

## 4.15 HYDROLOGY AND WATER QUALITY

This section describes the environmental and regulatory setting of the project site and vicinity with respect to floodplains, surface water hydrology and quality, and groundwater hydrology and quality. This analysis is based on the Ground Water Conditions at San Miguel Ranch memo (Cleath & Associates, November 17, 2005), Wastewater Feasibility Study (Kennedy/Jenks Consultants, January 23, 2007), and Preliminary Hydrology and Hydraulic Report (RRM Design Group, October 27, 2005). These reports are included in Appendices L and M. As cited below, surface and groundwater information used in this analysis was obtained from a variety of sources, including, but not limited to, the Central Coast Regional Water Quality Control Board (RWQCB).

### 4.15.1 Existing Environmental Setting

#### Surface Water.

**Surface Water Hydrology.** The project site is located within the Atascadero Hydrologic Subarea, a subbasin of the Paso Robles Hydrologic Area, which is located in the larger Salinas River Watershed. The Salinas River Watershed and its tributaries cover approximately 4,600 square miles within San Luis Obispo and Monterey Counties. The Salinas River originates in San Luis Obispo County, flows northwestward into Monterey County through the entire length of the Salinas Valley, and empties into Monterey Bay.<sup>1</sup>

The upper reach of the Salinas River is located approximately 1,500 feet (ft) east of the Development project site, parallel to United States Route 101 (US 101) (refer to Figure 3.4). The Wastewater Treatment Plant expansion site is adjacent to the Salinas River. The Salinas River flows from the south to the northwest. Flow in the Salinas River typically ceases during the summer and early fall months.<sup>2</sup>

In the existing condition, runoff from the Development project site is conveyed through ravines toward US 101. Culverts then carry the runoff under the freeway, where it then sheet flows across the property on the east side of US 101, and eventually to the Salinas River.

**Surface Water Quality.** The Central Coast RWQCB conducts surface water quality testing as part of its Central Coast Ambient Monitoring Program (CCAMP) within its jurisdiction. Water samples have been collected in the Salinas River at Bradley Road, approximately 10 miles downstream of the project site.

The CCAMP has established Action Levels for the Salinas River, which are based on the RWQCB's Water Quality Control Plan (Basin Plan) standards when available. For many water quality constituents, no standards are available. In these cases, CCAMP Action Levels are based on information in the literature, other State water quality objectives, or best professional

<sup>1</sup> Central Coast Regional Water Quality Control Board. Central Coast Ambient Monitoring Program. Salinas River Watershed Characterization Report 1999. July 31, 2000.

<sup>2</sup> Fugro West, Inc. Water Resources Evaluation, Proposed San Miguel Ranch Development, San Luis Obispo County. June 2008.

judgment. CCAMP Action Levels are listed later in Table 4.15.A. In general, metals and pesticides were not found at elevated levels (above the CCAMP Action Levels) in the upper Salinas River in samples collected as part of the CCAMP; however, the upper Salinas River Watershed has not been meeting Basin Plan standards for total dissolved solids and sodium due to contributions from natural sources (several of the Salinas River tributaries drain watersheds that are very high in natural salts). In the main stem of the Salinas River, nutrient concentrations, particularly nitrate, increase from upstream to downstream.<sup>1</sup>

## Drainage.

**Drainage and Flood Control.** Drainage deficiencies in San Miguel are detailed in the *San Miguel Drainage and Flood Control Study* (RMC, December 2003). According to the drainage and flood control study, the community of San Miguel lacks a formal drainage system. Local runoff generally follows the gentle northeasterly slope of the community and either flows to the Salinas River or infiltrates into the historic floodplain. Low spots or depressions cause frequent ponding and shallow flooding at several locations, particularly along Mission Street and N Street between 11th and 14th Streets, and north of 14th Street between Mission and N Streets. The primary cause of flooding in San Miguel is due to the absence of a continuous positive slope and drainage conveyance path from L Street to the Salinas River. Also, the absence of a continuous curb and gutter system has led to the concentration of street runoff in areas that do not have curbs or gutters and generally represent local low spots within a neighborhood block.

## Groundwater.

**Subsurface Hydrology.** The project site is located within the Paso Robles Groundwater Basin, which is a subbasin of the Salinas Valley Groundwater Basin. For regulatory purposes, the Paso Robles Groundwater Basin is divided into subareas; the project site is located in the San Miguel subarea. Groundwater in the Paso Robles Groundwater Basin is generated from several sources, including infiltration of rainfall, seepage from streams, and return flow from irrigation and other uses.<sup>2</sup> The Paso Robles Groundwater Basin is comprised of aquifers within a sequence of clay and Monterey Formation shale gravel beds. The depth to groundwater has been measured as more than 100 ft below ground surface (bgs) at several wells in the vicinity of San Miguel Ranch. Groundwater levels in the Paso Robles Groundwater Basin have fluctuated up and down by 15–30 ft in the past 30 years.<sup>3</sup> Groundwater flow in the Paso Robles Groundwater Basin is generally northwestward.<sup>4</sup>

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<sup>1</sup> Central Coast Regional Water Quality Control Board. Central Coast Ambient Monitoring Program. Salinas River Watershed Characterization Report 1999. July 31, 2000.

<sup>2</sup> Department of Water Resources. 2004. California's Groundwater Bulletin 118. Salinas Valley Groundwater Basin, Paso Robles Area Subbasin.

<sup>3</sup> Cleath & Associates. Ground Water Conditions at San Miguel Ranch. November 17, 2005.

<sup>4</sup> Department of Water Resources. 2004. California's Groundwater Bulletin 118. Salinas Valley Groundwater Basin, Paso Robles Area Subbasin.

**Groundwater Quality.** The primary constituents in the Paso Robles Groundwater Basin are calcium, sodium, and bicarbonate. Total dissolved solids (TDS) average 614 milligrams per Liter (mg/L) and range from 346 to 1,670 mg/L.<sup>1</sup>

The North Well on the Development project site was tested for water quality on September 24, October 12, and October 13, 2004. Based on the testing results, and according to County of San Luis Obispo Public Health Department Environmental Health Services, the well does not need treatment methods to meet domestic drinking water standards (Title 22 of the California Code of Regulations),<sup>2</sup> and no organic matter was detected in the water. In addition, radioactivity was measured at 5.16 pico-Curies per liter (pCi/l) of gross alpha activity, which is below the State standard of 15 pCi/l.<sup>3</sup>

As discussed in further detail in Section 4.9, Hazards and Hazardous Materials, perchlorate has been detected in groundwater at Camp Roberts in the vicinity of the active and larger inactive landfills at the base. Concentrations of perchlorate in the groundwater are below the Title 22 CCR maximum contaminant level (MCL) of 6 micrograms per liter (mg/L) at 16 of the 18 monitoring wells located on Camp Roberts. The locations of monitoring wells on Camp Roberts are shown on Figure 4.15.1. Perchlorate levels in the monitoring wells closest to the proposed project site are below the Title 22 MCL of 6 mg/L. In addition, groundwater at these monitoring wells flows away from the project site, toward the Salinas River.<sup>4</sup> In their potential exposure pathways and receptors analysis, TN & Associates found that there are no complete exposure pathways or potential receptors to perchlorate concentrations in groundwater above the MCL<sup>1</sup> as a result of the perchlorate plume at Camp Roberts.

As stated above, the North Well was tested subject to Title 22 CCR standards in 2004; however, this was before the California perchlorate standard was adopted on October 18, 2007. For this reason, the North Well was tested for perchlorate on August 4, 2008. Perchlorate was not detected in the water drawn from the North Well. The results of the test are included in Appendix L.

#### 4.15.2 Regulatory Setting

**National Flood Insurance Act.** The National Flood Insurance Act established the National Flood Insurance Program, which is based on the minimal requirements for floodplain management and is designed to minimize flood damage within Special Flood Hazard Areas. According to the Flood Insurance Rate Map (FIRM) from the Federal Emergency Management Agency (FEMA), the Development project site is located in Zone X, “areas determined to be outside the 0.2 percent annual chance floodplain” (i.e., outside the 100-year floodplain). The northeast corner of the proposed Wastewater Treatment Plant expansion site is located in Zone A, “Areas of 100-year flood; base flood elevations and flood hazard factors not determined,” and the remainder of the plant expansion site is located in Zone X.<sup>5</sup>

<sup>1</sup> Department of Water Resources. 2004. California’s Groundwater Bulletin 118. Salinas Valley Groundwater Basin, Paso Robles Area Subbasin.

<sup>2</sup> For additional information on Title 22, refer to Section 4.15.2.

<sup>3</sup> Cleath & Associates. Ground Water Conditions at San Miguel Ranch. November 17, 2005.

<sup>4</sup> TN & Associates, Inc. 2007. Evaluation/Delineation Report, Camp Roberts Landfill.

<sup>5</sup> FEMA Flood Insurance Rate Map No. 06079C0150F, August 28, 2008.

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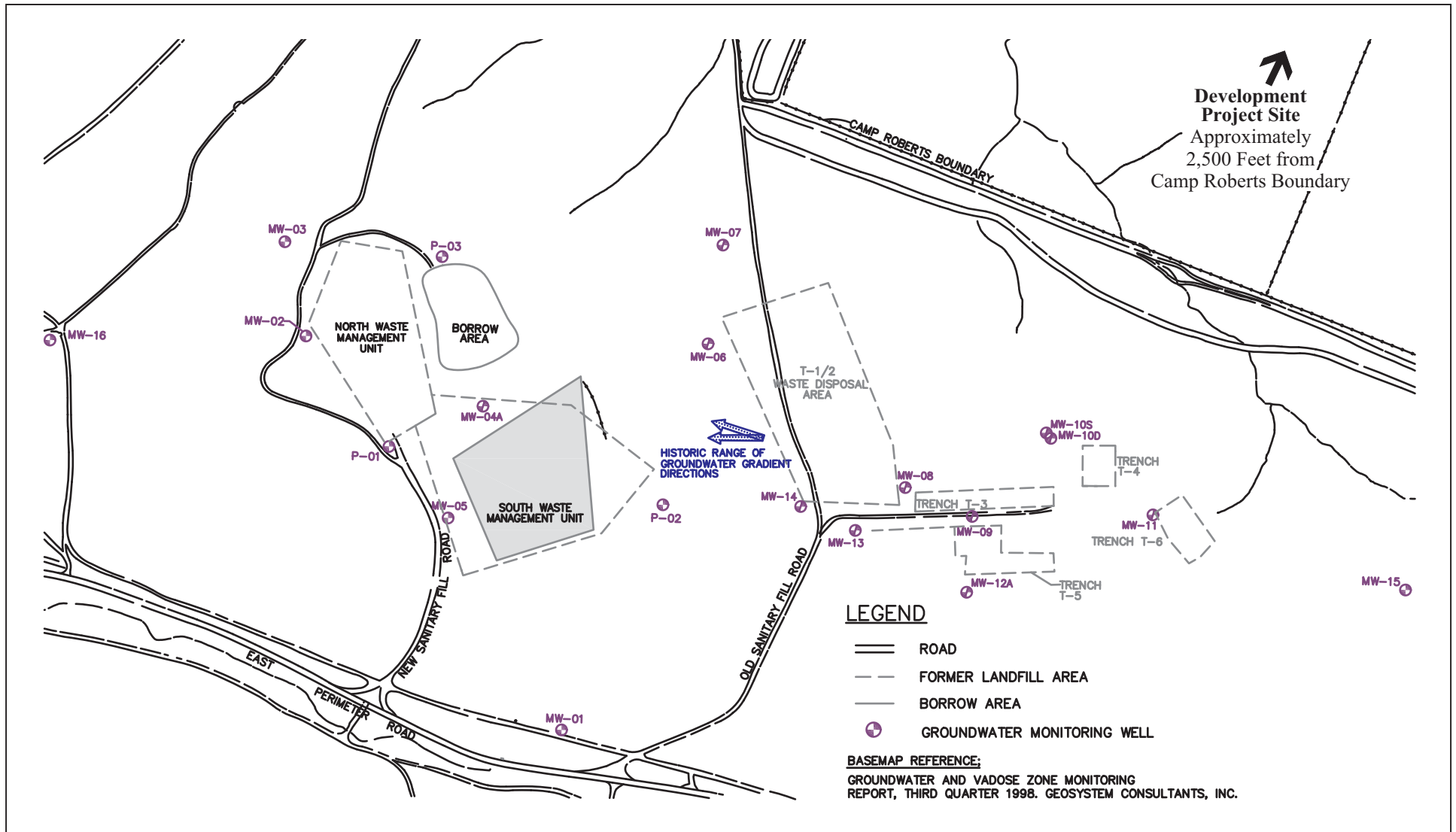


FIGURE 4.15.1

LSA



SOURCE: Bureau Veritas North America, Inc.

San Miguel Ranch EIR  
Camp Roberts Perchlorate Monitoring Locations

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**Drainage and Flood Control.** Drainage and flood control structures and improvements in the project vicinity are subject to review and approval by the County of San Luis Obispo (County) for on-site local drainage facilities and improvements. The County's Public Improvements Standards (November 2007) establish minimum drainage requirements and provide guidance for design and construction of any public improvement in the County. Public improvements are those that will be accepted for operation and maintenance by the County, any County-operated Special District, any independent Special District that does not have its own requirements in these areas, or for any subdivision or land use permit where the improvement is determined to be of sufficient public benefit that compliance with these standards is required by the conditions of approval.

### **Water Quality.**

**Clean Water Act.** In 1972 the Federal Water Pollution Control Act (later referred to as the Clean Water Act [CWA]) was amended to require that the discharge of pollutants into waters of the United States from any point source be effectively prohibited unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. In 1987, the CWA was again amended to require that the United States Environmental Policy Act (EPA) establish regulations for the permitting of storm water discharges (as a point source) by municipal and industrial facilities and construction activities under the NPDES permit program. The regulations require that Municipal Separate Storm Sewer System (MS4) discharges to surface waters be regulated by an NPDES permit.

The CWA requires states to adopt water quality standards for water bodies and have those standards approved by the EPA. Water quality standards consist of designated beneficial uses for a particular water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses. Water quality criteria are set concentrations or levels of constituents—such as lead, suspended sediment, and fecal coliform bacteria—or narrative statements that represent the quality of water that support a particular use. Because California had not established a complete list of acceptable water quality criteria for toxic pollutants, the EPA Region IX established numeric water quality criteria for toxic constituents in the form of the California Toxics Rule (CTR).

When designated beneficial uses of a particular water body are being compromised by water quality, Section 303(d) of the CWA requires identifying and listing that water body as impaired. Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for each impairing water quality constituent. A TMDL is an estimate of the total load of pollutants from point, nonpoint, and natural sources that a water body may receive without exceeding applicable water quality standards (often with a "factor of safety" included, which limits the total load of pollutants to a level well below that which could cause the standard to be exceeded). Once established, the TMDL is allocated among current and future dischargers into the water body.

The receiving waters for the project site, as described in greater detail below, have constituents on the 303(d) list and are considered impaired; no TMDLs have been developed to address the impairments.

**California Porter-Cologne Act.** The federal CWA places the primary responsibility for the control of water pollution and for planning the development and use of water resources within the states, although it does establish certain guidelines for the states to follow in developing their programs.

California's primary statute governing water quality and water pollution is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and the RWQCB broad powers to protect water quality and is the primary vehicle for implementation of California's responsibility under the federal CWA. The Porter-Cologne Act grants the SWRCB and RWQCBs the authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, oil, or petroleum product.

Each RWQCB must formulate and adopt a water quality plan for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include in its region a regional plan with water discharge prohibitions applicable to particular conditions, areas, or types of waste.

**Water Quality Control Plan, Central Coast Region (Basin Plan).** The Central Coast RWQCB has adopted a Basin Plan for its region of responsibility, which includes San Miguel. The RWQCB has delineated water resource area boundaries based on hydrological features. For purposes of achieving and maintaining water quality protection, specific beneficial uses have been identified for each of the hydrologic areas described in the Basin Plan. The Basin Plan also establishes implementation programs to achieve water quality objectives to protect beneficial uses and requires monitoring to evaluate the effectiveness of the programs. These objectives must comply with the State antidegradation policy (State Board Resolution No. 68-16), which is designed to maintain high-quality waters while allowing some flexibility if beneficial uses are not unreasonably affected.

Beneficial uses of water are defined in the Basin Plan as those necessary for the survival or well-being of humans, plants, and wildlife. The present and potential beneficial uses for the Salinas River (between the Nacimiento River and Santa Margarita Reservoir, which is the reach of the Salinas River near the project site) as designated by the RWQCB in the Basin Plan are listed below.

According to the Basin Plan, the Salinas River has the following designated beneficial uses:

- **Municipal and Domestic Supply (MUN):** Uses of water for community, military, municipal, or individual water supply systems.
- **Agricultural Supply (AGR):** Uses of water for farming, horticulture, or ranching.
- **Industrial Process Supply (PRO):** Uses of water for industrial activities that depend primarily on water quality (i.e., waters used for manufacturing, food processing, etc.).

- Ground Water Recharge (GWR): Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.
- Water Contact Recreation (REC-1): Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, or use of natural hot springs.
- Non-contact Water Recreation (REC-2): Uses of water for recreational activities involving proximity to water but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.
- Wildlife Habitat (WILD): Uses of water that support terrestrial ecosystems, including but not limited to preservation and enhancement of terrestrial habitats, vegetation, wildlife (i.e., mammals, birds, reptiles, amphibians, invertebrates), and wildlife water and food sources.
- Cold Fresh Water Habitat (COLD): Uses of water that support cold water ecosystems.
- Warm Freshwater Habitat (WARM): Uses of water that support warm water ecosystems. These uses include, but are not limited to, preservation or enhancement of aquatic habitats, vegetation, and fish and wildlife, including invertebrates.
- Migration of Aquatic Organisms (MIGR): Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms.
- Spawning, Reproduction, and/or Early Development (SPWN): Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.
- Rare, Threatened, or Endangered Species (RARE): Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or federal law as rare, threatened, or endangered.
- Commercial and Sport Fishing (COMM): Uses of water for commercial or recreation collection of fish, shellfish, or other aquatic organisms.

The Basin Plan has established narrative and numeric water quality objectives for inland surface streams, which include the Salinas River. If water quality objectives are exceeded, the RWQCB can use its regulatory authority to require municipalities to reduce pollutant loads to the affected receiving waters. Relevant water quality objectives for the proposed project are discussed below.

The Basin Plan includes the following water quality objectives for the Salinas River (above Bradley), which are applicable to the reach of the Salinas River near the project site:

- Total dissolved solids: 250 mg/L
- Chloride: 20 mg/L
- Sulfate: 100 mg/L
- Boron: 0.2 mg/L

- Sodium: 20 mg/L

Surface water quality objectives for all inland waters, including the Salinas River, are listed in Table 4.15.A.

General groundwater quality objectives for the Central Coast Region, including the Paso Robles Groundwater Basin, are as follows:

- Tastes and odors shall not contain taste- or odor-producing substances in concentrations that adversely affect beneficial uses
- Radioactivity shall not be in excess of limits specified in 22 California Code of Regulations (CCR), Chapter 15, Section 64443, Table 4

In addition to the general groundwater quality objectives, the Basin Plan includes the following water quality objectives for the San Miguel subarea of the Paso Robles Groundwater Basin:

- Total Dissolved solids: 750 mg/L
- Chloride: 100 mg/L
- Sulfate: 175 mg/L
- Boron: 0.5 mg/L
- Sodium: 105 mg/L
- Nitrate: 4.5 mg/L

**California Toxics Rule.** The CTR provides water quality criteria for certain potentially toxic compounds for inland surface waters, enclosed bays, estuaries, and waters designated with human health or aquatic life uses. Although the CTR criteria do not apply directly to the discharges of storm water runoff, they are utilized as benchmarks for toxics in urban runoff. The CTR and other water quality criteria and targets are used as benchmarks to evaluate the potential ecological impacts of storm water runoff to receiving waters. The CTR establishes acute and chronic surface water quality standards for certain water bodies. Acute criteria provide benchmarks for the highest permissible concentration below which aquatic life can be exposed for short periods of time without deleterious effects. Chronic criteria provide benchmarks for an extended period of time (i.e., for four days or more) without deleterious effects. The acute CTR criteria have a shorter relevant averaging period (less than four days) and provide a more appropriate benchmark for comparison for storm water flows.

CTR criteria are applicable to the receiving water body and, therefore, must be calculated based on the probable hardness values of the receiving waters. At higher hardness values for receiving waters, certain constituents, including copper, lead, and zinc are more likely to be complexed (bound with) components in the water column. This, in turn, reduces the bioavailability and resulting potential toxicity of these metals. CTR criteria are listed in previous Table 4.15.A.

**Table 4.15.A: Surface Water Quality Objectives for Inland Waters**

Constituent	Basin Plan Objectives	California Toxics Rule <sup>1</sup>	CCAMP Action Level
Aluminum	MUN: 1 mg/L AGR <sup>2</sup> : 5.0 mg/L	No standard or objective	No standard or objective
Ammonia	No standard or objective	No standard or objective	0.02 mg/L as N; 0.02 as NH <sub>3</sub>
Arsenic	MUN: 0.05 mg/L AGR: 0.1 mg/L	0.15 mg/L	No standard or objective
Barium	MUN: 1 mg/L	No standard or objective	No standard or objective
Beryllium	AGR: 0.1 mg/L	No standard or objective	No standard or objective
Biostimulatory Substances	Shall not cause nuisance or adversely affect beneficial uses	No standard or objective	No standard or objective
Bacteria (Fecal Coliform)	REC-1: Five samples in a 30-day period shall not exceed a log mean of 200/100 ml. Ten percent of samples in a 30-day period shall not exceed 400/ml  REC-2: Five samples in a 30-day period shall not exceed a log mean of 2000/100 ml. Ten percent of samples in a 30-day period shall not exceed 4000/ml	No standard or objective	200 MPN/100 ml
Bacteria (Total Coliform)	No standard or objective	No standard or objective	1000 MPN/100 ml
Boron	Salinas River: 0.2 mg/L AGR: 0.75 mg/L	No standard or objective	0.5 mg/L
Cadmium	MUN: 0.010 mg/L (total) AGR: 0.01 mg/L	0.0022 mg/L (dissolved)	No standard or objective
Chloride	Salinas River: 20 mg/L	No standard or objective	106 mg/L
Chlorophyll A	No standard or objective	No standard or objective	15 µg/L
Chromium	MUN: 0.05 (total) AGR: 0.10 mg/L	Chromium III 0.18 mg/L (dissolved); Chromium VI 0.011 mg/L (dissolved)	No standard or objective
Cobalt	AGR: 0.05 mg/L	No standard or objective	No standard or objective
Color	Shall not cause nuisance or adversely affect beneficial uses	No standard or objective	No standard or objective
Conductivity	No standard or objective	No standard or objective	1.5 ppt; 1500 µS
Copper	AGR: 0.2 mg/L (total)	0.009 mg/L (dissolved)	No standard or objective
Cyanide	No standard or objective	0.0052 mg/L	No standard or objective
Dissolved Oxygen	Shall not be less than 5.0 mg/l (milligrams per liter); SPWN and COLD: shall not be less than 7.0 mg/L	No standard or objective	7 mg/L Oxygen saturation: 85%
Dissolved Solids	Salinas River: total dissolved solids 250 mg/L	No standard or objective	Fixed dissolved solids 500 mg/L; total dissolved solids 500 mg/L; volatile dissolved solids 500 mg/L
Iron	AGR: 5.0 mg/L	No standard or objective	No standard or objective

**Table 4.15.A: Surface Water Quality Objectives for Inland Waters**

Constituent	Basin Plan Objectives	California Toxics Rule <sup>1</sup>	CCAMP Action Level
Floating Material	Shall not cause nuisance or adversely affect beneficial uses	No standard or objective	No standard or objective
Lead	MUN: 0.05 mg/L (total)	0.025 mg/L (dissolved)	No standard or objective
Lithium	AGR: 2.5 mg/L	No standard or objective	No standard or objective
Manganese	AGR: 0.2 mg/L	No standard or objective	No standard or objective
Mercury	MUN: 0.002 mg/L	No standard or objective	No standard or objective
Methylene Blue Activated Substances	Not to exceed 0.2 mg/L	No standard or objective	No standard or objective
Molybdenum	AGR: 0.01 mg/L	No standard or objective	No standard or objective
Nickel	AGR: 0.02 mg/L (total)	0.052 mg/L (dissolved)	No standard or objective
Nitrate	MUN: 45 mg/L as NO <sub>3</sub>	No standard or objective	1.13 mg/L as N; 5 mg/L as NO <sub>3</sub>
Nitrite	No standard or objective	No standard or objective	0.1 mg/L as N; 0.3 mg/L as NO <sub>2</sub>
Oil and Grease	Shall not cause nuisance or adversely affect beneficial uses or visible film on water surface	No standard or objective	No standard or objective
Ortho-phosphate	No standard or objective	No standard or objective	0.08 as P; 0.25 as PO <sub>4</sub>
PCBs	Not to exceed 0.3 µg/L (micrograms per liter)	No standard or objective	No standard or objective
Pesticides	Shall not reach concentrations that adversely affect beneficial uses. Shall not increase concentrations in bottom sediments or aquatic life	Chlordane: maximum concentration 2.4 mg/L, continuous concentration, 0.0043 mg/L	No standard or objective
pH	Shall not be depressed below 6.5 nor raised above 8.3	No standard or objective	Maximum 8.3; minimum 7
Phenols	Not to exceed 0.1 mg/L	No standard or objective	No standard or objective
Total Phosphate	No standard or objective	No standard or objective	0.16 mg/L
Phthalate Esters	Not to exceed 0.002 µg/L	No standard or objective	No standard or objective
Radioactivity	Shall not be present in concentrations that are deleterious to life forms	No standard or objective	No standard or objective
Salinity	No standard or objective	No standard or objective	1.5 mg/L
Sediment	Shall not cause nuisance or adversely affect beneficial uses	No standard or objective	No standard or objective
Selenium	MUN: 0.01 mg/L AGR: 0.02 mg/L	5.0 mg/L	No standard or objective
Settleable Material	Shall not cause nuisance or adversely affect beneficial uses	No standard or objective	No standard or objective
Silver	MUN: 0.05 mg/L	No standard or objective	No standard or objective
Sodium	Salinas River: 20 mg/L	No standard or objective	3 mg/L
Sulfate	Salinas River: 100 mg/L	No standard or objective	No standard or objective
Suspended Material	Shall not cause nuisance or adversely affect beneficial uses	No standard or objective	fixed suspended solids 250 mg/L; total suspended solids 250 mg/L
Tastes and Odors	Shall not cause nuisance or adversely affect beneficial uses or cause undesirable tastes or odors to edible organisms	No standard or objective	No standard or objective
Temperature	No standard or objective	No standard or objective	20 °C

**Table 4.15.A: Surface Water Quality Objectives for Inland Waters**

Constituent	Basin Plan Objectives	California Toxics Rule <sup>1</sup>	CCAMP Action Level
Toxicity	Shall be free of toxic substances in concentrations that are toxic to or that produce detrimental physiological responses in life forms	No standard or objective No standard or objective	No standard or objective
Turbidity	1. Where natural turbidity is between 0 and 50 JTU, increases shall not exceed 20 percent 2. Where natural turbidity is between 50 and 100 JTU, increases shall not exceed 10 percent 3. Where natural turbidity is greater than 100 JTU, increases shall not exceed 10 percent	No standard or objective	5 NTU
Vanadium	AGR: 0.1 mg/L	No standard or objective	No standard or objective
Zinc	AGR: 2.0 mg/L (total)	0.12 mg/L (dissolved)	No standard or objective

Sources: *Water Quality Control Plan*, Central Coast Region.1994; Federal Register, 40 CFR Part 131; Central Coast Ambient Monitoring Program, *Salinas River Watershed Characterization Report 1999*, July 31, 2000.

<sup>1</sup> Chronic toxicity values (over a 4-day period) in water with a hardness of 100 mg/L

<sup>2</sup> Irrigation supply

°C = degrees Celcius

JTU = Jackson Turbidity Units

mg/L = milligrams per liter

mL = milliliter

MPN = most probable number

N = nitrogen

NH<sub>3</sub> = ammonia

NO<sub>2</sub> = nitrite

NO<sub>3</sub> = nitrate

NTU = Nephelometric Turbidity Units

P = phosphorus

PO<sub>4</sub> = phosphate

ppt = parts per thousand

µg/L = micrograms per liter

µS = microseimens

**CWA, Section 303, List of Water Quality Limited Segments.** The 2006 list of impaired waters (303[d] list) was approved by the SWRCB on September 15, 2006. The upper reach of the Salinas River, located to the east of the project site, is listed on the 2006 303(d) list as impaired for chloride and sodium from agriculture, pasture grazing, and urban runoff/storm sewers.<sup>1</sup> There are currently no TMDLs for the upper reach of the Salinas River.<sup>2</sup>

**CWA, Section 402, National Pollutant Discharge Elimination System.** Direct discharges of pollutants into waters of the United States are not allowed, except in accordance with the National Pollutant Discharge Elimination System (NPDES) program established in Section 402 of the Clean Water Act.

**General Construction Activity Storm Water Permit.** In accordance with NPDES regulations, the State of California requires that any construction activity disturbing one acre or more of soil comply with the State General Construction Activity Storm Water Permit (Water Quality Order 99-08-DWQ). To obtain authorization for proposed storm water discharges pursuant to this permit, the landowner (discharger) is required to submit a Notice of Intent (NOI) to the SWRCB, prepare a Storm Water Pollution Prevention Plan (SWPPP), and implement best management practices (BMPs) detailed in the SWPPP during construction activities. Dischargers are required to implement BMPs meeting the technological standards of Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate storm water pollution. Certain discharges of nonstorm water, such as irrigation and pipe flushing/testing, are permitted, as long as they do not cause or contribute to a violation of any water quality standard, violate any provision of the General Permit, require a nonstorm water permit (such as that issued by RWQCB), or violate provisions of the Basin Plan. BMPs include programs, technologies, processes, practices, and devices that control, prevent, or remove or reduce pollution. Permittees must also maintain BMPs and conduct inspection and sampling programs as required by the permit.

The proposed project is subject to the General Construction Permit because it will disturb one acre or more of soil during the construction phase.

**Municipal Storm Water (MS4) Permit.** The County is subject to the requirements of the *State Water Resources Control Board (SWRCB) Water Quality Order No. 2003-0005-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000004, Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4 Permit)*. The region within the County subject to these requirements must at least include all urbanized areas. The General Permit requires permittees to develop and

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<sup>1</sup> State Water Resources Control Board (SWRCB). 2006. Clean Water Act, Section 303(d) List of Water Quality Limited Segments.

<sup>2</sup> Central Coast Regional Water Quality Control Board. 303(d) Investigations and TMDL Projects <http://www.waterboards.ca.gov/centralcoast/TMDL/303dandTMDLprojects.htm>. Site accessed December 21, 2007.

implement a Storm Water Management Program (SWMP) that describes BMPs, measurable goals, and timetables for implementation in the following six program areas:

- Public Education
- Public Participation
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Runoff Control
- Postconstruction Storm Water Management
- Pollution Prevention/Good Housekeeping for Municipal Operations

In particular, the MS4 Permit requires that the County develop and implement strategies that include a combination of appropriate structural and/or nonstructural BMPs to be incorporated into new development and redevelopment projects. Source Control BMPs are pollution prevention practices that are designed to reduce pollutants in runoff from a project site (e.g., street sweeping, drainage system maintenance). Treatment BMPs are structural devices that physically remove pollutants in runoff (e.g., infiltration basins, vegetated swales). The third revision of the County SWMP was approved by the County Board of Supervisors on June 13, 2006. The County SWMP describes the process, goals, and objectives of public education, illicit discharge detection and elimination, construction site runoff control, postconstruction storm water management, pollution prevention, and good housekeeping requirements stipulated in the general permit. The County Public Works Department is responsible for reviewing project applications and site plans for compliance with the SWMP requirements.

**County Ordinances.** The County requires a Drainage Plan and an Erosion Control and Sedimentation Plan that identify the proposed methods for controlling runoff, erosion, and sediment movement for review and approval by the appropriate director for projects within its jurisdiction (Sections 22.52.080 and 22.52.090 of the County Land Use Ordinance). The Drainage Plan and Erosion Control Plan are required to specify measures to reduce erosion and sedimentation during and after completion of construction. In addition, Section 22.52.100 of the County Land Use Ordinance requires groundwater recharge elements to be included in the project design except under specific conditions: existing high groundwater, no impervious area is created with the development, recharge would create geologic instability, no additional runoff will occur with development, or federal or State regulations prohibit recharge. In 2008, Ordinance 3143 was adopted to amend Title 8 of the San Luis Obispo County Code to include Chapter 868, “Stormwater Pollution Prevention and Discharge Control.”

Incorporation of low impact development (LID) into development projects is anticipated to be a countywide ordinance by March 2010. Currently, the county is encouraging new development projects to incorporate elements of LID into the project design.<sup>1</sup> LID is an approach to land development (or redevelopment) that works with nature to manage storm water as close to its source as possible. LID is a sustainable storm water practice that employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to

<sup>1</sup> Personal communication, Jill Falcone, County of San Luis Obispo, July 7, 2008.

create functional and appealing site drainage that treat storm water as a resource rather than a waste product. Examples of mechanisms used to implement these principles include bioretention facilities, rain gardens, vegetated rooftops, rain barrels, and permeable pavements. According to the EPA, by implementing LID principles and practices, water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed. Applied on a broad scale, LID can maintain or restore a watershed's hydrologic and ecological functions.<sup>1</sup>

**San Miguel CSD Waste Discharge Requirements.** The San Miguel CSD Wastewater Treatment Plant is subject to the requirements of Waste Discharge Requirements Order No. 99-046, Waste Discharger Identification Number 3 400109001 for San Miguel Sanitary District, San Luis Obispo, adopted by the Central Coast RWQCB on July 9, 1999. The current permit allows a treated wastewater discharge of 200,000 gallons per day (gpd). The permit specifies requirements for disposal and requires San Miguel Community Service District (CSD) to establish and maintain a monitoring program to document compliance with the requirements. The permit requires the San Miguel CSD to comply with the Basin Plan's groundwater quality objectives and other groundwater quality requirements outlined in the permit. The permit also prohibits wastewater seepage from the percolation ponds to the Salinas River, adjacent drainage ways, or adjacent properties and prohibits bypass of the treatment facility and discharge of untreated or partially treated wastes directly to the percolation beds.

**California Water Well Standards.** Water well construction is a complex process that involves a multitude of standards from many agencies, including: the California Department of Water Resources (DWR), SWRCB, California Department of Health Services, California Department of Toxic Substances Control, and the EPA. Under California Water Code Section 231, DWR developed Bulletin 74-81, *Water Well Standards: State of California* (December 1981), a set of water well standards to protect the integrity of California's groundwater. Bulletin 74-90, *California Well Standards, Water Wells, Monitoring Wells, Cathodic Protection Wells* (June 1991), a supplement to Bulletin 74-81 outlines the minimum requirements for constructing, altering, maintaining, and destroying water wells. The Southern District of DWR combined the standards contained in Bulletins 74-81 and 74-90 into *California Well Standards (Bulletins 74-81 & 74-90 Combined)*. In addition, the San Luis Obispo County Department of Environmental Health Services also has water well placement standards. Construction of water wells in San Luis Obispo County is subject to the review and approval of the County Department of Environmental Health Services.

**California Drinking Water Standards.** Drinking water standards are contained in Title 22 of the California Code of Regulations. Title 22 lists the MCL for regulated contaminants. The EPA has also established a list of contaminants and their MCLs. However, Title 22 standards are just as (or more) stringent than the EPA standards.

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<sup>1</sup> <http://www.epa.gov/nps/lid/>. Site accessed July 9, 2008.

### 4.15.3 Methodology

Project impacts to hydrology and water quality were evaluated based on the proposed project's adherence to local, State, and federal standards; proposed land use; site design; and proposed BMPs for control of surface runoff and reduction of pollutants in runoff.

### 4.15.4 Impact Significance Criteria

The following criteria are based on the County's Initial Study, the Initial Study Checklist, and Appendix G of the State CEQA Guidelines. Potential project impacts related to surface hydrology (drainage, erosion, and sedimentation) and water quality are considered to be significant if the proposed project would:

- Threshold 4.15.1** Change rates of soil absorption, or amount, velocity, or direction of surface runoff
- Threshold 4.15.2** Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial on- or off-site sedimentation/erosion or flooding
- Threshold 4.15.3** Result in soil erosion, topographic changes, loss of topsoil or unstable soil conditions from project-related improvements, such as vegetation removal, grading, excavation, or fill
- Threshold 4.15.4** Place housing or involve activities within the 100-year flood hazard zone as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazards delineation map
- Threshold 4.15.5** Place within a 100-year flood hazard area structures that would impede or redirect flood flows
- Threshold 4.15.6** Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam
- Threshold 4.15.7** Violate any water quality standards or requirements
- Threshold 4.15.8** Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff and/or generate NPDES compliance issues pursuant to the following list
1. Potential impact of project construction on storm water runoff;
  2. Potential impact of project's post-construction activity on storm water runoff;

3. Potential for discharge of storm water pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas; and
4. Potential for discharge of storm water to affect the beneficial uses of the receiving waters.

<b>Threshold 4.15.9</b>	Discharge into surface waters or otherwise alter surface water quality (e.g., turbidity, temperature, dissolved oxygen, etc.)
<b>Threshold 4.15.10</b>	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
<b>Threshold 4.15.11</b>	Change the quality of groundwater (e.g., saltwater intrusion, nitrogen loading, etc.)
<b>Threshold 4.15.12</b>	Violate waste discharge requirements or Central Coast Basin Plan criteria for wastewater systems

#### 4.15.5 Project Impacts

The proposed project plans include a comprehensive surface drainage/storm drainage system to collect and convey runoff to appropriate areas of the project site. On-site drainage would sheet flow to a series of vegetated strips adjacent to roadways that would then discharge to vegetated swales that parallel the roadways (Refer to Figures 3.8 and 3.17). The vegetated swales would be lined with erosion mats or other erosion control methods to prevent erosion during storm events. The vegetated swales would then convey water into unlined retention basins. A retention basin is designed to capture and retain water until it can percolate into the ground. In the proposed commercial areas of the Development project site, drainage would be conveyed in a drainage system and then into retention basins located in the open space areas. Existing ravine drainage would be maintained. Runoff from the 100-year storm and small storms would evaporate or infiltrate to groundwater through the retention basins consistent with County drawdown requirements and would not be conveyed to an off-site storm water drainage facility or discharged into surface waters.<sup>1</sup> In addition, County standards mandate that standing water is to be eliminated within seven days; the retention basins would be designed to meet this requirement. Retention basins may include the use of drain time enhancements, including gravel columns or small-diameter bleeder pipes to ensure that Public Works infiltration time standards are met. Runoff beyond the 100-year storm would discharge to overflow at the same rate as existing conditions. Figure 3.19 provides an illustration of infrastructure improvements related to drainage and water quality management.

<sup>1</sup> The retention basins would also be designed, at a minimum, to treat a 50-year storm event with 10-hour intensity and 10-hour duration, per County Public Works standards.

- Threshold 4.15.1** Change rates of soil absorption, or amount, velocity, or direction of surface runoff
- Threshold 4.15.2** Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial on- or off-site sedimentation/erosion or flooding
- Threshold 4.15.3** Result in soil erosion, topographic changes, loss of topsoil or unstable soil conditions from project-related improvements, such as vegetation removal, grading, excavation, or fill

**Construction.** The potential impacts of construction activities on water quality focus primarily on sediments, turbidity, and pollutants that might be associated with sediments (e.g., phosphorus and legacy pesticides). Construction-related activities that are primarily responsible for sediment releases are related to exposing soils to potential mobilization by rainfall/runoff and wind. Such activities include removal of vegetation and existing structures from the site, grading of the site, and construction of new buildings, roadways, and landscaped areas. Environmental factors that affect erosion include topographic, soil, and rainfall characteristics.

During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion compared to existing conditions. Additionally, during a storm event, soil erosion could occur at an accelerated rate. These impacts would be potentially significant and adverse. Mitigation Measure 4.15.1 requires preparation of a SWPPP to identify construction BMPs to be implemented as part of the proposed project to reduce impacts to water quality during construction, including those impacts associated with soil erosion.

The General Permit requires that the SWPPP include erosion and sediment control BMPs that would meet or exceed measures required by the Construction General Permit, as well as BMPs that control other potential construction-related pollutants. The SWPPP would be developed as required by, and in compliance with, the Construction General Permit. Erosion control BMPs are designed to prevent erosion, whereas sediment controls are designed to trap sediment once it has been mobilized. The General Permit requires the SWPPP to include a menu of BMPs to be selected and implemented to address erosion and sediment control. The BMPs are based on the phase of construction and the weather conditions. BMPs on this menu are expected to include, but are not limited to:

- Revegetation of landscaped areas;
- Hydroseeding, mulching, or other erosion controls for inactive exposed areas;
- Sediment controls such as check dams, desilting basins, fiber rolls, and silt fencing;
- Catch basin inlet protection;
- Construction materials management; and
- Cover and containment of construction materials and wastes.

The SWPPP would address site-specific conditions related to project construction, identify the sources of sediment and other pollutants that may affect the quality of storm water discharges, and

describe and ensure the implementation and maintenance of BMPs to reduce or eliminate sediment, pollutants adhering to sediment, and other nonsediment pollutants in storm water as well as nonstorm water discharges. Compliance with the General Construction Permit has been determined by the SWRCB to ensure that water quality standards (protection of beneficial uses and adherence to water quality objectives) are adequately protected during the construction period.

In addition to preparation of a SWPPP to address erosion impacts, an Erosion Control and Sedimentation Plan would be prepared for the proposed project that identifies the proposed methods for controlling runoff, erosion, and sediment movement. An Erosion Control and Sedimentation Plan and a Drainage Plan, as specified previously in Mitigation Measure 4.8.4, would be submitted to the County for review and approval by the Director of Planning and Building.

Therefore, with incorporation of Mitigation Measure 4.15.1, which requires compliance with the requirements of the General Construction Permit, and Mitigation Measure 4.8.4, which requires preparation of an Erosion Control and Sedimentation Plan and a Drainage Plan, potential construction impacts related to soil absorption; amount, velocity, or direction of surface runoff; drainage pattern; and erosion would be reduced to below a level of significance.

**Operation.** As discussed in the first paragraph in Section 4.15.5, the proposed project includes a comprehensive drainage and water quality treatment system to control erosion, velocity, and to follow the existing drainage pattern. The proposed project would not aggravate the existing drainage deficiencies in San Miguel (as describe in the *San Miguel Drainage and Flood Control Study* [RMC, December 2003]) because runoff from the project site would either evaporate, infiltrate, or be discharged at the same rate as existing conditions. However, the proposed project may have the potential to increase erosion. As specified previously in Mitigation Measure 4.8.4, an Erosion Control and Sedimentation Plan and a Drainage Plan would be prepared for the proposed project that identify the proposed methods for controlling runoff, erosion, and sediment movement. With implementation of the proposed drainage system and incorporation of Mitigation Measure 4.8.4, potential operational impacts related to soil absorption; amount, velocity, or direction of surface runoff; drainage pattern; and erosion would be reduced to below a level of significance.

**Project Impact Summary:** Class II. Potentially significant impacts related to soil absorption; amount, velocity, or direction of surface runoff; drainage pattern; and erosion would be reduced to a less than significant level with implementation of Mitigation Measures 4.15.1 and 4.8.4.

- Threshold 4.15.4** Place housing or involve activities within the 100-year flood hazard zone as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazards delineation map
- Threshold 4.15.5** Place within a 100-year flood hazard area structures that would impede or redirect flood flows
- Threshold 4.15.6** Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam

The Development project site is outside the 100-year floodplain; therefore, no impacts related to a 100-year flood hazard area would occur at this location. The Development project site and off-site infrastructure developments are not located in the vicinity of any large bodies of water, in the vicinity of the Pacific Ocean, or in a hillside or landslide area. According to the Safety Element of the County General Plan (December 1999), the Development project site is not in an inundation zone. As discussed above, the northeast corner of the San Miguel CSD Wastewater Treatment Plant is located in a 100-year floodplain. This area of the site is planned for additional percolation ponds. Mitigation Measure 4.15.2 would limit expansion of the site and construction of percolation ponds to areas outside of the 100-year floodplain so that the ponds would not overflow during a 100-year storm. Therefore, no housing would be constructed in the 100-year floodplain, no structures would impede or redirect 100-year flows, and there would not be a significant risk of loss, injury, or death involving flooding. With incorporation of Mitigation Measure 4.15.2, potential impacts related to a 100-year flood hazard area would be reduced to below a level of significance.

**Project Impact Summary:** Class II. Potentially significant impacts related to encroachment on the 100-year floodplain from expansion of Wastewater Treatment Plant ponds would be reduced to a less than significant level with implementation of Mitigation Measure 4.15.2.

**Threshold 4.15.7** Violate any water quality standards or requirements

**Threshold 4.15.8** Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff and/or generate NPDES compliance issues pursuant to the following list

1. Potential impact of project construction on storm water runoff;
2. Potential impact of project's post-construction activity on storm water runoff;
3. Potential for discharge of storm water pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas; and
4. Potential for discharge of storm water to affect the beneficial uses of the receiving waters.

**Threshold 4.15.9** Discharge into surface waters or otherwise alter surface water quality (e.g., turbidity, temperature, dissolved oxygen, etc.)

**Construction.** As discussed above, the potential impacts of construction activities on water quality focus primarily on sediments, turbidity, and pollutants that might be associated with sediments (e.g., phosphorus and legacy pesticides). Nonsediment-related pollutants that are also of concern during construction include waste construction materials; chemicals, liquid products, and petroleum products

used in building construction or the maintenance of heavy equipment; and concrete-related waste streams.

The SWPPP would include erosion and sediment control BMPs, as well as BMPs that control other potential construction-related pollutants. The BMPs identified in the SWPPP would be implemented and maintained during construction. The SWPPP would identify the sources of sediment and other pollutants that may affect the quality of storm water discharges and describe and ensure the implementation and maintenance of BMPs to reduce or eliminate sediment, pollutants adhering to sediment, and other nonsediment pollutants in storm water as well as nonstorm water discharges.

With the implementation of Mitigation Measure 4.15.1 (construction General Permit NOI and construction phase SWPPP), construction impacts from development of the proposed project would be minimized through compliance with the Construction General Permit. Compliance with the General Construction Permit has been determined by the SWRCB to ensure that water quality standards (protection of beneficial uses and adherence to water quality objectives) are adequately protected during the construction period.

**Operation.** The proposed development site and off-site roadways include a comprehensive surface drainage/storm drainage system to collect and eventually convey runoff to on-site retention basins. All runoff would be infiltrated to the groundwater through the unlined retention basins and would not be conveyed to an off-site storm water drainage facility or discharged into surface waters. In addition to the proposed treatment BMPs, source control and site design BMPs as specified in Mitigation Measure 4.15.3 would be implemented during operation of the proposed project to reduce potential pollutants. Mitigation Measure 4.15.5 requires verification that proposed retention basins would eliminate (through evaporation and/or infiltration) runoff from the 100-year storm and small storms within 7 days. With implementation of treatment BMPs and Mitigation Measures 4.15.3 and 4.15.5, impacts from the proposed development site to surface water quality, runoff, storm water drainage systems, and beneficial uses would be reduced to less than significant.

The *California Storm Water BMP Handbook—New Development and Redevelopment* (2003) lists the Source Control and Treatment Control BMPs that should be reviewed for application to new development and redevelopment projects. *The California Stormwater BMP Handbook, Industrial and Commercial* (2003) lists the Source Control, Site Design, and Treatment Control BMPs that should be reviewed for application to commercial developments. Source Control and Site Design BMPs that are applicable to the project are provided in Table 4.15.B. Table 4.15.C shows Treatment Control BMPs included as part of the project as well as those that would be considered during final design. Table 4.15.D shows the effectiveness of standard Treatment Control BMPs to remove pollutants of concern.

As discussed above, incorporation of LID into development projects is anticipated to be a countywide ordinance by March 2010. All phases of the proposed project that are constructed after the ordinance is adopted would be required to conform to the requirements of the ordinance by incorporating elements of LID into the project design.

**Table 4.15.B: Source Control and Site Design BMPs Considered for the Proposed Project**

Identifier	Name	Project-Specific Application	If Not Applicable, State Brief Reason
<b>Source Control (Site Design)</b>			
SD-10	Site Design and Landscape Planning	Landscape vegetation used will be drought-tolerant and will require minimal irrigation and fertilizer application.	
SD-11	Roof Runoff Controls	The objective is to reduce the total volume and rate of runoff from individual lots, and retain pollutants on site that may be picked up from roofing materials and atmospheric deposition. Roof runoff controls consist of directing the roof runoff away from paved areas.	
SD-12	Efficient Irrigation	Irrigation systems will be fitted with soil moisture sensors or precipitation detectors and designed to eliminate overspray onto impervious surfaces.	
SD-13	Storm Drain System Signs	The area near drain inlets will be stenciled for public awareness to prohibit illegal dumping.	
SD-20	Pervious Pavements	Applicable for parking areas with light vehicle loads.	Will be evaluated during the project design phase
SD-21	Alternative Building Materials	Roofing materials for the buildings will not be constructed of galvanized metal or copper, as to not increase metals in roof runoff.	
SD-30	Fueling Areas		No fueling areas
SD-31	Maintenance Bays and Docks	Loading docks will be designed to prevent run-on from outside the loading dock area and will be covered to prevent rainfall influence.	
SD-32	Trash Enclosures	Trash and recycling materials will be stored to prevent runoff from storage areas (e.g., construction of a roof and berm around trash containers), and pick-up will be appropriately scheduled.	
SD-33	Vehicle Washing Areas		No vehicle washing areas
SD-34	Outdoor Material Storage Areas		No outdoor material storage areas
SD-35	Outdoor Work Areas		No outdoor work areas
SD-36	Outdoor Processing Areas		No outdoor processing areas
<b>Source Control (Operational)</b>			
SC-10	Non-Storm water Discharges	Prevent discharge of unpermitted wastewater, such as gray water, and runoff contaminated with chemicals and trash from entering the storm drain system.	
SC-11	Spill Prevention, Control and Cleanup	Cleaning spilled materials in general by dry sweeping and not producing nonstorm water runoff (e.g., from cleaning surfaces) should be a part of the overall employee education.	
SC-20	Vehicle and Equipment Fueling		No equipment fueling
SC-21	Vehicle and Equipment Cleaning		No equipment cleaning

**Table 4.15.B: Source Control and Site Design BMPs Considered for the Proposed Project**

Identifier	Name	Project-Specific Application	If Not Applicable, State Brief Reason
SC-22	Vehicle and Equipment Repair		No equipment repair
SC-30	Outdoor Loading/Unloading	Loading docks will be designed to prevent run-on from outside the loading dock area and will be covered to prevent rainfall influence.	
SC-31	Outdoor Liquid Container Storage		No outdoor liquid container storage
SC-32	Outdoor Equipment Operations		No outdoor equipment operations
SC-33	Outdoor Storage of Raw Materials		No outdoor material storage areas
SC-34	Waste Handling and Disposal	Trash and recycling materials will be stored to prevent runoff from storage areas (e.g., construction of a roof and berm around trash containers), and pick-up will be appropriately scheduled. A recycling program will be implemented.	
SC-35	Safer Alternative Products	Alternative fertilizers and pesticides that do not result in runoff of toxic pesticides or bioavailable nutrients will be used.	
SC-40	Contaminated or Erodible Areas		After construction, no contaminated or erodible areas
SC-41	Building and Grounds Maintenance	Fertilizers and pesticides will be applied and scheduled to avoid overapplication and avoid application prior to rain events.	
SC-42	Building Repair and Construction	Good housekeeping practices will be performed while construction work or repairs are underway.	
SC-43	Parking/Storage Area Maintenance	Parking lot sweeping or vacuuming will be performed regularly.	
SC-44	Drainage System Maintenance	Inspection and maintenance of vegetated swales, vegetated strips, and retention basins will be performed regularly to ensure the inlets do not have excess debris, swales and strips are not eroding, and vegetation is adequately maintained.	

Sources: *California Storm Water BMP Handbook, Industrial and Commercial* (2003); *California Storm Water BMP Handbook, New Development and Redevelopment* (2003)

SC = Source Control

SD = Site Design

**Table 4.15.C: Treatment Control BMPs Considered for the Project**

<b>Identifier</b>	<b>Name</b>	<b>Description</b>	<b>If not Applicable, State Brief Reason</b>
TC-10	Infiltration Trench	Long, narrow, rock-filled trench with no outlet that receives storm water runoff. Runoff is stored in the void space between the stones and infiltrates through the bottom and into the soil matrix.	Same removal rates with proposed BMPs; water will be infiltrated through retention basins
TC-11	Infiltration Basin	Shallow impoundment that is designed to infiltrate storm water. Infiltration basins use the natural filtering ability of the soil to remove pollutants in storm water runoff. Infiltration facilities store runoff until it gradually exfiltrates through the soil and eventually into the water table.	Same removal rates with proposed BMPs; water will be infiltrated through retention basins
TC-12	Retention/Irrigation	Retention/irrigation refers to the capture of storm water runoff in a holding pond and subsequent use of the captured volume for irrigation of landscape of natural pervious areas.	<u>Vector concerns.</u> Same removal rates with proposed BMPs
TC-20	Wet Pond	Wet ponds (a.k.a. storm water ponds, retention ponds, wet extended detention ponds) are constructed basins that have a permanent pool of water throughout the year (or at least throughout the wet season) and differ from constructed wetlands primarily in having a greater average depth. Ponds treat incoming storm water runoff by settling and biological uptake.	Vector concerns. Similar removal rates with proposed BMPs
TC-21	Constructed Wetland	Constructed wetlands are constructed basins that have a permanent pool of water throughout the year (or at least throughout the wet season) and differ from wet ponds primarily in being shallower and having greater vegetation coverage.	Vector concerns. Similar removal rates with proposed BMPs
TC-22	Extended Detention Basin	Dry extended detention ponds (a.k.a. dry ponds, extended detention basins, detention ponds, extended detention ponds) are basins whose outlets have been designed to detain the storm water runoff from a water quality design storm for some minimum time (e.g., 48 hours) to allow particles and associated pollutants to settle.	Better removal rates with proposed BMPs.
TC-30	Vegetated Swale	Vegetated swales are open, shallow channels with vegetation covering the side slopes and bottom that collect and slowly convey runoff flow to downstream discharge points. They are designed to treat runoff through filtering by the vegetation in the channel, filtering through a subsoil matrix, and/or infiltration into the underlying soils.	
TC-31	Vegetated Buffer Strip	Grassed buffer strips (vegetated filter strips, filter strips, and grassed filters) are vegetated surfaces that are designed to treat sheet flow from adjacent surfaces. Filter strips function by slowing runoff velocities and allowing sediment and other pollutants to settle and by providing some infiltration into underlying soils.	
TC-32	Bioretention	The bioretention best management practice (BMP) functions as a soil and plant-based filtration device that removes pollutants through a variety of physical, biological, and chemical treatment processes.	Better removal rates with proposed BMPs.
TC-40	Media Filter	Storm water media filters are usually two-chambered including a pretreatment settling basin and a filter bed filled with sand or other absorptive filtering media.	Similar or better removal rates with proposed BMPs.
TC-50	Water Quality Inlet	Water quality inlets (WQIs), also commonly called trapping catch basins, oil/grit separators or oil/water separators, consist of one or more chambers that promote sedimentation of coarse materials and separation of free oil (as opposed	Better removal rates with proposed BMPs.

**Table 4.15.C: Treatment Control BMPs Considered for the Project**

Identifier	Name	Description	If not Applicable, State Brief Reason
		to emulsified or dissolved oil) from storm water.	
TC-60	Multiple Systems	A multiple treatment system uses two or more BMPs in series.	
MP-50	Wet Vault	A wet vault is a vault with a permanent water pool, generally 3 to 5 ft deep. The vault may also have a constricted outlet that causes a temporary rise of the water level (i.e., extended detention) during each storm.	Vector concerns. Better removal rates with proposed BMPs.
MP-51	Vortex Separator	Vortex separators: (alternatively, swirl concentrators) are gravity separators, and in principle are essentially wet vaults.	Same removal rates with proposed BMPs.
MP-52	Drain Insert	Drain inserts are manufactured filters or fabric placed in a drop inlet to remove sediment and debris.	Better removal rates with proposed BMPs.

Source: *California Storm Water BMP Handbook—New Development and Redevelopment* (2003).

aka = also known as

BMPs = best management practices

ft = feet

MP = Manufactured Product

TC = Treatment Control

WQIs = Water quality inlets

**Table 4.15.D: Treatment Control BMPs Selection Matrix<sup>1</sup>**

Pollutant of Concern	Treatment Control BMP Categories							Hydrodynamic Separator Systems <sup>(5)</sup>
	Water Quality Inlets	Drain Insert <sup>(2)</sup>	Biofilters	Detention Basins <sup>(3)</sup>	Infiltration Basins <sup>(4)</sup>	Wet Ponds or Wetlands	Filtration	
Sediment (commercial use)	L	V	H/M	M	H/M	H/M	H/M	H/M
Nutrients (commercial use and impairment)	L	V	L	M	H/M	H/M	LM	L
Organic Compounds (commercial use)	L	V	U	U	U	U	H/M	L
Trash (commercial use and impairment)	M	V	L	M	U	U	H/M	H/M
Oxygen-Demanding Substances (commercial use)	U	U	L	M	H/M	H/M	H/M	L
Bacteria and Viruses (commercial use and impairment)	L	V	U	U	H/M	U	H/M	L

**Table 4.15.D: Treatment Control BMPs Selection Matrix<sup>1</sup>**

Pollutant of Concern	Treatment Control BMP Categories							
	Water Quality Inlets	Drain Insert <sup>(2)</sup>	Biofilters	Detention Basins <sup>(3)</sup>	Infiltration Basins <sup>(4)</sup>	Wet Ponds or Wetlands	Filtration	Hydrodynamic Separator Systems <sup>(5)</sup>
Oil and Grease (commercial use)	M	V	H/M	M	U	U	H/M	L
Metals (commercial use and impairment)	L	V						
Pesticides (nonsoil bound)	U	U	U	U	U	U	U	L

Sources: Orange County DAMP, Exhibit 7.II: Model Water Quality Management Plan; *California Storm Water BMP Handbook—New Development and Redevelopment* (2003).

(1) Cooperative periodic performance assessment may be necessary.

(2) Removal efficiency depends on type of product. Few products have performance data collected under field conditions.

(3) For detention basins with minimum 36- to 48-hour drawdown time.

(4) Including trenches and porous pavement.

(5) Also known as hydrodynamic devices and baffle boxes.

L: Low removal efficiency

H/M: High or medium removal efficiency

U: Unknown removal efficiency

V = Variable removal efficiency

Biofilters include:

- Grass swales
- Grass strips
- Wetland vegetation swales
- Bioretention

Detention Basins include:

- Extended/dry detention basins with grass lining
- Extended/dry detention basins with impervious lining

Wet Ponds and Wetlands include:

- Wet ponds (permanent pool)
- Constructed wetlands

Filtration Systems include:

- Media filtration
- Sand filtration

Infiltration Basins include:

- Infiltration basins
- Infiltration trenches

Hydrodynamic Separation Systems include:

- Swirl Concentrators
- Cyclone Separators

The proposed off-site infrastructure improvements include construction of additional percolation ponds for infiltration of the additional treated wastewater. Disposal of the treated wastewater through percolation is regulated by the Waste Discharge Requirements (WDR) Order No. 99-046, Waste Discharger Identification Number 3 400109001 for San Miguel Sanitary District, San Luis Obispo, adopted by the Central Coast RWQCB on July 9, 1999. This permit allows treated wastewater discharge of 200,000 gpd. The permit specifies requirements for disposal and requires San Miguel CSD to establish and maintain a monitoring program to document compliance with the requirements. The permit prohibits wastewater seepage from the percolation ponds to the Salinas River, adjacent drainage ways, or adjacent properties and prohibits bypass of the treatment facility and discharge of untreated or partially treated wastes directly to the percolation beds. In addition, the permit requires the San Miguel CSD to comply with the Basin Plan's groundwater quality objectives and other groundwater quality requirements outlined in the permit. As discussed in more detail below, the expansion of the Wastewater Treatment Plant would require that a revised WDR be obtained from the Central Coast RWQCB to increase allowable treated wastewater discharge to 400,000 gpd prior to expansion of the Wastewater Treatment Plant. It is anticipated that the revised permit would also prohibit wastewater seepage from the percolation ponds to adjacent surface waters. Therefore, with compliance with the revised WDR, impacts to water quality, runoff, storm water drainage systems, and beneficial uses would be less than significant.

**Project Impact Summary:** Class II. Potential water quality, runoff, storm water drainage systems, and beneficial use impacts during construction and operation of the proposed Development project site would be reduced to a less than significant level with implementation of Mitigation Measures 4.15.1 (NPDES permit) and 4.15.3 (Best Management Practices).

**Threshold 4.15.10**      Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

The proposed development site and off-site roadways include a comprehensive surface drainage/ storm drainage system to collect and eventually convey runoff to on-site retention basins. All runoff would be infiltrated to the groundwater through the unlined retention basins. Runoff from the development site and off-site roadways would not be conveyed to an off-site storm water drainage facility and therefore would not require the construction or expansion of storm water drainage facilities. The retention basins would be designed to retain a 100-year storm, which would result in more water being retained on site after development compared to the existing condition. Therefore, impacts to storm water drainage facilities are not significant, and no mitigation is required.

The proposed off-site infrastructure improvements include construction of percolation ponds for infiltration of the additional treated wastewater. Construction of additional treatment and percolation ponds would not substantially increase impervious surface area on site or increase storm water runoff from the site; therefore, construction or expansion of storm water drainage facilities would not be required. Therefore, impacts to storm water drainage facilities are not significant, and no mitigation is required.

**Project Impact Summary:** No Impact. There are no impacts related to storm water drainage facilities, and no mitigation is required.

**Threshold 4.15.11** Change the quality of groundwater (e.g., saltwater intrusion, nitrogen loading, etc.)

**Threshold 4.15.12** Violate waste discharge requirements or Central Coast Basin Plan criteria for wastewater systems

Runoff from the Development project site, as well as treated wastewater at the expanded San Miguel CSD Wastewater Treatment Plant, would be infiltrated through retention basins and percolation ponds. The depth to groundwater has been measured as more than 100 ft bgs at several wells in the vicinity of San Miguel Ranch. Runoff from the proposed development site would infiltrate through the retention basins and eventually flow to the groundwater basin or Salinas River aquifer. Pollutants would be removed through filtration as the water flows through the soil.

The proposed off-site infrastructure improvements include construction of additional percolation ponds for infiltration of the additional treated wastewater. Disposal of the treated wastewater through percolation is regulated by the WDR Order No. 99-046, Waste Discharger Identification Number 3 400109001 for San Miguel Sanitary District, San Luis Obispo, adopted by the Central Coast RWQCB on July 9, 1999. This permit allows treated wastewater discharge of 200,000 gpd. The permit specifies requirements for disposal and requires San Miguel CSD to establish and maintain a monitoring program to document compliance with the requirements. The permit requires the San Miguel CSD to comply with the Basin Plan's groundwater quality objectives and other groundwater quality requirements outlined in the permit.

Expansion of the Wastewater Treatment Plant would require that a revised WDR be obtained from the Central Coast RWQCB, as specified in Mitigation Measure 4.15.4, to increase allowable treated wastewater discharge to 400,000 gpd. The San Miguel CSD Wastewater Master Plan (Wallace Group, January 2005) proposed three alternatives for expansion of the Wastewater Treatment Plant: (1) Complete-Mix Aerated Lagoons, (2) Partial-Mix Aerated Lagoons, and (3) Swanson Advanced Integrated Pond System (Swanson AIPS). The Master Plan concluded that all three alternatives would be expected to meet RWQCB discharge requirements, including groundwater quality objectives; however, the Master Plan recommended that the San Miguel CSD modify and expand the current treatment system to Swanson AIPS for expansion of the Wastewater Treatment Plant. In addition to obtaining a revised WDR, the San Miguel CSD would be required by CEQA to analyze project-level environmental impacts for the proposed Wastewater Treatment Plant expansion prior to project approval.<sup>1</sup> Potential impacts related to groundwater quality, waste discharge requirements, and Basin Plan criteria from expansion of the San Miguel CSD Wastewater Treatment Plant would be reduced to a less than significant level with implementation of Mitigation Measure 4.15.4, which requires the San Miguel CSD to obtain a revised WDR and upgrade the existing treatment facilities consistent with the recommendations of the San Miguel Community Services District Wastewater Master Plan, or equivalent treatment approved by the RWQCB. In addition, as discussed previously in Section 4.14, Mitigation Measure 4.14.1 requires verification that sufficient wastewater treatment capacity exists to serve each phase of project development.

<sup>1</sup> Additional mitigation measures may be required to reduce potential impacts associated with plant expansion.

As part of the proposed project, the North Well would be incorporated into the CSD water system. As discussed previously, the North Well was tested subject to Title 22 standards on September 24, October 12, and October 13, 2004. North Well was also tested for perchlorate on August 4, 2008. Perchlorate was not detected in the water samples drawn from North Well on the Development project site. In addition, perchlorate levels in groundwater at the Camp Roberts monitoring wells nearest the Development project site have not been detected above drinking water standards. Nevertheless, the San Miguel CSD is required to comply with all Title 22 regulations, which include regular water quality testing within its service system. Compliance with Title 22 regulations would ensure that the potable water supply meets all California drinking water standards. In addition to the North Well, there may be the option of drilling wells for irrigation on 27 of the proposed residential lots. The placement of these wells would be subject to the review and approval of the County Department of Environmental Health Services, which would ensure that the wells are placed an adequate distance from the perchlorate plume at Camp Roberts. For the reasons discussed above, impacts related to water well placement and drinking water standards are not significant, and no mitigation is required.

**Project Impact Summary:** Class II. Significant adverse impacts related to groundwater quality, waste discharge requirements, and Basin Plan criteria due to expansion of the San Miguel Wastewater Treatment Plant would be reduced to a less than significant level with implementation of Mitigation Measure 4.15.4.

#### 4.15.6 Cumulative Impacts

Cumulative development in the project area is a continuation of the existing urban pattern of development, primarily within the corridor along the Salinas River that has already resulted in modifications to drainage and watercourses in the area. For all cumulative analysis related to hydrology and water quality, the cumulative projects being considered include all projected development discharging to the upper reach of the Salinas River. Because cumulative hydrology and water quality impacts are caused by build out of properties that increase impervious area and pollutant loads, cumulative development is considered to be the build out of the Salinas River Watershed over an extended time period, resulting in complete available parcel build out.

New development and redevelopment can result in increased urban pollutants in dry weather and storm water runoff from project sites. Each project must comply with NPDES permitting requirements and include BMPs to avoid impacts to water quality and local hydrology in compliance with local ordinances and plans adopted to comply with MS4 Permit and other permits (e.g., General Construction Permit, WDRs). Each project must consider water quality objectives, impaired receiving waters, and annual TMDL loads for receiving waters. By complying with water quality objectives and NPDES requirements, the project contributes to overall water quality improvement in the watershed in context of the regulatory program designed to account for cumulative impacts. In addition, the proposed project includes Treatment BMPs to retain storm water runoff and associated pollutants on site. Regional programs and BMPs such as TMDL programs and the MS4 Permit Program have been designed under an assumption that the Salinas River Watershed would continue the pattern of urbanization. The regional control measures contemplate cumulative effects of proposed development. Compliance with these regional programs and the General Construction Permit constitutes compliance with programs intended to address the proposed project's contribution to

cumulative hydrological and water quality impacts. Therefore, the project's contribution to cumulative hydrology and water quality impacts would not be considered significant.

**Potential Cumulative Impact Summary:** Class III. The project's contribution to cumulative hydrology and water quality impacts is not considered significant, and no mitigation is required.

#### **4.15.7 Level of Significance Prior to Mitigation**

Prior to mitigation the proposed project would result in significant adverse impacts to hydrology and water quality. These significant impacts would be the result of the following:

- Increased erosion during construction and operation of the project
- Encroachment into the 100-year floodplain
- Impacts to surface water from increased runoff and construction activities
- Impacts to groundwater from increased percolation of treated wastewater
- Violation of waste discharge requirements

#### **4.15.8 Mitigation Measures**

**Mitigation Measure 4.15.1 State General Construction Activity NPDES Permit.** Prior to commencement of grading activities for each construction phase, the project applicant shall demonstrate to the County Director of Planning and Building, or designee, that coverage has been obtained under the State General Construction Activity National Pollutant Discharge Elimination System Permit (NPDES) by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board (SWRCB) and a copy of the subsequent notification of the issuance of a Waste Discharge Identification (WDID) number or other proof of filing. The Storm Water Pollution Prevention Plan (SWPPP) for the entire Development project site shall be developed prior to the initiation of grading and implemented for all construction activity. The Director of the Department of Planning and Building, or designee, shall review the SWPPP prior to the issuance of any grading permits. A copy of the SWPPP shall be kept at the project site and shall be available to the County Field Engineer upon request.

**Mitigation Measure 4.15.2 Wastewater Treatment Plant Expansion: Floodplain.** During design of the expansion of San Miguel Community Services District Wastewater Treatment Plant, the project engineer shall ensure that all new structures, including percolation ponds, are located outside the 100-year floodplain. Design plans for the expanded San Miguel Community Services District Wastewater Treatment Plant shall be reviewed and approved by the County Director of Planning and Building, or designee, prior to issuance of a [Conditional Use Permit](#)

(CUP) to ensure that percolation ponds are located outside the 100-year floodplain.

### Mitigation Measure 4.15.3

**Best Management Practices.** Prior to recordation of the final map for the first phase of development, the County of San Luis Obispo shall, under the direction of the Director of Public Works, approve a plan to ensure implementation of Source Control and Site Design Best Management Practices (BMPs). This plan shall include a statement from the applicant accepting responsibility for inclusion of Site Design BMPs in the plans and implementation of all Source Control BMPs during operation of the proposed project in accordance with the County's Storm Water Management Program. All future transfers of the property to a private or public owner shall have conditions requiring the recipient to assume responsibility for implementation of Source Control BMPs.

These Source Control and Site Design BMPs shall include, but not be limited to, the following:

- **Public Education.** A water quality education program shall be implemented through brochures or other materials distributed to tenants at the time of initial purchase or lease. Maintenance personnel shall receive training on the management of fertilizers, pesticides, and chemicals; proper disposal of animal waste; not introducing oil, paints, and other pollutants into storm drains; effective cleaning practices; proper landscaping practices; and impacts of over-irrigation.
- **Pet Waste Control.** Signs notifying residents to pick up and properly dispose of pet waste shall be placed in landscaped areas. In addition, pet waste bags shall be provided at stations in landscaped areas.
- **Activity Restrictions.** Activity restrictions shall be prepared as necessary and shall address surface water quality protection.
- **Landscaping and Irrigation Controls.** Landscape vegetation will be drought-tolerant and will require minimal irrigation and fertilizer application. The timing and application methods of irrigation water in common areas shall minimize excess irrigation runoff.
- **Proper Use of Fertilizers and Pesticides.** Fertilizer and pesticide usage shall be used consistent with manufacturer specifications. Fertilizer and pesticide applications will be scheduled to avoid overapplication and avoid application prior to rain events.
- **Street Sweeping Program.** A sweeping program shall be implemented to sweep the public streets/driveways at least

monthly in order to minimize the potential for pollutant loads from these areas in storm water and dry weather flows. The street sweeping program may be administered by the project Homeowners Association (HOA) or the County.

- **Litter Control Program and Design of Trash Storage Areas.** The litter control program shall focus on litter control for common areas and shall include the placement and emptying of covered trash receptacles, removing trash from parking areas and landscaping, noting trash disposal violations by tenants and reporting the violations to the apartment management for investigation, and pet waste control programs. In conjunction with the litter control program, trash storage areas shall be designed to prevent introduction of this pollutant into runoff by incorporating impervious surfaces for storage areas that prevent run-on from adjacent areas and off-site transport of trash, no connection of trash drains to the storm drain system, and covered to minimize direct precipitation.
- **Drain Inlet Stenciling and Drainage Facility Inspection.** All drain inlets at the project site shall be stenciled or labeled to prohibit illegal dumping. Project Covenants, Conditions, and Restrictions (CC&Rs) shall require that private on-site drainage facilities be inspected and cleaned/maintained as necessary, at a minimum annually prior to October 1.
- **Maintenance Bays and Docks.** Loading docks will be designed to prevent run-on from outside the loading dock area and will be covered to prevent rainfall influence.

#### Mitigation Measure 4.15.4

**Wastewater Treatment Plant Expansion: Waste Discharge Requirements.** Prior to expansion of the San Miguel Community Services District (CSD) Wastewater Treatment Plant, the San Miguel CSD shall obtain a revised Waste Discharge Requirements (WDRs) from the Central Coast Regional Water Quality Control Board (RWQCB). As part of the WDRs, the San Miguel CSD shall upgrade the existing treatment facilities consistent with the recommendations of the San Miguel CSD Wastewater Master Plan, or equivalent treatment approved by the RWQCB.

#### Mitigation Measure 4.15.5

**Verification of Storm Water Retention Basin Infiltration Time.** Prior to recordation of the final map for the first phase of development, the County of San Luis Obispo shall, under the direction of the Director of Public Works, verify through plan review and approval that water held in proposed retention basins would be eliminated (evaporated and/or infiltrated) within 7 days. Retention basins may include the use of drain time enhancements, including gravel columns or small-diameter bleeder pipes to ensure that Public Works infiltration time standards are met.

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#### **4.15.9 Level of Significance after Mitigation**

| With implementation of Mitigation Measures 4.15.1 through 4.15.5, compliance with existing plans, programs, and policies, and implementation of treatment BMPs, hydrology and water quality impacts would be less than significant.

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