

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF NOVEMBER 13, 2014

Prepared on August 1, 2014

ITEM NUMBER:

SUBJECT: Order No. R3-2014-0046, Revision of Waste Discharge Requirements for California Army National Guard - Camp Roberts Training Facility, San Luis Obispo and Monterey Counties

KEY INFORMATION

Discharger:	California Army National Guard
Location:	Along US 101, about 12 miles north of Paso Robles
Discharge type:	Sanitary wastewater, equipment washwater, and landfill leachate
Design Capacity	
Main Garrison WWTP:	0.04 million gallons-per-day 0.15 million gallons-per-day (second phase) 0.3 million gallons-per-day (final phase) 2.0 million gallons-per-day (during short-term emergencies)
East Garrison WWTP:	134,000 gallons-per-day
Current Flow	
Main Garrison WWTP:	Around 50,000 gallons-per-day
East Garrison WWTP:	Around 4,000 gallons-per-day
Disposal Capacity	
Main Garrison WWTP:	Greater than 0.3 million gallons-per-day
East Garrison WWTP:	134,000 gallons-per-day
Disposal Method	Percolation Ponds
Recycling:	None
Existing Order:	Order No. R3-2004-0106

THIS ACTION:

Adopt revised WDR (Order No. R3-2014-0046)

SUMMARY

Camp Roberts is a California Army National Guard (CANG) reserve training facility that straddles the borders of San Luis Obispo and Monterey Counties. Camp Roberts operates two existing wastewater facilities under one set of waste discharge requirements and a Class III landfill under another set of waste discharge requirements. CANG requested revised wastewater WDRs to dovetail those WDRs with its landfill WDRs, to modernize its WWTP facility, and to proactively provide for increased training and emergency response missions. The proposed WDRs revise the wastewater facilities' existing WDRs as follows:

- Allows Camp Roberts' Main Garrison wastewater facility to accept Camp Roberts Class III landfill leachate under specified conditions (i.e., when it is too wet to land-apply leachate at the landfill),
- Allows Main Garrison wastewater facility upgrades, including a new nitrogen removal unit process, to improve effluent quality,
- Decreases normal Main Garrison wastewater facility effluent flow rates to ensure a quality effluent,
- Allows increased flow rates if Camp Roberts is used to shelter people displaced in response to natural disasters or other emergency conditions (during disaster, relaxed effluent limits will supersede normal effluent limits),
- Adds effluent limits for biochemical oxygen demand (BOD) and total suspended solids (TSS), and
- Lowers nitrogen limits.

Staff welcomes and encourages CANG's efforts, which should result in improved effluent quality. Staff especially welcomes CANG's proposed nitrogen filter, which would be a precedent-setting application of the technology in our region. Staff also welcomes CANG's active and willing participation in the Paso Robles Groundwater Basin Salt and Nutrient Management Plan effort.

DISCUSSION

Ownership, Location, and Overview

CANG owns and operates Camp Roberts as an army reserve training facility. Camp Roberts is located in the southern section of the Salinas River Valley and eastern portion of the Santa Lucia Mountain range of Central California. Camp Roberts occupies 42,784 acres along a six-mile stretch of the Salinas River and is located on US 101 about 12 miles north of Paso Robles. The facility spans the border between southern Monterey County and northern San Luis Obispo County where the Nacimiento River enters the Salinas River.

Camp Roberts currently has two garrisons, the Main Garrison and the East Garrison. The Main Garrison lies west of the Salinas River and was built to accommodate 23,000 officers and troops. The East Garrison is located east of the Salinas River and was constructed to accommodate up to 6,000 troops. Camp Roberts is occupied by personnel year-round, but there tends to be increased occupancy during the summer due to training events. The facility is primarily used for training of active Army units, National Guard units, and other active and reserve units from other branches of the armed forces. Camp Roberts is also a mobilization center for overseas deployments.

Existing WWTPs and Landfill

Of particular interest to the Water Board, Camp Roberts includes a Main Garrison wastewater treatment facility, an East Garrison wastewater treatment facility, and a Class III landfill. The Main Garrison WWTP operates with preliminary treatment (grit removal/comminutor) and an unusual primary/secondary treatment configuration.

The Main Garrison WWTP was designed to have a hydraulic capacity of 1.0 million gallons per day (MGD). However, flows of 1.0 MGD would not produce a quality effluent since the primary clarifier also serves as a secondary clarifier and allows blended primary and secondary wastewater to be discharged to the percolation ponds. Fortunately, actual average daily flow rates tend to be less than 50,000 gallons per day (gpd), which provides ample detention time for treatment.

The East Garrison WWTP has a hydraulic capacity of 134,000 gpd and receives both domestic wastewater and truck washing flows. Treatment consists of primary treatment/settling in septic tanks, oil water separators for truck washing flows, and additional treatment in secondary stabilization ponds. The East Garrison treatment facility currently operates with minimum flows including many days without flow.

CANG operates a Class III landfill. Two cells at the landfill's "South Unit" are in current use: one for special waste (demolition debris from World War II-era buildings) and one for solid waste. Each cell has an independent Leachate Collection and Recovery System (LCRS).

Receiving Waters

Both of Camp Roberts' wastewater treatment plants percolate treated wastewater about 250 feet from the Salinas River. The percolated wastewater flows through about 30 feet of alluvial soils before entering groundwater in the San Miguel Sub-basin of the Paso Robles Ground Water Basin. Present and anticipated beneficial uses of groundwater near the discharge include:

- ◆ Municipal & Domestic Water Supply
- ◆ Agricultural Water Supply
- ◆ Industrial Process Supply
- ◆ Industrial Service Supply

In the vicinity of Camp Roberts, the alluvial sediments have relatively shallow groundwater that is influenced by the hydrology of the river. The beneficial uses of the Salinas River include:

- ◆ Municipal and domestic water supply
- ◆ Agricultural supply
- ◆ Industrial process supply
- ◆ Groundwater recharge
- ◆ Water contact recreation
- ◆ Non-contact water recreation
- ◆ Wildlife habitat
- ◆ Warm fresh water habitat
- ◆ Cold fresh water habitat
- ◆ Migration of aquatic organisms
- ◆ Spawning, reproduction, and/or early development
- ◆ Rare, threatened, or endangered species and
- ◆ Commercial and sport fishing

Existing Waste Discharge Requirements

The Water Board adopted Waste Discharge Requirements (WDRs) Order No. R3-2004-0106 to regulate wastewater discharges from both CANG's Main Garrison and East Garrison WWTPs. The Water Board also adopted Waste Discharge Requirements (WDRs) Order No. R3-2010-0038 to regulate Camp Roberts' Class III landfill. Both orders are attached to this staff report.

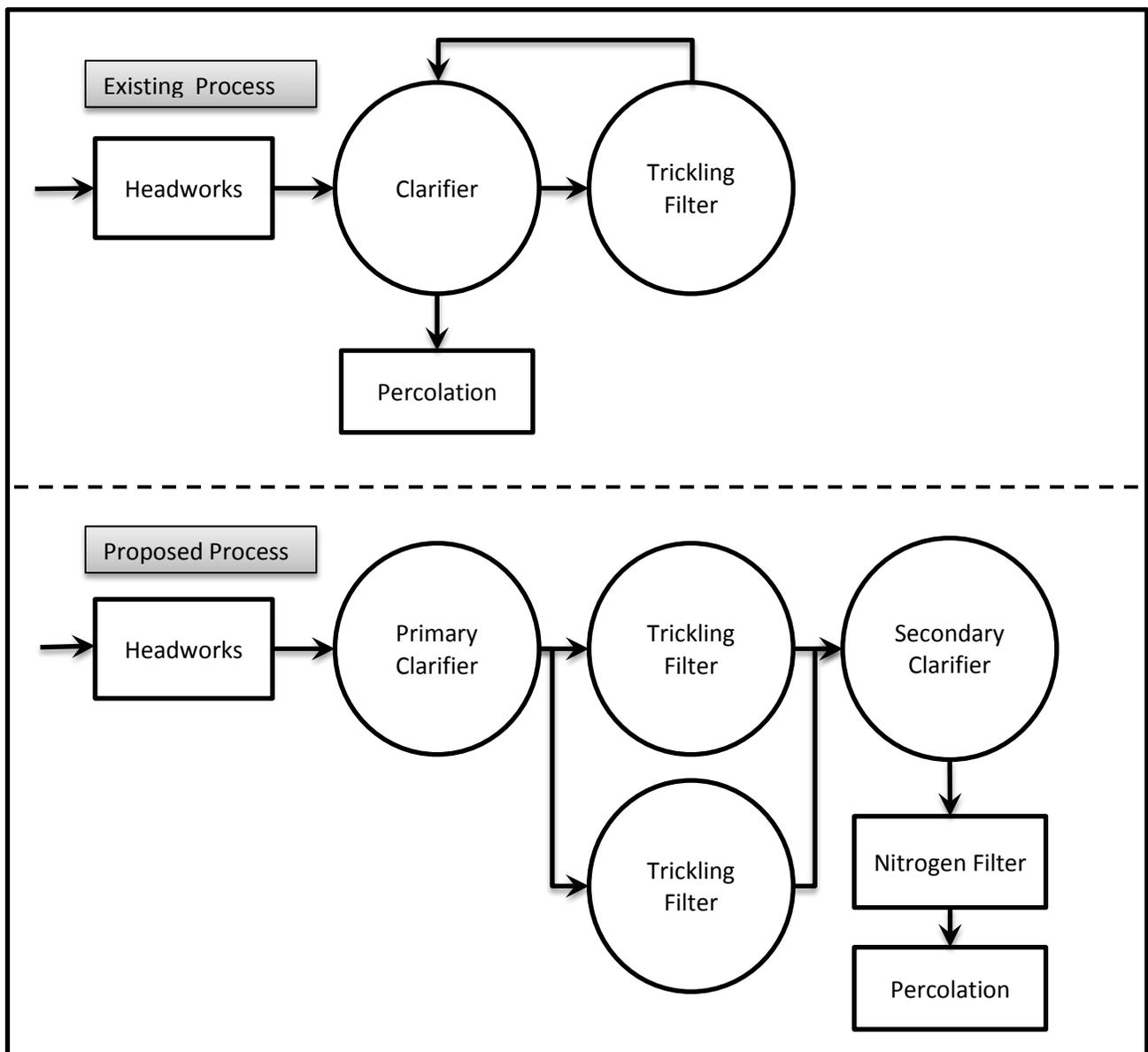
Report of Waste Discharge

CANG plans to increase training use of Camp Roberts. In addition, Camp Roberts is also designated as a temporary disaster shelter. To improve Camp Roberts' wastewater infrastructure to accommodate increased training and emergency housing, on its own initiative, the CANG submitted a Report of Waste Discharge (ROWD) seeking a revision of the WWTP WDRs (Order No. R3-2004-0106). The ROWD proposed to upgrade the existing Main Garrison wastewater treatment and discharge facilities to:

- ◆ Provide additional wastewater treatment capacity to support CANG's training and emergency response missions, and
- ◆ To remedy on-going violations of its existing WDRs.

The improvements will refurbish an abandoned clarifier and trickling filter, as well as alter plumbing to achieve true secondary clarification. The upgrade to the existing Main Garrison wastewater treatment and discharge facilities is represented by the following schematic:

Figure 1 - Existing and Proposed Schematic



As shown and mentioned above, a key improvement is separation of primary and secondary clarification stages to eliminate discharge of partially treated wastewater and improve overall effluent quality with respect to BOD and suspended solids. Another key improvement is the addition of a denitrifying filter to reduce effluent nitrogen concentrations. The proposed first phase of installing denitrification treatment would provide nitrate treatment capacity for an average daily flow of 0.04 MGD. Additional filter capacity would be required in the future when the Camp Roberts population increases.

The ROWD also proposes a WDR modification that allows, on a limited basis, the discharge of treated landfill leachate from Camp Roberts' Class III Solid Waste Cell. CANG operates a landfill under WDR No. R3-2010-0038. The landfill WDRs allow leachate land application at the landfill only during dry periods 48 hours before or after a rainfall event. The landfill WDRs also allow CANG to request permission to discharge to a WWTP. However, the existing WWTP WDRs only allow the discharge of treated domestic wastewater and equipment washwater.

Proposed Waste Discharge Requirements

The proposed WDRs are very similar to the existing WDRs. Significant changes from the existing WDRs are as follows:

1. Prohibition A.2 was modified to say (underlined words indicate added language):

Discharge of any wastes other than leachate from the Camp Roberts South Unit landfill, domestic wastewater, and equipment washwater is prohibited.^{ROWD}

Two landfill cells at the Camp Roberts South Unit of the landfill are in current use: one for special waste (demolition debris from World War II-era buildings) and one for solid waste. Each cell has an independent Leachate Collection and Recovery System (LCRS). A 50,000-gallon-capacity above ground storage tank farm is under construction to temporarily store leachate. When this tank is full and land application is not feasible, WDR No. R3-2010-0038 requires an alternative discharge location. CANG's landfill consultant, Avocet Environmental, Inc. (Avocet), has prepared an analysis of leachate flow and water quality from the South Unit to support a proposal to discharge landfill leachate to the Main Garrison WWTP. The analysis indicates that landfill leachate will be significantly diluted and treated at the WWTP. As a precaution, prior to any leachate discharge to the WWTP, the monitoring and reporting program for draft Order No. R3-2014-0046 requires leachate batch sampling.

2. Specification B.1 was modified to significantly reduce flow limits, except when Camp Roberts might be used to shelter people displaced in response to natural disasters or other emergency conditions. The existing WDRs allowed flows up to 1.0 MGD. The proposed WDRs limit flows to 300,000 gpd provided that CANG has in place a denitrifying filter that can provide compliance with effluent nitrogen limits. If Camp Roberts is used to shelter people displaced in response to natural disasters or other emergency conditions, the proposed WDRs allow flows up to 2.0 MGD. Engineering calculations indicate that the Main Garrison WWTP can hydraulically handle flows of that magnitude, with a relatively minor degradation of treatment performance.
3. Specification B.3 was modified to include 30 mg/L biochemical oxygen demand and total suspended solids effluent limits. The existing WDRs had no such effluent limits.

4. Specification B.3's nitrogen limits were slightly modified; the limit for nitrate was replaced with a limit for total nitrogen. That modification allows stricter control of effluent nitrogen discharges. The proposed total nitrogen limit is 10 mg/L.
5. Specification B.3's salt limits were removed, in recognition of a) the limitations of applying the Basin Plan's current water quality objectives as effluent limits, and b) CANG's active participation in the Paso Robles Groundwater Basin Salt and Nutrient Management Plan effort to develop more appropriate water quality objectives and salinity discharge control.
6. Specification B.3's pH limits were removed, since effluent pH is not a definitive indicator of impacts to receiving waters. Wastewater effluent pH is not necessarily equal to the pH of percolated wastewater since many factors (e.g., soil buffering, vegetative processes, and microbial processes) can alter pH during the percolation process.
7. CANG has become an active participant in the Paso Robles Groundwater Basin Salt and Nutrient Management Plan effort (along with the County of San Luis Obispo, City of Atascadero, Templeton Community Services District, City of Paso Robles, San Miguel Community Services District, and Heritage Ranch Community Services District). The effort will evaluate local conditions, convene stakeholder groups to provide public input, and develop and approve management plans to protect groundwater quality resources. This project may provide better information to use in managing salinity of various discharges and developing appropriate water quality objectives for the sub-basins of the Paso Robles Groundwater Basin.
8. The proposed order's Specification B.4 addresses effluent limits when Camp Roberts might be used to shelter people displaced in response to natural disasters or other emergency conditions. Under those conditions, the proposed order allows relaxed effluent limits as follows:
 - a. 90 mg/L BOD and Total Suspended Solids
 - b. No limits for salts, including nitrate

COMPLIANCE HISTORY/STATUS

Both the Main Garrison and East Garrison WWTPs have reported violations for salts, nutrients, and pH.

To address salt violations, CANG recently drilled supply wells that have lower salinity. CANG is evaluating how these wells may be operated along with wells in current use to improve effluent quality. To address nutrient violations, CANG proposes to add nitrogen filters to their treatment process. Nitrogen filter pilot testing indicates that CANG can significantly reduce discharges of nitrogen. In addition, to address salt and nutrient violations, CANG has become an active participant in the Paso Robles Groundwater Basin Salt and Nutrient Management Plan effort (along with the County of San Luis Obispo, City of Atascadero, Templeton Community Services District, City of Paso Robles, San Miguel Community Services District, and Heritage Ranch Community Services District). The effort will evaluate local conditions, convene stakeholder groups to provide public input, and develop and approve management plans to protect groundwater quality resources. This project may provide better information to use in managing salinity of various discharges and developing appropriate water quality objectives for the sub-basins of the Paso Robles Groundwater Basin.

Both the Main Garrison and East Garrison provide long wastewater detention times. The detained water promotes a habitat for algae. In sunlight, the algal cells utilize carbon dioxide from the water and release oxygen during photosynthesis. Organic-consuming bacteria breathe that oxygen and produce carbon dioxide, which supply the algal cells with their desired source of carbon dioxide. On warm, sunny days, photosynthetic activity elevates oxygen concentrations in the surface water. Sometimes oxygen levels can rise above oxygen saturation levels. Conversely, oxygen levels are decreased at night, when photosynthesis decreases. Due to the intense use of carbon dioxide by algae, the pH of the near surface water can become elevated, creating conditions favorable for ammonia removal via volatilization. This photosynthetic activity occurs on a diurnal basis, causing both oxygen and pH levels to shift from a maximum in daylight hours to a minimum at night.

Understanding that pH naturally fluctuates, it is unrealistic to think that a detained wastewater will be relatively neutral. To obtain a neutral treatment process effluent, one would need to add a neutralization unit process. That would add costs and is not typically done. In addition, if one were to neutralize effluent, there is no guarantee that a neutral pH water would percolate to the receiving water (i.e., groundwater). Water pH can change during the disposal process.

This Water Board has a long-standing practice of establishing pH effluent limits for discharges to land. In both surface water and land discharges, the important consideration is the discharge's impact on the receiving water. However, while effluent pH limits are critical for protecting surface water, they are not so critical for protecting groundwater. Wastewater effluent pH is not necessarily equal to the pH of percolated wastewater. So, controlling effluent pH for land discharges may be irrelevant with respect to protecting groundwater. The treatment pond pH is not indicative of the pH of the percolated water that enters ground water. It is unlikely that the pH violations have resulted in measureable water quality impacts. We do not see supply wells taken out of service due to pH degradation. Although the discharger has a compliance history of repeated pH violations, for reasons cited above, the historic pH violations should not be interpreted as evidence supporting a receiving water impact.

ANTIDegradation ANALYSIS

State Water Board Resolution No. 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (hereafter the Antidegradation Policy) requires that disposal of waste into the waters of the state be regulated to achieve the highest water quality consistent with the maximum benefit to the people of the state. The quality of some waters is higher than what is established by adopted policies and that higher quality water shall be maintained to the maximum extent possible, consistent with the Antidegradation Policy. The Antidegradation Policy requires the following:

- a. Higher quality water will be maintained until it has been demonstrated to the state that any change will be consistent with the maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of the water, and will not result in water quality less than that prescribed in the policies.
- b. Any activity that produces a waste and discharges to existing high quality waters will be required to meet WDRs that will result in the best practicable treatment or control (BPTC) of the discharge necessary to ensure pollution or nuisance will not occur, and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.

The Antidegradation Policy requires maintenance of high quality of waters of the state unless limited degradation is consistent with the maximum benefit to the people of the state. When issuing waste discharge requirements, the Water Board must ensure that dischargers implement BPTC as necessary to maintain the highest water quality consistent with the maximum benefit to the people of the state.

These waste discharge requirements allow discharges to a groundwater body where there is insufficient data to determine if the local receiving water has high quality. To the extent the discharges covered under this Order may be to high quality waters, this Order authorizes limited degradation consistent with the Antidegradation Policy because of the following BPTC activities and considerations:

1. This Order limits the discharge flow rate such that, given the areal extent of Camp Roberts, there is an extremely low discharge rate per acre. Under maximum permitted flow, Camp Roberts' two wastewater treatment plants would discharge 434,000 gallons per day from the 42,784 acre facility, which would result in a discharge rate of about 10 gallons per acre per day. That is more than an order of magnitude less than discharge rates allowed under the Basin Plan for individual on-site systems, whose discharge rates are approximately 250 gallons per acre. Actual Camp Roberts discharge rates are much less than the maximum permitted flow rates. Discharge of domestic wastewater at lower flow rates inherently has less potential to significantly degrade water quality,
2. Camp Roberts' discharges are located remote from existing supply wells,
3. Camp Roberts has a history of compliant performance data for conventional pollutants,
4. Camp Roberts is upgrading the Main Garrison wastewater treatment plant to improve operations and conventional pollutant effluent quality,
5. Camp Roberts is upgrading the Main Garrison wastewater treatment plant to reduce nitrogen pollutants, which is a treatment step not taken by most other similar facilities,
6. Camp Roberts is participating in the Paso Robles Groundwater Basin Salt and Nutrient Management Plan effort, which is an effort to better understand and manage the Paso Robles Groundwater Basin,
7. Camp Roberts is evaluating the strategic use of source water supply wells to further minimize potential salinity impacts on groundwater (the source water supply for Camp Roberts consists of a number of wells with differing water quality),
8. Limited degradation of groundwater by some pollutants associated with domestic wastewater effluent, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The use of Camp Roberts as a military training facility contributes to the economic prosperity of the region, state, and country and is of maximum benefit to the people of the state. The use of Camp Roberts provides sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order provided the terms of the Basin Plan and other applicable State Water Board and Regional Water Board policies are consistently met.

9. While the proposed Order does not continue the existing order's salinity or pH limits, compliance with the proposed Order will ensure compliance with the Basin Plan.

ENVIRONMENTAL SUMMARY

The CANG has provided a Notice of Exemption documenting that the Camp Roberts facility is categorically exempt from the California Environmental Compliance Act (Public Resources Code, Section 21000, et. seq.).

Adoption of revised waste discharge requirements is intended to ensure compliance with laws and regulations administered by the Water Board. As such, adoption of revised waste discharge requirements is categorically exempt from the provisions of the California Environmental Quality Act pursuant to Section 15321 of the Resources Agency Guidelines. Mitigation measures to prevent nuisance and ensure protection of beneficial uses of surface and groundwaters will be implemented through this Order.

NOTIFICATION AND WRITTEN COMMENTS

The Central Coast Water Board staff has notified known interested parties of its intent to revise CANG's Camp Roberts WWTP waste discharge requirements and has provided an opportunity to submit written comments. Staff also posted notification to the Central Coast Water Board's "[Tentative Orders](#)" web site. Written comments were due no later than October 8, 2014.

Comments were solicited from

Walter Goodwater, L NFG NG CAARNG (US)
John Morrow CAARNG (US)
Bob Young Kennedy Jenks
Onder Caliskaner Kennedy Jenks
Chris Rose Avocet Environmental, Inc.
Richard LeWarne Monterey County Environmental Health Division Drinking Water Protection Services
Steve Shimek, Executive Director Monterey Coastkeeper

RECOMMENDATION

Adopt proposed Order No. R3-2014-0046

ATTACHMENTS

1. WDR Order No. R3-2014-0046
2. Monitoring and Reporting Program No. R3-2014-0046
3. Standard Provisions and Reporting Requirements for Waste Discharge Requirements
4. WDR Order No. R3-2004-0106 and Monitoring and Reporting Program No. R3-2004-0106
5. WDR Order No. R3-2010-0038 and Monitoring and Reporting Program No. R3-2010-0038

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California Army National Guard, Camp Roberts Military Reservation
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Figure 1 - Location Map

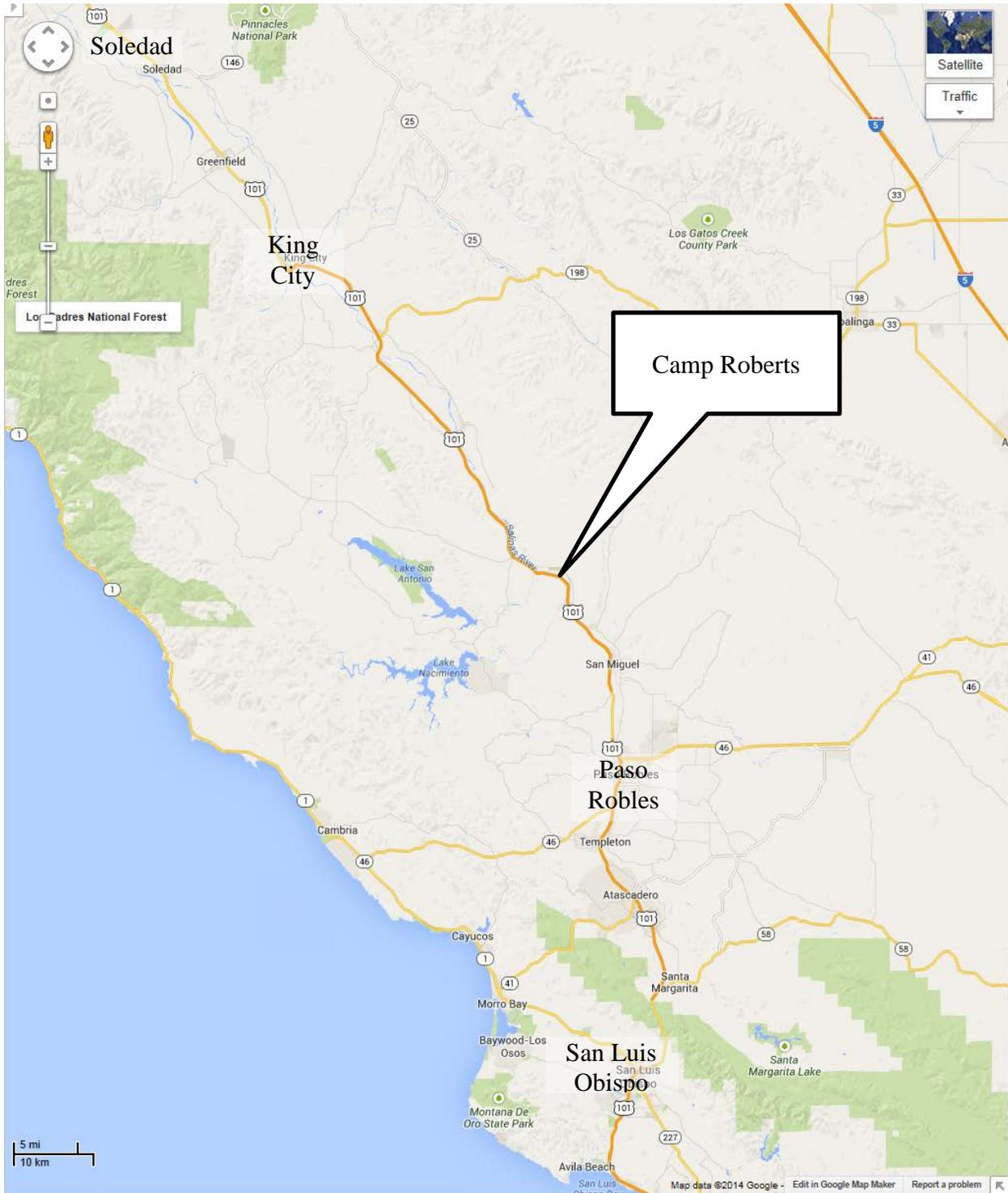


Figure 2 - Facility Map

