSP	total suspended particulate
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOCs	volatile organic compounds
WTWRF	wastewater treatment and water reclamation facility

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality impacts associated with the proposed Valiano Project (Project). The evaluation addresses the potential for air pollutant emissions during construction and after full buildout of the Project, including an assessment of the potential for carbon monoxide (CO) “hot spots” to form due to traffic associated with the Project.

The Project would exceed the growth projections in the San Diego Association of Governments (SANDAG) growth forecasts for the San Marcos and Escondido Subregional Areas. As discussed in Section 4.1.2, the Project would increase density in terms of the number of dwelling units (DUs) compared to what was assumed in the County of San Diego General Plan. This could create potential interference with the Regional Air Quality Strategy (RAQS), and, therefore, Project-level and cumulative impacts would be significant.

The Project would result in emissions of air pollutants during both the construction phase and operational phase of the Project. Construction emissions would include emissions associated with fugitive dust, heavy construction equipment, and construction workers commuting to and from the site. All off-road construction equipment is required to meet the minimum application of U.S. Environmental Protection Agency (USEPA) Tier 4 engines, to install CARB-approved diesel particulate filter devices, and to apply best management practices to control and minimize emissions. The Project would incorporate measures to minimize fugitive dust control emissions, including watering two times per day during grading and stabilization of storage piles. Construction activities are assumed to begin January 2016 and finish in mid-2019. Building construction for some neighborhoods may overlap with previously constructed neighborhoods that are occupied and in operation. Under a worst-case daily scenario of overlapping construction and operational activities, emission of criteria pollutants would not exceed the significance thresholds. With the implementation of the USEPA Tier 4 engines and fugitive dust control measures, short-term impacts associated with the construction activities would be less than significant. However, it is possible that construction associated with several other projects would occur in the general vicinity of the Project at the same time, and cumulative construction projects would result in a significant, but temporary, cumulative impact.

The main operational emissions associated with the Project would include impacts associated with vehicular traffic, as well as area sources such as energy use, landscaping, and the use of consumer products. A wide range of current regulatory codes, Project design features, and other measures would be incorporated into the Proposed Project. The Project would incorporate energy-efficiency features in accordance with 2013 California Title 24 Energy Efficiency Standards that would exceed 2008 California Title 24 Energy Efficiency Standards by a minimum of 15 percent. The installation of natural gas fireplaces would prevent residences from using wood as fuel for fire and prevent the generation of particulate emissions in the area. The installation of low-flow or high-efficiency water fixtures in residences reduces water demand, and its associated embodied energy demand, and associated indirect air quality emissions. The Project would provide areas for recyclable materials collection and would use building products that have at least a 10-percent recycle content. These Project design features were selected under the mitigation measure menu in the California Emission Estimator Model (CalEEMod). Emissions of criteria pollutants during operation for the Project at buildout would not exceed the

daily significance thresholds, and no CO hot spots would occur. Therefore, no significant air quality impact is anticipated and mitigation measures are not required.

Quantitative screening-level health risk assessments were conducted to assess impacts to sensitive receptors from toxic air contaminants (TACs) during construction activities as well as operation of the wastewater treatment and water reclamation facility (WTWRF). Both construction and operation impacts were found to be less than significant.

An evaluation of potential odors from construction activities, the proposed WTWRF and its sewer pump stations, and equestrian uses indicated that associated impacts would be less than significant.

1.0 INTRODUCTION

1.1 Purpose of the Report

This report presents an analysis of potential air quality impacts associated with the proposed Valiano Project (Project), which includes an evaluation of existing conditions in the Project vicinity, an assessment of potential impacts associated with Project construction, and an evaluation of Project operational impacts. The analysis of impacts is based on state and federal ambient air quality standards and impacts are assessed in accordance with the guidelines, policies, and standards established by the County of San Diego (County) and the San Diego Air Pollution Control District (SDAPCD). The Project's compatibility with the adopted air quality plan for the area is also described. Measures are recommended, as required, to reduce potentially significant impacts.

1.2 Project Location and Description

The Project includes an approximately 239-acre site in an unincorporated portion of San Diego County within the Eden Valley portion of the San Dieguito Community Planning Area near the cities of San Marcos and Escondido. The Project site is located approximately 1.5 miles west of Interstate 15 (I-15) and 0.6 mile south of State Route (SR) 78 at its closest points. Principal site access is from SR-78, Nordahl Road, and Country Club Drive, from which a number of smaller surface streets (e.g., Hill Valley Drive, Eden Valley Lane and Mt. Whitney Road) extend along or near the northern and eastern property boundaries.

The Project consists of a gated residential community with 326 single-family dwelling units (DUs) and related facilities within a total developed area of approximately 92 acres. Since preparation of the Traffic Impact Analysis (TIA) prepared in April 2014, the Proposed Project's residential units have been reduced from 334 residential units to 326 residential units for a decrease of 8 units. The trip generation calculations provided in the TIA utilize the 334 residential units, which represents a conservative analysis and this same number is utilized in this air quality report. In addition, the Proposed Project includes up to 54 second units within Neighborhoods 2, 3 and 5 which could be attached or detached from the main unit.

The residential development is divided into five distinct neighborhoods. The proposed development also incorporates a number of related amenities and facilities, including a 2.3-acre private Community Park and Recreation Center, a 1.2-acre private park, a 0.5-acre Trail Head Park, a 2.6-acre public Neighborhood Park, an on-site wastewater treatment and water reclamation facility (WTWRF) and wet weather storage area, three pump (lift) stations and an existing barn complex in the southeastern portion of the site that would be retained.

Wastewater generated by the Proposed Project would be treated by an on-site WTWRF which would be owned and operated by the San Diego County Sanitation District. The County WTWRF design has developed specific design criteria and standards for an "Aero-Mod" wastewater treatment plant, a plant process design that is currently being used in the Rancho Santa Fe Community Facilities District. "Aero-Mod" is a company based in Kansas that offers a packaged wastewater treatment plant approach based on the extensive use of "common-wall"

construction between basins, performing a version of the extended aeration wastewater treatment process. Extended aeration is a conservative approach to the activated sludge process that relies upon treating the wastewater for an extended period of time (approximately 24 hours on average).

A summary of WTWRF plant components include but not limited to the following:

- Headworks providing fine screening of the influent wastewater.
- Equalization basin to balance out variations in flow by storing a portion of the peak flows received for treatment in the plant during low-flow periods.
- Aeration basins and anoxic basins performing the activated sludge process along with biological nitrogen removal.
- Clarifier basins to settle most of the solids out of the wastewater to yield a clarified flow that goes to filters for further turbidity removal.
- Filters for further removal of turbidity to produce reclaimed water meeting Title 22 standards for effluent clarity.
- Chlorine contact basins for disinfection of the reclaimed water by chlorine solution.
- Residual solids processing. The Aero-Mod process typically includes digester basins for further reduction of the settled solids produced by the treatment process. However, at a plant as small as the Proposed Project's plant would be, it would probably be more efficient to just thicken the solids and transfer them to the Harmony Grove WTWRF for further processing.
- An operations/laboratory building providing space for employees to store their personal items, restrooms and showers for employees, some desk space and a small laboratory for use in operational control of the plant.

WTWRF Operations

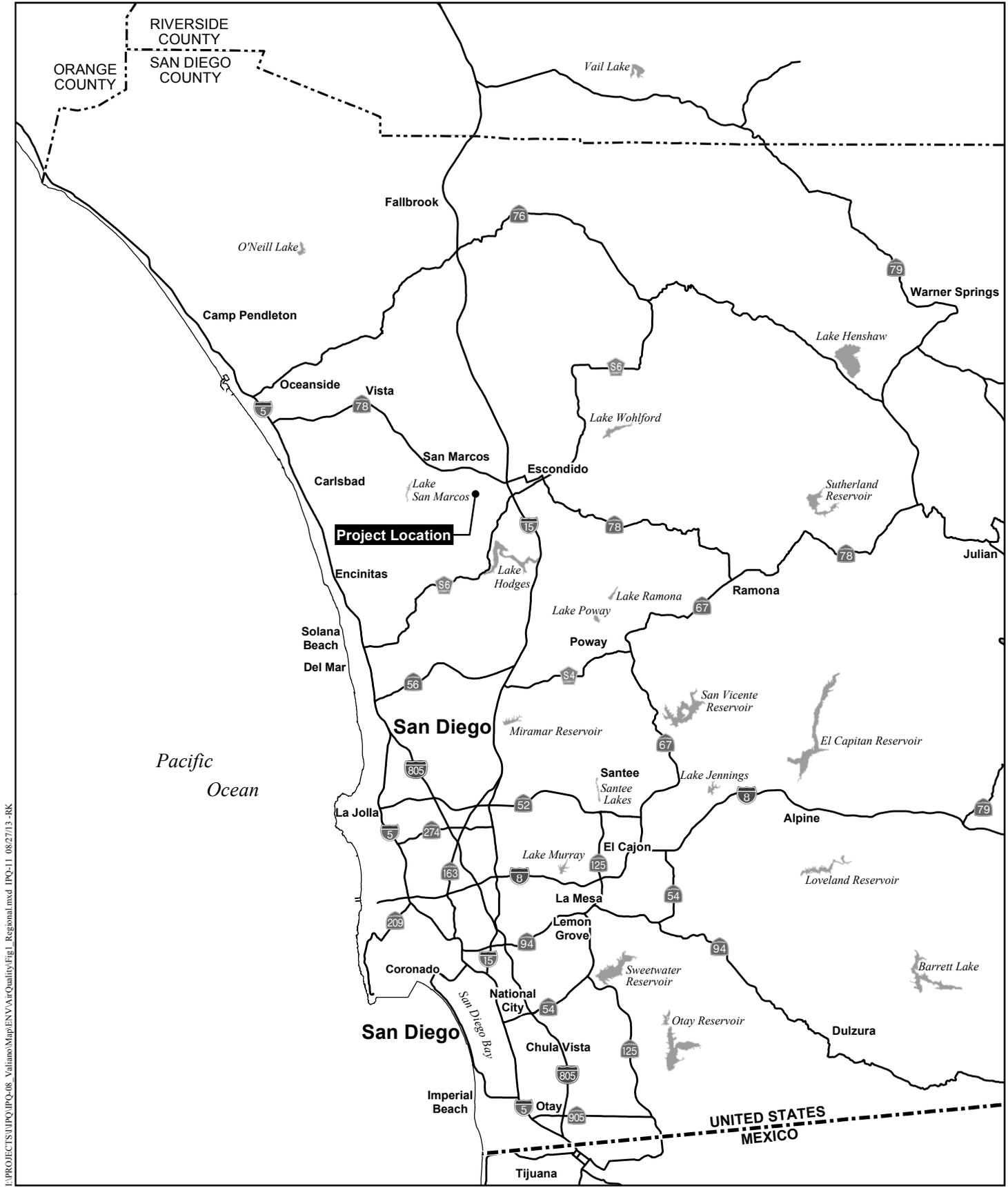
The Project would be required to construct wet weather storage to meet the Regional Water Quality Control Board's (RWQCB) requirement for approximately 90 days of recycled water storage. Therefore, a total of 6.4 million gallons of storage would be provided at the proposed 1.6-acre wet weather storage area located north of Neighborhood 5.

Figure 1 provides the regional location map of the Project, and Figure 2 provides the site location map of the Project site.

1.3 Project Design Features and Best Management Practices

Construction

The Project would incorporate best management practices (BMPs) during construction to reduce emissions of fugitive dust. SDAPCD Rule 55 – Fugitive Dust Control states that no dust and/or dirt shall leave the property line. SDAPCD Rule 55 requires the following:



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Regional Location Map

VALIANO

Figure 1