Appendix A
Air Quality-Greenhouse Gas Assessment

KUNZMAN ASSOCIATES, INC.

SAN ANTONIO WATER COMPANY

AIR QUALITY AND GLOBAL CLIMATE CHANGE IMPACT ANALYSIS

September 18, 2014

Traffic Engineering | Transportation Planning | Parking | Noise/Vibration | Expert Witness
Air Quality | Global Climate Change | Health Risk Assessment

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September 18, 2014

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I. Introduction and Setting

A. Purpose and Objectives

This study was performed to address the possibility of regional and local air quality impacts and global climate change impacts. The objectives of the study include:

- documentation of the atmospheric setting
- discussion of criteria pollutants and greenhouse gases
- discussion of the air quality and global climate change regulatory framework
- discussion of the air quality and greenhouse gases thresholds of significance
- analysis of the construction related air quality and greenhouse gas emissions
- analysis of the operations related air quality and greenhouse gas emissions
- recommendations for mitigation measures
- analysis of the conformity of the proposed project with the SCAQMD AQMP

The City of Upland is the lead agency responsible for preparation of this air quality analysis, in accordance with the California Environmental Quality Act authorizing legislation. Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with terms unique to air quality and global climate change, a definition of terms has been provided in Appendix A.

B. Project Location

The project site is located within the Cucamonga Creek Wash, south of the Cucamonga Dam, in the County of San Bernardino. Most of the site exists in an unincorporated area of San Bernardino County known as San Antonio Heights however parts of the project is within the Cities of Upland and Rancho Cucamonga. A vicinity map showing the project location is provided on Figure 1.

C. Project Description

The project site is proposed to conduct maintenance and repair of San Antonio Water Company's (SAWCo) facilities. Crosswalls were developed to capture and slow local storm flows in the Cucamonga Creek wash to allow for percolation into the groundwater basin. Over time the area behind the dam has filled in with aggregate material washed down from the local mountains immediately to the north. The material consists of varying sizes of aggregate ranging from large boulders to fine sand.

The proposed project consists of the excavation and removal of approximately 200,000 cubic yards of aggregate material from the north side of the Cucamonga dam. The material will vary in sizes ranging from large boulders to fine sand. The purpose of the project is twofold: 1) to repair the existing crosswalls used for water conservation; and 2) to allow the contractor/operator who will be processing the material to utilize the stockpiles when he has a project requiring aggregate material.

D. Phasing and Timing

The proposed project consists of two parts. The first part is the maintenance and repair of the crosswalls north of the Cucamonga Dam. The second part is the sorting, processing, and stockpiling of the aggregate material removed during the repairs and maintenance.

Crosswalls Maintenance and Repair

Maintenance and repair of the crosswalls be done over a period of approximately seven months between late 2014 and early 2015. At the end of this job, the crosswalls will be functioning again to capture the surface water runoff from the higher mountain areas and allow it to percolate into the groundwater basin.

Stockpiling, Sorting, and Processing

This phase will occur after the crosswalls maintenance and repair (early 2015) and take up to five years. Currently, there is approximately 200,000 cubic yards stockpiled at this location from previous maintenance projects. The existing stockpiled material will be kept in place and used as a barrier as the new material is transported to the processing area, sorted and stockpiled, before being hauled off-site. This material, along with the material hauled down from the Cucamonga crosswalls project, will be processed at the stockpile location using portable screens. The operator of the processing site will be using the stockpiled material for various development projects and when needed, he will haul processed material off-site to sites as fill material, landscaping and other auxiliary projects where this type of material is required. The existing stockpile is approximately 20 to 30 feet in height, the location of the new stockpile area is in an excavated area ranging in depth from 15 to 25 feet below ground level. This will allow the excess material to fill in the excavated area rather than creating another large stockpile.

The proposed contractor/operator estimates that the sorting, processing and depletion of the aggregate material will be completed within five years. Sorting/processing will be done in the former excavation area as the contractor/operator uses up the new material. At such time as the existing stockpile begins to be processed, the sorting and processing would continue to be done in the former excavation area, with material from the old stockpile being brought over via loaders.

The stockpile and processing area will sort the material into piles by size. Processing will be limited to material sorting to create new stockpiles of sized material such as boulders, “river rock”, cobbles, gravel, sand, etc. No washing is proposed, and no batching (asphalt or concrete) is proposed. After processing, the aggregate rock will be transported off-site for use by the contractor/operator.

The site, including stockpiles will be maintained by the operator. Stockpiles that would not be drawn down within a short period of time, may be subject to additional dust control such as a polymer coating. Temporary stockpiles of sorted materials will range in height up to 25 feet but would not exceed the height of the existing stockpile.

Off-site access exists along an existing unpaved road referred to as the southerly haul road. This road lies on the east side of the Cucamonga Creek wash and south of the Cucamonga dam. A portion of the southerly haul route crosses into the City of Rancho Cucamonga, as shown on Figure 2. There are approximately 20 residences within the City of Rancho Cucamonga that could potentially be impacted by trucks hauling material along this road, due to the road's proximity to the residences. The haul road is narrow and not wide enough for two-way traffic. When in use, traffic will be controlled using a flag person with communication devise to control the flow of traffic.

The contractor/operator anticipates that processing and hauling material off-site includes processing the 200,000 cubic yards of material from the proposed crosswalls maintenance/repair project, and the approximately 200,000 cubic yards of material already stockpiled at the site; for a total of 400,000 cy or 600,000 tons of aggregate material.

Employee trips would be minimal, 1.5 miles each way on the access road (just north of SR-210), as the operation will require only 5 to 6 employees who would arrive at the site via the southerly haul road accessed from the terminus of North Campus Road.

In addition, when the contractor/operator has an order to fill, it is anticipated that up to 2,500 tons of material per day could leave the site destined for job sites in the local area. Trucks could be a combination of single dump (one tractor/one trailer) or double dump (one tractor/2 trailers). For the purposes of this analysis, a double-dump configuration was assumed with each truck capable of carrying 25 tons of material, and hauling five loads per day. Therefore, on a typical day where 2,500 tons of material would leave the site, a total of 100 truck trips and up to 20 trucks completing five round trips. Because aggregate material is heavy and relatively expensive to haul, the average haul distance was assumed to be 10 miles (for a total of 11.5 miles for hauling access roads and off-site).

Processed material will be loaded onto rock haul trucks and hauled off-site via the existing County access road along the west side of the Cucamonga Creek Channel south, then west to the intersection of North Campus Ave and East 20th Street This stop controlled intersection also provides access to the Holliday Rock facility. From there the trucks will exit the site and travel south one block on North Campus Avenue to the light controlled interchange on the SR-210 Freeway.

E. Sensitive Receptors in Project Vicinity

Those who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD defines a sensitive receptor as a land use such as residences, schools, child care centers, athletic facilities, playgrounds, retirement homes and convalescent homes (South Coast Air Quality Management District 2008). Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours.

The nearest existing land uses are the single-family detached residential dwelling units that are about 200 feet west of the crosswall repair area and 400 feet west of the material processing site. There are two churches located within one mile in the community to the west; Grace Lutheran Church (located approximately 0.4 miles west) on West 21st Street,

and Life Bible Fellowship Church (located approximately 0.7 miles west) on North Euclid Avenue.

To the east of the project site, located within the community, are two churches and a school located within one mile of the project site. The churches are the Church of Jesus Christ of Latter-Day Saints and the Alta Loma Christian Church. Both are located approximately 0.25 miles east on Sapphire Street. The school is Floyd M. Stork Elementary School, located approximately 0.75 miles east of the site on Jasper Street.

F. Executive Summary of Findings

Construction-Source Emissions

Project construction-source emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. For localized emissions, the project will not exceed applicable Localized Significance Thresholds (LSTs) established by the SCAQMD.

Project construction-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). As discussed herein, the project will comply with all applicable SCAQMD construction-source emission reduction rules and guidelines. Project construction source emissions would not cause or substantively contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less-than-significant. Project-related GHG emissions are also considered to be less than significant.

Operational-Source Emissions

The project is not a source of long-term operational emissions. No operational analysis was required or performed.

Figure 1
Project Location Map

Figure 2
Site Plan

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II. Atmospheric Setting

The project site is located within the western portion of San Bernardino County, which is part of the South Coast Air Basin (Basin) that includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The South Coast Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the South Coast Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter. The project site is located toward the northeast portion of the South Coast Air Basin near the foot of the San Bernardino Mountains, which define the eastern boundary of the South Coast Air Basin.

The climate of southwestern San Bernardino County, technically called an interior valley subclimate of the Southern California's Mediterranean-type climate, is characterized by hot dry summers, mild moist winters with infrequent rainfall, moderate afternoon breezes, and generally fair weather. Occasional periods of strong Santa Ana winds and winter storms interrupt the otherwise mild weather pattern. The clouds and fog that form along the area's coastline rarely extend as far inland as southwestern San Bernardino County. When morning clouds and fog form, they typically burn off quickly after sunrise. The most important weather pattern from an air quality perspective is associated with the warm season airflow across the populated areas of the Los Angeles Basin. This airflow brings polluted air into southwestern San Bernardino County late in the afternoon. This transport pattern creates unhealthful air quality that may extend to the project site particularly during the summer months.

Winds are an important parameter in characterizing the air quality environment of a project site because they both determine the regional pattern of air pollution transport and control the rate of dispersion near a source. Daytime winds in southwestern San Bernardino County are usually light breezes from off the coast as air moves regionally onshore from the cool Pacific Ocean to the warm Mojave Desert interior of Southern California. These winds allow for good local mixing, but as discussed above, these coastal winds carry significant amounts of industrial and automobile air pollutants from the densely urbanized western portion of the South Coast Air Basin into the interior valleys which become trapped by the mountains that border the eastern edge of the South Coast Air Basin.

In the summer, strong temperature inversions may occur that limit the vertical depth through which air pollution can be dispersed. Air pollutants concentrate because they cannot rise through the inversion layer and disperse. These inversions are more common and persistent during the summer months. Over time, sunlight produces photochemical reactions within this inversion layer that creates ozone, a particularly harmful air pollutant. Occasionally, strong thermal convections occur which allows the air pollutants to rise high enough to pass over the mountains and ultimately dilute the smog cloud.

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily developed coastal areas of the basin,

there is not enough traffic in inland valleys to cause any winter air pollution problems. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the City of Upland are shown below in Table 1. Table 1 shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table 1

Upland Monthly Climate Data[1]

Descriptor	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Max. Temperature	68	69	71	76	79	84	90	92	89	80	74	68
Avg. Min. Temperature	43	45	47	49	54	58	62	62	60	55	47	42
Avg. Total Precipitation (in.)	3.11	4.76	2.63	1.20	0.23	0.09	0.00	0.03	0.15	1.05	1.62	2.45

[1] Source: http://www.weather.com/weather/wxclimatology/monthly/graph/USCA1179

III. Pollutants

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

A. Criteria Pollutants

The criteria pollutants consist of: ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants.

1. Nitrogen Dioxide

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NOx and the pollutants formed from NOx can be transported over long distances, following the patterns of prevailing winds. Therefore controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

2. Ozone

Ozone is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NOx and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated

with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

3. Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

4. Sulfur Dioxide

Sulfur Oxide (SOx) gases (including sulfur dioxide) are formed when fuel containing sulfur, such as coal and oil is burned, and from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

5. Lead

Lead is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid

battery manufacturers. Exposure of fetuses, infants and children to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

6. Particulate Matter

Particle matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. Particle matter is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

7. Volatile Organic Compounds (VOC)

Although not a criteria pollutant, reactive organic gases (ROGs), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably. Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

B. Other Pollutants of Concern

1. Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of toxic air contaminants include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important of these toxic air contaminants, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to toxic air contaminants can result from emissions from normal operations as well as accidental releases. Health effects of toxic air contaminants include cancer, birth defects, neurological damage, and death.

Toxic air contaminants are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity. Sources of toxic air contaminants include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to the 2005 California Almanac of Emissions and Air Quality, the majority of the estimated health risk from toxic air contaminants can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). Diesel particulate matter is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of diesel particulate matter as a toxic air contaminant in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in diesel particulate matter by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of diesel particulate matter as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to diesel particulate matter is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

2. Asbestos

Asbestos is listed as a TAC by ARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestoform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. Naturally occurring asbestos is not present in San Bernardino County. The nearest likely locations of naturally occurring asbestos, as identified in the General Location Guide for Ultramafic Rocks in California prepared by the California Division of Mines and Geology, is located in Santa Barbara County. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

C. Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent

greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO_2 and nitrous oxide (NOx) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

1. Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved in is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

2. Carbon Dioxide

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid 1700s. Each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left

unchecked, the IPCC projects that concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This could result in an average global temperature rise of at least two degrees Celsius.

3. Methane

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

4. Nitrous Oxide

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and in race cars).

5. Chlorofluorocarbons

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

6. Hydrofluorocarbons

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 HFC-134a are now about 10 parts per trillion

(ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

7. Perfluorocarbons

PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

8. Sulfur Hexafluoride

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

9. Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

10. Global Warming Potential

GHGs have varying global warming potential (GWP). The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO_2. One teragram of carbon dioxide equivalent (Tg CO_2e) is essentially the emissions of the gas multiplied by the global warming potential. One teragram is equal to one million metric tons. The carbon dioxide equivalent is a good way to assess emissions because it gives weight to the global warming potential of the gas. A summary of the atmospheric lifetime and the global warming potential of selected gases are summarized in Table 2. As shown in Table 2, the global warming potential of GHGs ranges from 1 to 23,900.

Table 2

Global Warming Potentials and Atmospheric Lifetimes[1]

Gas	Atmospheric Lifetime	Global Warming Potential[2] (100 Year Horizon)
Carbon Dioxide	50-200	1
Methane	12 ± 3	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC: Tetrafluoromethane	50,000	6,500
PFC: Hexafluoroethane	10,000	9,200
Sulfur Hexafluoride	3,200	23,900

[1] Source: United States Environmental Protection Agency, 2006.

[2] Compared to the same quantity of CO_2 emissions.

IV. Air Quality Management

A. Regulatory Setting

The proposed project is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

1. International

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by 2000 and methyl chloroform by 2005.

2. Federal - United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The National Ambient Air Quality Standards (NAAQS) pollutants were identified using medical evidence and are shown below in Table 3.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The State Implementation Plan (SIP) must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the State Implementation Plan (SIP).

As indicated below in Table 4, the Basin has been designated by the EPA as a non-attainment area for ozone (O_3) and suspended particulates (PM10 and PM2.5).

Currently, the Basin is in attainment with the ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO_2), and nitrogen dioxide (NO_2).

In 2011, the Basin exceeded federal standards for either ozone or PM2.5 at one or more locations on a total of 124 days, based on the current federal standards for 8-hour ozone and 24-hour PM2.5. Despite substantial improvements in air quality over the past few decades, some air monitoring stations in the Basin still exceed the NAAQS for ozone more frequently than any other stations in the U.S. In 2011, three of the top five stations that exceeded the 8-hour ozone NAAQS were located in the Basin (Central San Bernardino Mountains, East San Bernardino Valley, and Metropolitan Riverside County).

PM2.5 in the Basin has improved significantly in recent years, with 2010 and 2011 being the cleanest years on record. In 2011, only one station in the Basin (Metropolitan Riverside County at Mira Loma) exceeded the annual PM2.5 NAAQS and the 98th percentile form of the 24-hour PM2.5 NAAQS, as well as the 3-year design values for these standards. Basin-wide, the federal PM2.5 24-hour standard level was exceeded in 2011 on 17 sampling days.

The Basin is currently in attainment for the federal standards for carbon monoxide (CO), lead, sulfur dioxide (SO_2), and nitrogen dioxide (NO_2). While the concentration level of the new 1-hour NO_2 federal standard (100 ppb) was exceeded in the Basin at two stations (Central Los Angeles and Long Beach) on the same day in 2011, the NAAQS NO_2 design value has not been exceeded. Therefore, the Basin remains in attainment of the NO_2 NAAQS.

The EPA designated the Los Angeles County portion of the Basin as nonattainment for the revised (2008) federal lead standard (0.15 µg/m3, rolling 3-month average), due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in Vernon and the City of Industry exceeding the new standard in the 2007-2009 period of data used. For the most recent 2009-2011 data period, only one of these stations (Vernon) still exceeded the lead standard.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO_2 and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and

engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions will not themselves impose any requirements on industry or other entities. However, it is a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by the EPA and Department of Transportation on September 15, 2009.

3. State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the State Implementation Plan (SIP). The California Ambient Air Quality Standards (CAAQS) for criteria pollutants are shown in Table 3. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

The South Coast Air Basin has been designated by the CARB as a nonattainment area for ozone, PM10 and PM2.5. Currently, the South Coast Air Basin is in attainment with the ambient air quality standards for CO, lead, SO_2, NO_2, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

On June 20, 2002, the CARB revised the PM10 annual average standard to 20 µg/m3 and established an annual average standard for PM2.5 of 12 µg/m3. These standards were approved by the Office of Administrative Law in June 2003 and are now effective. On September 27, 2007 CARB approved the South Coast Air Basin and the Coachella Valley 2007 Air Quality Management Plan for Attaining the Federal 8-hour Ozone and PM2.5 Standards. The plan projects attainment for the 8-hour Ozone standard by 2024 and the PM2.5 standard by 2015.

The CARB is also responsible for regulations pertaining to toxic air contaminants. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into the South Coast Air Basin. The data is ranked by high,

intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

CARB also proposed interim statewide CEQA thresholds for GHG emissions and released Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act, on October 24, 2008. The State currently has no regulations that establish ambient air quality standards for GHGs. However, the State has passed laws directing CARB to develop actions to reduce GHG emissions, which are listed below.

Assembly Bill 1493

California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

Executive Order S-3-05

The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels
- 2020: Reduce greenhouse gas emissions to 1990 levels
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

The executive order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs.

Assembly Bill 32

In 2006, the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and best management practices that are technologically feasible and cost effective.

On December 6, 2007 CARB released the calculated Year 1990 GHG emissions of 427 million metric tons of CO_2e ($MMTCO_2e$). The 2020 target of 427 $MMTCO_2e$ requires the reduction of 169 $MMTCO_2e$, or approximately 30 percent from the State's projected 2020 business as usual emissions of 596 $MMTCO_2e$ and the reduction of 42 $MMTCO_2e$, or almost 10 percent from the 2002-2004 average GHG emissions. Under AB 32, CARB was required to adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of CO_2 in a calendar year to submit verification of GHG emissions by December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources that became enforceable on or before January 1, 2010.

On December 11, 2008 the CARB Board approved a Scoping Plan, with final adoption May 11, 2009 that proposed a variety of measures including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, a market-based cap-and-trade system, and a fee regulation to fund the program. In current pending litigation, Association of Irritated Residents v. California Air Resources Board, a California State trial court found that the analysis of the alternatives identified in the AB 32 Scoping Plan Functional Equivalent Document (FED) was not sufficient for informed decision-making and public review under CEQA. In response, CARB has appealed the decision. In addition, CARB prepared the *Supplement to the AB 32 Scoping Plan Functional Equivalent Document,* June 13, 2011. On August 24, 2011 CARB recertified the complete AB 32 Scoping Plan Functional Equivalent Environmental Document revised by the Final Supplement. In December, 2011 the Final Supplement was accepted as sufficient to fulfill the trial court's March order.

While local government operations were not accounted for in achieving the 2020 emissions reduction, local land use changes are estimated to result in a reduction of 5 metric tons of CO_2e, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments will play in successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of 2010 levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target. According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 metric tons of CO_2e (or approximately 1.2 percent of the GHG reduction target).

In May 2014, CARB released its *First Update to the Climate Change Scoping Plan* (CARB 2014). This *Update* identifies the next steps for California's leadership on climate change. While California continues on its path to meet the near-term 2020 greenhouse gas limit, it must also set a clear path toward long-term, deep

GHG emission reductions. This report highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.

Senate Bill 1368

Senate Bill 1368 (SB 1368) is the companion Bill of AB 32 and was adopted September, 2006. SB 1368 requires the California Public Utilities Commission (CPUC) to establish a performance standard for baseload generation of GHG emissions by investor-owned utilities by February 1, 2007 and for local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas-fired plant. Furthermore, the legislation states that all electricity provided to the State, including imported electricity, must be generated by plants that meet the standards set by California Public Utilities Commission (CPUC) and California Energy Commission (CEC).

Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel

cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Resource Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009 the Natural Resources Agency adopted amendments to the state CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporate GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance are provided and no specific mitigation measures are identified. The GHG emission reduction amendments went into effect on March 18, 2010 and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

Senate Bills 1078, 107, and X1-2 and Executive Orders S-14-08 and S-21-09
Senate Bill 1078 (SB 1078) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) changed the target date to 2010. Executive Order S-14-08 was signed on November 2008 and expands the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 375
Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG), which has authority to develop the SCS or APS. For the SCAG region, the targets set by CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 13 percent below 2005 per capita GHG emissions levels by 2035. On April 4, 2012, SCAG adopted the 2012-2035 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS), which meets the CARB emission reduction requirements. The Housing Element Update is required by the State to be completed within 18 months after RTP/SCS adoption or by October 2013.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS or APS. However, new provisions of CEQA would incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS or APS and categorized as "transit priority projects."

Senate Bill X7-7
Senate Bill X7-7 (SB X7-7), enacted on November 9, 2009, mandates water conservation targets and efficiency improvements for urban and agricultural water suppliers. SB X7-7 requires the Department of Water Resources (DWR) to develop a task force and technical panel to develop alternative best management practices for the water sector. In addition SB X7-7 required the

DWR to develop criteria for baseline uses for residential, commercial, and industrial uses for both indoor and landscaped area uses. The DWR was also required to develop targets and regulations that achieve a statewide 20 percent reduction in water usage.

Assembly Bill 939 and Senate Bill 1374

Assembly Bill 939 (AB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004 suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills.

California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008 and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009.

All buildings for which an application for a building permit is submitted on or after July 1, 2014 must follow the 2013 standards. The 2013 commercial standards are estimated to be 30 percent more efficient than the 2008 standards; 2013 residential standards are at least 25 percent more efficient. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

California Green Building Standards

On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. The Code is a comprehensive and uniform regulatory code for all residential, commercial and school buildings.

The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by

construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy. Enforcement is generally through the local building official.

CCR Title 24, Part 11: California Green Building Standards (Title 24) became effective in 2001 in response to continued efforts to reduce GHG emissions associated with energy consumption. CCR Title 24, Part 11 now require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory measures and an additional 130 provisions for optional use. Some key mandatory measures for commercial occupancies include specified parking for clean air vehicles, a 20 percent reduction of potable water use within buildings, a 50 percent construction waste diversion from landfills, use of building finish materials that emit low levels of volatile organic compounds, and commissioning for new, nonresidential buildings over 10,000 square feet.

4. Regional

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

The SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. The SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. A revised draft of the 2012 AQMP was released on September, 2012, and was adopted by the SCAQMD Board on December 7, 2012. The 2012 AQMP is now awaiting approval from CARB and the U.S. EPA. The 2012 AQMP is being prepared in order to meet the federal Clean Air Act requirement that all 24-hour PM2.5 non-attainment areas prepare a SIP, which was required to be submitted to the U.S. EPA by December 14, 2012 and demonstrate attainment with the 24-hour PM2.5 standard by 2014. The 2012 AQMP demonstrates attainment of the federal 24-hour PM2.5 standard by 2014 in the Basin through adoption of all feasible measures, and therefore, no extension of the attainment date is needed.

The 2007 AQMP demonstrated attainment with the 1997 8-hour ozone (80 ppb) standard by 2023, through implementation of future improvements in control techniques and technologies. These “black box” emissions reductions represent 65

percent of the remaining NOx emission reductions by 2023 in order to show attainment with the 1997 8-hour ozone NAAQS. Given the magnitude of these needed emissions reductions, additional NOx control measures have been provided in this AQMP even though the primary purpose of this AQMP is to show compliance with 24-hour PM2.5 emissions standards.

The 2012 AQMP is designed to satisfy the California Clean Air Act's (CCAA) emission reductions of 5 percent per year or adoption of all feasible measures requirements and fulfill the EPA's requirement to update transportation conformity emissions budgets based on the latest approved motor vehicle emissions model and planning assumptions. The 2012 AQMP updates and revises the previous 2007 AQMP. The 2012 AQMP was prepared to comply with the Federal and State CCAA and amendments, to accommodate growth, to reduce the high pollutant levels in the Basin, to meet Federal and State ambient air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. The purpose of the 2012 AQMP for the Basin is to set forth a comprehensive program that will lead this area into compliance with all federal and state air-quality planning requirements.

The 2012 AQMP builds upon the approaches taken in the 2007 AQMP for the attainment of federal PM and ozone standards, and highlights the significant amount of reductions needed and the need to engage in interagency coordinated planning of mobile sources to meet all of the federal criteria pollutant standards. Compared with the 2007 AQMP, the 2012 AQMP utilizes revised emissions inventory projections that use 2008 as the base year. On-road emissions are calculated using CARB EMFAC2011 emission factors and the transportation activity data provided by SCAG from their 2012 Regional Transportation Plan (2012 RTP). Off-road emissions were updated using CARB's 2011 In-Use Off-Road Fleet Inventory Model. Since the 2007 AQMP was finalized new area source categories such as LPG transmission losses, storage tank and pipeline cleaning and degassing, and architectural colorants, were created and included in the emissions inventories. The 2012 AQMP also includes analysis of several additional sources of GHG emissions such as landfills and could also assist in reaching the GHG target goals in the AB32 Scoping Plan.

The control measures in the 2012 AQMP consist of three components: 1) Basin-wide and episodic short-term PM2.5 measures; 2) Section 182(e)(5) implementation measures; and 3) Transportation control measures. Many of the control measures are not based on command and control regulations, but instead focus on incentives, outreach, and education to bring about emissions reductions through voluntary participation and behavioral changes. More broadly, a transition to zero- and near-zero emission technologies is necessary to meet 2023 and 2032 air quality standards and 2050 climate goals. Many of the same technologies will address both air quality and climate needs.

During construction and operation, the project must comply with applicable rules and regulations. The following are rules the project may be required to comply with, either directly, or indirectly:

SCAQMD Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

SCAQMD Rule 403 governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors. Rule 403 measures may include but are not limited to the following:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least three times daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 meters (2 feet) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour (mph) or less.
- Suspension of all grading activities when wind speeds (including instantaneous wind gusts) exceed 25 mph.
- Bumper strips or similar best management practices shall be provided where vehicles enter and exit the construction site onto paved roads or wash off trucks and any equipment leaving the site each trip.
- Replanting disturbed areas as soon as practical.
- During all construction activities, construction contractors shall sweep on-site and off-site streets if silt is carried to adjacent public thoroughfares, to reduce the amount of particulate matter on public streets. All sweepers shall be compliant with SCAQMD Rule 1186.1, Less Polluting Sweepers.

SCAQMD Rule 445 prohibits permanently installed wood burning devices into any new development. A wood burning device means any fireplace, wood burning heater, or

pellet-fueled wood heater, or any similarly enclosed, permanently installed, indoor or outdoor device burning any solid fuel for aesthetic or space-heating purposes, which has a heat input of less than one million British thermal units per hour.

SCAQMD Rule 481 applies to all spray painting and spray coating operations and equipment. The rule states that a person shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:

(1) The spray coating equipment is operated inside a control enclosure, which is approved by the Executive Officer. Any control enclosure for which an application for permit for new construction, alteration, or change of ownership or location is submitted after the date of adoption of this rule shall be exhausted only through filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or through a water wash system designed to be equally effective for the purpose of air pollution control.

(2) Coatings are applied with high-volume low-pressure, electrostatic and/or airless spray equipment.

(3) An alternative method of coating application or control is used which has effectiveness equal to or greater than the equipment specified in the rule.

SCAQMD Rule 1108 governs the sale, use, and manufacturing of asphalt and limits the volatile organic compound (VOC) content in asphalt used in the South Coast Air Basin. This rule would regulate the VOC content of asphalt used during construction. Therefore, all asphalt used during construction of the project must comply with SCAQMD Rule 1108.

SCAQMD Rule 1113 governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of the project must comply with SCAQMD Rule 1113.

SCAQMD Rule 1143 governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

SCAQMD Rule 1186 limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency or special district such as water, air, sanitation, transit, or school district.

SCAQMD Rule 1303 governs the permitting of re-located or new major emission sources, requiring Best Available Control Measures and setting significance limits for PM_{10} among other pollutants.

SCAQMD Rule 1401, New Source Review of Toxic Air Contaminants, specifies limits for maximum individual cancer risk, cancer burden, and non-cancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units, which emit toxic air contaminants.

SCAQMD Rule 2202, On-Road Motor Vehicle Mitigation Options, is to provide employers with a menu of options to reduce mobile source emissions generated from employee commutes, to comply with federal and state Clean Air Act requirements, Health & Safety Code Section 40458, and Section 182(d)(1)(B) of the federal Clean Air Act. It applies to any employer who employs 250 or more employees on a full or part-time basis at a worksite for a consecutive six-month period calculated as a monthly average.

In order to assist local agencies with direction on GHG emissions, the SCAQMD organized a working group and adopted Rules 2700, 2701, 2702, and 3002 which are described below.

SCAQMD Working Group

Since neither CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual thresholds of 10,000 MTCO2e for industrial uses.

Rules 2700 and 2701

The SCAQMD adopted Rules 2700 and 2701 on December 5, 2008, which establishes the administrative structure for a voluntary program designed to quantify GHG emission reductions. Rule 2700 establishes definitions for the various terms used in Regulation XXVII – Global Climate Change. Rule 2701 provides specific protocols for private parties to follow to generate certified GHG emission reductions for projects within the district. Approved protocols include forest projects, urban tree planting, and manure management. The SCAQMD is currently developing additional protocols for other reduction measures. For a GHG emission reduction project to qualify, it must be verified and certified by the SCAQMD Executive Officer, who has 60 days to approve or deny the Plan to reduce GHG emissions. Upon approval of the Plan, the Executive Officer issues required to issue a certified receipt of the GHG emission reductions within 90 days.

Rule 2702

The SCAQMD adopted Rule 2702 on February 6, 2009, which establishes a voluntary air quality investment program from which SCAQMD can collect funds from parties that desire certified GHG emission reductions, pool those funds, and use them to purchase or fund GHG emission reduction projects within two years, unless extended by the Governing Board. Priority will be given to projects that result in co-benefit emission reductions of GHG emissions and criteria or toxic air pollutants within environmental justice areas. Further, this voluntary program may compete with the

cap-and-trade program identified for implementation in CARB's Scoping Plan, or a Federal cap and trade program.

Rule 3002

The SCAQMD amended Rule 3002 on November 5, 2010 to include facilities that emit greater than 100,000 tons per year of CO_2e are required to apply for a Title V permit by July 1, 2011. A Title V permit is for facilities that are considered major sources of emissions.

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the South Coast Air Basin. Instead, this is controlled through local jurisdictions in accordance with the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the CEQA Air Quality Handbook (SCAQMD CEQA Handbook), prepared by the SCAQMD, 1993, with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs of the AQMP. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that the SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the South Coast Air Basin, and adverse impacts will be minimized.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the Federally designated MPO for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the Regional Transportation Plan and Regional Transportation Improvement Plan (RTIP), which addresses regional development and growth forecasts. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The Regional Transportation Plan, Regional Transportation Improvement Plan, and AQMP are based on projections originating within the City and County General Plans.

5. Local

Local jurisdictions, such as the County of San Bernardino, and City of Upland have the authority and responsibility to reduce air pollution through its police power and decision-making authority. However this site extends slightly into the neighboring city

of Upland. As such the project would be subject to comply with both the City of Upland and County of San Bernardino regulations.

Specifically, the both the County and City responsible for the assessment and mitigation of air emissions resulting from its land use decisions. They are also responsible for the implementation of transportation control measures as outlined in the 2007 AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with the CEQA requirements, the County and City do not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the County relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

The County of San Bernardino General Plan contains the following air quality-related goals and policies that are applicable to the proposed project:

GOAL CO 4. The County will ensure good air quality for its residents, businesses, and visitors to reduce impacts on human health and the economy.

POLICIES

CO 4.1 Because developments can add to the wind hazard (due to increased dust, the removal of wind breaks, and other factors), the County will require either as mitigation measures in the appropriate environmental analysis required by the County for the development proposal or as conditions of approval if no environmental document is required, that developments in areas identified as susceptible to wind hazards to address site-specific analysis of:

a. Grading restrictions and/or controls on the basis of soil types, topography or season.

c. Dust-control measures during grading, heavy truck travel, and other dust generating activities.

CO 4.2 Coordinate air quality improvement technologies with the South Coast Air Quality Management District (SCAQMD) and the Mojave Air Quality Management District (MAQMD) to improve air quality through reductions in pollutants from the region.

The City of Upland General Plan contains the following air quality-related goals and policies that are applicable to the proposed project:

Goal 4 A pattern of land uses which can be efficiently served by diversified transportation system and land development projects which directly and indirectly generate the minimum feasible air pollutants.

Policy 4.3 **Protect Sensitive Receptors**

Support regional approach to regulating the location and design of land uses which are especially sensitive to air pollution.

Programs:

4.3.1 Participate with the SCAQMD in jointly formulating appropriate standards for regulating the location and protection of sensitive receptors (schools, day care facilities, hospitals and the like) from excessive and hazardous emissions.

Goal 5 The minimum practicable particulate emissions from the construction and operation of roads and buildings.

Policy 5.1 **Control Dust**

Reduce particulate emissions from roads, parking lots, construction sites, and agricultural lands.

Programs:

5.1.1 Adopt incentives, regulations and procedures to manage paved roads so they produce the minimum practicable level of particulates.

5.1.2 Adopt incentives, regulations and procedures to minimize particulate emissions during road, parking lot, and building construction.

5.1.3 Adopt incentives, regulations, and procedures to control particulate emissions from unpaved roads, drives, vehicle maneuvering areas and parking lots.

Policy 5.2 **Reduce Emissions from Building Materials/Methods**

Reduce emissions from building materials and methods which generate excessive pollutants.

Programs:

5.2.1 Adopt incentives, regulations and procedures to prohibit the use of building materials and methods which generate excessive pollutants.

B. Monitored Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates of the existing emissions in the Basin provided in the Revised Draft 2012 Air Quality Management Plan, prepared by SCAQMD, September 2012, indicate that collectively, mobile sources account for 59 percent of the VOC, 88 percent of the NOx emissions and 40 percent of directly emitted PM2.5, with another 10 percent of PM2.5 from road dust.

The SCAQMD has divided the South Coast Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in the Northwest San Bernardino Air Monitoring Area (Area 32), which is located in the northwestern portion of San Bernardino County and covers the Upland and Rancho Cucamonga areas to the Los Angeles County Line in the west. Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the project site have been used; Upland Monitoring Station (Upland Station) and Fontana-Arrow Highway Monitoring Station (Fontana Station).

The Upland Station is located approximately 2.4 miles south of the project site at 1350 San Bernardino Road, Upland and the Fontana Station is located approximately 8.3 miles southeast of the project site at 14360 Arrow Boulevard, Fontana. Table 5 presents the monitored pollutant levels from these Monitoring Stations. Ozone, CO, and NO_2 were measured at the Upland Station; PM10 and PM2.5 were measured at the Fontana Station. However, it should be noted that due to the air monitoring stations distances from the project site, recorded air pollution levels at the air monitoring stations reflect, with varying degrees of accuracy, local air quality conditions at the project site.

Table 5 summarizes 2011 through 2013 published monitoring data from that station, which is the most recent 3-year period available. The data shows that during the past few years, the project area has exceeded the ozone and particulate matter (PM10 and PM2.5) standards. However, it should be noted that due to the air monitoring station distance from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site.

Ozone

During the 2011 to 2013 monitoring period, the State 1-hour concentration standard for ozone has been exceeded between 27 and 42 days each year at the Upland Station. The State 8-hour ozone standard has been exceeded between 4 and 66 days each year over the past three years at the Upland Station. The Federal 8-hour ozone standard was exceeded between 27 and 45 days each year over the past three years at the Perris Station.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many

areas of the SCAQMD contribute to the ozone levels experienced at the monitoring station, with the more significant areas being those directly upwind.

Carbon Monoxide

CO is another important pollutant that is due mainly to motor vehicles. The Upland Station did not record an exceedance of the state or federal 1-hour or 8-hour CO standards for the last three years.

Nitrogen Dioxide

The Upland Station did not record an exceedance of the State or Federal NO_2 standards for the last three years.

Particulate Matter

The State 24-hour concentration standards for PM10 have been estimated to have been exceeded between 24.4 and 90.2 days each year over the past three years at the Fontana Station. Over the past three years the Federal 24-hour standards for PM10 have not been exceeded at the Fontana Station. The annual PM10 concentrations at the Fontana Station have exceeded the State's standard for the past three years and have not exceeded the Federal standard for the past three years.

The Federal 24 hour standard for PM2.5 has been estimated to have been exceeded between 3 and 10.6 days each year over the past three years at the Fontana Station. The annual average PM2.5 concentration has exceeded the State's standard for the past three years and has not exceeded the Federal standard for the past three years. There does not appear to be a noticeable trend for PM10 or PM2.5 in either maximum particulate concentrations or days of exceedances in the area. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

Table 3

State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O_3)	0.09 ppm/1-hour 0.07 ppm/8-hour	0.075 ppm/8-hour	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; (f) Property damage.
Carbon Monoxide (CO)	20.0 ppm/1-hour 9.0 ppm/8-hour	35.0 ppm/1-hour 9.0 ppm/8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	0.18 ppm/1-hour 0.03 ppm/annual	100 ppb/1-hour 0.053 ppm/annual	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm/1-hour 0.04 ppm/24-hour	75 ppb/1-hour 0.14 ppm/annual	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM_{10})	50 µg/m^3/24-hour 20 µg/m^3/annual	150 µg/m^3/24-hour	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in elderly.
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m^3 / annual	35 µg/m^3/24-hour 15 µg/m^3/annual	
Sulfates	25 µg/m^3/24-hour	No Federal Standards	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) property damage.
Lead	1.5 µg/m^3/30-day	0.15 µg/m^3/3-month rolling	(a) Learning disabilities; (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer-visibility of 10 miles or more due to particles when humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

[1] Source: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf .

Table 4

South Coast Air Basin Attainment Status

Pollutant	Averaging Time	National Standards[1]	Attainment Date[2]	California Standards[3]
1979 1-Hour Ozone[4]	1-Hour (0.12 ppm)	Nonattainment (Extreme)	11/15/2010 (Not attained[4])	Extreme Nonattainment
1997 8-Hour Ozone[5]	8-Hour (0.08 ppm)	Nonattainment (Extreme)	6/15/2024	Nonattainment
2008 8-Hour Ozone	8-Hour (0.075 ppm)	Nonattainment (Extreme)	12/31/2032	
CO	1-Hour (35 ppm) 8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007 (Attained)	Maintenance
NO_2[6]	1-Hour (100 ppb) Annual (0.053 ppm)	Attainment (Maintenance)	9/22/1998 (Attained)	Attainment
SO_2[7]	1-Hour (75 ppb)	Designations Pending	Pending	Attainment
	24-Hour (0.14 ppm) Annual (0.03 ppm)	Unclassifiable/ Attainment	3/19/1979 (Attained)	
PM10	24-Hour (150 µg/m^3)	Nonattainment (Serious)[8]	12/31/2006 (Redesignation request submitted)[8]	Nonattainment
PM2.5	24-Hour (35 µg/m^3)	Unclassifiable/ Attainment	Attained	Unclassified
Lead	3-Months Rolling (0.15 µg/m^3)	Nonattainment (Partial)[9]	12/31/2015	Nonattainment

[1] Obtained from Draft 2012 AQMP, SCAQMD, 2012. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassified/Attainment or Unclassifiable.

[2] A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for attainment demonstration.

[3] Obtained from http://www.arb.ca.gov/desig/adm/adm.htm.

[4] 1-hour O_3 standard (0.13 ppm) was revoked, effective June 15, 2005; however, the Basin has not attained this standard based on 2008-2010 data has some continuing obligations under the former standard.

[5] 1997 8-hour O_3 standard (0.08 ppm) was reduced (0.075 ppm), effective May 27, 2008; the 1997 O3 standard and most related implementation rules remain in place until the 1997 standard is revoked by U.S. EPA.

[6] New NO_2 1-hour standard, effective August 2, 2010; attainment designations January 20, 2012; annual NO_2 standard retained.

[7] The 1971 annual and 24-hour SO_2 standards were revoked, effective August 23, 2010; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO_2 1-hour standard. Area designations expected in 2012, with SSAB designated Unclassifiable/Attainment.

[8] Annual PM10 standard was revoked, effective December 18, 2006; redesignation request to Attainment of the 24-hour PM10 standard is pending with U.S. EPA

[9] Partial Nonattainment designation - Los Angeles County portion of Basin only.

Table 5

Local Area Air Quality Monitoring Summary[1]

Pollutant (Standard)[2]	Year		
	2011	2012	2013
Ozone:[3]			
Maximum 1-Hour Concentration (ppm)	0.145	0.136	0.143
Days > CAAQS (0.09 ppm)	**36**	**42**	**25**
Maximum 8-Hour Concentration (ppm)	0.122	0.111	0.111
Days > NAAQS (0.08 ppm)	**36**	**45**	**27**
Days > CAAQS (0.070 ppm)	**45**	**66**	**44**
Carbon Monoxide:[3]			
Maximum 8-Hour Concentration (ppm)	1.27	0.93	*
Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:[3]			
Maximum 1-Hour Concentration (ppm)	0.0685	0.0667	0.0621
Days > NAAQS (0.25 ppm)	0	0	0
Inhalable Particulates (PM10):[4]			
Maximum 24-Hour Concentration ($\mu g/m^3$)	84.0	67	90
Days > NAAQS (150 $\mu g/m^3$)	0	0	0
Days > CAAQS (50 $\mu g/m^3$)	**4**	**5**	**15**
Annual Arithmetic Mean (AAM) ($\mu g/m^3$)	30.5	32.9	38.8
Annual > NAAQS (50 $\mu g/m^3$)	No	No	No
Annual > CAAQS (20 $\mu g/m^3$)	**Yes**	**Yes**	**Yes**
Ultra-Fine Particulates (PM2.5):[4]			
Maximum 24-Hour Concentration ($\mu g/m^3$)	60.1	39.9	43.6
Days > NAAQS (35 $\mu g/m^3$)	**2**	**3**	**1**
Annual Arithmetic Mean (AAM) ($\mu g/m^3$)	12.5	12.8	12.2
Annual > NAAQS (15 µg/m3)	No	No	No
Annual > CAAQS (12 $\mu g/m^3$)	**Yes**	**Yes**	**Yes**

[1] Source: http://www.arb.ca.gov/adam/

[2] CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million

[3] Data obtained from the Upland Monitoring Station.

[4] Data obtained from the Fontana-Arrow Highway Monitoring Station.

* http://www.arb.ca.gov/adam/ - insufficient (OR no) data available to determine the value

V. Air Quality Standards

A. Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, the SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the South Coast Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table 6.

B. Local Air Quality

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The SCAQMD has also provided Final Localized Significant Threshold Methodology (LST Methodology), June 2003, which details the methodology to analyze local air emission impacts. The Localized Significant Threshold Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5.

The significance thresholds for the local emissions of NO_2 and CO are determined by subtracting the highest background concentration from the last three years of these pollutants from Table 5 above, from the most restrictive ambient air quality standards for these pollutants that are outlined in the Localized Significant Thresholds. Table 6 shows the ambient air quality standards for NO_2, CO, and PM10 and PM2.5.

C. Toxic Air Contaminants

Construction

The construction equipment would emit DPM, which is a carcinogen. However, the DPM emissions are short-term in nature. Determination of risk from DPM is considered over a 70-year exposure period because carcinogenic risk is directly related to sustained exposure. In contrast, construction activities for the project are only expected to last approximately seven months. Thus, the duration of construction activities would represent only a small fraction of the 70-year exposure period used as the basis for assessing the significance of carcinogenic risk exposure and, therefore, would not represent a source of sustained DPM

emissions. Therefore, considering the short time frame, exposure to DPM is anticipated to be less than significant.

Operation

The project will 1) repair the existing crosswalls used for water conservation; and 2) to allow the contractor/operator who will be processing the material to utilize the stockpiles when he has a project requiring aggregate material. Sensitive receptors would not be exposed to toxic sources of air pollution.

D. Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

> "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
>
> The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals."

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

E. Greenhouse Gases

The project is within the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

SCAQMD Regulation XXVII, Climate Change. SCAQMD Regulation XXVII currently includes three rules:

- The purpose of Rule 2700 is to define terms and post global warming potentials.
- The purpose of Rule 2701, SoCal Climate Solutions Exchange, is to establish a voluntary program to encourage, quantify, and certify voluntary, high quality certified greenhouse gas emission reductions in the SCAQMD.
- Rule 2702, Greenhouse Gas Reduction Program, was adopted on February 6, 2009. The purpose of this rule is to create a Greenhouse Gas Reduction Program for greenhouse gas emission reductions in the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

A variety of agencies have developed greenhouse gas emission thresholds and/or have made recommendations for how to identify a threshold. However, the thresholds for projects in the jurisdiction of the SCAQMD remain in flux. The California Air Pollution Control Officers Association explored a variety of threshold approaches, but did not

recommend one approach (2008). The ARB recommended approaches for setting interim significance thresholds (California Air Resources Board 2008b), in which a draft industrial project threshold suggests that non-transportation related emissions under 7,000 MTCO2e per year would be less than significant; however, the ARB has not approved those thresholds and has not published anything since then. The Bay Area Air Quality Management District and the San Joaquin Valley Air Pollution Control District have both developed greenhouse gas thresholds. However, those thresholds are not applicable to the project since the project is under the jurisdiction of the SCAQMD. The SCAQMD is in the process of developing thresholds, as discussed below.

SCAQMD Threshold Development. On December 5, 2008, the SCAQMD Governing Board adopted an interim greenhouse gas significance threshold for stationary sources, rules, and plans where the SCAQMD is lead agency (SCAQMD permit threshold). The SCAQMD permit threshold consists of five tiers. However, the SCAQMD is not the lead agency for this project. Therefore, the five permit threshold tiers do not apply to the proposed project.

The SCAQMD is in the process of preparing recommended significance thresholds for greenhouse gases for local lead agency consideration ("SCAQMD draft local agency threshold"); however, the SCAQMD Board has not approved the thresholds as of the date of the Notice of Preparation. The current draft thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a greenhouse gas reduction plan. If a project is consistent with a qualifying local greenhouse gas reduction plan, it does not have significant greenhouse gas emissions.
- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to a project's operational emissions. If a project's emissions are under one of the following screening thresholds, then the project is less than significant:
    - All land use types: 3,000 MTCO2e per year
    - Based on land use type: residential: 3,500 MTCO2e per year; commercial: 1,400 MTCO2e per year; or mixed use: 3,000 MTCO2e per year.
- Tier 4 has the following options:
    - Option 1: Reduce emissions from business as usual (BAU) by a certain percentage; this percentage is currently undefined (City of Moreno Valley CAP calls for a community-wide reduction of 15 % from 2007 BAU emissions by 2020).
    - Option 2: Early implementation of applicable AB 32 Scoping Plan measures.
    - Option 3, 2020 target for service populations (SP), which includes residents and employees: 4.8 MTCO2e/SP/year for projects and 6.6 MTCO2e/SP/year for plans;
    - Option 3, 2035 target: 3.0 MTCO2e/SP/year for projects and 4.1 MTCO2e/SP/year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's draft threshold uses the Executive Order S-3-05 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap carbon dioxide concentrations at 450 ppm, thus stabilizing global climate.

To determine whether the project is significant, this analysis uses the SCAQMD draft local agency tier 3 threshold of 3,000 MTCO2e per year for all land use types as a screening threshold.

The City of Upland does not have a Climate Action Plan or Greenhouse Gas Reduction Plan, however the majority of the project is in the County of San Bernardino which has adopted the County of San Bernardino Greenhouse Gas Emissions Reduction Plan in September, 2011. The Plan presents a comprehensive set of actions to reduce the County's internal and external GHG emissions to 15 percent below current levels by 2020, consistent with the AB 32 Scoping Plan.

The Greenhouse Gas reduction plan develops a target of a 15 percent decrease in GHG emissions over current levels by 2020. The Greenhouse Gas Analysis has been prepared to assist the County in conforming to the GHG emissions reductions as mandated under AB 32. Consistent with the CARB Scoping Plan, the County of San Bernardino has chosen a reduction target of 15 percent below 2007 GHG emissions levels by 2020.

The County of San Bernardino Greenhouse Gas Reduction plan establishes goals, objectives and strategies to help reduce the countywide GHG emissions levels. The project will be required to comply with the following goals, objectives and strategies within the GHG Reduction Plan which are applicable to the project.

GHG Goal TL 2: Reduce GHG emissions by reducing vehicle miles traveled, by encouraging the use of alternative fuels, alternative modes of transportation and providing roadway improvements that improve mobility and reduce congestion.

Objective GHG TL 2.4:

Support and promote the use of low- and zero- emission vehicles, and alternative fuels and other measures to directly reduce emissions from motor vehicles.

GHG Goal TL 4: Reduce GHG emissions by regulating the idling of diesel-fueled vehicles and equipment and encouraging the use of alternative fuels and transportation technologies.

Objective GHG TL 4.1:

Reduce the exhaust emissions of diesel-fueled vehicles and equipment.

Reduction Strategies

1. Anti-Idling Enforcement Policy. The County requires that diesel-fueled vehicles and off-road equipment shall not be left idling on-site for periods in excess of five minutes.

2. Diesel Exhaust Emissions Control Measures. The County will continue to implement the County's diesel exhaust emissions control measures, which extend beyond the County's idling restriction described above in the anti-idling enforcement policy. The County's diesel exhaust control measures described in Development Code Section 83.01.040, apply to all discretionary land use projects approved by the County on or after January 15, 2009. These measures include, but are not limited to:

   - Off-Road Diesel Vehicle/Equipment Operations. All business establishments and contractors that use off-road diesel vehicle/equipment as part of their normal business operations shall adhere to the following measures during their operations in order to reduce diesel particulate matter emissions from diesel-fueled engines: Use reformulated ultra low-sulfur diesel fuel in equipment and use equipment certified by the U. S. Environmental Protection Agency (EPA) or that pre-dates EPA regulations.

   - Maintain engines in good working order to reduce emissions.

   - Signs shall be posted requiring vehicle drivers to turn off engines when parked.

   - Any requirements or standards subsequently adopted by the South Coast Air Quality Management District, the Mojave Desert Air Quality Management District or the California Air Resources Board.

   - Provide temporary traffic control during all phases of construction.

   - On-site electrical power connections shall be provided for electric construction tools to eliminate the need for diesel-powered electric generators, where feasible.

   - Maintain construction equipment engines in good working order to reduce emissions. The developer shall have each contractor certify that all construction equipment is properly serviced and maintained in good operating condition.

   - Contractors shall use ultra low sulfur diesel fuel for stationary construction equipment as required by Air Quality Management District (AQMD) Rules 431.1 and 431.2 to reduce the release of undesirable emissions.

   - Substitute electric and gasoline-powered equipment for diesel-powered equipment, where feasible.

Table 6

SCAQMD Air Quality Significance Thresholds[1]

Mass Daily Thresholds		
Pollutant	Construction (lbs/day)	Operation (lbs/day)
NOx	100	55
VOC	75	55
PM10	150	150
PM2.5	55	55
SOx	150	150
CO	550	550
Lead	3	3

Toxic Air Contaminants, Odor and GHG Thresholds	
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index > 1.0 (project increment)
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402
GHG	10,000 MT/yr CO2e for industrial facilities

Ambient Air Quality Standards	
Pollutant	SCAQMD Standards
NO2 -1-hour average	0.18 ppm (338 µg/m^3)
PM10 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 ug/m^3
PM2.5 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 µg/m^3
SO2 1-hour average 24-hour average	 0.25 ppm 0.04 ppm
CO 1-hour average 8-hour average	 20 ppm (23,000 µg/m^3) 9 ppm (10,000 µg/m^3)
Lead 30-day average Rolling 3-month average Quarterly average	 1.5 µg/m^3 0.15 µg/m^3 1.5 µg/m^3

[1] Source: http://www.aqmd.gov/ceqa/handbook/signthres.pdf

VI. Short-Term Construction Impacts

Construction activities associated with the proposed project would have the potential to generate air emissions, toxic air contaminant emissions, and odor impacts. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. Processing of 200,000 CY of dirt is equal to a disturbance of 41.32 acres.

Maintenance and repair of the crosswalls be done over a period of approximately seven months between late 2014 and early 2015. At the end of this job, the crosswalls will be functioning again to capture the surface water runoff from the higher mountain areas and allow it to percolate into the groundwater basin.

The Stockpiling, Sorting, and Processing phase will occur after the crosswalls maintenance and repair (in early 2015) and take up to five years.

In addition, when the contractor/operator has an order to fill, it is anticipated that up to 2,500 tons of material per day could leave the site destined for job sites in the local area. Trucks could be a combination of single dump (one tractor/one trailer) or double dump (one tractor/2 trailers). For the purposes of this analysis, a double-dump configuration was assumed with each truck capable of carrying 25 tons of material, and hauling five loads per day. Therefore, on a typical day where 2,500 tons of material would leave the site, a total of 100 truck trips and up to 20 trucks completing five round trips. Because aggregate material is heavy and relatively expensive to haul, the average haul distance was assumed to be 10 miles (for a total of 11.5 miles for hauling access roads and off-site).

<u>Construction Schedule and Equipment</u>

Crosswalls Maintenance and Repair: The maintenance/repair and stockpiling activities will take place along the northerly haul route, from the crosswalls to the temporary stockpile area. It will take approximately seven months to complete this first phase beginning in late 2014, with operations six days per week (M-S) between the hours of 7:00 AM and 5:00 PM, using the following equipment:

- 2 Excavators
- 1 Water Truck
- 1 Bulldozer
- 5 haul trucks

Up to 15 employee vehicles to access the work site. Work will begin on the de-silting, regular maintenance of the crosswalls by removing the materials built up behind the crosswalls using a track excavator and bulldozer. SAWCo staff has calculated a gross amount of material to be removed from the crosswalls area at 200,000 cubic yards (300,000 tons). Based on this number,

and a schedule of about seven months, the amount of material to be removed each day would be approximately 1,700 tons. The rock haul trucks to be utilized can carry up to 20 tons per load along a distance of 4,400 linear feet (along the northern access route). Therefore an average of 85 loads per day could be transported from the crosswalls area to the temporary stockpile area. At the existing, temporary stockpile area south of the dam, the aggregate will be sorted by screens, then separated material will stockpiled by conveyor according to the size of material. However, it should be noted, that processing of material *will not occur* simultaneously with the crosswalls maintenance/repair activities. There will be no overlay between these two activities.

Processing/Stockpiling

Material processing and loading from the stockpiles will be ongoing over approximately five years as material is needed with operations five days per week (M-F) between the hours of 7:00 AM and 5:00 PM, using the following equipment:

- 2 Front End Wheel Loaders
- Conveyor (20 HP)
- 2 Portable Screens (127 HP)
- 2 Water Trucks
- Small Excavator
- Portable Rock Crusher
- 3 Dozers

Up to 10 employee vehicles when processing and off-site delivery is conducted. Rock haul trucks to remove the processed material from the site (see below for further details). Electricity for the operation will come from the grid as there are local electric distribution lines adjacent to the project site. Water will be provided by the San Antonio Water Company from its facilities at 24th Street.

For the purposes of this Air Quality Assessment assumed that a daily rate of production during the processing of aggregate material would be an average of 450 tons of material per day, or 120,000 tons annually, based on a production schedule of 5 days per week and hours of operation between 7:00 AM and 5:00 PM. No nighttime processing is proposed for this project so only security lighting would be required around the office trailer, a motion sensor activated light on the trailer that will be placed behind the existing stockpile. The contractor/operator anticipates that processing and hauling material off-site could take up to five years and includes processing the 200,000 cubic yards of material from the proposed crosswalls maintenance/repair project, and the approximately 200,000 cubic yards of material already stockpiled at the site; for a total of 400,000 cy or 600,000 tons of aggregate material.

Employee trips would be minimal, 1.5 miles each way on the access road (just north of SR-210), as the operation will require only 5 to 6 employees who would arrive at the site via the southerly haul road accessed from the terminus of North Campus Road.

In addition, when the contractor/operator has an order to fill, it is anticipated that up to 2,500 tons of material per day could leave the site destined for job sites in the local area. Trucks could be a combination of single dump (one tractor/one trailer) or double dump (one tractor/2 trailers). For the purposes of this Initial Study a double-dump configuration was assumed with each truck capable of carrying 25 tons of material, and hauling five loads per day. Therefore, on a typical day where 2,500 tons of material would leave the site, a total of 100 truck trips and up to 20 trucks completing five round trips. Because aggregate material is heavy and relatively expensive to haul, the average haul distance was assumed to be 10 miles (11.5 miles total haul length including southerly haul road [8,200 linear feet]).

Processed material will be loaded onto rock haul trucks and hauled off-site via the existing County access road along the west side of the Cucamonga Creek Channel south, then west to the intersection of North Campus Ave and East 20th Street This stop controlled intersection also provides access to the Holliday Rock facility. From there the trucks will exit the site and travel south one block on North Campus Avenue to the light controlled interchange on the SR-210 freeway (please see the CalEEMod output in Appendix B for further details on construction equipment and timing).

A. Construction-Related Regional Impacts

The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

1. Construction-Related Criteria Pollutants Analysis

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the proposed project's short-term construction emissions for the criteria pollutants.

Methodology

Typical emission rates from construction activities were obtained from CalEEMod Version 2013.2.2 CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2011 computer program to calculate the emission rates specific for the eastern portion of San Bernardino County for construction-related employee vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy truck operations. EMFAC2011 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Using CalEEMod, the peak daily air pollutant emissions during each phase was calculated and presented below. These emissions represent the highest level of emissions for each of the construction phases in terms of air pollutant emissions. The daily construction emissions printouts from CalEEMod are provided in Appendix B.

SCAQMD's Rule 403

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent and stabilizing ground cover on finished sites. In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Although the project area is approximately 41.32 acres, the project would disturb less than 2 acres a day; therefore, a Fugitive Dust Control Plan or Large Operation Notification would not be required.

SCAQMD's Rule 403 minimum requirements require that the application of the best available dust control measures are used for all grading operations and include the application of water or other soil stabilizers in sufficient quantity to prevent the generation of visible dust plumes. Compliance with Rule 403 would require the use of water trucks during all phases where earth moving operations would occur.

The phases of the construction activities which have been analyzed below for each phase are: 1) site prep for excavation and crosswalls and, 2) site prep for processing and stockpiling. Details pertaining to the project's construction timing and the type of equipment modeled for each construction phase are available in the CalEEMod output in Appendix B.

Project Impacts

The construction-related criteria pollutant emissions for both excavation and crosswalls and processing/stockpiling/hauling are shown below in Table 7. As shown in Table 7, none of the emissions for either phase exceed SCAQMD regional construction thresholds. No mitigation is required.

B. Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. The proposed project has been analyzed for the potential local air quality impacts created from: construction-related fugitive dust and diesel emissions; from toxic air contaminants; and from construction-related odor impacts.

1. Local Air Quality Impacts from Construction

The SCAQMD has published a "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds" (South Coast Air Quality Management District 2011b). CalEEMod calculates construction emissions based on the number of equipment hours

and the maximum daily disturbance activity possible for each piece of equipment. In order to compare CalEEMod reported emissions against the localized significance threshold lookup tables, the CEQA document should contain in its project design features or its mitigation measures the following parameters:

1) The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
2) The maximum number of acres disturbed on the peak day.
3) Any emission control devices added onto off-road equipment.
4) Specific dust suppression techniques used on the day of construction activity with maximum emissions.

The CalEEMod output in Appendix B show the equipment used for this analysis.

As shown in Table 8, the maximum number of acres disturbed in a day would be 1.5 acres.

The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold Look-up Tables and the methodology described in Localized Significance Threshold Methodology, prepared by SCAQMD, revised July 2008. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. The emission thresholds were calculated based on the San Bernardino Valley source receptor area (SRA) 32 and a disturbance value of two acres per day. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25 meter thresholds. The nearest existing land uses are the single-family detached residential dwelling units that are about 200 feet (61 meters) west of the crosswall repair area and 400 feet (121 meters) west of the material processing site; therefore, the SCAQMD Look-up Tables for 50 meters was used for the crosswalls and 100 meters was used for the material processing. Table 9 details the on-site emissions from the CalEEMod model for the different construction phases and the calculated emissions thresholds.

The data provided in Table 9 shows that none of the analyzed criteria pollutants would exceed the calculated local emissions thresholds at the nearest sensitive receptors. Therefore, a less than significant local air quality impact would occur from construction of the proposed project. No mitigation is required. The project is expected to comply with the requirements of SCAQMD Fugitive Dust Rule 403.

2. Construction-Related Toxic Air Contaminant Impacts

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of "individual cancer risk". "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of

toxic air contaminants over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project.

3. Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement and diesel exhaust emissions. The objectionable odors that may be produced during the construction process are of short-term in nature and the odor emissions are expected cease upon the drying or hardening of the odor producing materials. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed project.

Table 7

Construction-Related Regional Criteria Pollutant Emissions[1]

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO_2	PM10	PM2.5
Excavation and Crosswalls						
Site Preparation						
On-Site[2]	6.54	83.97	50.08	0.08	5.99	4.52
Off-Site[3]	0.94	3.29	14.56	0.01	0.50	0.15
Total	**7.48**	**87.26**	**64.63**	**0.09**	**6.49**	**4.67**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	No	No	No	No	No	No
Processing/Stockpiling/ Hauling						
Site Preparation						
On-Site[2]	4.54	45.29	27.83	0.04	2.75	2.56
Off-Site[3]	1.47	18.94	17.90	0.04	7.07	1.97
Total	**6.01**	**64.23**	**45.73**	**0.08**	**9.82**	**4.53**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	No	No	No	No	No	No

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[1] Source: CalEEMod Version 2013.2.2

[2] On-site emissions from equipment operated on-site that is not operated on public roads.

[3] Off-site emissions from equipment operated on public roads.

[4] Construction, paving and painting phases may overlap.

Table 8

Maximum Number of Acres Disturbed Per Day[1]

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Excavation and Crosswalls	Graders	0	0.5	0
	Rubber Tired Dozers	1	0.5	0.5
	Excavators	2	0.5	1
	Scrapers	0	1	0
	Tractors/Loaders/Backhoes	0	0.5	0
Total per phase		-	-	**1.5**
Activity	Equipment	Number	Acres/8hr-day	Total Acres
Processing/ Stockpiling/ Hauling	Graders	0	0.5	0
	Rubber Tired Dozers	0	0.5	0
	Excavators	1	0.5	0.5
	Scrapers	0	1	0
	Tractors/Loaders/Backhoes	2	0.5	1
Total per phase		-	-	**1.5**

[1] Source: South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds

Table 9

Unmitigated Local Construction Emissions at Closest Sensitive Receptors[1]

Phase	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Excavation and Crosswalls	83.97	50.08	5.99	4.52
SCAQMD Threshold for 50 meters (164 feet) or less[2]	**200**	**1,877**	**19**	**8**
Exceeds Threshold?	no	no	no	no
Phase	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Processing/Stockpiling/ Hauling	45.29	27.83	2.75	2.56
SCAQMD Threshold for 100 meters (328 feet) or less[2]	**263**	**3,218**	**34**	**14**
Exceeds Threshold?	no	no	no	no

[1] Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for two acres in San Bernardino Valley.

[2] The estimated distance from the project site to the nearest existing sensitive receptors, located adjacent to the west and east of the project site.

VII. Long-Term Air Quality Operational Impacts

The on-going operation of the proposed project could result in a long-term increase in air quality emissions. This increase would mainly be due to emissions from the project-generated vehicle trips. The proposed project consists of two parts. The first part is the maintenance and repair of the crosswalls north of the Cucamonga Dam. The second part is the sorting, processing, and stockpiling of the aggregate material removed during the repairs and maintenance. The on-going sorting, processing, and hauling (project-generated vehicle trips) were analyzed in Section VI, short-term construction impacts, as the sorting, processing, and hauling have a duration of 5 years or less. Therefore, this project has no long-term air quality impacts and no long-term operational analysis was performed.

VIII. Global Climate Change Analysis

As stated previously, the proposed project consist of two parts, the maintenance and repair of the crosswalls north of the Cucamonga Dam and the sorting, processing, and stockpiling of the aggregate material removed during the repairs and maintenance. The proposed project is anticipated to generate GHG emissions from construction equipment only.

A. Methodology

There is currently no greenhouse gas threshold for construction emissions. The construction-related GHG emissions were calculated by CalEEMod Version 2013.2.2, detailed above in Section VI, and were based on a 30 year amortization rate (as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009). The project's emissions were compared to the SCAQMD draft screening threshold of 3,000 metric tons CO2e per year. The CalEEMod Annual Output for both phases of the project is available in Appendix C.

B. Project Greenhouse Gas Emissions

A summary of the results are shown below in Table 10. Table 10 shows that the proposed project would generate approximately 189.91 metric tons of CO_2e per year (when amortized over 30 years per SCAQMD protocol). According to the thresholds of significance established above in Section V above, a cumulative global climate change impact would potentially occur if the GHG emissions created from the project would exceed the screening threshold of 3,000 metric tons per year of CO_2e. As the amortized emissions are well below the screening threshold, no mitigation is required.

C. Greenhouse Gas Plan Consistency

The City of Upland does not have a Climate Action Plan or Greenhouse Gas Reduction Plan; however, the majority of the project is in the County of San Bernardino which adopted the County of San Bernardino Greenhouse Gas Emissions Reduction Plan in September, 2011. The Plan presents a comprehensive set of actions to reduce the County's internal and external GHG emissions to 15 percent below current levels by 2020; consistent with the AB 32 Scoping Plan.

However, as the project is a construction-based project, the County of San Bernardino Greenhouse Gas Emissions Reduction Plan does not have any reduction criteria for construction-based emissions. Furthermore, the project's amortized emissions fall well below the County's screening threshold of 3,000 metric tons per year of CO_2e. Therefore, the proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Table 10

Project-Related Greenhouse Gas Emissions[1]

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Excavation and Crosswalls	0.00	769.15	769.15	0.21	0.00	773.61
Processing/Stockpiling/ Hauling	0.00	4,909.62	4,909.62	0.67	0.00	4,923.77
Total Emissions[2]	0.00	5,678.77	5,678.77	0.89	0.00	**189.91**
Screening Threshold						**3,000**
Exceeds Threshold?						**No**

[1] Source: CalEEMod Version 2013.2.2.

[2] Total Construction GHG emissions CO2e based on a 30 year amortization rate.

IX. Air Quality Compliance

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

(2) Whether the project will exceed the assumptions in the AQMP in 2010 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

A. Criterion 1 - Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in this Air Analysis, short-term construction emissions from the proposed project will not result in any significant impacts based on the SCAQMD regional and local thresholds of significance. The project is not a source of long-term operational emissions.

Therefore, the proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

B. Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to insure that the analyses conducted for the proposed project are based on the same

forecasts as the AQMP. The Regional Comprehensive Plan and Guide (RCP&G) consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this project, the City of Upland Valley General Plan Land Use Plan defines the assumptions that are represented in the AQMP.

The purpose of the project is twofold: 1) to repair the existing crosswalls used for water conservation; and 2) to allow the contractor/operator who will be processing the material to utilize the stockpiles when he has a project requiring aggregate material. Therefore, the proposed project would not result in an inconsistency with the current land use designation. Therefore, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur.

X. Mitigation Measures

A. Construction Measures

None required.

B. Operational Measures

None required.

XI. References

California Air Pollution Control Officers Association
2009 Health Risk Assessments for Proposed Land Use Projects

California Air Resources Board
2008 Resolution 08-43

2008 Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act

2008 ARB Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk – Frequently Asked Questions

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2014 Historical Air Quality, Top 4 Summary

2014 First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB32, the California Global Warming Solutions Act of 2006. May.

City of Upland
1992 City of Upland General Plan

County of San Bernardino
2007 County of San Bernardino 2007 General Plan

2011 County of San Bernardino General Plan Amendment and Greenhouse Reduction Plan Draft Supplemental Program Environmental Impact Report

2011 Greenhouse Gas Emissions Development Review Processes

Governor's Office of Planning and Research
2008 CEQA and Climate: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review

2009 CEQA Guideline Sections to be Added or Amended

Office of Environmental Health Hazard Assessment
2003 Air Toxics Hot Spots Program Risk Assessment Guidelines

South Coast Air Quality Management District
1993 CEQA Air Quality Handbook

2005 Rule 403 Fugitive Dust

2007 2007 Air Quality Management Plan

2008 Final Localized Significance Threshold Methodology, Revised

2008 Draft Report Multiple Air Toxics Exposure Study in the South Coast Air Basin, MATES III

2011 Appendix A Calculation Details for CalEEMod

2012 Revised Draft 2012 Air Quality Management Plan

Appendices

Appendix A – Glossary of Terms

Appendix B – CalEEMod Model Daily Emissions Printouts

Appendix C – CalEEMod Model Annual Emissions Printouts

APPENDIX A

Glossary of Terms

AQMP	Air Quality Management Plan
BACT	Best Available Control Technologies
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse gas
GWP	Global warming potential
HIDPM	Hazard Index Diesel Particulate Matter
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LST	Localized Significant Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
O_3	Ozone
OPR	Governor's Office of Planning and Research
PFCs	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PMI	Point of maximum impact
PPM	Parts per million
PPB	Parts per billion
ROG	Reactive organic gases
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SANBAG	San Bernardino Association of Governments
SCAB	South Coast Air Basin

SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
TAC	Toxic air contaminants
VOC	Volatile organic compounds

APPENDIX B

CalEEMod Model Daily Emissions Printouts

San Antonio Water Company

San Bernardino-South Coast County, Summer

Construction analysis only

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	41.32	Acre	41.32	1,799,899.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2014
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - processing of approx 200,000 cubic yards dirt = 41.32 acres

Construction Phase - Site prep= excavation and hauling of materials which is reused to maintain and rebuild crosswalls. Construction timing from developer.

Off-road Equipment -

Off-road Equipment - Construction for developer: 2 excavators, 1 dozer, 1 water truck (other const 1). 5 Haul trucks (other const 2)(volvo specifications 303hp, CalEEMod default load factor)

Trips and VMT - From Developer: 15 worker trips/day, approx total haul trips = 15000, materials will be hauled approximately 4400 Linear ft (0.833mi).

Grading - from developer: 300k tons of material removed. processing of approx 200,000 cubic yards dirt = 41.32 acres

Architectural Coating - No coating/painting

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Consumer Products - no consumer products

Area Coating - project is construction only

Landscape Equipment - no landscaping

Water And Wastewater - construction analysis only

Construction Off-road Equipment Mitigation -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	0
tblAreaCoating	Area_Nonresidential_Interior	2699850	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	250
tblConstructionPhase	NumDays	30.00	183.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	0.00	41.32
tblGrading	MaterialExported	0.00	300,000.00
tblOffRoadEquipment	HorsePower	162.00	163.00
tblOffRoadEquipment	HorsePower	171.00	172.00
tblOffRoadEquipment	HorsePower	171.00	303.00
tblOffRoadEquipment	HorsePower	97.00	0.00
tblOffRoadEquipment	LoadFactor	0.37	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.83
tblTripsAndVMT	HaulingTripNumber	29,663.00	15,000.00
tblTripsAndVMT	VendorTripLength	6.90	7.90
tblTripsAndVMT	WorkerTripLength	14.70	19.80

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	7.4819	87.2582	64.6342	0.0893	6.8745	3.5202	10.3947	3.4814	3.2384	6.7199	0.0000	9,361.7899	9,361.7899	2.5615	0.0000	9,415.5807
2015	7.2345	84.6580	62.0812	0.0892	6.8494	3.4221	10.2716	3.4753	3.1483	6.6236	0.0000	9,254.0732	9,254.0732	2.5580	0.0000	9,307.7906
Total	**14.7164**	**171.9161**	**126.7154**	**0.1785**	**13.7239**	**6.9423**	**20.6663**	**6.9567**	**6.3867**	**13.3435**	**0.0000**	**18,615.8632**	**18,615.8632**	**5.1194**	**0.0000**	**18,723.3713**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	7.4819	87.2582	64.6342	0.0893	2.9655	3.5202	6.4857	1.4329	3.2384	4.6713	0.0000	9,361.7899	9,361.7899	2.5615	0.0000	9,415.5807
2015	7.2345	84.6580	62.0812	0.0892	2.9404	3.4221	6.3626	1.4267	3.1483	4.5750	0.0000	9,254.0732	9,254.0732	2.5580	0.0000	9,307.7906
Total	**14.7164**	**171.9161**	**126.7154**	**0.1785**	**5.9059**	**6.9423**	**12.8483**	**2.8596**	**6.3867**	**9.2464**	**0.0000**	**18,615.8632**	**18,615.8632**	**5.1194**	**0.0000**	**18,723.3713**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**56.97**	**0.00**	**37.83**	**58.89**	**0.00**	**30.71**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	35.6385	4.0000e-005	4.4100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.0400e-003	9.0400e-003	3.0000e-005		9.6100e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**35.6385**	**4.0000e-005**	**4.4100e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**9.0400e-003**	**9.0400e-003**	**3.0000e-005**	**0.0000**	**9.6100e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	35.6385	4.0000e-005	4.4100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.0400e-003	9.0400e-003	3.0000e-005		9.6100e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**35.6385**	**4.0000e-005**	**4.4100e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**9.0400e-003**	**9.0400e-003**	**3.0000e-005**	**0.0000**	**9.6100e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/1/2014	5/1/2015	6	183	

Acres of Grading (Site Preparation Phase): 41.32

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Excavators	2	8.00	163	0.38
Site Preparation	Other Construction Equipment	1	8.00	172	0.42
Site Preparation	Other Construction Equipment	5	8.00	303	0.42
Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	0	0.00

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	23.00	0.00	15,000.00	19.80	7.90	0.83	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4082	0.0000	6.4082	3.3583	0.0000	3.3583			0.0000			0.0000
Off-Road	6.5449	83.9730	50.0785	0.0809		3.4863	3.4863		3.2074	3.2074		8,575.0905	8,575.0905	2.5340		8,628.3051
Total	**6.5449**	**83.9730**	**50.0785**	**0.0809**	**6.4082**	**3.4863**	**9.8945**	**3.3583**	**3.2074**	**6.5657**		**8,575.0905**	**8,575.0905**	**2.5340**		**8,628.3051**

3.2 Site Preparation - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7968	3.0873	11.9753	4.1000e-003	0.1201	0.0311	0.1512	0.0314	0.0285	0.0599		402.1958	402.1958	6.3300e-003		402.3288
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1402	0.1979	2.5804	4.3100e-003	0.3462	2.8100e-003	0.3490	0.0918	2.5600e-003	0.0944		384.5037	384.5037	0.0211		384.9468
Total	**0.9370**	**3.2852**	**14.5557**	**8.4100e-003**	**0.4663**	**0.0339**	**0.5002**	**0.1232**	**0.0311**	**0.1542**		**786.6995**	**786.6995**	**0.0274**		**787.2756**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4992	0.0000	2.4992	1.3097	0.0000	1.3097			0.0000			0.0000
Off-Road	6.5449	83.9730	50.0785	0.0809		3.4863	3.4863		3.2074	3.2074	0.0000	8,575.0904	8,575.0904	2.5340		8,628.3051
Total	**6.5449**	**83.9730**	**50.0785**	**0.0809**	**2.4992**	**3.4863**	**5.9855**	**1.3097**	**3.2074**	**4.5171**	**0.0000**	**8,575.0904**	**8,575.0904**	**2.5340**		**8,628.3051**

3.2 Site Preparation - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7968	3.0873	11.9753	4.1000e-003	0.1201	0.0311	0.1512	0.0314	0.0285	0.0599		402.1958	402.1958	6.3300e-003		402.3288
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1402	0.1979	2.5804	4.3100e-003	0.3462	2.8100e-003	0.3490	0.0918	2.5600e-003	0.0944		384.5037	384.5037	0.0211		384.9468
Total	**0.9370**	**3.2852**	**14.5557**	**8.4100e-003**	**0.4663**	**0.0339**	**0.5002**	**0.1232**	**0.0311**	**0.1542**		**786.6995**	**786.6995**	**0.0274**		**787.2756**

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4082	0.0000	6.4082	3.3583	0.0000	3.3583			0.0000			0.0000
Off-Road	6.4613	81.6641	49.2211	0.0808		3.3954	3.3954		3.1237	3.1237		8,482.5391	8,482.5391	2.5324		8,535.7193
Total	**6.4613**	**81.6641**	**49.2211**	**0.0808**	**6.4082**	**3.3954**	**9.8036**	**3.3583**	**3.1237**	**6.4820**		**8,482.5391**	**8,482.5391**	**2.5324**		**8,535.7193**

3.2 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.6486	2.8174	10.5397	4.0700e-003	0.0950	0.0241	0.1192	0.0252	0.0221	0.0473		398.2357	398.2357	6.2200e-003		398.3664
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1246	0.1764	2.3204	4.3300e-003	0.3462	2.6400e-003	0.3488	0.0918	2.4200e-003	0.0942		373.2984	373.2984	0.0194		373.7049
Total	**0.7733**	**2.9938**	**12.8601**	**8.4000e-003**	**0.4412**	**0.0268**	**0.4680**	**0.1170**	**0.0246**	**0.1416**		**771.5341**	**771.5341**	**0.0256**		**772.0713**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4992	0.0000	2.4992	1.3097	0.0000	1.3097			0.0000			0.0000
Off-Road	6.4613	81.6641	49.2211	0.0808		3.3954	3.3954		3.1237	3.1237	0.0000	8,482.5391	8,482.5391	2.5324		8,535.7193
Total	**6.4613**	**81.6641**	**49.2211**	**0.0808**	**2.4992**	**3.3954**	**5.8946**	**1.3097**	**3.1237**	**4.4335**	**0.0000**	**8,482.5391**	**8,482.5391**	**2.5324**		**8,535.7193**

3.2 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.6486	2.8174	10.5397	4.0700e-003	0.0950	0.0241	0.1192	0.0252	0.0221	0.0473		398.2357	398.2357	6.2200e-003		398.3664
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1246	0.1764	2.3204	4.3300e-003	0.3462	2.6400e-003	0.3488	0.0918	2.4200e-003	0.0942		373.2984	373.2984	0.0194		373.7049
Total	**0.7733**	**2.9938**	**12.8601**	**8.4000e-003**	**0.4412**	**0.0268**	**0.4680**	**0.1170**	**0.0246**	**0.1416**		**771.5341**	**771.5341**	**0.0256**		**772.0713**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.477446	0.065927	0.171594	0.156638	0.055185	0.009062	0.015877	0.037321	0.001132	0.001346	0.004831	0.000736	0.002906

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	35.6385	4.0000e-005	4.4100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.0400e-003	9.0400e-003	3.0000e-005		9.6100e-003
Unmitigated	35.6385	4.0000e-005	4.4100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.0400e-003	9.0400e-003	3.0000e-005		9.6100e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	35.6380					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.4100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.0400e-003	9.0400e-003	3.0000e-005		9.6100e-003
Total	**35.6385**	**4.0000e-005**	**4.4100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.0400e-003**	**9.0400e-003**	**3.0000e-005**		**9.6100e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	35.6380					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.4100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.0400e-003	9.0400e-003	3.0000e-005		9.6100e-003
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**35.6385**	**4.0000e-005**	**4.4100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.0400e-003**	**9.0400e-003**	**3.0000e-005**		**9.6100e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

SAWCo - Process and stockpile

San Bernardino-South Coast County, Summer

Construction analysis only

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	41.32	Acre	41.32	1,799,899.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2015
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 200k cubic yard= 41.32 acres

Construction Phase - construction timing from developer.

Off-road Equipment -

Off-road Equipment - Conveyor (Other Mat) average HP = 20, portable crusher, Water truck (Other const. 1) Default CalEEMod, Portable screen (Other const 2) Average HP = 127,

Trips and VMT - up to 6 workers, assumes a maximum 100 truck trips / day for 5yrs = 130000. approx total miles 10+8200 ft=11.55mi

Grading - total acers disturbed is 41.32 (200000 cubic yrds)

Architectural Coating - project is construction only

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Road Dust -

Consumer Products - project is construction only

Area Coating - project is construction only

Landscape Equipment - project is construction only

Water And Wastewater -

Construction Off-road Equipment Mitigation - construction equipment will be CARB tier 3 or better.

Area Mitigation - Project is construction only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	0
tblAreaCoating	Area_Nonresidential_Interior	2699850	0
tblConstructionPhase	NumDays	30.00	1,306.00
tblGrading	AcresOfGrading	0.00	41.32
tblGrading	MaterialExported	0.00	200,000.00
tblOffRoadEquipment	HorsePower	255.00	0.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	171.00	172.00
tblOffRoadEquipment	HorsePower	171.00	127.00
tblOffRoadEquipment	HorsePower	167.00	20.00
tblOffRoadEquipment	LoadFactor	0.40	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2015
tblTripsAndVMT	HaulingTripLength	20.00	11.55
tblTripsAndVMT	HaulingTripNumber	25,000.00	130,000.00
tblTripsAndVMT	WorkerTripNumber	23.00	6.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	6.0139	64.2325	45.7329	0.0840	6.8052	3.0429	9.8481	1.6939	2.8396	4.5335	0.0000	8,583.7489	8,583.7489	1.1600	0.0000	8,608.1081
2016	5.5314	58.9530	44.1974	0.0839	4.1631	2.7718	6.9349	1.0454	2.5855	3.6309	0.0000	8,495.0753	8,495.0753	1.1486	0.0000	8,519.1961
2017	5.2054	54.8743	43.5001	0.0839	4.1779	2.5600	6.7379	1.0491	2.3861	3.4352	0.0000	8,366.7371	8,366.7371	1.1390	0.0000	8,390.6568
2018	4.6214	48.4058	42.3432	0.0838	4.1634	2.1987	6.3620	1.0455	2.0493	3.0949	0.0000	8,238.2578	8,238.2578	1.1318	0.0000	8,262.0255
2019	4.3094	44.6147	41.9940	0.0835	4.1635	1.9944	6.1579	1.0456	1.8574	2.9029	0.0000	8,090.0177	8,090.0177	1.1242	0.0000	8,113.6256
2020	4.0484	40.6899	41.5326	0.0835	9.4668	1.8194	11.2862	2.3473	1.6931	4.0404	0.0000	7,923.2781	7,923.2781	1.1194	0.0000	7,946.7850
Total	**29.7300**	**311.7703**	**259.3002**	**0.5025**	**32.9398**	**14.3872**	**47.3270**	**8.2268**	**13.4110**	**21.6378**	**0.0000**	**49,697.1148**	**49,697.1148**	**6.8230**	**0.0000**	**49,840.3972**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	6.0139	64.2325	45.7329	0.0840	6.7742	3.0429	9.8171	1.6901	2.8396	4.5297	0.0000	8,583.7489	8,583.7489	1.1600	0.0000	8,608.1081
2016	5.5314	58.9530	44.1974	0.0839	4.1320	2.7718	6.9039	1.0416	2.5855	3.6271	0.0000	8,495.0753	8,495.0753	1.1486	0.0000	8,519.1961
2017	5.2054	54.8743	43.5001	0.0839	4.1468	2.5600	6.7069	1.0453	2.3861	3.4313	0.0000	8,366.7371	8,366.7371	1.1390	0.0000	8,390.6568
2018	4.6214	48.4058	42.3432	0.0838	4.1323	2.1987	6.3310	1.0417	2.0493	3.0911	0.0000	8,238.2578	8,238.2578	1.1318	0.0000	8,262.0255
2019	4.3094	44.6147	41.9940	0.0835	4.1325	1.9944	6.1268	1.0418	1.8574	2.8991	0.0000	8,090.0177	8,090.0177	1.1242	0.0000	8,113.6256
2020	4.0484	40.6899	41.5326	0.0835	9.4357	1.8194	11.2552	2.3435	1.6931	4.0366	0.0000	7,923.2781	7,923.2781	1.1194	0.0000	7,946.7850
Total	**29.7300**	**311.7703**	**259.3002**	**0.5025**	**32.7536**	**14.3872**	**47.1408**	**8.2040**	**13.4110**	**21.6149**	**0.0000**	**49,697.1148**	**49,697.1148**	**6.8230**	**0.0000**	**49,840.3972**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.57**	**0.00**	**0.39**	**0.28**	**0.00**	**0.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	35.6384	4.0000e-005	4.3600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.0400e-003	9.0400e-003	3.0000e-005		9.5900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**35.6384**	**4.0000e-005**	**4.3600e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**9.0400e-003**	**9.0400e-003**	**3.0000e-005**	**0.0000**	**9.5900e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	35.6384	4.0000e-005	4.3600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.0400e-003	9.0400e-003	3.0000e-005		9.5900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**35.6384**	**4.0000e-005**	**4.3600e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**9.0400e-003**	**9.0400e-003**	**3.0000e-005**	**0.0000**	**9.5900e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2015	6/1/2020	5	1306	

Acres of Grading (Site Preparation Phase): 41.32

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crushing/Proc. Equipment	1	8.00	85	0.78
Site Preparation	Excavators	1	8.00	162	0.38
Site Preparation	Other Construction Equipment	2	8.00	172	0.42
Site Preparation	Other Construction Equipment	2	8.00	127	0.42
Site Preparation	Other Material Handling Equipment	1	8.00	20	0.40
Site Preparation	Rubber Tired Dozers	0	0.00	0	0.00
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	98	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	6.00	0.00	130,000.00	14.70	6.90	11.55	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0509	0.0000	0.0509	6.2500e-003	0.0000	6.2500e-003			0.0000			0.0000
Off-Road	4.5446	45.2926	27.8334	0.0401		2.7317	2.7317		2.5534	2.5534		4,137.8916	4,137.8916	1.1200		4,161.4109
Total	**4.5446**	**45.2926**	**27.8334**	**0.0401**	**0.0509**	**2.7317**	**2.7826**	**6.2500e-003**	**2.5534**	**2.5596**		**4,137.8916**	**4,137.8916**	**1.1200**		**4,161.4109**

3.2 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4404	18.9048	17.4399	0.0430	6.6873	0.3106	6.9979	1.6699	0.2857	1.9556		4,373.1821	4,373.1821	0.0362		4,373.9420
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0289	0.0350	0.4596	8.4000e-004	0.0671	5.2000e-004	0.0676	0.0178	4.8000e-004	0.0183		72.6752	72.6752	3.8100e-003		72.7552
Total	**1.4693**	**18.9399**	**17.8995**	**0.0439**	**6.7544**	**0.3112**	**7.0655**	**1.6877**	**0.2862**	**1.9739**		**4,445.8573**	**4,445.8573**	**0.0400**		**4,446.6972**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0198	0.0000	0.0198	2.4400e-003	0.0000	2.4400e-003			0.0000			0.0000
Off-Road	4.5446	45.2926	27.8334	0.0401		2.7317	2.7317		2.5534	2.5534	0.0000	4,137.8916	4,137.8916	1.1200		4,161.4109
Total	**4.5446**	**45.2926**	**27.8334**	**0.0401**	**0.0198**	**2.7317**	**2.7515**	**2.4400e-003**	**2.5534**	**2.5558**	**0.0000**	**4,137.8916**	**4,137.8916**	**1.1200**		**4,161.4109**

3.2 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4404	18.9048	17.4399	0.0430	6.6873	0.3106	6.9979	1.6699	0.2857	1.9556		4,373.1821	4,373.1821	0.0362		4,373.9420
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0289	0.0350	0.4596	8.4000e-004	0.0671	5.2000e-004	0.0676	0.0178	4.8000e-004	0.0183		72.6752	72.6752	3.8100e-003		72.7552
Total	**1.4693**	**18.9399**	**17.8995**	**0.0439**	**6.7544**	**0.3112**	**7.0655**	**1.6877**	**0.2862**	**1.9739**		**4,445.8573**	**4,445.8573**	**0.0400**		**4,446.6972**

3.2 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0509	0.0000	0.0509	6.2500e-003	0.0000	6.2500e-003			0.0000			0.0000
Off-Road	4.2414	42.1936	27.6431	0.0401		2.5228	2.5228		2.3565	2.3565		4,100.8883	4,100.8883	1.1125		4,124.2515
Total	**4.2414**	**42.1936**	**27.6431**	**0.0401**	**0.0509**	**2.5228**	**2.5737**	**6.2500e-003**	**2.3565**	**2.3627**		**4,100.8883**	**4,100.8883**	**1.1125**		**4,124.2515**

3.2 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2642	16.7280	16.1410	0.0430	4.0451	0.2485	4.2937	1.0214	0.2286	1.2500		4,324.1203	4,324.1203	0.0326		4,324.8049
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0258	0.0314	0.4133	8.4000e-004	0.0671	5.0000e-004	0.0676	0.0178	4.6000e-004	0.0182		70.0667	70.0667	3.4800e-003		70.1398
Total	**1.2900**	**16.7594**	**16.5543**	**0.0438**	**4.1122**	**0.2490**	**4.3612**	**1.0392**	**0.2291**	**1.2682**		**4,394.1870**	**4,394.1870**	**0.0361**		**4,394.9446**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0198	0.0000	0.0198	2.4400e-003	0.0000	2.4400e-003			0.0000			0.0000
Off-Road	4.2414	42.1936	27.6431	0.0401		2.5228	2.5228		2.3565	2.3565	0.0000	4,100.8883	4,100.8883	1.1125		4,124.2515
Total	**4.2414**	**42.1936**	**27.6431**	**0.0401**	**0.0198**	**2.5228**	**2.5427**	**2.4400e-003**	**2.3565**	**2.3589**	**0.0000**	**4,100.8883**	**4,100.8883**	**1.1125**		**4,124.2515**

3.2 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2642	16.7280	16.1410	0.0430	4.0451	0.2485	4.2937	1.0214	0.2286	1.2500		4,324.1203	4,324.1203	0.0326		4,324.8049
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0258	0.0314	0.4133	8.4000e-004	0.0671	5.0000e-004	0.0676	0.0178	4.6000e-004	0.0182		70.0667	70.0667	3.4800e-003		70.1398
Total	**1.2900**	**16.7594**	**16.5543**	**0.0438**	**4.1122**	**0.2490**	**4.3612**	**1.0392**	**0.2291**	**1.2682**		**4,394.1870**	**4,394.1870**	**0.0361**		**4,394.9446**

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0509	0.0000	0.0509	6.2500e-003	0.0000	6.2500e-003			0.0000			0.0000
Off-Road	3.9757	39.4679	27.4759	0.0401		2.3319	2.3319		2.1762	2.1762		4,045.7120	4,045.7120	1.1038		4,068.8920
Total	**3.9757**	**39.4679**	**27.4759**	**0.0401**	**0.0509**	**2.3319**	**2.3828**	**6.2500e-003**	**2.1762**	**2.1825**		**4,045.7120**	**4,045.7120**	**1.1038**		**4,068.8920**

3.2 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2068	15.3784	15.6530	0.0429	4.0599	0.2276	4.2876	1.0251	0.2094	1.2344		4,253.7065	4,253.7065	0.0320		4,254.3792
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0229	0.0281	0.3713	8.4000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		67.3186	67.3186	3.1900e-003		67.3856
Total	**1.2298**	**15.4065**	**16.0242**	**0.0438**	**4.1270**	**0.2281**	**4.3551**	**1.0428**	**0.2098**	**1.2527**		**4,321.0251**	**4,321.0251**	**0.0352**		**4,321.7648**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0198	0.0000	0.0198	2.4400e-003	0.0000	2.4400e-003			0.0000			0.0000
Off-Road	3.9757	39.4679	27.4759	0.0401		2.3319	2.3319		2.1762	2.1762	0.0000	4,045.7120	4,045.7120	1.1038		4,068.8920
Total	**3.9757**	**39.4679**	**27.4759**	**0.0401**	**0.0198**	**2.3319**	**2.3518**	**2.4400e-003**	**2.1762**	**2.1787**	**0.0000**	**4,045.7120**	**4,045.7120**	**1.1038**		**4,068.8920**

3.2 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2068	15.3784	15.6530	0.0429	4.0599	0.2276	4.2876	1.0251	0.2094	1.2344		4,253.7065	4,253.7065	0.0320		4,254.3792
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0229	0.0281	0.3713	8.4000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		67.3186	67.3186	3.1900e-003		67.3856
Total	**1.2298**	**15.4065**	**16.0242**	**0.0438**	**4.1270**	**0.2281**	**4.3551**	**1.0428**	**0.2098**	**1.2527**		**4,321.0251**	**4,321.0251**	**0.0352**		**4,321.7648**

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0509	0.0000	0.0509	6.2500e-003	0.0000	6.2500e-003			0.0000			0.0000
Off-Road	3.4457	34.0893	26.9366	0.0401		1.9708	1.9708		1.8397	1.8397		3,990.9031	3,990.9031	1.0964		4,013.9264
Total	**3.4457**	**34.0893**	**26.9366**	**0.0401**	**0.0509**	**1.9708**	**2.0216**	**6.2500e-003**	**1.8397**	**1.8459**		**3,990.9031**	**3,990.9031**	**1.0964**		**4,013.9264**

3.2 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1553	14.2911	15.0710	0.0429	4.0454	0.2275	4.2729	1.0215	0.2093	1.2308		4,182.5796	4,182.5796	0.0325		4,183.2620
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0205	0.0254	0.3356	8.4000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		64.7752	64.7752	2.9500e-003		64.8371
Total	**1.1758**	**14.3165**	**15.4066**	**0.0437**	**4.1125**	**0.2279**	**4.3404**	**1.0393**	**0.2097**	**1.2490**		**4,247.3548**	**4,247.3548**	**0.0355**		**4,248.0991**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0198	0.0000	0.0198	2.4400e-003	0.0000	2.4400e-003			0.0000			0.0000
Off-Road	3.4457	34.0893	26.9366	0.0401		1.9708	1.9708		1.8397	1.8397	0.0000	3,990.9031	3,990.9031	1.0964		4,013.9264
Total	**3.4457**	**34.0893**	**26.9366**	**0.0401**	**0.0198**	**1.9708**	**1.9906**	**2.4400e-003**	**1.8397**	**1.8421**	**0.0000**	**3,990.9031**	**3,990.9031**	**1.0964**		**4,013.9264**

3.2 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1553	14.2911	15.0710	0.0429	4.0454	0.2275	4.2729	1.0215	0.2093	1.2308		4,182.5796	4,182.5796	0.0325		4,183.2620
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0205	0.0254	0.3356	8.4000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		64.7752	64.7752	2.9500e-003		64.8371
Total	**1.1758**	**14.3165**	**15.4066**	**0.0437**	**4.1125**	**0.2279**	**4.3404**	**1.0393**	**0.2097**	**1.2490**		**4,247.3548**	**4,247.3548**	**0.0355**		**4,248.0991**

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0509	0.0000	0.0509	6.2500e-003	0.0000	6.2500e-003			0.0000			0.0000
Off-Road	3.1699	31.2541	26.7948	0.0401		1.7639	1.7639		1.6453	1.6453		3,938.2795	3,938.2795	1.0896		3,961.1604
Total	**3.1699**	**31.2541**	**26.7948**	**0.0401**	**0.0509**	**1.7639**	**1.8148**	**6.2500e-003**	**1.6453**	**1.6516**		**3,938.2795**	**3,938.2795**	**1.0896**		**3,961.1604**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1208	13.3374	14.8949	0.0426	4.0456	0.2300	4.2756	1.0215	0.2116	1.2332		4,089.6878	4,089.6878	0.0319		4,090.3577
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0186	0.0231	0.3044	8.4000e-004	0.0671	4.6000e-004	0.0675	0.0178	4.2000e-004	0.0182		62.0504	62.0504	2.7200e-003		62.1075
Total	**1.1394**	**13.3606**	**15.1992**	**0.0435**	**4.1126**	**0.2305**	**4.3431**	**1.0393**	**0.2120**	**1.2514**		**4,151.7382**	**4,151.7382**	**0.0346**		**4,152.4651**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0198	0.0000	0.0198	2.4400e-003	0.0000	2.4400e-003			0.0000			0.0000
Off-Road	3.1699	31.2541	26.7948	0.0401		1.7639	1.7639		1.6453	1.6453	0.0000	3,938.2795	3,938.2795	1.0896		3,961.1604
Total	**3.1699**	**31.2541**	**26.7948**	**0.0401**	**0.0198**	**1.7639**	**1.7837**	**2.4400e-003**	**1.6453**	**1.6478**	**0.0000**	**3,938.2795**	**3,938.2795**	**1.0896**		**3,961.1604**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1208	13.3374	14.8949	0.0426	4.0456	0.2300	4.2756	1.0215	0.2116	1.2332		4,089.6878	4,089.6878	0.0319		4,090.3577
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0186	0.0231	0.3044	8.4000e-004	0.0671	4.6000e-004	0.0675	0.0178	4.2000e-004	0.0182		62.0504	62.0504	2.7200e-003		62.1075
Total	**1.1394**	**13.3606**	**15.1992**	**0.0435**	**4.1126**	**0.2305**	**4.3431**	**1.0393**	**0.2120**	**1.2514**		**4,151.7382**	**4,151.7382**	**0.0346**		**4,152.4651**

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0509	0.0000	0.0509	6.2500e-003	0.0000	6.2500e-003			0.0000			0.0000
Off-Road	2.9452	28.7416	26.6405	0.0401		1.5908	1.5908		1.4828	1.4828		3,866.9368	3,866.9368	1.0848		3,889.7184
Total	**2.9452**	**28.7416**	**26.6405**	**0.0401**	**0.0509**	**1.5908**	**1.6417**	**6.2500e-003**	**1.4828**	**1.4891**		**3,866.9368**	**3,866.9368**	**1.0848**		**3,889.7184**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0859	11.9269	14.6096	0.0426	9.3488	0.2282	9.5770	2.3233	0.2099	2.5332		3,996.8245	3,996.8245	0.0320		3,997.4962
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0173	0.0214	0.2825	8.4000e-004	0.0671	4.6000e-004	0.0675	0.0178	4.2000e-004	0.0182		59.5167	59.5167	2.5600e-003		59.5705
Total	**1.1033**	**11.9483**	**14.8921**	**0.0434**	**9.4159**	**0.2286**	**9.6445**	**2.3411**	**0.2103**	**2.5514**		**4,056.3412**	**4,056.3412**	**0.0345**		**4,057.0667**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0198	0.0000	0.0198	2.4400e-003	0.0000	2.4400e-003			0.0000			0.0000
Off-Road	2.9452	28.7416	26.6405	0.0401		1.5908	1.5908		1.4828	1.4828	0.0000	3,866.9368	3,866.9368	1.0848		3,889.7184
Total	**2.9452**	**28.7416**	**26.6405**	**0.0401**	**0.0198**	**1.5908**	**1.6107**	**2.4400e-003**	**1.4828**	**1.4853**	**0.0000**	**3,866.9368**	**3,866.9368**	**1.0848**		**3,889.7184**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0859	11.9269	14.6096	0.0426	9.3488	0.2282	9.5770	2.3233	0.2099	2.5332		3,996.8245	3,996.8245	0.0320		3,997.4962
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0173	0.0214	0.2825	8.4000e-004	0.0671	4.6000e-004	0.0675	0.0178	4.2000e-004	0.0182		59.5167	59.5167	2.5600e-003		59.5705
Total	**1.1033**	**11.9483**	**14.8921**	**0.0434**	**9.4159**	**0.2286**	**9.6445**	**2.3411**	**0.2103**	**2.5514**		**4,056.3412**	**4,056.3412**	**0.0345**		**4,057.0667**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.474745	0.065936	0.172132	0.156409	0.055843	0.009120	0.016202	0.038647	0.001119	0.001338	0.004871	0.000723	0.002914

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	35.6384	4.0000e-005	4.3600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.0400e-003	9.0400e-003	3.0000e-005		9.5900e-003
Unmitigated	35.6384	4.0000e-005	4.3600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.0400e-003	9.0400e-003	3.0000e-005		9.5900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	35.6380					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.3600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.0400e-003	9.0400e-003	3.0000e-005		9.5900e-003
Total	**35.6384**	**4.0000e-005**	**4.3600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.0400e-003**	**9.0400e-003**	**3.0000e-005**		**9.5900e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	35.6380					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.3000e-004	4.0000e-005	4.3600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.0400e-003	9.0400e-003	3.0000e-005		9.5900e-003
Total	**35.6384**	**4.0000e-005**	**4.3600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.0400e-003**	**9.0400e-003**	**3.0000e-005**		**9.5900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

APPENDIX C

CalEEMod Model Annual Emissions Printouts

San Antonio Water Company

San Bernardino-South Coast County, Annual

Construction analysis only

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	41.32	Acre	41.32	1,799,899.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2014
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

SAWCo - Process and stockpile

San Bernardino-South Coast County, Annual

Construction analysis only

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	41.32	Acre	41.32	1,799,899.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2015
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - processing of approx 200,000 cubic yards dirt = 41.32 acres

Construction Phase - Site prep= excavation and hauling of materials which is reused to maintain and rebuild crosswalls. Construction timing from developer.

Off-road Equipment -

Off-road Equipment - Construction for developer: 2 excavators, 1 dozer, 1 water truck (other const 1). 5 Haul trucks (other const 2)(volvo specifications 303hp, CalEEMod default load factor)

Trips and VMT - From Developer: 15 worker trips/day, approx total haul trips = 15000, materials will be hauled approximately 4400 Linear ft (0.833mi).

Grading - from developer: 300k tons of material removed. processing of approx 200,000 cubic yards dirt = 41.32 acres

Architectural Coating - No coating/painting

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Consumer Products - no consumer products

Area Coating - project is construction only

Landscape Equipment - no landscaping

Water And Wastewater - construction analysis only

Construction Off-road Equipment Mitigation -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	0
tblAreaCoating	Area_Nonresidential_Interior	2699850	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	250
tblConstructionPhase	NumDays	30.00	183.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	0.00	41.32
tblGrading	MaterialExported	0.00	300,000.00
tblOffRoadEquipment	HorsePower	162.00	163.00
tblOffRoadEquipment	HorsePower	171.00	172.00
tblOffRoadEquipment	HorsePower	171.00	303.00
tblOffRoadEquipment	HorsePower	97.00	0.00
tblOffRoadEquipment	LoadFactor	0.37	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.83
tblTripsAndVMT	HaulingTripNumber	29,663.00	15,000.00
tblTripsAndVMT	VendorTripLength	6.90	7.90
tblTripsAndVMT	WorkerTripLength	14.70	19.80

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.2980	3.4505	2.6221	3.5100e-003	0.6044	0.1391	0.7435	0.3121	0.1280	0.4400	0.0000	334.2134	334.2134	0.0918	0.0000	336.1411
2015	0.3788	4.4067	3.3245	4.6200e-003	0.6089	0.1780	0.7868	0.3133	0.1637	0.4770	0.0000	434.9349	434.9349	0.1207	0.0000	437.4692
Total	**0.6768**	**7.8572**	**5.9466**	**8.1300e-003**	**1.2133**	**0.3171**	**1.5303**	**0.6253**	**0.2917**	**0.9170**	**0.0000**	**769.1483**	**769.1483**	**0.2125**	**0.0000**	**773.6103**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.2980	3.4505	2.6221	3.5100e-003	0.2467	0.1391	0.3858	0.1246	0.1280	0.2526	0.0000	334.2130	334.2130	0.0918	0.0000	336.1408
2015	0.3788	4.4067	3.3245	4.6200e-003	0.2512	0.1780	0.4292	0.1258	0.1637	0.2896	0.0000	434.9344	434.9344	0.1207	0.0000	437.4687
Total	**0.6768**	**7.8571**	**5.9466**	**8.1300e-003**	**0.4979**	**0.3171**	**0.8150**	**0.2504**	**0.2917**	**0.5421**	**0.0000**	**769.1475**	**769.1475**	**0.2125**	**0.0000**	**773.6095**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**58.96**	**0.00**	**46.74**	**59.95**	**0.00**	**40.88**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.5040	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0300e-003	1.0300e-003	0.0000	0.0000	1.0900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5040**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0300e-003**	**1.0300e-003**	**0.0000**	**0.0000**	**1.0900e-003**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.5040	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0300e-003	1.0300e-003	0.0000	0.0000	1.0900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5040**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0300e-003**	**1.0300e-003**	**0.0000**	**0.0000**	**1.0900e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/1/2014	5/1/2015	6	183	

Acres of Grading (Site Preparation Phase): 41.32

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Excavators	2	8.00	163	0.38
Site Preparation	Other Construction Equipment	1	8.00	172	0.42
Site Preparation	Other Construction Equipment	5	8.00	303	0.42
Site Preparation	Rubber Tired Dozers	1	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	0	0.00

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	23.00	0.00	15,000.00	19.80	7.90	0.83	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5864	0.0000	0.5864	0.3073	0.0000	0.3073	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2585	3.3169	1.9781	3.1900e-003		0.1377	0.1377		0.1267	0.1267	0.0000	307.2781	307.2781	0.0908	0.0000	309.1849
Total	**0.2585**	**3.3169**	**1.9781**	**3.1900e-003**	**0.5864**	**0.1377**	**0.7241**	**0.3073**	**0.1267**	**0.4340**	**0.0000**	**307.2781**	**307.2781**	**0.0908**	**0.0000**	**309.1849**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0345	0.1249	0.5538	1.6000e-004	4.6500e-003	1.2600e-003	5.9100e-003	1.2200e-003	1.1500e-003	2.3700e-003	0.0000	14.1903	14.1903	2.4000e-004	0.0000	14.1953
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0200e-003	8.7000e-003	0.0902	1.6000e-004	0.0134	1.1000e-004	0.0135	3.5600e-003	1.0000e-004	3.6600e-003	0.0000	12.7450	12.7450	7.6000e-004	0.0000	12.7609
Total	**0.0395**	**0.1336**	**0.6440**	**3.2000e-004**	**0.0181**	**1.3700e-003**	**0.0194**	**4.7800e-003**	**1.2500e-003**	**6.0300e-003**	**0.0000**	**26.9354**	**26.9354**	**1.0000e-003**	**0.0000**	**26.9562**

3.2 Site Preparation - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2287	0.0000	0.2287	0.1198	0.0000	0.1198	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2585	3.3169	1.9781	3.1900e-003		0.1377	0.1377		0.1267	0.1267	0.0000	307.2777	307.2777	0.0908	0.0000	309.1846
Total	**0.2585**	**3.3169**	**1.9781**	**3.1900e-003**	**0.2287**	**0.1377**	**0.3664**	**0.1198**	**0.1267**	**0.2465**	**0.0000**	**307.2777**	**307.2777**	**0.0908**	**0.0000**	**309.1846**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0345	0.1249	0.5538	1.6000e-004	4.6500e-003	1.2600e-003	5.9100e-003	1.2200e-003	1.1500e-003	2.3700e-003	0.0000	14.1903	14.1903	2.4000e-004	0.0000	14.1953
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0200e-003	8.7000e-003	0.0902	1.6000e-004	0.0134	1.1000e-004	0.0135	3.5600e-003	1.0000e-004	3.6600e-003	0.0000	12.7450	12.7450	7.6000e-004	0.0000	12.7609
Total	**0.0395**	**0.1336**	**0.6440**	**3.2000e-004**	**0.0181**	**1.3700e-003**	**0.0194**	**4.7800e-003**	**1.2500e-003**	**6.0300e-003**	**0.0000**	**26.9354**	**26.9354**	**1.0000e-003**	**0.0000**	**26.9562**

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5864	0.0000	0.5864	0.3073	0.0000	0.3073	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3360	4.2465	2.5595	4.2000e-003		0.1766	0.1766		0.1624	0.1624	0.0000	400.1520	400.1520	0.1195	0.0000	402.6607
Total	**0.3360**	**4.2465**	**2.5595**	**4.2000e-003**	**0.5864**	**0.1766**	**0.7629**	**0.3073**	**0.1624**	**0.4697**	**0.0000**	**400.1520**	**400.1520**	**0.1195**	**0.0000**	**402.6607**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0370	0.1499	0.6587	2.1000e-004	4.8500e-003	1.2900e-003	6.1400e-003	1.2900e-003	1.1800e-003	2.4700e-003	0.0000	18.4969	18.4969	3.1000e-004	0.0000	18.5033
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8400e-003	0.0102	0.1064	2.1000e-004	0.0177	1.4000e-004	0.0178	4.6900e-003	1.3000e-004	4.8200e-003	0.0000	16.2861	16.2861	9.1000e-004	0.0000	16.3053
Total	**0.0428**	**0.1601**	**0.7650**	**4.2000e-004**	**0.0225**	**1.4300e-003**	**0.0239**	**5.9800e-003**	**1.3100e-003**	**7.2900e-003**	**0.0000**	**34.7830**	**34.7830**	**1.2200e-003**	**0.0000**	**34.8085**

3.2 Site Preparation - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2287	0.0000	0.2287	0.1198	0.0000	0.1198	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3360	4.2465	2.5595	4.2000e-003		0.1766	0.1766		0.1624	0.1624	0.0000	400.1515	400.1515	0.1195	0.0000	402.6602
Total	**0.3360**	**4.2465**	**2.5595**	**4.2000e-003**	**0.2287**	**0.1766**	**0.4052**	**0.1198**	**0.1624**	**0.2823**	**0.0000**	**400.1515**	**400.1515**	**0.1195**	**0.0000**	**402.6602**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0370	0.1499	0.6587	2.1000e-004	4.8500e-003	1.2900e-003	6.1400e-003	1.2900e-003	1.1800e-003	2.4700e-003	0.0000	18.4969	18.4969	3.1000e-004	0.0000	18.5033
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8400e-003	0.0102	0.1064	2.1000e-004	0.0177	1.4000e-004	0.0178	4.6900e-003	1.3000e-004	4.8200e-003	0.0000	16.2861	16.2861	9.1000e-004	0.0000	16.3053
Total	**0.0428**	**0.1601**	**0.7650**	**4.2000e-004**	**0.0225**	**1.4300e-003**	**0.0239**	**5.9800e-003**	**1.3100e-003**	**7.2900e-003**	**0.0000**	**34.7830**	**34.7830**	**1.2200e-003**	**0.0000**	**34.8085**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.477446	0.065927	0.171594	0.156638	0.055185	0.009062	0.015877	0.037321	0.001132	0.001346	0.004831	0.000736	0.002906

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.5040	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0300e-003	1.0300e-003	0.0000	0.0000	1.0900e-003
Unmitigated	6.5040	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0300e-003	1.0300e-003	0.0000	0.0000	1.0900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.5039					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0300e-003	1.0300e-003	0.0000	0.0000	1.0900e-003
Total	**6.5040**	**1.0000e-005**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0300e-003**	**1.0300e-003**	**0.0000**	**0.0000**	**1.0900e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	6.5039					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0300e-003	1.0300e-003	0.0000	0.0000	1.0900e-003
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5040**	**1.0000e-005**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0300e-003**	**1.0300e-003**	**0.0000**	**0.0000**	**1.0900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Project Characteristics -

Land Use - 200k cubic yard= 41.32 acres

Construction Phase - construction timing from developer.

Off-road Equipment -

Off-road Equipment - Conveyor (Other Mat) average HP = 20, portable crusher, Water truck (Other const. 1) Default CalEEMod, Portable screen (Other const 2) Average HP = 127,

Trips and VMT - up to 6 workers, assumes a maximum 100 truck trips / day for 5yrs = 130000. approx total miles 10+8200 ft=11.55mi

Grading - total acers disturbed is 41.32 (200000 cubic yrds)

Architectural Coating - project is construction only

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Road Dust -

Consumer Products - project is construction only

Area Coating - project is construction only

Landscape Equipment - project is construction only

Water And Wastewater -

Construction Off-road Equipment Mitigation - construction equipment will be CARB tier 3 or better.

Area Mitigation - Project is construction only

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	0
tblAreaCoating	Area_Nonresidential_Interior	2699850	0
tblConstructionPhase	NumDays	30.00	1,306.00
tblGrading	AcresOfGrading	0.00	41.32
tblGrading	MaterialExported	0.00	200,000.00
tblOffRoadEquipment	HorsePower	255.00	0.00
tblOffRoadEquipment	HorsePower	97.00	98.00
tblOffRoadEquipment	HorsePower	171.00	172.00
tblOffRoadEquipment	HorsePower	171.00	127.00
tblOffRoadEquipment	HorsePower	167.00	20.00
tblOffRoadEquipment	LoadFactor	0.40	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2015
tblTripsAndVMT	HaulingTripLength	20.00	11.55
tblTripsAndVMT	HaulingTripNumber	25,000.00	130,000.00
tblTripsAndVMT	WorkerTripNumber	23.00	6.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.4686	5.0238	3.7138	6.4600e-003	0.5423	0.2344	0.7767	0.1313	0.2187	0.3500	0.0000	598.7019	598.7019	0.0811	0.0000	600.4039
2016	0.7300	7.8097	6.1015	0.0109	0.5588	0.3618	0.9206	0.1370	0.3375	0.4744	0.0000	1,004.2148	1,004.2148	0.1360	0.0000	1,007.0711
2017	0.6842	7.2399	5.9864	0.0109	0.5587	0.3329	0.8915	0.1369	0.3102	0.4472	0.0000	985.2688	985.2688	0.1344	0.0000	988.0904
2018	0.6099	6.4158	5.8604	0.0109	0.5589	0.2870	0.8458	0.1370	0.2675	0.4045	0.0000	973.8837	973.8837	0.1340	0.0000	976.6983
2019	0.5688	5.9141	5.8112	0.0109	0.5589	0.2603	0.8192	0.1370	0.2424	0.3794	0.0000	956.3717	956.3717	0.1331	0.0000	959.1674
2020	0.2231	2.2517	2.4020	4.5400e-003	0.5354	0.0992	0.6346	0.1290	0.0923	0.2213	0.0000	391.1771	391.1771	0.0554	0.0000	392.3397
Total	**3.2846**	**34.6550**	**29.8752**	**0.0546**	**3.3130**	**1.5755**	**4.8885**	**0.8082**	**1.4686**	**2.2768**	**0.0000**	**4,909.6180**	**4,909.6180**	**0.6740**	**0.0000**	**4,923.7708**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.4686	5.0238	3.7138	6.4600e-003	0.5221	0.2344	0.7564	0.1289	0.2187	0.3476	0.0000	598.7016	598.7016	0.0811	0.0000	600.4036
2016	0.7300	7.8097	6.1015	0.0109	0.5386	0.3618	0.9003	0.1345	0.3375	0.4720	0.0000	1,004.2142	1,004.2142	0.1360	0.0000	1,007.0705
2017	0.6842	7.2399	5.9864	0.0109	0.5384	0.3329	0.8713	0.1345	0.3102	0.4447	0.0000	985.2682	985.2682	0.1344	0.0000	988.0899
2018	0.6099	6.4158	5.8604	0.0109	0.5386	0.2870	0.8256	0.1345	0.2675	0.4020	0.0000	973.8832	973.8832	0.1340	0.0000	976.6977
2019	0.5688	5.9141	5.8112	0.0109	0.5386	0.2603	0.7989	0.1345	0.2424	0.3769	0.0000	956.3712	956.3712	0.1331	0.0000	959.1668
2020	0.2231	2.2517	2.4020	4.5400e-003	0.5152	0.0992	0.6144	0.1265	0.0923	0.2188	0.0000	391.1769	391.1769	0.0554	0.0000	392.3395
Total	**3.2846**	**34.6550**	**29.8752**	**0.0546**	**3.1914**	**1.5755**	**4.7669**	**0.7933**	**1.4686**	**2.2619**	**0.0000**	**4,909.6151**	**4,909.6151**	**0.6740**	**0.0000**	**4,923.7680**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**3.67**	**0.00**	**2.49**	**1.85**	**0.00**	**0.66**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.5040	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0300e-003	1.0300e-003	0.0000	0.0000	1.0900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5040**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0300e-003**	**1.0300e-003**	**0.0000**	**0.0000**	**1.0900e-003**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.5040	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0300e-003	1.0300e-003	0.0000	0.0000	1.0900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5040**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0300e-003**	**1.0300e-003**	**0.0000**	**0.0000**	**1.0900e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2015	6/1/2020	5	1306	

Acres of Grading (Site Preparation Phase): 41.32

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Crushing/Proc. Equipment	1	8.00	85	0.78
Site Preparation	Excavators	1	8.00	162	0.38
Site Preparation	Other Construction Equipment	2	8.00	172	0.42
Site Preparation	Other Construction Equipment	2	8.00	127	0.42
Site Preparation	Other Material Handling Equipment	1	8.00	20	0.40
Site Preparation	Rubber Tired Dozers	0	0.00	0	0.00
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	98	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	9	6.00	0.00	130,000.00	14.70	6.90	11.55	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0332	0.0000	0.0332	4.0800e-003	0.0000	4.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3499	3.4875	2.1432	3.0900e-003		0.2103	0.2103		0.1966	0.1966	0.0000	289.0451	289.0451	0.0782	0.0000	290.6880
Total	**0.3499**	**3.4875**	**2.1432**	**3.0900e-003**	**0.0332**	**0.2103**	**0.2436**	**4.0800e-003**	**0.1966**	**0.2007**	**0.0000**	**289.0451**	**289.0451**	**0.0782**	**0.0000**	**290.6880**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1167	1.5332	1.5391	3.3100e-003	0.5040	0.0240	0.5280	0.1259	0.0221	0.1480	0.0000	304.9606	304.9606	2.5500e-003	0.0000	305.0141
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-003	3.0000e-003	0.0315	6.0000e-005	5.0700e-003	4.0000e-005	5.1100e-003	1.3500e-003	4.0000e-005	1.3800e-003	0.0000	4.6963	4.6963	2.7000e-004	0.0000	4.7019
Total	**0.1187**	**1.5362**	**1.5706**	**3.3700e-003**	**0.5091**	**0.0240**	**0.5331**	**0.1273**	**0.0221**	**0.1494**	**0.0000**	**309.6569**	**309.6569**	**2.8200e-003**	**0.0000**	**309.7160**

3.2 Site Preparation - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0130	0.0000	0.0130	1.5900e-003	0.0000	1.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3499	3.4875	2.1432	3.0900e-003		0.2103	0.2103		0.1966	0.1966	0.0000	289.0447	289.0447	0.0782	0.0000	290.6876
Total	**0.3499**	**3.4875**	**2.1432**	**3.0900e-003**	**0.0130**	**0.2103**	**0.2233**	**1.5900e-003**	**0.1966**	**0.1982**	**0.0000**	**289.0447**	**289.0447**	**0.0782**	**0.0000**	**290.6876**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1167	1.5332	1.5391	3.3100e-003	0.5040	0.0240	0.5280	0.1259	0.0221	0.1480	0.0000	304.9606	304.9606	2.5500e-003	0.0000	305.0141
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-003	3.0000e-003	0.0315	6.0000e-005	5.0700e-003	4.0000e-005	5.1100e-003	1.3500e-003	4.0000e-005	1.3800e-003	0.0000	4.6963	4.6963	2.7000e-004	0.0000	4.7019
Total	**0.1187**	**1.5362**	**1.5706**	**3.3700e-003**	**0.5091**	**0.0240**	**0.5331**	**0.1273**	**0.0221**	**0.1494**	**0.0000**	**309.6569**	**309.6569**	**2.8200e-003**	**0.0000**	**309.7160**

3.2 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0332	0.0000	0.0332	4.0800e-003	0.0000	4.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5535	5.5063	3.6074	5.2300e-003		0.3292	0.3292		0.3075	0.3075	0.0000	485.4944	485.4944	0.1317	0.0000	488.2603
Total	**0.5535**	**5.5063**	**3.6074**	**5.2300e-003**	**0.0332**	**0.3292**	**0.3625**	**4.0800e-003**	**0.3075**	**0.3116**	**0.0000**	**485.4944**	**485.4944**	**0.1317**	**0.0000**	**488.2603**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1735	2.2989	2.4462	5.6000e-003	0.5170	0.0325	0.5495	0.1306	0.0299	0.1605	0.0000	511.0477	511.0477	3.8900e-003	0.0000	511.1295
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0100e-003	4.5500e-003	0.0479	1.0000e-004	8.5900e-003	6.0000e-005	8.6500e-003	2.2800e-003	6.0000e-005	2.3400e-003	0.0000	7.6727	7.6727	4.1000e-004	0.0000	7.6814
Total	**0.1765**	**2.3035**	**2.4941**	**5.7000e-003**	**0.5256**	**0.0326**	**0.5582**	**0.1329**	**0.0299**	**0.1628**	**0.0000**	**518.7204**	**518.7204**	**4.3000e-003**	**0.0000**	**518.8108**

3.2 Site Preparation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0130	0.0000	0.0130	1.5900e-003	0.0000	1.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5535	5.5063	3.6074	5.2300e-003		0.3292	0.3292		0.3075	0.3075	0.0000	485.4938	485.4938	0.1317	0.0000	488.2597
Total	**0.5535**	**5.5063**	**3.6074**	**5.2300e-003**	**0.0130**	**0.3292**	**0.3422**	**1.5900e-003**	**0.3075**	**0.3091**	**0.0000**	**485.4938**	**485.4938**	**0.1317**	**0.0000**	**488.2597**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1735	2.2989	2.4462	5.6000e-003	0.5170	0.0325	0.5495	0.1306	0.0299	0.1605	0.0000	511.0477	511.0477	3.8900e-003	0.0000	511.1295
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0100e-003	4.5500e-003	0.0479	1.0000e-004	8.5900e-003	6.0000e-005	8.6500e-003	2.2800e-003	6.0000e-005	2.3400e-003	0.0000	7.6727	7.6727	4.1000e-004	0.0000	7.6814
Total	**0.1765**	**2.3035**	**2.4941**	**5.7000e-003**	**0.5256**	**0.0326**	**0.5582**	**0.1329**	**0.0299**	**0.1628**	**0.0000**	**518.7204**	**518.7204**	**4.3000e-003**	**0.0000**	**518.8108**

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0332	0.0000	0.0332	4.0800e-003	0.0000	4.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5168	5.1308	3.5719	5.2100e-003		0.3032	0.3032		0.2829	0.2829	0.0000	477.1271	477.1271	0.1302	0.0000	479.8608
Total	**0.5168**	**5.1308**	**3.5719**	**5.2100e-003**	**0.0332**	**0.3032**	**0.3364**	**4.0800e-003**	**0.2829**	**0.2870**	**0.0000**	**477.1271**	**477.1271**	**0.1302**	**0.0000**	**479.8608**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1647	2.1050	2.3718	5.5800e-003	0.5169	0.0296	0.5466	0.1306	0.0273	0.1579	0.0000	500.7991	500.7991	3.8100e-003	0.0000	500.8791
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6500e-003	4.0600e-003	0.0427	1.0000e-004	8.5500e-003	6.0000e-005	8.6100e-003	2.2700e-003	6.0000e-005	2.3300e-003	0.0000	7.3426	7.3426	3.8000e-004	0.0000	7.3505
Total	**0.1674**	**2.1091**	**2.4145**	**5.6800e-003**	**0.5255**	**0.0297**	**0.5552**	**0.1329**	**0.0273**	**0.1602**	**0.0000**	**508.1417**	**508.1417**	**4.1900e-003**	**0.0000**	**508.2297**

3.2 Site Preparation - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0130	0.0000	0.0130	1.5900e-003	0.0000	1.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5168	5.1308	3.5719	5.2100e-003		0.3032	0.3032		0.2829	0.2829	0.0000	477.1265	477.1265	0.1302	0.0000	479.8602
Total	**0.5168**	**5.1308**	**3.5719**	**5.2100e-003**	**0.0130**	**0.3032**	**0.3161**	**1.5900e-003**	**0.2829**	**0.2845**	**0.0000**	**477.1265**	**477.1265**	**0.1302**	**0.0000**	**479.8602**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1647	2.1050	2.3718	5.5800e-003	0.5169	0.0296	0.5466	0.1306	0.0273	0.1579	0.0000	500.7991	500.7991	3.8100e-003	0.0000	500.8791
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6500e-003	4.0600e-003	0.0427	1.0000e-004	8.5500e-003	6.0000e-005	8.6100e-003	2.2700e-003	6.0000e-005	2.3300e-003	0.0000	7.3426	7.3426	3.8000e-004	0.0000	7.3505
Total	**0.1674**	**2.1091**	**2.4145**	**5.6800e-003**	**0.5255**	**0.0297**	**0.5552**	**0.1329**	**0.0273**	**0.1602**	**0.0000**	**508.1417**	**508.1417**	**4.1900e-003**	**0.0000**	**508.2297**

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0332	0.0000	0.0332	4.0800e-003	0.0000	4.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4497	4.4487	3.5152	5.2300e-003		0.2572	0.2572		0.2401	0.2401	0.0000	472.4735	472.4735	0.1298	0.0000	475.1992
Total	**0.4497**	**4.4487**	**3.5152**	**5.2300e-003**	**0.0332**	**0.2572**	**0.2904**	**4.0800e-003**	**0.2401**	**0.2442**	**0.0000**	**472.4735**	**472.4735**	**0.1298**	**0.0000**	**475.1992**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1579	1.9634	2.3066	5.5900e-003	0.5171	0.0297	0.5468	0.1306	0.0274	0.1580	0.0000	494.3185	494.3185	3.8800e-003	0.0000	494.4001
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3700e-003	3.6700e-003	0.0386	1.0000e-004	8.5900e-003	6.0000e-005	8.6500e-003	2.2800e-003	6.0000e-005	2.3400e-003	0.0000	7.0918	7.0918	3.5000e-004	0.0000	7.0991
Total	**0.1602**	**1.9671**	**2.3452**	**5.6900e-003**	**0.5256**	**0.0298**	**0.5554**	**0.1329**	**0.0274**	**0.1603**	**0.0000**	**501.4102**	**501.4102**	**4.2300e-003**	**0.0000**	**501.4991**

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0130	0.0000	0.0130	1.5900e-003	0.0000	1.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4497	4.4487	3.5152	5.2300e-003		0.2572	0.2572		0.2401	0.2401	0.0000	472.4729	472.4729	0.1298	0.0000	475.1986
Total	**0.4497**	**4.4487**	**3.5152**	**5.2300e-003**	**0.0130**	**0.2572**	**0.2701**	**1.5900e-003**	**0.2401**	**0.2417**	**0.0000**	**472.4729**	**472.4729**	**0.1298**	**0.0000**	**475.1986**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1579	1.9634	2.3066	5.5900e-003	0.5171	0.0297	0.5468	0.1306	0.0274	0.1580	0.0000	494.3185	494.3185	3.8800e-003	0.0000	494.4001
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3700e-003	3.6700e-003	0.0386	1.0000e-004	8.5900e-003	6.0000e-005	8.6500e-003	2.2800e-003	6.0000e-005	2.3400e-003	0.0000	7.0918	7.0918	3.5000e-004	0.0000	7.0991
Total	**0.1602**	**1.9671**	**2.3452**	**5.6900e-003**	**0.5256**	**0.0298**	**0.5554**	**0.1329**	**0.0274**	**0.1603**	**0.0000**	**501.4102**	**501.4102**	**4.2300e-003**	**0.0000**	**501.4991**

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0332	0.0000	0.0332	4.0800e-003	0.0000	4.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4137	4.0787	3.4967	5.2300e-003		0.2302	0.2302		0.2147	0.2147	0.0000	466.2435	466.2435	0.1290	0.0000	468.9523
Total	**0.4137**	**4.0787**	**3.4967**	**5.2300e-003**	**0.0332**	**0.2302**	**0.2634**	**4.0800e-003**	**0.2147**	**0.2188**	**0.0000**	**466.2435**	**466.2435**	**0.1290**	**0.0000**	**468.9523**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1530	1.8321	2.2795	5.5600e-003	0.5171	0.0301	0.5471	0.1306	0.0277	0.1583	0.0000	483.3350	483.3350	3.8100e-003	0.0000	483.4151
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1500e-003	3.3500e-003	0.0350	1.0000e-004	8.5900e-003	6.0000e-005	8.6400e-003	2.2800e-003	6.0000e-005	2.3400e-003	0.0000	6.7933	6.7933	3.2000e-004	0.0000	6.8000
Total	**0.1551**	**1.8354**	**2.3145**	**5.6600e-003**	**0.5257**	**0.0301**	**0.5558**	**0.1329**	**0.0277**	**0.1606**	**0.0000**	**490.1282**	**490.1282**	**4.1300e-003**	**0.0000**	**490.2151**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0130	0.0000	0.0130	1.5900e-003	0.0000	1.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4137	4.0787	3.4967	5.2300e-003		0.2302	0.2302		0.2147	0.2147	0.0000	466.2429	466.2429	0.1290	0.0000	468.9518
Total	**0.4137**	**4.0787**	**3.4967**	**5.2300e-003**	**0.0130**	**0.2302**	**0.2432**	**1.5900e-003**	**0.2147**	**0.2163**	**0.0000**	**466.2429**	**466.2429**	**0.1290**	**0.0000**	**468.9518**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1530	1.8321	2.2795	5.5600e-003	0.5171	0.0301	0.5471	0.1306	0.0277	0.1583	0.0000	483.3350	483.3350	3.8100e-003	0.0000	483.4151
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1500e-003	3.3500e-003	0.0350	1.0000e-004	8.5900e-003	6.0000e-005	8.6400e-003	2.2800e-003	6.0000e-005	2.3400e-003	0.0000	6.7933	6.7933	3.2000e-004	0.0000	6.8000
Total	**0.1551**	**1.8354**	**2.3145**	**5.6600e-003**	**0.5257**	**0.0301**	**0.5558**	**0.1329**	**0.0277**	**0.1606**	**0.0000**	**490.1282**	**490.1282**	**4.1300e-003**	**0.0000**	**490.2151**

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0332	0.0000	0.0332	4.0800e-003	0.0000	4.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1605	1.5664	1.4519	2.1800e-003		0.0867	0.0867		0.0808	0.0808	0.0000	191.1874	191.1874	0.0536	0.0000	192.3138
Total	**0.1605**	**1.5664**	**1.4519**	**2.1800e-003**	**0.0332**	**0.0867**	**0.1199**	**4.0800e-003**	**0.0808**	**0.0849**	**0.0000**	**191.1874**	**191.1874**	**0.0536**	**0.0000**	**192.3138**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0618	0.6840	0.9365	2.3200e-003	0.4986	0.0125	0.5111	0.1240	0.0115	0.1354	0.0000	197.2688	197.2688	1.6000e-003	0.0000	197.3023
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	1.2900e-003	0.0135	4.0000e-005	3.5900e-003	2.0000e-005	3.6100e-003	9.5000e-004	2.0000e-005	9.8000e-004	0.0000	2.7209	2.7209	1.3000e-004	0.0000	2.7236
Total	**0.0626**	**0.6853**	**0.9501**	**2.3600e-003**	**0.5022**	**0.0125**	**0.5147**	**0.1249**	**0.0115**	**0.1364**	**0.0000**	**199.9897**	**199.9897**	**1.7300e-003**	**0.0000**	**200.0259**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0130	0.0000	0.0130	1.5900e-003	0.0000	1.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1605	1.5664	1.4519	2.1800e-003		0.0867	0.0867		0.0808	0.0808	0.0000	191.1872	191.1872	0.0536	0.0000	192.3136
Total	**0.1605**	**1.5664**	**1.4519**	**2.1800e-003**	**0.0130**	**0.0867**	**0.0997**	**1.5900e-003**	**0.0808**	**0.0824**	**0.0000**	**191.1872**	**191.1872**	**0.0536**	**0.0000**	**192.3136**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0618	0.6840	0.9365	2.3200e-003	0.4986	0.0125	0.5111	0.1240	0.0115	0.1354	0.0000	197.2688	197.2688	1.6000e-003	0.0000	197.3023
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	1.2900e-003	0.0135	4.0000e-005	3.5900e-003	2.0000e-005	3.6100e-003	9.5000e-004	2.0000e-005	9.8000e-004	0.0000	2.7209	2.7209	1.3000e-004	0.0000	2.7236
Total	**0.0626**	**0.6853**	**0.9501**	**2.3600e-003**	**0.5022**	**0.0125**	**0.5147**	**0.1249**	**0.0115**	**0.1364**	**0.0000**	**199.9897**	**199.9897**	**1.7300e-003**	**0.0000**	**200.0259**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.474745	0.065936	0.172132	0.156409	0.055843	0.009120	0.016202	0.038647	0.001119	0.001338	0.004871	0.000723	0.002914

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.5040	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0300e-003	1.0300e-003	0.0000	0.0000	1.0900e-003
Unmitigated	6.5040	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0300e-003	1.0300e-003	0.0000	0.0000	1.0900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.5039					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0300e-003	1.0300e-003	0.0000	0.0000	1.0900e-003
Total	**6.5040**	**1.0000e-005**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0300e-003**	**1.0300e-003**	**0.0000**	**0.0000**	**1.0900e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.5039					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0300e-003	1.0300e-003	0.0000	0.0000	1.0900e-003
Total	**6.5040**	**1.0000e-005**	**5.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0300e-003**	**1.0300e-003**	**0.0000**	**0.0000**	**1.0900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

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Appendix B.1
Biological Resources Report (2009)

BIOLOGICAL RESOURCES REPORT
SAN ANTONIO HEIGHTS BASIN 5 & 6 STOCKPILE AND CUCAMONGA CROSSWALL EXCAVATION
SAN ANTONIO HEIGHTS, CA

Prepared by: Brandy Wood, Ecological Resource Specialist
San Bernardino County
Department of Public Works
Environmental Management Division
(909) 387-7971

Date: February 12, 2009

USGS Mt. Baldy Quad T1N, R7W, Sections 19 / 20
Thomas Guide page 572, C & D-1

Background

The proposed project is located in San Antonio Heights within the city of Upland, CA. Proposed work consists of:

1. The excavation of the sediment load within the Cucamonga crosswalls, along Cucamonga Creek Channel, north of the Cucamonga debris dam. The sediment from the crosswalls will be deposited in front of the Cucamonga dam.
2. Two stockpiles from the front of San Antonio Heights basins 5 & 6 will be moved to an area below the Cucamonga dam. Construction equipment will include, but not be limited to, front-end loader, water truck, grader, backhoe, and dump trucks.

Environmental Setting

Cucamonga Crosswalls

The Cucamonga crosswalls are composed of a series of rock-filled gabion walls designed to collect sediment and debris from flows reaching Cucamonga dam. The crosswalls are in a perpendicular orientation to the channel flowing between them (figure 1). The channel itself contains native vegetation composed of open Riversidean alluvial fan sage scrub, a California Department of Fish and Game (CDFG) sensitive habitat, surrounded by non native grasses and annuals such as mustard (*Brassica sp*.) and tree tobacco (*Nicotiana glauca*). Also, between the crosswalls there are several small ponds with mulefat (*Baccharis salicifolia*), willows (*Salix sp*.) and Fremont cottonwood (*Populus fremontii*).

Riversidean alluvial fan sage scrub (RAFSS) consists of drought-deciduous sub-shrubs and large evergreen woody shrubs adapted to survive intense, periodic flooding and scouring of the substrate. Pioneer, intermediate-aged, and mature-aged describe the three stages of the RAFSS plant community. Pioneer RAFSS has sparse vegetation and low plant diversity; this stage is present within the crosswalls. Intermediate RAFSS is characterized by more dense vegetation dominated by sub-shrubs, and the mature RAFSS has dense full grown sub-shrubs, along with evergreen woody shrubs and other components of a more chaparral type habitat. Intermediate

and mature RAFSS dominate the edges, banks and upper benches of the overall area. Also found in the area is scale-broom (*Lepidospartum squamatum*), which is a common shrub species that is often found on alluvial soils associated with drainages and is considered an indicator species of RAFSS. Other common species associated with RAFSS include California sagebrush (*Artemisia californica),* California buckwheat (*Eriogonum fasciculatum*), yerba santa (*Eriodictyon trichocalyx*), sugarbush (*Rhus ovata*), birch-leaved mountain mahogany (*Cercocarpus betuloides*) and deerweed (*Lotus scoparius*).

San Antonio Heights Basin stockpiles

Two stockpiles in front of the San Antonio Heights Basins 5 and 6 are located north of 26th street. The western stockpile (9 acres) has an area on top that is heavily disturbed by operations type vehicle traffic and is lacking vegetation (1.65 acres). On the top of the stockpile, there are two large mounds of earth within this area that are vegetated, the largest can be described as mule fat scrub; a combination of coastal sage scrub with several large mulefat plants, the other mound consisting of coastal sage components and weeds. On the sides of the stockpile, both eastern and southwest portions are heavily vegetated by Riversidian "coastal" sage scrub/Riversidian alluvial fan sage scrub. Characteristic plants found here include California sagebrush (*Artemisia californica*), scalebroom (*Leptospartum squamatum*), white sage (*Salvia apiana*), California buckwheat (*Eriogonum fasciculatum*), yerba santa (*Eriodictyon trichocalyx*), deer weed (*Lotus scoparius*), and tarragon (*Artemisia dracunculus*).

The eastern stockpile (0.5 acres) is covered with annual grasses and forbs.

Endangered Species Review

The California Natural Diversity Database (CNDDB, 2009) for the Ontario, CA Quad as well as the Mt. Baldy quad was reviewed, along with aerial photographs. The California gnatcatcher (*Polioptila californica californica),*a federally threatened species have historically occurred in southwestern San Bernardino County, and although they have not been found within the project site in recent years, there have been observations of gnatcatchers in nearby areas. More importantly there is suitable habitat for the gnatcatcher on both sites. From the USFWS final rule, the coastal California gnatcatcher occurs almost exclusively in the coastal sage scrub plant community.

Additionally, several species of special concern also have a high potential of occurring on site including:

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)
San Diego desert woodrat (*Neotoma lepida intermedia*)
Coast horned lizard (*Phrynosoma coronatum blainvillii*)

Plummer's mariposa-lily (*Calochortus plummerae*)
Parry's spineflower (*Chorizanthe parryi* var. *parryi*)
Mesa horkelia (*Horkelia cuneata* ssp. *puberula*)

Determination

In San Bernardino County, coastal sage scrub and Riversidian alluvial fan sage scrub are becoming increasingly rare habitats. Urbanization, anthropogenic and natural disturbances have led to an estimated loss of 70%-90% of the coastal sage scrub in southern California (Rundel 2007). Loss of sage scrub habitat has led to the listing of 11 mammal, 26 bird, and 10 reptile species as threatened or endangered (Keeley and Swift 1995). Riversidian alluvial fan sage scrub is ranked very threatened (S1.1) by state ranking and the highest global ranking (G1) meaning there are less than 6 viable element occurrences or less than 2000 acres left (www.dfg.ca.gov). Both projects are vegetated by Riversidian alluvial sage scrub, which is considered a very rare and threatened sensitive biological resource by the California Plant Society and the California Department of Fish and Game (CDFG). The law requires notification of CDFG, the Regional Water Quality Control Board, and Army Corps of Engineers for projects that may affect state special status species, alter a stream bed, bank, or channel, and will affect water quality and/or "Waters of the United States".

Protocol level focused survey for California gnatcatcher would be required.

Recommendations

All construction activity should occur outside of bird-nesting season (February 15- August 15).

Impacts to sensitive species for construction/work other than what is described in this report have not been evaluated. Future work should be reviewed by a qualified biologist and/or ecologist.

Cucamonga Channel
Crosswall
Crosswall
Crosswall
Crosswall
Crosswall
Crosswall
Crosswall
Channel
Crosswall
Crosswall
Ranch Gate Rd
Hillsi
shapefiles (c) 2008 San Bernardino
February 2008 Image 1ft (c) I.K. Curtis Services, Inc.
W elev 1991 ft
Streaming 100%

Figure 1

Appendix B.2
Focused Surveys for CAGN(2009)

Focused Surveys for California Gnatcatcher, in the Area of the Cucamonga Creek Flood Control Basin San Bernardino County, California

Section 20 (plus lands not sectioned), Township 1 North,
Range 7 West, USGS Mt. Baldy
7.5-Minute Topographic Quadrangle

Prepared for:

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December 2009

ICF Jones & Stokes. 2009. Focused Surveys for California Gnatcatcher in the Area of the Cucamonga Creek Flood Control Basin, San Bernardino County, California. December. (JSA 00449.08) Irvine, CA.

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Abbreviations and Acronyms

CNDDB	California Natural Diversity Database
CDFG	California Department of Fish and Game
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Chapter 1
Introduction

This report summarizes the findings of focused surveys to determine the presence or absence of Coastal California Gnatcatcher (*Polioptila californica californica*) on and adjacent to proposed sediment removal activities in the area of the Cucamonga Creek Flood Control Basin. The study area included habitat potentially suitable of supporting Coastal California Gnatcatcher within the proposed area of disturbance, plus a 500-foot buffer.

The study area is in the floodplain and upper terraces of Cucamonga Creek, where the creek empties from the foothills of the San Gabriel Mountains. It is located in the San Antonio Heights area of Upland, San Bernardino County, California (Figure 1).

The study area is in Section 20 (plus lands not sectioned), Township 1 North, Range 7 West (San Bernardino Baseline and Meridian), San Bernardino County, California (Figure 2). This location is shown on the Mt. Baldy, California 7.5-minute U.S. Geological Survey (USGS) quadrangle (Mt. Baldy 2007) and on page 572 (blocks D1, D2, and D3) of the San Bernardino County Street Guide and Directory (Thomas Brothers Maps Design 2007).

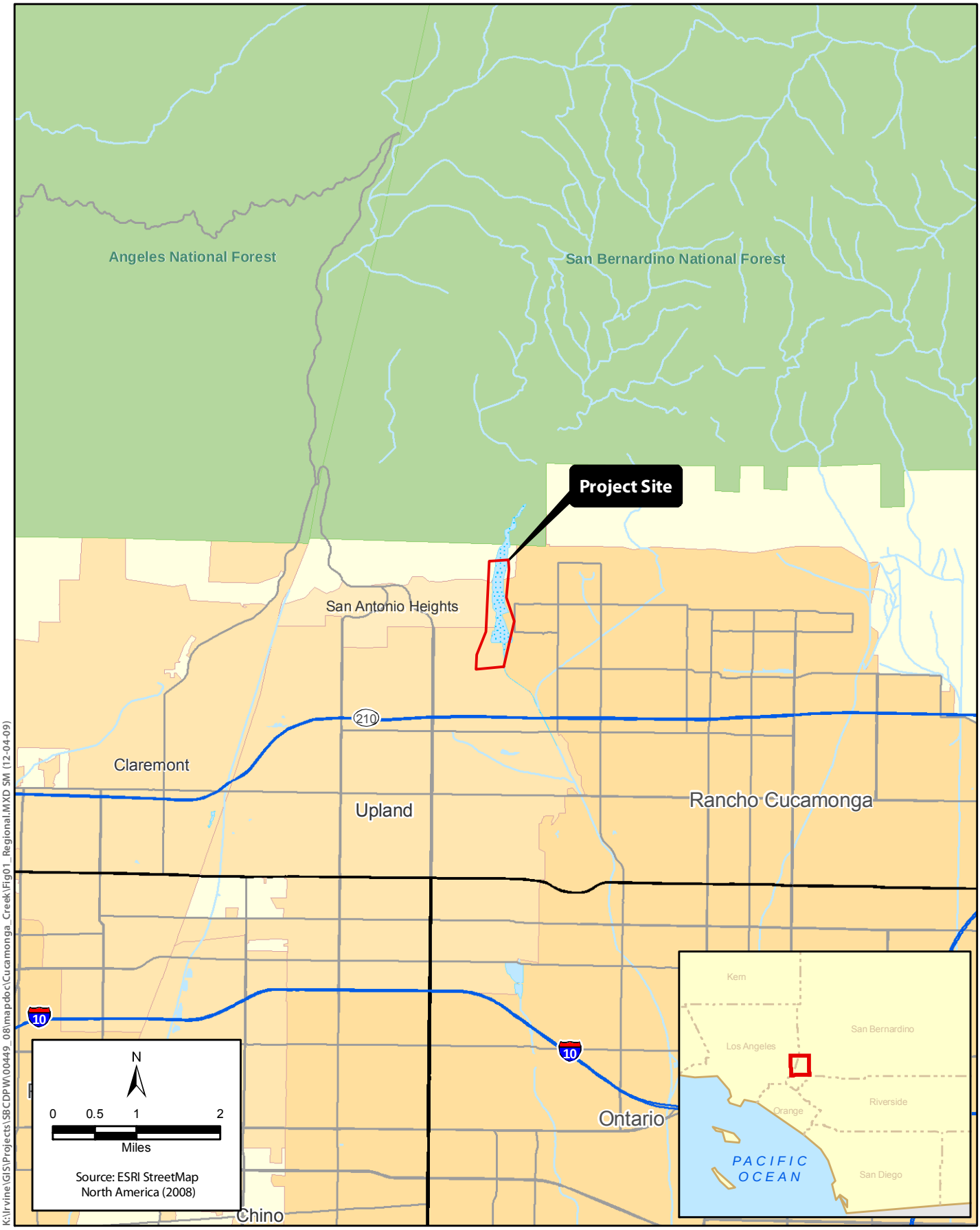

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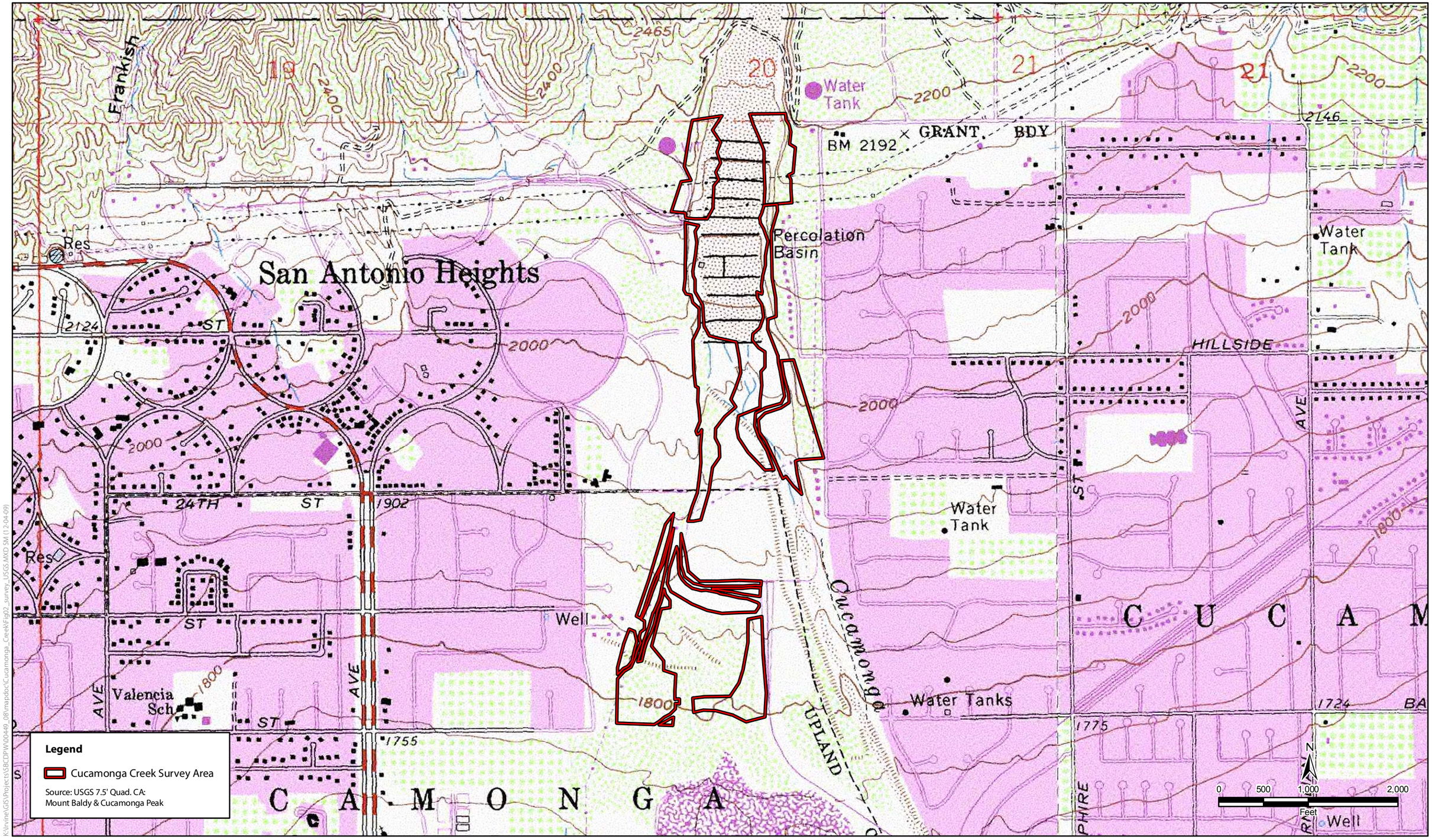
Figure 1
Regional Vicinity Map
Focused California Gnatcatcher Survey-
Cucamonga Creek



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an ICF International Company

Figure 2
Suitable Habitat Surveyed for California Gnatcatcher
Focused California Gnatcatcher Surveys-
Cucamonga Creek

Chapter 2
Study Area Conditions

This chapter summarizes conditions in the study area and surrounding lands. For purposes of this report, the term *study area* includes potentially suitable habitat within the limits of disturbance and a surrounding 500-foot buffer (Figure 3). The term *project site* encompasses the proposed limits of disturbance. The study area includes approximately 80 acres of potentially suitable habitat for Coastal California Gnatcatcher.

2.1 Physical Conditions

The study area is in the floodplain and upper terraces of Cucamonga Creek, where the creek empties from the foothills of the San Gabriel Mountains. The Cucamonga Creek floodplain is an active floodplain subject to annual flooding. As a result, much of the floodplain is scoured and consists of sand, cobles, and boulders and supporting little to no vegetation. Raised terraces (or benches) within the floodplain are less subject to flooding, and therefore consist of stabilized soils that support mixed densities of shrubs. Upstream (north) of the Cucamonga Creek flood control dam, the walls of the floodplain are tall and steep, with the tallest slopes along the north end of the study area. In general, the walls of the floodplain support scattered sage scrub shrubs on the west side (east facing) and dense chaparral shrubs on the east side (west facing). The upper terraces above the floodplain are comprised of mixed residential, county flood control infrastructure, municipal water storage (tanks), dirt maintenance roads, and open space. Open space on these upper terraces consists of a dense cover of shrubs. South of the Cucamonga Creek flood control dam, the study area is relatively flat and consists of a mix of disturbed habitat and mixed densities of native shrubs. Elevation in the study area ranges from 1,800 feet to 2,170 feet above sea level.

2.2 Vegetation

Dominant vegetation communities in the study area include alluvial fan sage scrub and southern mixed chaparral. Other vegetation communities present include southern willow scrub, mule fat scrub, disturbed habitat (ruderal), ornamental vegetation, and development.

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Figure 3
Suitable Habitat Surveyed for California Gnatcatcher
Focused California Gnatcatcher Surveys-
Cucamonga Creek

Alluvial fan sage scrub is composed of an assortment of drought-deciduous subshrubs and large evergreen woody shrubs adapted to the porous, low-fertility substrate and to survival of intense, periodic flooding and erosion. Step-like shrub-covered terraces above wash channels exhibit different phases of alluvial fan sage scrub vegetation. Physical and biological characteristics on each terrace directly relate to the distance from the main flood channels, amount of time since the last flood event, and various other related factors such as duration, velocity, and magnitude of the last flood event. Three primary seral phases of alluvial fan sage scrub vegetation, frequently blending into each other, have been recognized within the area of the survey site. The three phases are referred to as pioneer, intermediate, and mature phase alluvialfan sage scrub vegetation (Smith 1980 and Hanes et al. 1989). The pioneer phase is the initial colonizing form of alluvial scrub vegetation and exists where there have been recent flood events. It generally occupies the central axis of drainage channels scoured during flood flows and, accordingly, is on the lowest terraces in the study area. Vegetation tends to be sparse. The intermediate phase is composed mainly of subshrubs that have existed for an intermediate period and are generally supported on terraces above scoured channels. The mature phase is characterized by large woody shrubs at a generally higher density than the intermediate phase. Vegetation associated with the mature phase is supported on stabilized soils of terraces that are generally higher or farther away from active flood channels.

Alluvial fan sage scrub in the study area is dominated by Scale-broom (*Lepidospartum squamatum*), California Buckwheat (*Eriogonum fasciculatum*), Yerba Santa (*Eriodictyon trichocalyx* var. *trichocalyx*), California Sagebrush (*Artemisia californica*), Pine Goldenbush (*Ericameria pinifolia*), Holly-leaved Cherry (*Prunus ilicifolia*), Sugarbush (*Rhus ovata*), Spiny Redberry (*Rhamnus crocea*), Hoaryleaf Ceanothus (*Ceanothus crassifolius*), and Chaparral Whitethorn (*Ceanothus leucodermis*).

Other vegetation communities in the study area include disturbed habitat dominated by non-native grasses (e.g., *Bromus* sp.) and Short-pod Mustard (*Hirschfeldia incana*), Mule Fat Scrub dominated by Mule Fat (*Baccharis salicifolia*), and Southern Mixed Chaparral dominated by Chamise (*Adenostoma fasciculatum*), Spiny Redberry, Holly-leaved Cherry, Hoaryleaf Ceanothus, Chaparral Whitethorn. There is a dense stand of Southern Willow Scrub clustered around a water outlet along the northeast corner of the study area. Species associated with this vegetation community include *Salix* sp. and Mule Fat. Trees in the floodplain are limited to only a few scattered individual Western Sycamores (*Platanus racemosa*) and Black Willows (*Salix gooddingii*). In contrast, residential development on both sides of the floodplain supports numerous ornamental trees and other plantings.

2.3 Wildlife

The study area supports wildlife species typically found in urban settings, and species that can be associated with disturbed natural settings.

Observed reptile species include Western Fence Lizard (*Sceloporus occidentalis*), Side-blotched Lizard (*Uta stansburiana*), and Southern Alligator Lizard (*Elgaria multicarinata*).

Common observed bird species include Red-tailed Hawk (*Buteo jamaicensis*), American Kestrel (*Falco sparverius*), Mourning Dove (*Zenaida macroura*), Anna's Hummingbird (*Calypte anna*), Costa's Hummingbird (*Calypte costae*), American Crow (*Corvus brachyrhynchos*), Common Raven (*Corvus corax*), Bewick's Wren (*Thryomanes bewickii*), House Wren (*Troglodytes aedon*), Wrentit (*Chamaea fasciata*), Northern Mockingbird (*Mimus polyglottos*), Yellow-rumped Warbler (*Dendroica coronata*), Blue-gray Gnatcatcher (*Polioptila caerulea*), Califoria Towhee (*Pipilo crissalis*), Spotted Towhee (*Pipilo maculatus*), Bushtit (*Psaltriparus minimus*), House Finch (*Carpodacus mexicanus*), and Lesser Goldfinch (*Carduelis psaltria*). A complete listing of the bird species detected is provided in Appendix B.

Detected mammal species include Botta's pocket gopher (*Thomomys bottae*), California Ground Squirrel (*Spermophilus beecheyi*), and Coyote (*Canis latrans*).

No special-status wildlife species were detected in the study area.

Chapter 3

California Gnatcatcher Focused Survey

This chapter describes the background, methods, and results of the focused survey for Coastal California Gnatcatcher in the study area.

3.1 Background

The Coastal California Gnatcatcher is a resident species in coastal (Diegan or Venturan) and inland (Riversidean) sage scrub plant communities of southern California, especially where dominated by California Sagebrush and California Buckwheat. Examples of other shrubs in habitat occupied by Coastal California Gnatcatcher include California Bush Sunflower (*Encelia californica*), Brittlebush (*Encelia farinosa*), Black Sage (*Salvia mellifera*), White Sage (*Salvia apiana*), and Deerweed (*Lotus scoparius*). Coastal California Gnatcatcher has a restricted range in the United States, primarily limited to Orange, western Riverside, and San Diego Counties. Relatively small, fragmented populations of Coastal California Gnatcatcher are known to occur in Los Angeles and southwestern San Bernardino Counties. An extremely isolated population was recently rediscovered in Ventura County, where this species was considered extirpated. Coastal California Gnatcatcher is generally found at elevations below 250 meters (800 feet) along the coast and up to 250 to 500 meters (800 to 1,600 feet) at inland locations (Atwood 1993).

North of Mexico, Coastal California Gnatcatcher underwent significant population declines during the late 1900s. As of 1990, the gnatcatcher population in California was estimated at approximately 2,000 or fewer pairs (Atwood 1993). A U.S. Fish and Wildlife Service (USFWS) estimate in 1999 revised the total to approximately 3,000 pairs (Atwood and Bontrager 2001). This species' decline has been attributed to loss of its preferred habitat from development, agricultural conversion, fuel modification, and brood parasitism by brown-headed cowbirds (*Molothrus ater*). Thus, the USFWS proposed the Coastal California Gnatcatcher for listing as a federally endangered/threatened species in September 1991, and officially designated it as a federally threatened species in March 1993.

The study area is not in lands designated as critical habitat for Coastal California Gnatcatcher as defined by the USFWS. Critical habitat refers to specific geographic areas essential for the conservation of a threatened or endangered species and that might require special management consideration or protection.

A critical habitat designation on private land has no affect on private landowner activities that do not require federal funding or permits. Such a designation applies only to federal activities. Similarly, the designation of critical habitat has no affect on whether an area is determined to be suitable for an threatened or endangered species; in other words, it is quite reasonable that suitable habitat be found and focused surveys required in suitable habitat that is outside of critical habitat, as is the case for this project.

Although the study area is not on critical habitat for this species, for the sake of clarification, the study area was on lands designated as critical habitat in the past. Specifically, at the time of the designation in 2000 (Federal Register 2000), the study area was associated with critical habitat referred to as Unit 13. Unit 13 was one of 15 units that included portions of San Diego, Orange, Los Angeles, Riverside, and San Bernardino Counties. Unit 13 encompassed approximately 30,076 hectares (74,316 acres) along the foothills of the San Gabriel Mountains and within the Jurupa Hills on the border of San Bernardino and Riverside Counties. In 2003, the USFWS revised their proposed areas to designate as critical habitat for the species (Federal Register 2003). The proposed revision included 13 units (instead of 15) and included a portion of Ventura County. The total area associated with San Bernardino County was reduced and fell into an area referred to as Unit 11. Finally, in 2007 the USFWS issued their final rule regarding critical habitat for the Coastal California Gnatcatcher (Federal Register 2007). In this rule, the USFWS removed all lands proposed as critical habitat in Unit 11 (6,065 hectares [14,990 acres]) from the revised final designation.

According BIOS, a system designed to enable the management, visualization, and analysis of biogeographic data, in this case collected by the Carlsbad US Fish and Wildlife Service, the nearest reported occurrence of Coastal California Gnatcatchers is 4.6 6 miles east of the study area on an alluvial fan associated with Deer Creek. There is also a Coastal California Gnatcatcher occurrence approximately 6.4 miles to the southeast of the study area within Day Creek. The reported occurrences are from 1999. There are additional occurrences reported for California gnatcatcher further east along the Etiwanda Fan. No reported occurrences of Coastal California Gnatcatcher are reported on the California Natural Diversity Database (CNDDB) for the Mt. Baldy quadrangle.

3.2 Methods

The survey protocol to determine presence or absence of Coastal California Gnatcatcher requires a federal 10(A)1(a) permit. From August 13 through December 3, 2009, Phillip Richards (permit # TE-095896) and Kylie Fischer (permit # TE-321039) performed a focused survey for Coastal California Gnatcatcher in potential habitat in the study area. . Table 3-1 summarizes the dates, times, and conditions for each visit.

Table 3-1. Dates, Times, and Conditions for California Gnatcatcher Survey Visits

Date	Times	Biologist	Conditions
08/13/09	0655-1025	Phillip Richards	68 – 85°F, sunny, no dew, wind 0-4 mph, good visibility
08/27/09	0620-1100	Phillip Richards	73 – 94°F, sunny, no dew, wind 0-3 mph, good visibility
09/10/09	0619-1150	Phillip Richards	71 – 87°F, sunny, no dew, wind 0-5 mph, good visibility
09/24/09	0628-1155	Phillip Richards	75 – 88°F, sunny, no dew, wind 0-4 mph, good visibility
10/08/09	0640-1200	Phillip Richards	50 – 72°F, sunny, no dew, wind 1-4 mph, good visibility
10/22/09	0645-1155	Phillip Richards	62 – 84°F, sunny, no dew, wind 0-4 mph, good visibility
11/05/09	0600-1015	Kylie Fischer	52 – 63°F, sunny, no dew, wind 0 mph, good visibility
11/19/09	0645-1045	Phillip Richards	50 – 69°F, sunny, no dew, wind 0-4 mph, good visibility
12/03/09	0650-1115	Phillip Richards	45 – 61°F, cloudy to sunny, no dew, wind 0-6 mph, good visibility

The surveys followed the published survey methodology for Coastal California Gnatcatcher (USFWS 1997). On each of the nine survey visits, surveyors carefully checked all potential habitat for this species. The survey included slow walking with frequent stops to listen and play taped coastal California Gnatcatcher vocalizations. During each visit, surveyors played tape vocalizations at least once in all potential habitat at distance intervals of approximately 23 to 30 meters (75 to 100 feet).

All potential suitable habitat in the study area was surveyed during the morning hours according to the current protocol for such work. The rate of coverage during each survey visit was approximately 6 to 8 hectares (15 to 20 acres) per hour. Component floral species and their physical structures and conditions were evaluated based on both personal experience with and published literature on this species' habitat requirements. Habitat structure was not analyzed quantitatively.

3.3 Results

Surveyors did not detect Coastal California Gnatcatcher on or in the immediate vicinity of the study area. The species can be considered absent at this time. Typically, the results of a focused survey are valid for one year.

Chapter 4
Conclusions

From August 13 through December 3, 2009, surveyors performed USFWS protocol focused surveys to determine the presence or absence of Coastal California Gnatcatcher on and 500 feet beyond the proposed limits of disturbance from proposed sediment removal activities within Cucamonga Creek.

Surveyors did not detect Coastal California Gnatcatcher on or in the immediate vicinity of the study area; the species can be considered absent at this time. Typically, the results of a focused survey are valid for one year.

Chapter 5
Certification

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

_____ December 8, 2009
Phillip Richards Date
Staff Biologist

_____ December 8, 2009
Kylie Fischer Date
Wildlife Biologist

Chapter 6
Cited References

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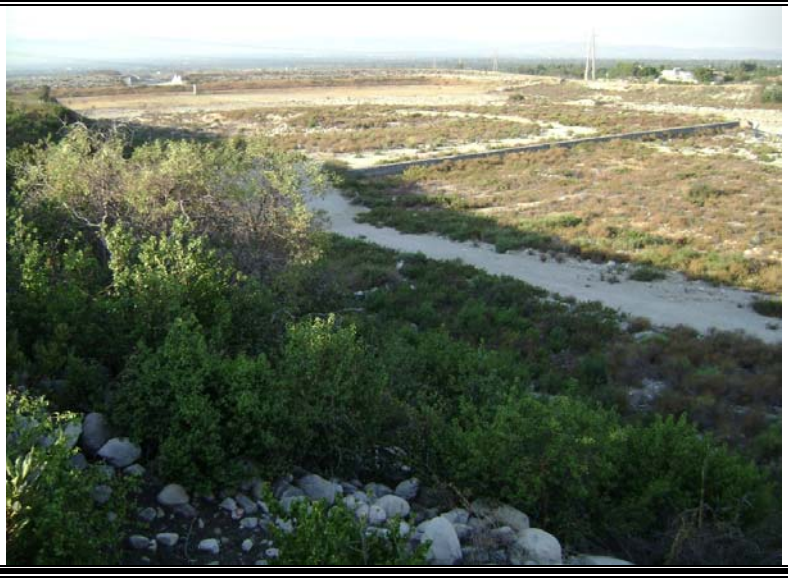
Appendix A

Photographic Log



Photograph: 1

Photo Date: August 27, 2009

Location: East side of creek on upper terrace, about 0.5 miles north of dam.

Direction: View facing southwest

Comment: Photo depicts floodplain, flood control dam and shrub cover within and on slopes of floodplain.

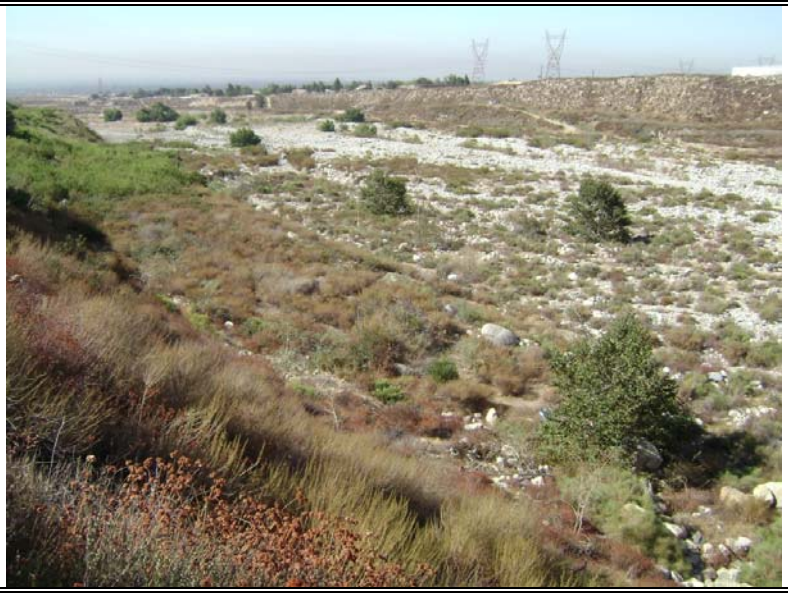
Photograph: 2

Photo Date: August 27, 2009

Location: East side of creek at base of floodplain terrace, about 0.80 miles north of dam.

Direction: View facing southwest

Comment: Photo depicts floor of floodplain.



Photograph: 3

Photo Date: August 27, 2009

Location: East side of creek at base of floodplain terrace, about 1.0 miles north of dam.

Direction: View facing southwest.

Comment: Photo depicts floodplain as seen from the top of the upper terrace.

Photograph: 4

Photo Date: August 27, 2009

Location: West side of creek from top of upper terrace, about 0.75 miles north of dam.

Direction: View facing east across floodplain.

Comment: Photo depicts floodplain as seen from top of upper terrace.

Photograph: 5

Photo Date: August 27, 2009

Location: Parcel southwest of dam.

Direction: View facing east.

Comment: Photo depicts extant scrub supported on edges of parcel, south of dam.

Photograph: 6

Photo Date: August 27, 2009

Location: Parcel southwest of dam.

Direction: View facing southwest.

Comment: Photo depicts disturbed conditions located south of dam.

Appendix B

Avian Species Detected

Appendix B. Avian Species Detected

Scientific Name	Common Name	Special Status
VERTEBRATES		
Birds		
Callipepla californica	California Quail	
Accipiter cooperii	Cooper's Hawk	
Buteo jamaicensis	Red-tailed Hawk	
Falco sparverius	American Kestrel	
Falco mexicanus	Prairie Falcon	
Charadrius vociferus	Killdeer	
**Columba livia*	Rock Pigeon	
Zenaida macroura	Mourning Dove	
Columbina passerina	Common Ground-Dove	
Chordeiles acutipennis	Lesser Nighthawk	
Calypte anna	Anna's Hummingbird	
Calypte costae	Costa's Hummingbird	
Picoides nuttallii	Nuttall's Woodpecker	
Colaptes auratus	Northern Flicker	
Sayornis nigricans	Black Phoebe	
Sayornis saya	Say's Phoebe	
Tyrannus vociferans	Cassin's Kingbird	
Tyrannus verticalis	Western Kingbird	
Aphelocoma californica	Western Scrub-Jay	
Corvus corax	Common Raven	
Psaltriparus minimus	Bushtit	
Salpinctes obsoletus	Rock Wren	
Thryomanes bewickii	Bewick's Wren	
Troglodytes aedon	House Wren	
Regulus calendula	Ruby-crowned Kinglet	
Polioptila caerulea	Blue-gray Gnatcatcher	
Chamaea fasciata	Wrentit	
Mimus polyglottos	Northern Mockingbird	
Toxostoma redivivum	California Thrasher	
Phainopepla nitens	Phainopepla	

Scientific Name	Common Name	Special Status
Dendroica coronata	Yellow-rumped Warbler	
Pipilo maculatus	Spotted Towhee	
Pipilo crissalis	California Towhee	
Aimophila ruficeps canescens	Southern California Rufous-crowned Sparro	
Chondestes grammacus	Lark Sparrow	
Melospiza melodia	Song Sparrow	
Zonotrichia leucophrys	White-crowned Sparrow	
Junco hyemalis	Dark-eyed Junco	
Sturnella neglecta	Western Meadowlark	
Icterus bullockii	Bullock's Oriole	
Carpodacus mexicanus	House Finch	
Carduelis psaltria	Lesser Goldfinch	

Legend

*= Non-native or invasive species

Special Status:

Federal:
FE = Endangered
FT = Threatened

State:
SE = Endangered
ST =Threatened
CSC = Species of Special Concern
FPS = California Fully Protected Species

Appendix B.3
Focused Surveys for CAGN(2012)

July 23, 2012

Impact Sciences, Inc.
803 Camarillo Springs Road
Suite A
Camarillo, CA 93012
Attention: Mr. Daryl Koutnik

Subject: Results of Focused California Gnatcatcher Surveys on the Cucmonga Crosswalls Project Site, County of San Bernardino, CA

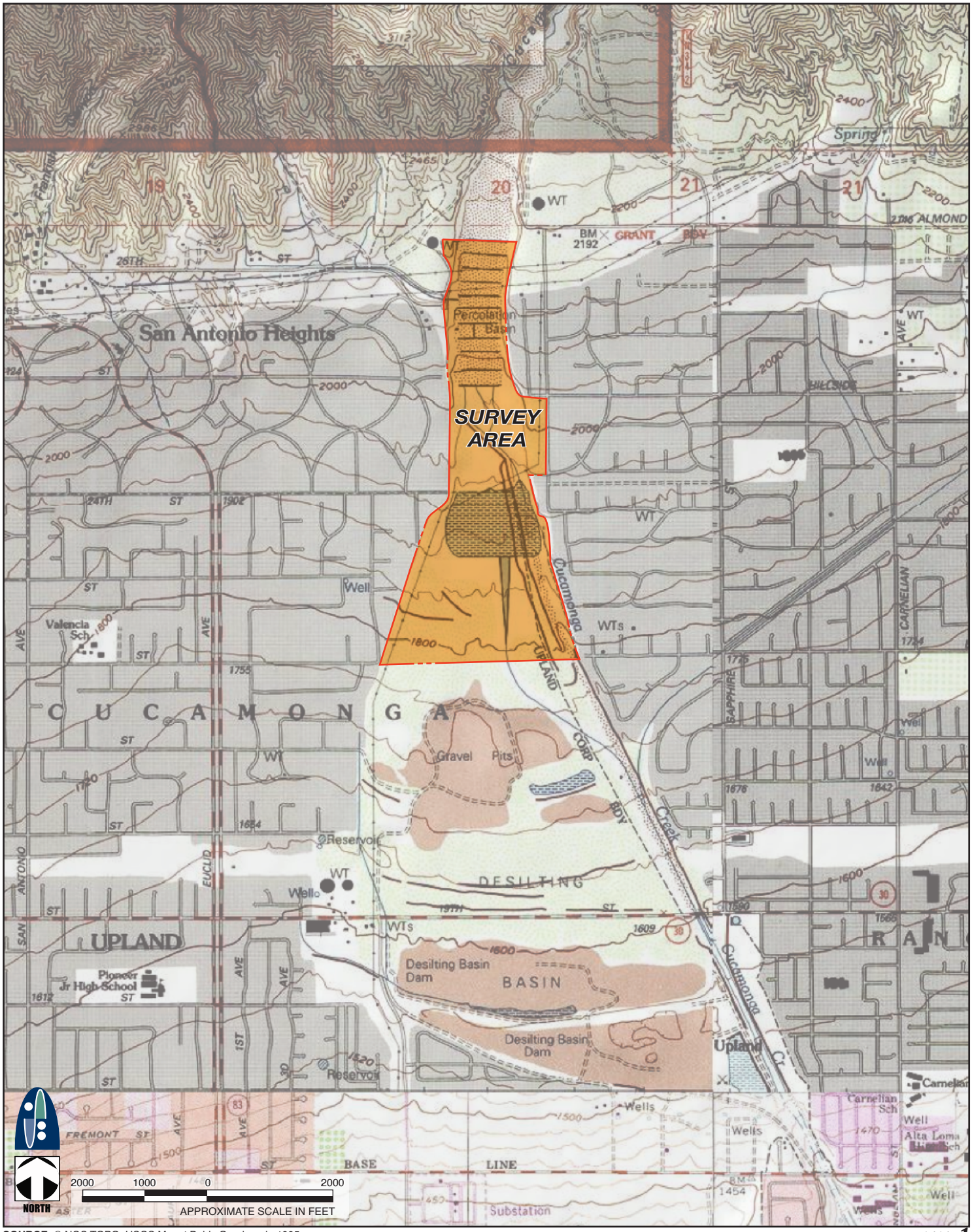
Dear Mr. Koutnik,

This letter report summarizes the methodology and findings of surveys for the federally-listed Threatened California gnatcatcher (*Polioptila californica*) (herein CAGN) conducted by Compliance Biology, Inc. on the 232-acre Cucamonga Crosswalls project site in the County of San Bernardino, California. The surveys were conducted for the purpose of determining the presence or absence of CAGN and any other special-status bird species within the study area.

SURVEY SITE

The survey location is situated at T1N, R7W, in a Land Grant area of Rancho Cucamonga, on the Mount Baldy, California U.S.G.S. 7.5-minute quadrangle map (**Exhibit 1**). The project site is located north of 19th Street and east of Euclid Avenue. The site totals approximately 232 acres with no more than 160 acres of suitable to marginally suitable CAGN habitat (**Exhibit 2**).

The subject site is characterized as a percolation basin at the southern reach of Cucamonga Canyon Creek. The study area is situated within the San Antonio Heights area of Rancho Cucamonga. Existing residential development abuts the study area to the east and west and a desilting basin and gravel pit operation is situated to the south. North of the property is the foothills of the San Bernardino Mountains and the San Bernardino National Forest. Elevations at the project site range from approximately 1,850 feet to approximately 2,250 feet above mean sea level.



SOURCE: © NGS TOPO: USGS Mount Baldy Quadrangle 1995.

exhibit **1**

PROJECT LOCATION: USGS 7.5' "MOUNT BALDY, CA" QUADRANGLE

Cucamonga • California Gnatcatcher Survey • July 2012

SOURCE: © Google Earth, 2012.

exhibit 2

PROJECT LOCATION: AERIAL

Cucamonga • California Gnatcatcher Survey • July 2012

EXISTING CONDITIONS

The majority of the site is characterized by sandy to rocky alluvium with sage scrub and alluvial wash scrub vegetation. Dominant species present include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*) and yerba santa (*Eriodictyon crassifolium*). Secondary though common species include yucca whipplei), blue elderberry (*Sambucus mexicana*), and deerweed (*Lotus scoparius*). Concentrations and density of various species varied considerably throughout the site. Substrate varied from sandy to large cobble.

METHODOLOGY

Service recommended survey guidelines stipulate a minimum of six surveys shall be conducted at least one week apart between March 15 through June 30, and from July 1 through March 14, a minimum of nine surveys shall be conducted at least 14 days apart. Guidelines also recommend that a) surveys be completed between 6:00 a.m. and 12 p.m.; b) that they shall avoid periods of inclement weather or excessive heat, rain, wind, and fog; and c) the rate of coverage should be no more than 80 acres per day per permitted biologist.

Based on the seasonal timing and size of the study area two surveys were conducted weekly (at least 7 days apart) for a period of six weeks, for a total of 12 surveys. All surveys were performed by David Crawford under the authority of his individual Section 10(a)(1)(A) Endangered Species Recovery Permit.

Surveys were conducted on May 25 and 26, June 1, 2, 8, 9, 15, 16, 22, 23, 29, and 30. Half of all suitable habitat on the project site was surveyed each date. All potential habitat areas were systematically surveyed on foot by walking slowly and methodically along random transect routes. The location of transects and survey points along each transect were based on the vegetation and topographic conditions (size, location, and shape of habitat) of the area surveyed to ensure complete coverage. A combination of recorded vocalizations (played at 20-30 second increments) and "pishing" sounds were used at each calling point to illicit response from any potentially occurring CAGN.

Weather conditions during the surveys varied considerably, but no surveys were conducted during periods of high wind or temperatures exceeding 85° Fahrenheit (F). All surveys were conducted between the hours of about 6:00 a.m. and approximately 11:00 a.m. Temperatures varied from approximately 54° F to a maximum of about 82° F. Wind speed ranged from 0 to 15 mph during the surveys and typically averaged less than 5 mph. Cloud cover varied from completely overcast to sunny and clear.

RESULTS

No CAGN or other state- or federally-listed endangered, threatened, or candidate or other species considered to be of special-status were recorded on the project site during the focused protocol surveys. A total of 43 avian species was observed or detected on the subject property. A complete list of all vertebrate species observed during the survey efforts is included as **Attachment A**.

Three species included on the CDFG "Special Animals" list were observed and include great egret (*Aredea alba*), Allen's hummingbird (*Selasphorus sasin*) and lark sparrow (*Chondestes grammacus*). CDFG is interested in tracking nesting locations of these species. Great egret was only observed once and lark sparrow on two occasions and typical nesting habitat is not present on the subject property for either species. Therefore, nesting on site is not expected. Conversely, several Allen's hummingbirds were observed during each site survey and are expected to be nesting on site. Coastal whiptail (*Aspidoscelis tigris stejnegeri*), also a CDFG "Special Animal," was the only other wildlife species included on the Special Animals list that was observed or detected during the protocol surveys.

CONCLUSIONS

No CAGN or other state- or federally-listed endangered or threatened species were observed or detected within or adjacent to the subject site during the protocol survey effort. Based on the results of these surveys, CAGN are considered to be absent from the site at this time. As such impacts to this species are not expected to occur by alteration of the subject property.

Further, although only three of the 43 individual bird species observed on the project site are included on the Special Animals list, most of the species occurring on site are protected under the federal Migratory Bird Species Treaty Act (1985) while actively nesting. As such, grading and/or any other activity resulting in the removal of vegetation should be conducted outside the typical nesting season (February 1 through July 30). Should such activities be unavoidable during this period of time, it is recommended that nesting bird surveys be conducted consistent with California Department of Fish and Game guidelines.

Please feel free to contact me if you have any questions regarding the contents of this report.

Sincerely,

Dave Crawford

Dave Crawford
President/Principal Biologist

Cc: Ms. Susie Tharratt; US Fish and Wildlife Service, Carlsbad Field Office

I certify that the information in this survey report and attached exhibits, fully and accurately reflects my work.

7/23/12

Dave Crawford; Permit # TE-821229-5

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Appendix B.4
Sensitive Plant Survey (2014)

CUCAMONGA BASIN
CROSSWALLS MAINTENANCE PROJECT

Sensitive Plant Survey Report

Prepared For:

The Altum Group
73-710 Fred Waring Drive, Suite 219
Palm Desert, California 92260
Contact: Nancy M. Ferguson
760.346.4750

Prepared By:

RBF Consulting
3210 East Guasti Road, Suite 100
Ontario, California 91761
Contact: Thomas J. McGill, Ph.D.
909.947.4907

August 2014
JN 141083

CUCAMONGA BASIN
CROSSWALLS MAINTENANCE PROJECT

CITY OF UPLAND, SAN BERNARDINO COUNTY, CALIFORNIA

Sensitive Plant Survey Report

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.

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Executive Summary

The sensitive plant survey was conducted to document the presence and/or absence of sensitive plant species on the project site. Survey methods conformed to the California Department of Fish and Wildlife's (CDFW) *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (2009), the California Native Plant Society's (CNPS) *Botanical Survey Guidelines* (2001), and the U.S. Fish and Wildlife Service's (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (1996).

The sensitive plant surveys were conducted on April 23, 2014 and July 15, 2014 to coincide with the flowering periods of sensitive plant species known to occur in the general vicinity and that were determined to have a low to high potential to occur on the project site. Based on the results of the literature search and site assessment, it was determined that the project site has a low potential to provide suitable habitat for slender mariposa-lily (*Calochortus clavatus* var. *gracilis*) and Plummer's mariposa-lily (*Calochortus plummerae*). Both of these plant species are listed by the CNPS as sensitive plant species (Rare Plant Rank 1B.2 and 4.2, respectively), but are not federally or state listed as threatened or endangered. Based on current distribution, habitat requirements, and absence of suitable habitat on and adjacent to the project site, the remaining sensitive plant species identified as occurring in the general area of the project site are considered to be absent.

Despite extensive systematic surveys of suitable habitat throughout the project site, populations of slender mariposa-lily and Plummer's mariposa-lily were not observed and are presumed absent from the project site. No additional sensitive plant surveys are recommended.

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APPENDICES

Appendix A Potential Occurring Sensitive Plant Species
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LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
FESA	Federal Endangered Species Act
GPS	Global Positioning System
NRCS	Natural Resource Conservation Service
NPPA	National Plant Protection Act
RAFSS	Riversidean Alluvial Fan Sage Scrub
RSS	Riversidean Sage Scrub
RBF	RBF Consulting
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

Section 1 Introduction

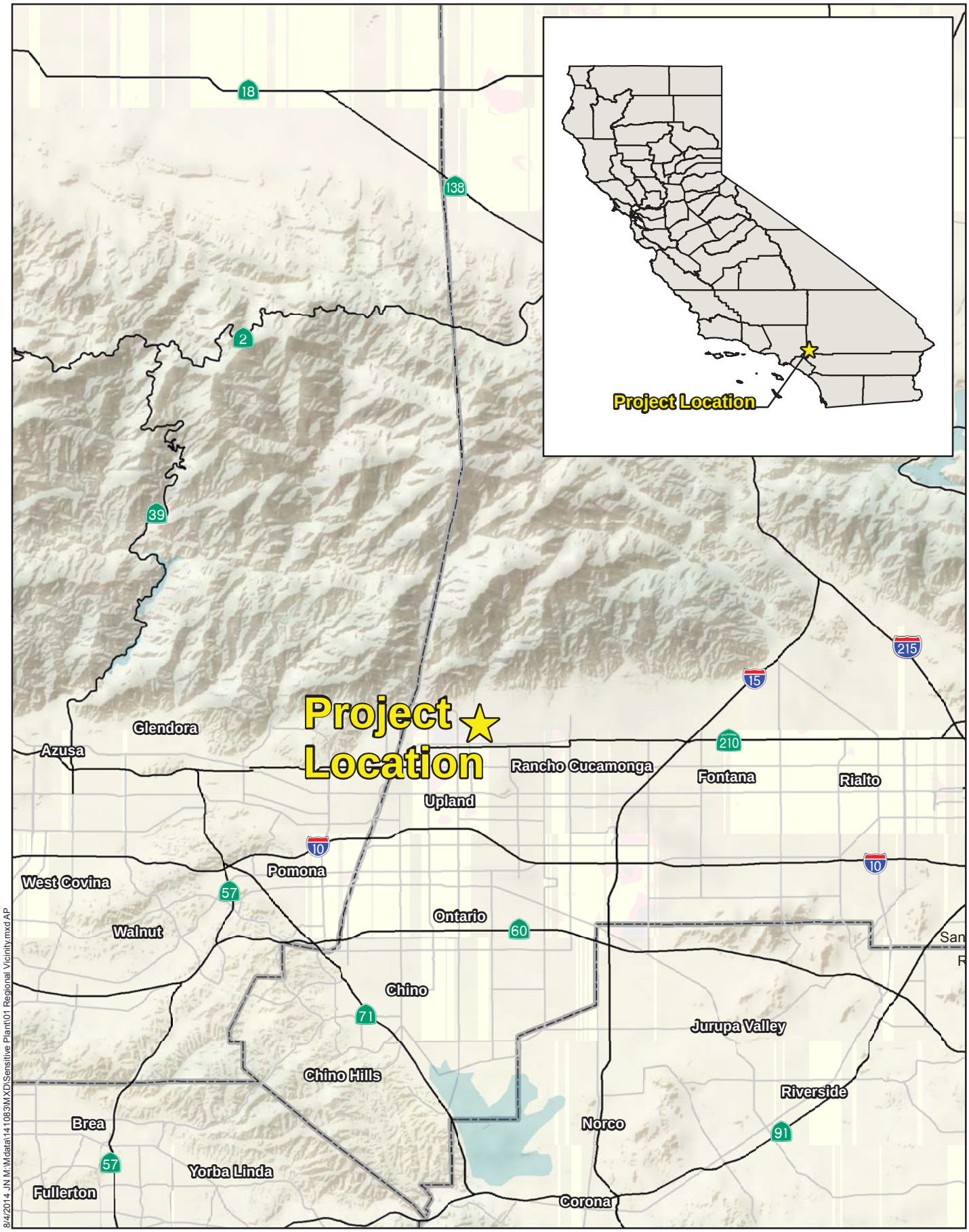
This report contains the findings of the 2014 sensitive plant survey conducted by RBF Consulting (RBF) for the proposed Cucamonga Basin Crosswalls Maintenance Project, hereinafter referred to as the project site or site. The project site is located in the City of Upland, San Bernardino County, California. The sensitive plant surveys were conducted on April 23, 2014 and July 15, 2014 to coincide with the flowering periods of the sensitive plant species known to occur in the general vicinity that were determined to have a low to high potential to occur on the project site. The findings of the surveys will be used to establish constraints, if any, to development including measures to avoid impacts to any federally and State listed plant species and California Native Plant Society (CNPS) *California Rare Plant Rank* listed plant species.

1.1 PROJECT LOCATION

The project site is generally located north of Interstate 10, west of Interstate 15, and east of State Route 57 at the southern foothills of the San Gabriel Mountains, San Bernardino County, California (Exhibit 1, *Regional Vicinity*). The project site is depicted on the *Mount Baldy, California* United States Geological Survey (USGS) 7.5-minute quadrangle within a Land Grant Area of Rancho Cucamonga in Township 1 South, Range 7 West (Exhibit 2, *Site Vicinity*). Specifically, the project site is located north of State Route 210, east of State Route 83 (Euclid Avenue), and west of Sapphire Street (Exhibit 3, *Project Site*).

1.2 PROJECT DESCRIPTION

San Antonio Water Company's (SAWCo's) crosswall water conservation facility consists of a series of rock-filled gabion walls designed to collect sediment and debris from flows before reaching Cucamonga Dam. The area behind the dam is used for percolation and groundwater recharge. The crosswalls can be seen in Exhibit 2 as perpendicular features across the wash at intervals catching the debris and sediment while allowing the water to flow in the central channel. The project proposes to remove excessive materials that have accumulated over the years behind the crosswalls by using a track excavator and bulldozer returning the site to the initial site conditions. The excavated material will then be loaded and transported to the existing stock pile south of the dam by an articulated hauler. Materials will then be crushed, screened, and separated. The processed materials will then be loaded on trucks and hauled off-site via the existing county access roadway along the Cucamonga Creek flood control channel south and eventually to 20th street and the new Campus Avenue and freeway on ramps.



CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT
SENSITIVE PLANT SURVEY REPORT

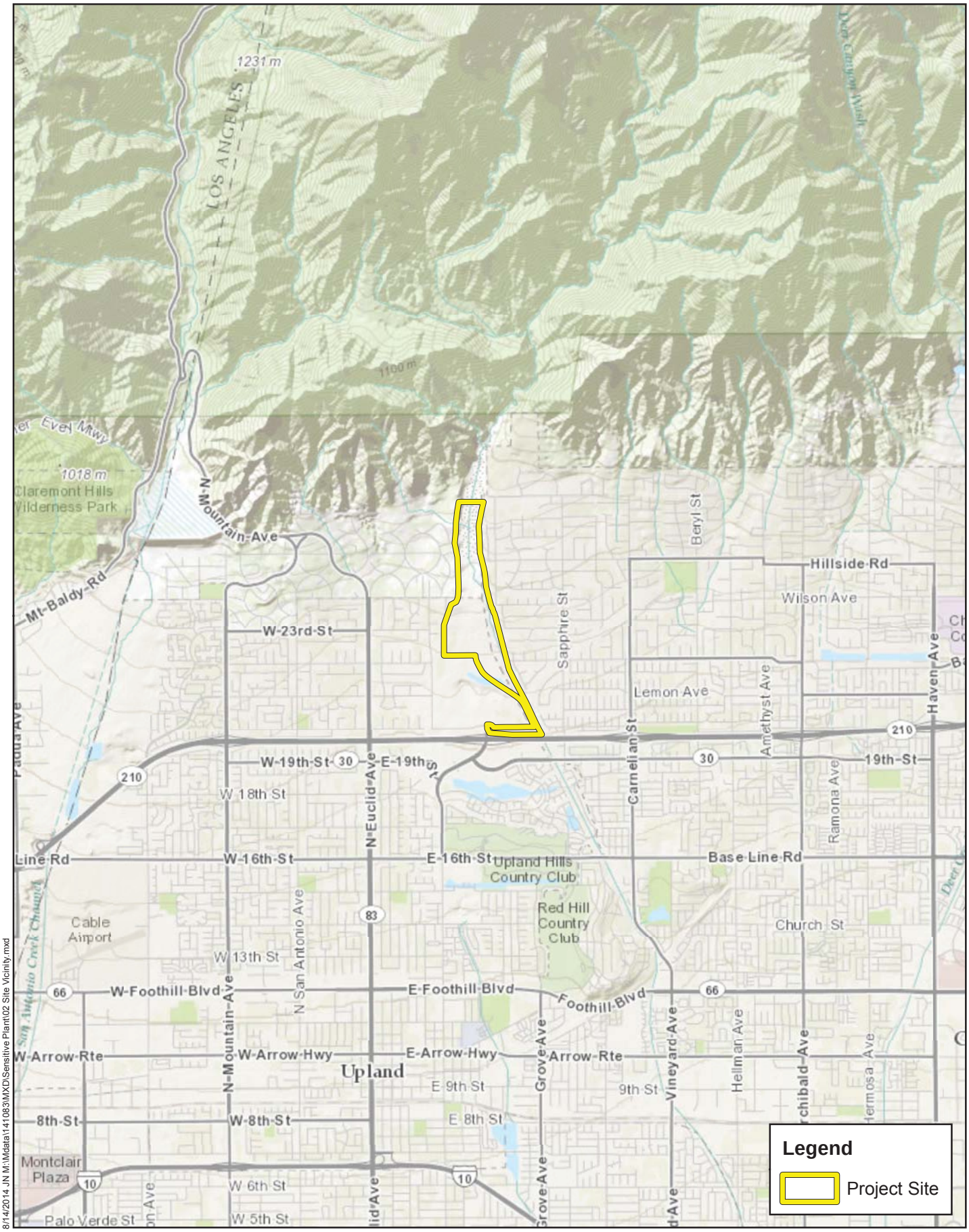
RBF CONSULTING
A Baker Company

0 2.5 5 10 Miles

Source: ESRI Relief Map, National Highway Planning Network

Regional Vicinity

Exhibit 1



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CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT
SENSITIVE PLANT SURVEY REPORT

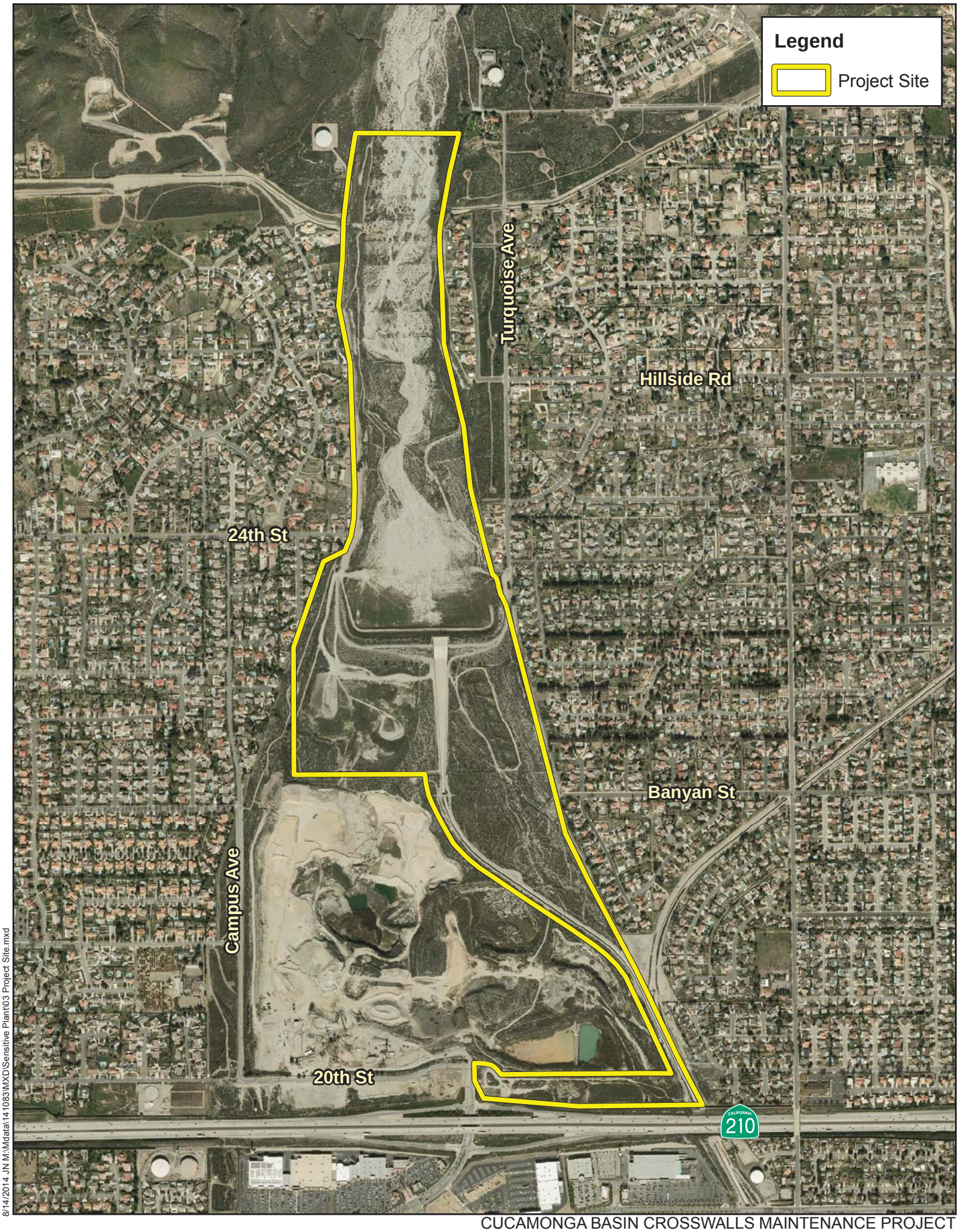
RBF CONSULTING A Baker Company

0 0.5 1 2 Miles

Source: ESRI World Topographic Basemap

Site Vicinity

Exhibit 2



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CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT
SENSITIVE PLANT SURVEY REPORT

RBF CONSULTING A Baker Company

0 625 1,250 2,500 Feet

Source: Eagle Aerial 2013, SESPE Consulting

Project Site

Exhibit 3

Section 2 Methodology

A literature review and records search was conducted to determine which sensitive plant species have the potential to occur within the general area. In addition to the literature review, focused surveys were conducted to coincide with the flowering periods of the sensitive plant species determined to have a low to high potential to occur on the project site and those that are known to occur within the general vicinity.

2.1 LITERATURE REVIEW

Prior to conducting the field visit, a literature review and records search was conducted for federally and State listed plant species and CNPS *California Rare Plant Rank* listed plant species having the potential to occur within the general vicinity of the project site. Previously recorded occurrences of special status plant species and their proximity to the project site were determined through a query of CDFWs *California Natural Diversity Database* (CNDDB) *Rarefind 5 and CNDDB BIOS,* the CNPS's *Electronic Inventory of Rare and Endangered Vascular Plants of California*, Calflora Database, compendia of special-status species published by CDFW, and USFWS species listings, as well as the following resources:

- CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (2009);
- CNPS *Botanical Survey Guidelines* (2001);
- USFWS *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (1996);
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Soil Survey; and
- USFWS Critical Habitat designations for Threatened and Endangered Plant Species.

Based on the results of the database search, a list of sensitive plant species having the potential to occur within the general vicinity of the project site was compiled and is provided in Appendix A. In addition, refer to Exhibit 4, *CNDDB Map*, for a depiction of sensitive plant locations within the general vicinity of the project site.

2.2 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE 2009 PROTOCAL

Prior to the commencement of any activities that may modify natural vegetation (i.e., clearing, mowing, or ground-breaking activities) CDFW deems it necessary to conduct botanical surveys for sensitive plant species based on the suitability of the habitat. CDFW recognized that it is appropriate to conduct a botanical field survey when:

8/5/2014 JN M:\Mdata\141083\GIS\MXD\Ex 4 CNDDB Map.mxd

0 3,000 6,000 Feet

Source: Eagle Aerial 2013

CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT
SENSITIVE PLANT SURVEY REPORT

CNDDB Map

Exhibit 4

- Natural (or naturalized) vegetation occurs on the site, and it is unknown if special status plant species or natural communities occur on the site, and the project has the potential for direct or indirect effects on vegetation; or
- Special status plants or natural communities have historically been identified on the project site; or
- Special status plants or natural communities occur on sites with similar physical and biological properties as the project site.

The 2009 protocol states that surveys need to be conducted using systematic field techniques in all habitats of a site to ensure thorough coverage of potential impact areas. The level of effort required per given area and habitat is dependent upon the vegetation and its overall diversity and structural complexity, which determines the distance at which plants can be identified. Conduct surveys by walking over the entire site to ensure thorough coverage, noting all plant taxa observed. The level of effort was sufficient to provide comprehensive reporting.

2.2.1 Survey Objectives

Field surveys were conducted in a manner that maximizes the likelihood of locating special status plant species or special status natural communities that may be present. Every plant taxon identified on site was identified to the taxonomic level necessary to determine its rarity and listing status. A list of plant species and natural communities identified during each botanical survey has been included in this report.

2.2.2 Timing and Number of Visits

Surveys were conducted at the time of year when species are both evident and identifiable. Site visits were spaced throughout the growing season to accurately determine what plant species exist on-site. Multiple surveys were conducted to capture the floristic diversity at a level necessary to determine if special status plants are present. The timing and number of surveys was determined by geographic location, the natural communities present, and the weather patterns.

Based on the plant species known to occur within the general vicinity and the suitability of the on-site plant communities to support those plant species, two site visits were conducted, on April 23, 2014 and July 15, 2014. These visits were spaced throughout the growing season to capture the appropriate phenotypic stage for proper identification of all sensitive plant species determined to have a low to high potential to occur on the project site. Based on habitat requirements for specific species, availability and quality of habitats needed by each sensitive plant species, and habitat assessment results (RBF Consulting 2014), it was determined that the project site has a low potential to provide suitable habitat for slender

mariposa-lily (*Calochortus clavatus* var. *gracilis*) and Plummer's mariposa lily (*Calochortus plummerae*). The remaining sensitive plant species are presumed absent. Refer to Table 1 and the following subsections for additional information on the sensitive plant species identified as having the potential to occur on the project site. In addition, refer to Exhibit 4, *CNDDB Map*, for a depiction of sensitive plant species locations recorded within the general vicinity of the project site.

Table 1: Sensitive Plant Species Having the Potential to Occur On-site

Scientific Name Common Name	**Status**	**Blooming Period**	**Preferred Habitat**
Calochortus clavatus* var. *gracilis Slender mariposa-lily	Fed: None CA: None CNPS: 1B.2	Mar – Jun	Occurs on shaded foothill canyons and chaparral, coastal scrub, valley and foothill grassland habitats at the south base of the San Gabriel Mountains. From 1,378 to 2,493 feet in elevation.
Calochortus plummerae Plummer's Mariposa Lily	Fed: None CA: None CNPS: 4.2	May – Jul	Occurs on rocky, granitic soils or on gravelly alluvium in coastal scrub, chaparral, cismontane woodland, lower montane coniferous forest and valley and foothill grasslands from 328 to 5,577 feet in elevation.

U.S. Fish and Wildlife Service – Federal (Fed)
FE- Endangered
FT- Threatened

California Department of Fish and Game – State (CA)
SE- Endangered
ST- Threatened

California Native Plant Society – (CNPS)
California Rare Plant Rank
1A Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2A Plants Presumed Extirpated in California, but More Common Elsewhere
2B Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
3 Plants About Which More information is Needed – A Review List
4 Plants of Limited Distribution – A Review List

Threat Ranks
0.1- Seriously threatened in California
0.2- Moderately threatened in California
0.3- Not very threatened in California

Slender Mariposa-Lily

Slender mariposa-lily, a monocot, is a perennial herb that is native to California and presumed to be restricted to the southern foothills of the San Gabriel Mountains, the eastern San Emigdio Mountains, and the coastal base of the Santa Monica mountains. It is included in the CNPS Inventory of Rare and Endangered Plants. Often mistaken for a poppy, it is a member of the lily family (Liliaceae). It can be found on dry, rocky soils in chaparral, coastal scrub, valley, and foothill grassland habitats. Stems are slender and typically between 7 and 12 inches tall. The yellow flowers are sparsely hairy with a reddish-brown.

Plummer's Mariposa Lily

Plummer's mariposa-lily, a monocot, is a perennial herb that is native to California and is endemic to California alone. It occurs from the south peninsular ranges to the north transverse ranges and grows in the following counties: Los Angeles; Orange; Riverside; San Bernardino; and Ventura. It is included in the CNPS Inventory of Rare and Endangered Plants. Often mistaken for a poppy, it is a member of the lily family (Liliaceae). It can be easy to grow preferring well-drained soil, a dry summer, part shade and a moist winter and spring. The Plummer's mariposa-lily prefers dry, rocky soils in chaparral, yellow-pine forest and valley grasslands. Stems are branched and generally range from 1 to 2 feet tall. The pink to purple flowers are finely toothed with a central ring of long, yellow to orange hairs.

2.3 FOCUSED PLANT SURVEYS

RBF biologists, Travis J. McGill and Ryan Winkleman, surveyed the project site on April 23, 2014 to coincide with the flowering periods of slender mariposa-lily. A second survey was conducted by Travis J. McGill and regulatory specialist, Thomas C. Millington, on July 15, 2014 to coincide with the flowering periods of Plummer's mariposa-lily.

Suitable habitat occurring on the project site was surveyed by foot. Linear transects were walked throughout the suitable habitat and spaced to ensure maximum visual coverage. A handheld geographic positioning systems (GPS) device and field data sheets were used to record all populations of sensitive plants and their characteristics, if found during the surveys.

Common plant species observed during the field survey were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unusual and less familiar plants were identified in the laboratory using taxonomical guides. In this report, scientific names are provided immediately following common names of plant species (first reference only).

2.4 REGULATORY BACKGROUND

Federally listed species are protected under the Federal Endangered Species Act (FESA) and regulations related to the FESA are enforced by the USFWS. State-listed species are protected under the California Endangered Species Act (CESA) and these regulations are enforced by the CDFW. CDFW may also designate a species as a Species of Special Concern because of local and/or statewide population declines. California's Native Plant Protection Act (NPPA), requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants under Fish and Wildlife Code Sections 1900-1913. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use

that would adversely impact listed plants. This requirement allows CDFW to salvage listed plant species that would otherwise be destroyed. Additionally, local government agencies or watch groups may provide a list of species considered to be locally-important. The CNPS maintains a list of plants considered to be sensitive which are generally considered during the environmental review process. Guidelines for the implementation of the California Environmental Quality Act (CEQA) provide that a species can be considered endangered or “rare” regardless of appearance on a formal list. Any significant impact identified during the CEQA review process requires that the impact be mitigated to less than significant.

Section 3 Existing Conditions

3.1 WEATHER CONDITIONS

The region has a year-round Mediterranean climate or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Average annual precipitation ranges from 12 inches per year in the coastal plain to 18 inches per year in the inland alluvial valleys, reaching 40 inches or more in the San Bernardino Mountains. Most of the precipitation occurs between November and March in the form of rain with variable amounts of snow in the higher elevations. The climatological cycle of the region results in higher surface water flows in the spring and early summer and low flows during the dry season. Winter and spring floods generated by storms are not uncommon in wet years. Similarly, during the dry season, infrequent summer storms can cause torrential floods in local streams. Weather conditions during the surveys included temperatures in the mid-70s to high-80s (degree Fahrenheit) with minimal wind and little to no cloud cover.

3.2 TOPOGRAPHY AND SOILS

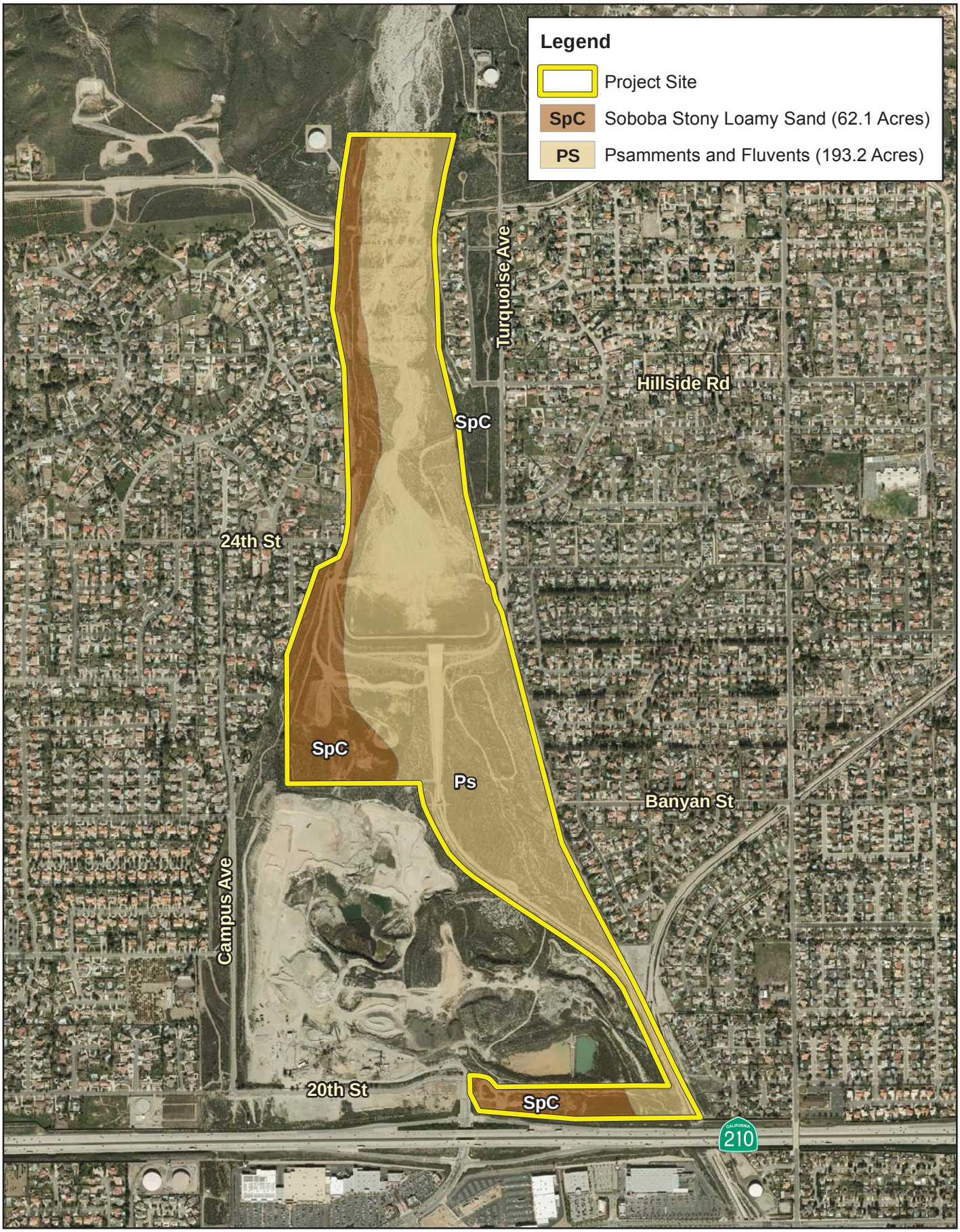
On-site topography ranges from approximately 1,800 to 2,180 feet above mean sea level (msl) and generally slopes to the south with no areas of significant topographic relief. According to the USDA Natural Resources Conservation Service Soil Survey, surface soils are moderately well drained consisting of two soil series: Soboba Stony Loamy Sand (2 to 9 percent slopes); and Psamments and Fluvents (Frequently Flooded) (Exhibit 5, *Soils Map*).

Soboba Stony Loamy Sand, 2 to 9 Percent Slopes (SpC)

This soil type is excessively-drained and is developed in alluvium derived from granitic material. In the western San Bernardino County area, this soil is found on alluvial fans at an elevation of 10 to 4,200 feet above msl. The mean annual precipitation for where this soil type occurs in this area is 10 to 25 inches, with a mean annual air temperature range of 59° to 64°F and a frost-free period of 210 to 350 days. The typical profile of this soil for the western San Bernardino County area includes very stony loamy sand from 0 to 10 inches and very stony sand from 10 to 60 inches. The depth to a restrictive feature is more than 80 inches, the depth to the water table is more than 80 inches, and the available water capacity is very low at approximately 2.5 inches. This soil type is not classified as prime farmland.

Psamments and Fluvents, Frequently Flooded (Ps)

This soil type is somewhat excessively-drained and is developed in sandy alluvium. In the western San Bernardino County area it is found in drainageways at an elevation of 10 to 1,500 feet above msl. The mean annual precipitation for where this soil type occurs is 10 to



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SENSITIVE PLANT SURVEY REPORT

RBF CONSULTING
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0 625 1,250 2,500 Feet

Source: NRCS Soils Data-ca677, Eagle Aerial 2013, SESPE Consulting

Soils Map

Exhibit 5

25 inches, with a mean annual air temperature range of 59 to 64F and frost-free period of 250 to 350 days. The typical profile of this soil for the western San Bernardino County area includes sand from 0 to 12 inches; loamy sand, fine sand, and sand from 12 to 48 inches; and stratified gravelly sand to gravelly loamy sand from 48 to 60 inches. The depth to a restrictive feature is more than 80 inches, the depth to the water table is more than 80 inches, and the available water capacity is high at approximately 9.1 inches. This soil type is not classified as prime farmland.

3.3 SURROUNDING LAND USES

The project site is located within the southern reach of Cucamonga Creek where it exits the San Gabriel Mountains. This portion of the creek has been converted into a series of percolation basins. On the southern end of the percolation basins, Cucamonga Creek has been dammed and is then channelized into a concrete-lined channel. South of the dam and west of the southern half of the project site is a desilting basin and gravel pit operation. North of the project site is the southern foothills of the San Gabriel Mountains and the San Bernardino National Forest. The upper terraces above Cucamonga Creek (east and west of the project site) are comprised of single-family residences, county flood control facilities, municipal water storage (tanks), unpaved maintenance roads, the Cucamonga Creek multipurpose trail (along the west side of the wash) and open space. South of the project site is State Route 210, with the Colonies Crossroads shopping center located on the other side. South of Cucamonga Dam, the study area is relatively flat and consists of a mix of disturbed and native habitats.

Section 4 Discussion

4.1 EXISTING CONDITIONS

The study area for the sensitive plant survey is located within the floodplain and upper terraces of Cucamonga Creek, where the creek flows from the San Gabriel Mountains. The Cucamonga Creek floodplain is an active floodplain subject to annual flooding. Raised terraces (or benches) bordering the floodplain are subject to less flooding, and therefore consist of stabilized soils that support a greater density of plant species. Upstream (north) of the Cucamonga Creek flood control dam, the walls of the canyon are tall and steep, with the tallest slopes on the north side. The southern half of the creek, downstream of Cucamonga Dam, is located within a concrete-lined flood control channel. Additionally, the area south of the Cucamonga Dam primarily consists of an active rock quarry. Refer to Appendix B for representative photographs taken throughout the project site.

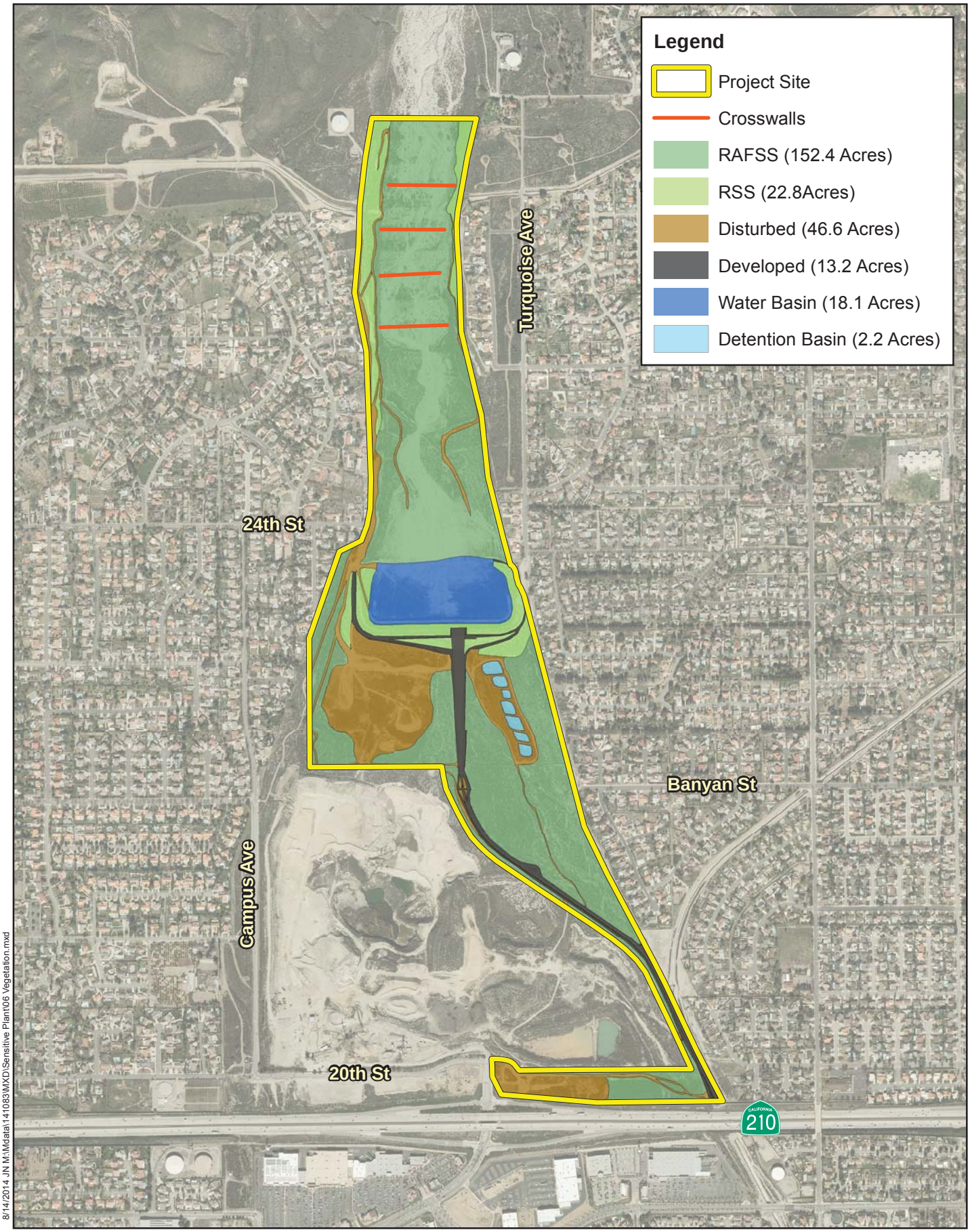
4.2 PLANT COMMUNITIES

Four plant communities occur within the boundaries of the project site: Riversidean alluvial fan sage scrub (RAFSS), Riversidean sage scrub (RSS), disturbed, and developed (Exhibit 6, *Vegetation Map*). These plant communities are described in further detail below.

4.2.1 Riversidean Alluvial Fan Sage Scrub

RAFSS is considered a sensitive plant community, and is listed by CDFW as rare. All three phases of RAFSS habitat occur within the boundaries of the project site: pioneer; intermediate; and mature RAFSS. The pioneer phase or colonizing form of RAFSS is typically located within the active stream channels or along recently scoured banks within areas surrounding the existing crosswalls. This phase was observed within the active flood channel of Cucamonga Creek and supports sparse vegetation including scale broom (*Lepidospartum squamatum*), mulefat (*Baccharis salicifolia*), and mugwort (*Artemisia douglasiana*).

The intermediate phase is located on terraces just above the active flood plain and within areas surrounding the existing crosswalls. The elevated terraces receive less scouring from fluvial processes which allows for the establishment of moderate vegetation. This phase occurs along the natural portions of Cucamonga Creek located upstream of Cucamonga Dam. Vegetation observed within this phase includes scale broom, mulefat, California buckwheat (*Eriogonum fasciculatum*), yerba santa (*Eriodictyon trichocalyx*), deerweed (*Acmispon glaber*), California sagebrush (*Artemisia californica*), and pine bush (*Ericameria pinifolia*).



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CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT
SENSITIVE PLANT SURVEY REPORT

RBF CONSULTING A Baker Company

0 625 1,250 2,500 Feet

Source: Eagle Aerial 2013, SESPE Consulting

Vegetation Map

Exhibit 6

The mature phase occurs within the northern and southern portions of the project site in areas that have been effectively cut-off from the fluvial processes of Cucamonga Creek. The conversion of the creek from a natural wash system to a concrete-lined flood control channel has removed the scouring regime from this portion of the project site. The habitat in this area has transitioned to the mature phase of RAFSS with emergent woody species characteristic of a RSS/Chaparral plant community. Vegetation within this phase includes California buckwheat, yerba santa, black sage (*Salvia mellifera*), mountain mahogany (*Cercocarpus betuloides*), laurel sumac (*Malosma laurina*), and Mexican elderberry (*Sambucus nigra*).

4.2.2 Riversidean Sage Scrub

The RSS plant community occurs within the eastern and western portions of the project site along the upper terraces outside of the active floodplain. These areas are not subject to scouring from flooding and therefore, support a more mature and denser plant community. Dominant plant species observed within this community include California sagebrush, California buckwheat, and yerba santa. Other common plant species observed include chaparral yucca (*Hesperoyucca whipplei*), black sage, white sage (*Salvia apiana*), and common sunflower (*Helianthus annuus*). Non-native plant species include tree tobacco (*Nicotiana glauca*) and castor bean (*Ricinus communis*). Woody, chaparral species were also observed intermixed within the RSS plant community and included hoaryleaf ceanothus (*Ceanothus crassifolius*), chaparral whitethorn (*Ceanothus leucodermis*), and whiteflower currant (*Ribes indecorum*).

4.2.3 Disturbed

Disturbed areas within the project site no longer support a defined plant community. These areas are primarily associated with continual human activities and flood control and mining operations. Disturbed areas include the Cucamonga Creek multipurpose trail, Cucamonga Basin, unpaved maintenance roads, rock quarry operations, and stockpiling areas associated with sand and gravel mining operations. Plant species observed within these areas included short-pod mustard (*Hirschfeldia incana*), Russian thistle (*Salsola tragus*), and non-native grasses (*Bromus* sp.).

4.2.4 Developed

Developed areas within the project site are unvegetated and consist of concrete-lined flood control facilities and paved maintenance roads.

Section 5 Results

Based on the results of the literature search it was determined that the plant communities found on the project site have a low potential to provide suitable habitat for slender mariposa-lily and Plummer's mariposa-lily (see Table 1 below). The remaining sensitive plant species identified as occurring in the general area are presumed absent based on current distribution, habitat requirements, and absence of suitable habitat on and adjacent to the project site.

5.1 FIRST SURVEY

The first survey, conducted April 23, 2014, was scheduled to capture the plant species that show the appropriate physical attributes for identification early during the growing season. Particular attention was given to those areas on-site that have the potential to support slender mariposa-lily. Despite extensive systematic searches throughout suitable habitat on the project site, no populations of slender mariposa-lily were observed on the project site during the first survey conducted on April 23, 2014.

5.2 SECOND SURVEY

The second survey, conducted July 15, 2014, was scheduled to capture any plant species that were not in bloom during the first survey those plant species that show the appropriate physical attributes for identification during the middle to late portion of the growing season. In particular, this survey was scheduled to identify any populations of Plummer's mariposa-lily. Despite extensive systematic searches throughout suitable habitat on the project site, no populations of Plummer's mariposa-lily were observed on the project site during the second survey conducted on July 15, 2014.

Section 6 Conclusion and Recommendations

No special-status plant species were observed during the 2014 sensitive plant surveys. The timing of these visits encompassed the recorded blooming times of all of the potentially occurring special-status plant species known to occur in the general vicinity. Each of the seasonal survey visits covered all of the suitable habitat and natural areas with fewer disturbances on the project site.

Despite extensive systematic surveys of the suitable habitat on the project site, populations of slender mariposa-lily and Plummer's mariposa-lily were not observed. Therefore, these sensitive plant species are presumed absent from the project site and no additional sensitive plant surveys are recommended.

Section 7 References

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Appendix A Potential Occurring Sensitive Plant Species

Potentially Occurring Sensitive Plant Species

Scientific Name Common Name	**Status**	**Habitat**	**Blooming Period**	**Observed On-Site**	**Potential to Occur**
PLANT SPECIES					
Arctostaphylos glandulosa ssp. *gabrielensis* San Gabriel manzanita	Fed: None CA: None CNPS: 1B.2	Occurs along rocky outcrops in chaparral plant communities up to 4,921 feet in elevation.	Mar – Apr	No	**Presumed Absent:** No Suitable Habitat
Berberis nevinii Nevin's barberry	Fed: **END** CA: **END** CNPS: 1B.1	Occurs on sandy or gravelly soils in chaparral, cismontane woodland, coastal scrub, and riparian scrub plant communities. From 951 to 5,167 feet in elevation.	Mar – Jun	No	**Presumed Absent:** No Suitable Habitat
Calochortus clavatus var. *gracilis* Slender mariposa-lily	Fed: None CA: None CNPS: 1B.2	Occurs on shaded foothill canyons and chaparral, coastal scrub, valley and foothill grassland habitats at the south base of the San Gabriel Mountains. From 1,378 to 2,493 feet in elevation.	Mar – Jun	No	**Low:** This species could occur in intershrub spaces in the upland area.
Calochortus plummerae Plummer's mariposa-lily	Fed: None CA: None CNPS: 4.2	Occurs on rocky, granitic soils or on gravelly alluvium in coastal scrub, chaparral, cismontane woodland, lower montane coniferous forest and valley and foothill grasslands from 328 to 5,577 feet in elevation.	May – Jul	No	**Low:** This species could occur in intershrub spaces in the upland area.
Chorizanthe parryi var. *parryi* Parry's spineflower	Fed: None CA: None CNPS: 1B.1	Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. From 131 to 5,594 feet in elevation.	Apr – Jun	No	**Presumed Absent:** No Suitable Habitat
Claytonia lanceolata var. *peirsonii* Peirson's spring beauty	Fed: None CA: None CNPS: 3.1	Occurs on granitic slopes, often with a sandy or fine soil component and granitic cobbles in upper montane coniferous forest and subalpine coniferous forest. From 7,005 to 9,006 feet in elevation.	May – Jun	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Dudleya multicaulis Many-stemmed dudleya	Fed: None CA: None CNPS: 1B.2	Often occurs on clay soils and around granitic outcrops in chaparral, coastal sage scrub, and grasslands. From 0 to 2,592 feet in elevation.	Apr – Jul	No	**Presumed Absent:** No Suitable Habitat
Eriogonum microthecum var. *johnstonii* Johnston's buckwheat	Fed: None CA: None CNPS: 1B.3	Occurs on granite or limestone slopes and ridges in subalpine coniferous forest, upper montane coniferous forests. From 7,251 to 9,514 feet in elevation.	Jul – Sep	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Horkelia cuneata var. *puberula* Mesa horkelia	Fed: None CA: None CNPS: 1B.1	Occurs on sandy or gravelly soils in chaparral, woodlands, and coastal scrub plant communities. From 230 to 2,657 feet in elevation.	Feb – Jul	No	**Presumed Absent:** No Suitable Habitat
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	Fed: None CA: None CNPS: 4.3	Typically occurs in dry opening within chaparral, coastal sage scrub, and alluvial fan sage scrub plant communities. From 3 to 2,904 feet in elevation.	Jan – Jul	No	**Presumed Absent:** No Suitable Habitat

Scientific Name Common Name	**Status**	**Habitat**	**Blooming Period**	**Observed On-Site**	**Potential to Occur**
Lilium parryi Lemon lily	Fed: None CA: None CNPS: 1B.2	Occurs in moist openings of meadows and along streams within riparian, lower montane coniferous, and upper montane coniferous forests. From 4,003 to 9,006 feet in elevation.	Jul – Aug	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Linanthus concinnus San Gabriel linanthus	Fed: None CA: None CNPS: 1B.2	Occurs on rocky soils in lower and upper montane coniferous forests from 5,167 to 8,350 feet in elevation.	Apr – Jul	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Monardella australis ssp. *jokerstii* Jokerst's monardella	Fed: None CA: None CNPS: 1B.1	Often found in lower montane coniferous forest and chaparral plant communities from 4,429 to 5,741 feet in elevation.	Jul – Sep	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Monardella macrantha ssp. *hallii* Hall's monardella	Fed: None CA: None CNPS: 1B.3	Found on dry slopes, ridges and openings in broadleaved upland forest, chaparral, lower montane coniferous forest, cismontane woodland, and valley and foothill grassland. From 2,395 to 7,201 feet in elevation.	Jun – Oct	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Oreonana vestita Woolly mountain-parsley	Fed: None CA: None CNPS: 1B.3	Occurs in lower and upper montane coniferous forests as well as subalpine coniferous forest. Prefers gravelly or talus substrate. From 7,907 to 11,483 feet in elevation.	May – Sep	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Orobanche valida ssp. *valida* Rock Creek broomrape	Fed: None CA: None CNPS: 1B.2	Occurs in chaparral and pinyon-juniper woodland, on slopes of loose decomposed granite. From 5,594 to 5,971 feet in elevation.	May – Sep	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Sagittaria sanfordii Sanford's arrowhead	Fed: None CA: None CNPS: 1B.2	Occurs in freshwater marshes, ponds, and ditches and various other shallow freshwater habitats. From 0 to 2,133 feet in elevation.	May – Oct	No	**Presumed Absent:** No Suitable Habitat
Streptanthus bernardinus Laguna Mountains jewel-flower	Fed: None CA: None CNPS: 4.3	Occurs on clay or decomposed granitic soils, sometimes in disturbed areas such as streamside or roadcuts. Found in chaparral and lower montane coniferous forest. From 4,724 to 8,202 feet in elevation.	May – Aug	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Symphyotrichum greatae Greata's aster	Fed: None CA: None CNPS: 1B.3	Found in broad-leaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland habitats. From 2,625 to 4,921 feet in elevation.	Jun – Oct	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.

Scientific Name Common Name	**Status**	**Habitat**	**Blooming Period**	**Observed On-Site**	**Potential to Occur**
Thysanocarpus rigidus Rigid fringepod	Fed: None CA: None CNPS: 1B.2	Occurs along rocky ridges, slopes and washes in woodland and chaparral plant communities. From 1,969 to 7,218 feet in elevation.	Feb – May	No	**Presumed Absent:** No Suitable Habitat

U.S. Fish and Wildlife Service (USFWS) – Federal

END – Federal Endangered

THR – Federal Threatened

California Department of Fish and Wildlife (CDFW) - California

END – California Endangered

CSC – California Species of Concern

WL – Watch List

California Native Plant Society (CNPS)

California Rare Plant Rank

1A	Plants rare, threatened, or endangered in California and elsewhere
1B	Plants rare, threatened, or endangered in California but more common elsewhere
2	Lack information to assign a rank (review list)
3	Limited Distribution or infrequent throughout a broader area in California (watch list)

Threat Ranks

0.1 – Seriously threatened in California

0.2 – Fairly threatened in California

0.3 – Not very threatened in California

Appendix B Site Photographs

Photograph 1- Looking north at Cucamonga Creek on the northern portion of the project site.

Photograph 2- Looking south at Cucamonga Creek.

Photograph 3- Looking southwest at active channel within Cucamonga Creek.

Photograph 4- Looking north at Cucamonga Creek and existing crosswall on the northern portion of the project site.

Photograph 5- Looking north at Riversidean Sage Scrub plant community on the eastern portion of the project site.

Photograph 6- Looking north at mature RAFSS plant community on the western portion of the project site..

Photograph 7- Looking south at active wash and Cucamonga Creek detention basin.

Photograph 8- Looking west at Cucamonga Creek detention basin on the central portion of the project site.

Photograph 9- Looking north at concrete-lined flood control channel south of Cucamonga Dam.

Photograph 10- Looking south at mature RAFSS on the southern portion of the project site.

Appendix C Floral Compendium

Scientific Name	Common Name
ADOXACEAE	**MOSCHATEL FAMILY**
Sambucus nigra	Mexican elderberry
AGAVACEAE	**AGAVE FAMILY**
Hesperoyucca whipplei	chaparral yucca
ANACARDIACEAE	**SUMAC FAMILY**
Malosma laurina	laurel sumac
Rhus aromatica	basketbush
Toxicodendron diversilobum	poison oak
Rhus ovata	sugar bush
Schinus molle	Peruvian peppertree
ASTERACEAE	**SUNFLOWER FAMILY**
Ambrosia acanthicarpa	annual bursage
Artemisia californica	California sagebrush
Artemisia douglasiana	mugwort
Baccharis salicifolia	mulefat
Baccharis sarothroides	broom baccharis
Centaurea melitensis	tocalote
Cirsium vulgare	bull thistle
Encelia farinosa	brittlebush
Ericameria pinifolia	pine goldenbush
Eriophyllum confertiflorum	golden yarrow
Erigeron canadensis	horseweed
Gutierrezia californica	matchweed
Helianthus annuus	common sunflower
Heterotheca grandiflora	telegraph weed
Isocoma menziesii	Menzies' goldenbush
Lactuca serriola	prickly lettuce
Lepidospartum squamatum	scale broom
Pseudognaphalium beneolens	fragrant everlasting
Pseudognaphalium biolettii	Bioletti's cudweed
Rafinesquia californica	California chicory
Senecio flaccidus var. douglasii	Douglas' groundsel
Stephanomeria exigua	small wirelettuce
Stephanomeria virgata	tall wreath plant
BORAGINACEAE	**BORAGE FAMILY**
Cryptantha sp.	popcornflower
Eriodictyon californicum	yerba santa
Phacelia campanularia	California bluebells
Phacelia distans	common phacelia
BRASSICACEAE	**MUSTARD FAMILY**
Hirschfeldia incana	shortpod mustard
Nasturtium officinale	watercress
Lepidium sp.	pepperweed

Scientific Name	Common Name
Sisymbrium irio	London rocket
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
Chenopodium sp.	pigweed
Salsola tragus	Russian thistle
CONVULVULACEAE	**MORNING-GLORY FAMILY**
Convolvulus arvensis	field bindweed
CUCURBITACEAE	**GOURD FAMILY**
Marah macrocarpus	wild cucumber
CYPERACEAE	**SEDGE FAMILY**
Cyperus eragrostis	tall flatsedge
EUPHORBIACEAE	**SPURGE FAMILY**
Croton californicus	California croton
Ricinus communis	castor bean
FABACEAE	**PEA FAMILY**
Acmispon glaber	deerweed
Caesalpinia gilliesii	bird of paradise
Lupinus hirsutissimus	stinging lupine
Lupinus succulentus	arroyo lupine
Parkinsonia aculeate	palo verde
GERANIACEAE	**GERANIUM FAMILY**
Erodium sp.	filaree
LAMIACEAE	**MINT FAMILY**
Salvia apiana	white sage
Salvia columbariae	chia
Salvia mellifera	black sage
Marrubium vulgare	horehound
LOASACEAE	**LOASA FAMILY**
Mentzelia laevicaulis	giant blazing star
MALVACEAE	**MALLOW FAMILY**
Malacothamnus fasciculatus	chaparral mallow
MYRTACEAE	**MYRTLE FAMILY**
Eucalyptus sp.	eucalyptus
ONAGRACEAE	**EVENING PRIMROSE FAMILY**
Camissonia californica	false mustard
PAPAVERACEAE	**POPPY FAMILY**
Dendromecon rigida	bush poppy
PLANTAGINACEAE	**PLANTAIN FAMILY**
Penstemon spectabilis	showy penstemon
Plantago sp.	plantain
PLANTANACEAE	**SYCAMORE FAMILY**
Platanus racemosa	western sycamore
POACEAE	**GRASS FAMILY**
Avena sp.	oat

Scientific Name	Common Name
Bromus diandrus	ripgut brome
Bromus madritensis	red brome
Bromus tectorum	cheatgrass
Cortaderia selloana	pampas grass
Phalaris sp.	Canary grass
Piptatherum miliaceum	smilo grass
Pennisetum setaceum	fountain grass
Schismus barbatus	Mediterranean grass
POLYGONACEAE	**BUCKWHEAT FAMILY**
Eriogonum fasciculatum	California buckwheat
Eriogonum gracile	slender buckwheat
Rumex salicifolius	willow dock
RHAMNACEAE	**BUCKTHORN FAMILY**
Ceanothus sp.	ceanothus
Rhamnus crocea	spiny redberry
ROSACEAE	**ROSE FAMILY**
Adenostoma fasciculatum	chamise
Cercocarpus betuloides	mountain mahogany
Prunus ilicifolia	holly-leafed cherry
SALICACEAE	**WILLOW FAMILY**
Populus fremontii	cottonwood
Salix gooddingii	black willow
Salix lasiandra	Pacific willow
Salix lasiolepis	arroyo willow
SIMAROUBACEAE	**QUASSIA FAMILY**
Ailanthus altissima	tree -of-heaven
SOLANACEAE	**NIGHTSHADE FAMILY**
Datura wrightii	Jimson weed
Nicotiana glauca	tree tobacco
Solanum douglasii	Douglas' nightshade
ZYGOPHYLLACEAE	**CALTROP FAMILY**
Tribulus terrestris	puncture vine

Appendix B.5
Delineation of State and Federal Jurisdictional Waters (2014)

CUCAMONGA BASIN CROSSWALLS MAINTENANCE

City of Upland, San Bernardino County, California

DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

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August 2014
JN 141083

RBF CONSULTING
A Baker Company

CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT

CITY OF UPLAND, SAN BERNARDINO COUNTY, CALIFORNIA

Delineation of State and Federal Jurisdictional Waters

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a jurisdictional "waters of the U.S." (including wetlands) and "waters of the State" determination for the above-referenced project.

Thomas C. Millington
Regulatory Analyst
Planning and Environmental Sciences

Richard Beck, PWS
Vice President
Planning and Environmental Sciences

August 2014

Executive Summary

At the request of The Altum Group, RBF Consulting (RBF) has prepared this Delineation of Jurisdictional Waters for the Cucamonga Basin Crosswalls Maintenance Project (project), located in the Cities of Upland and Rancho Cucamonga, County of San Bernardino, State of California. This delineation documents the regulatory authority of the U.S. Army Corps of Engineers (Corps), Santa Ana Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife Inland Deserts Region (CDFW) pursuant to Sections 401 and 404 of the Federal Clean Water Act (CWA), the California Porter-Cologne Water Quality Control Act, and Section 1600 of the California Fish and Game Code[1] respectively.

Cucamonga Creek was observed within the boundaries of the project site and is subject to state and federal jurisdiction. No other jurisdictional features or wetlands were observed. Placement of fill and/or alteration within Cucamonga Creek is subject to Corps, Regional Board, and CDFW jurisdiction and approval. Table ES-1 identifies the total jurisdiction on-site of each regulatory agency as well as impacts based on project design plans.

Based on a detailed review of current site conditions and project design plans, the project applicant must obtain the following regulatory approvals prior to impacts occurring within identified jurisdictional areas: Corps CWA Section 404 Nationwide Permit No. 3: *Maintenance*; Regional Board CWA Section 401 Water Quality Certification; and CDFW Section 1602 Streambed Alteration Agreement (SAA)[2]. Refer to Sections 1-6 for a complete discussion.

TABLE ES-1: Jurisdictional Area and Impact Summary

Jurisdictional Feature Name	Corps / Regional Board		CDFW	
	Jurisdictional Area	Jurisdictional Impact Area	Jurisdictional Area	Jurisdictional Impact Area
	Acreage	Temporary	Acreage	Temporary
Cucamonga Creek	52.59	9.04	70.62	20.22
Totals	**52.59**	**9.04**	**70.62**	**20.22**

1 The project area was surveyed pursuant to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0 (Corps 2008); the Practices for Documenting Jurisdiction under Section 404 of the CWA Regional Guidance Letter (Corps 2007); Minimum Standards for Acceptance of Preliminary Wetland Delineations (Corps 2001); and the Field Guide to Lake and Streambed Alteration Agreements Section 1600-1607 (CDFW 1994).

2 Other approvals (in-lieu of an SAA) may be acquired from the CDFW based on a formally-submitted notification package.

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APPENDIX

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LIST OF ACRONYMS

CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
Corps	United States Army Corps of Engineers
CWA	Clean Water Act
DBH	Diameter at Breast Height
EPA	Environmental Protection Agency
FAC	Facultative Vegetation
FACU	Facultative Upland Vegetation
FACW	Facultative Wetland Vegetation
GPS	Ground Positioning System
LF	Linear Feet
MSL	Mean Sea Level
NRCS	Natural Resources Conservation Service
NWP	Nationwide Permit
OBL	Obligate Wetland Vegetation
OHWM	Ordinary High Water Mark
RAFSS	Riversidean Alluvial Fan Sage Scrub
RBF	RBF Consulting
RCP	Reinforced Concrete Pipe
Regional Board	Regional Water Quality Control Board
RPW	Relatively Permanent Waters
RSS	Riversidean Sage Scrub
SAA	Streambed Alteration Agreement
SBBM	San Bernardino Base and Meridian
SIP	Standard Individual Permit
SWANCC	Solid Water Agency of Northern Cook County
TNW	Traditional Navigable Water
UPL	Obligate Upland Vegetation
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WoUS	Waters of the United States

Section 1 Introduction and Purpose

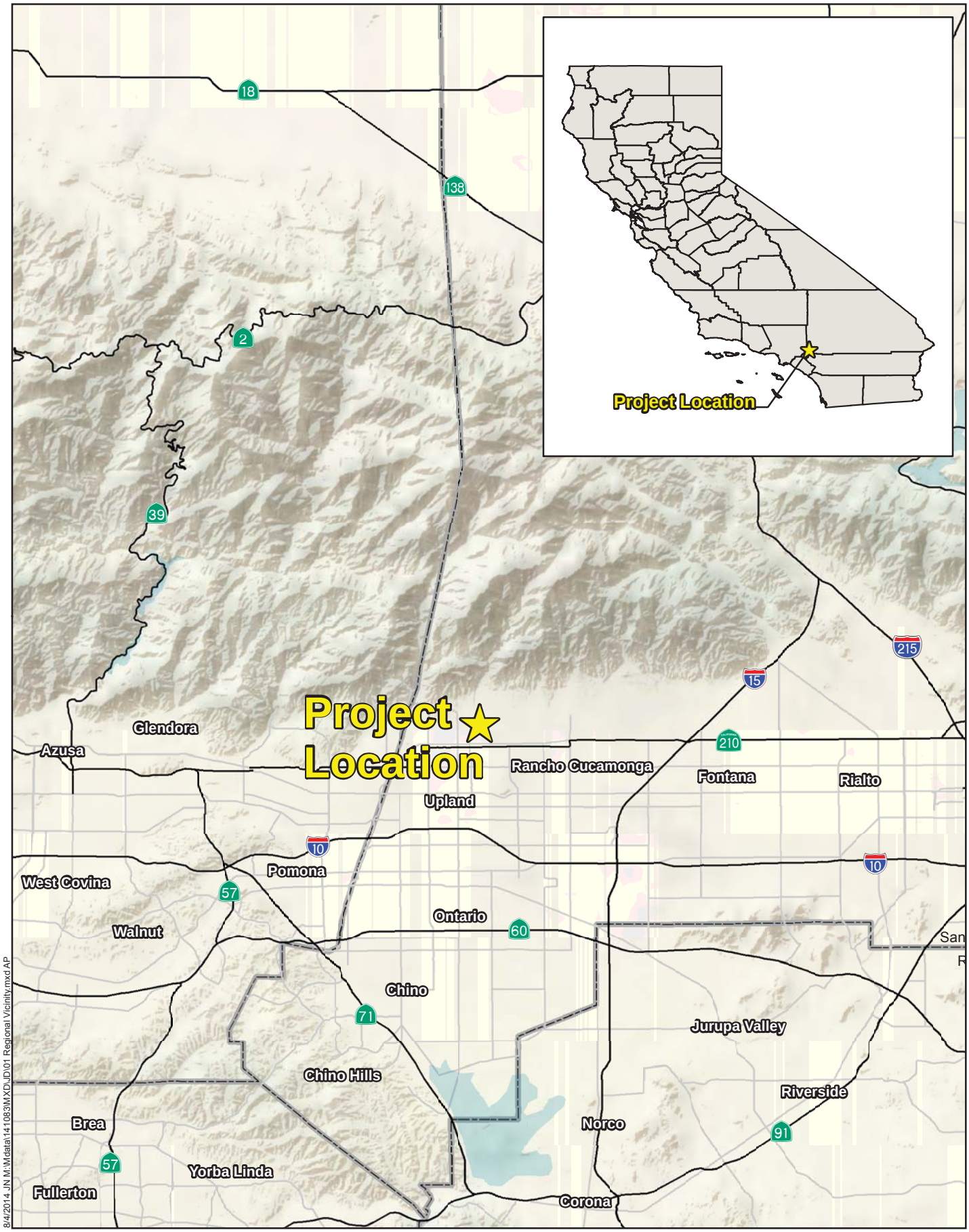
This delineation has been prepared for The Altum Group, to document the jurisdictional authority of the U.S. Army Corps of Engineers' (Corps), Santa Ana Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife Inland Deserts Region (CDFW) pursuant to Sections 401 and 404 of the Federal Clean Water Act (CWA), the California Porter-Cologne Water Quality Control Act, and Section 1600 of the Fish and Game Code. This delineation explains the methodology undertaken by RBF Consulting (RBF), defines the jurisdictional authority of the regulatory agencies, and documents the findings made by RBF. This report presents our best effort at determining the jurisdictional boundaries using the most up-to-date regulations (as of report publication), written policy, and guidance from the regulatory agencies; however, only the regulatory agencies can make a final determination of jurisdictional boundaries.

1.1 PROJECT LOCATION

The Cucamonga Basin Crosswalls Maintenance Project, hereinafter referred to as the project site, is generally located north of Interstate 10, west of Interstate 15, east of State Route 57 at the southern foothills of the San Gabriel Mountains, San Bernardino County, California (Exhibit 1, *Regional Vicinity*). The project site is depicted on the *Mount Baldy, California* United States Geological Survey (USGS) 7.5-minute quadrangle within a Land Grant Area of Rancho Cucamonga in Township 1 South, Range 7 West (Exhibit 2, *Site Vicinity*). Specifically, the project site is located north of State Route 210, east of State Route 83 (Euclid Avenue), and west of Sapphire Street (Exhibit 3, *Project Site*).

1.2 PROJECT DESCRIPTION

San Antonio Water Company's (SAWCo's) crosswall water conservation facility consists of a series of rock-filled gabion walls designed to collect sediment and debris from flows before reaching Cucamonga Dam. The area behind the dam is used for percolation and groundwater recharge. The crosswalls can be seen in Exhibit 2 as perpendicular features across the wash at intervals catching the debris and sediment while allowing the water to flow in the central channel. The project proposes to remove excessive materials that have accumulated over the years behind the crosswalls by using a track excavator and bulldozer returning the site to the initial site conditions. The excavated material will then be loaded and transported to the existing stock pile south of the dam by an articulated hauler. Materials will then be crushed, screened, and separated. The processed materials will then be loaded on trucks and hauled off-site via the existing county access roadway along the Cucamonga Creek flood control channel south and eventually to 20th street and the new Campus Avenue and freeway on ramps.



8/4/2014 JN M:\Mdata\141083\MXD\JD\01 Regional Vicinity.mxd AP

CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT
DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

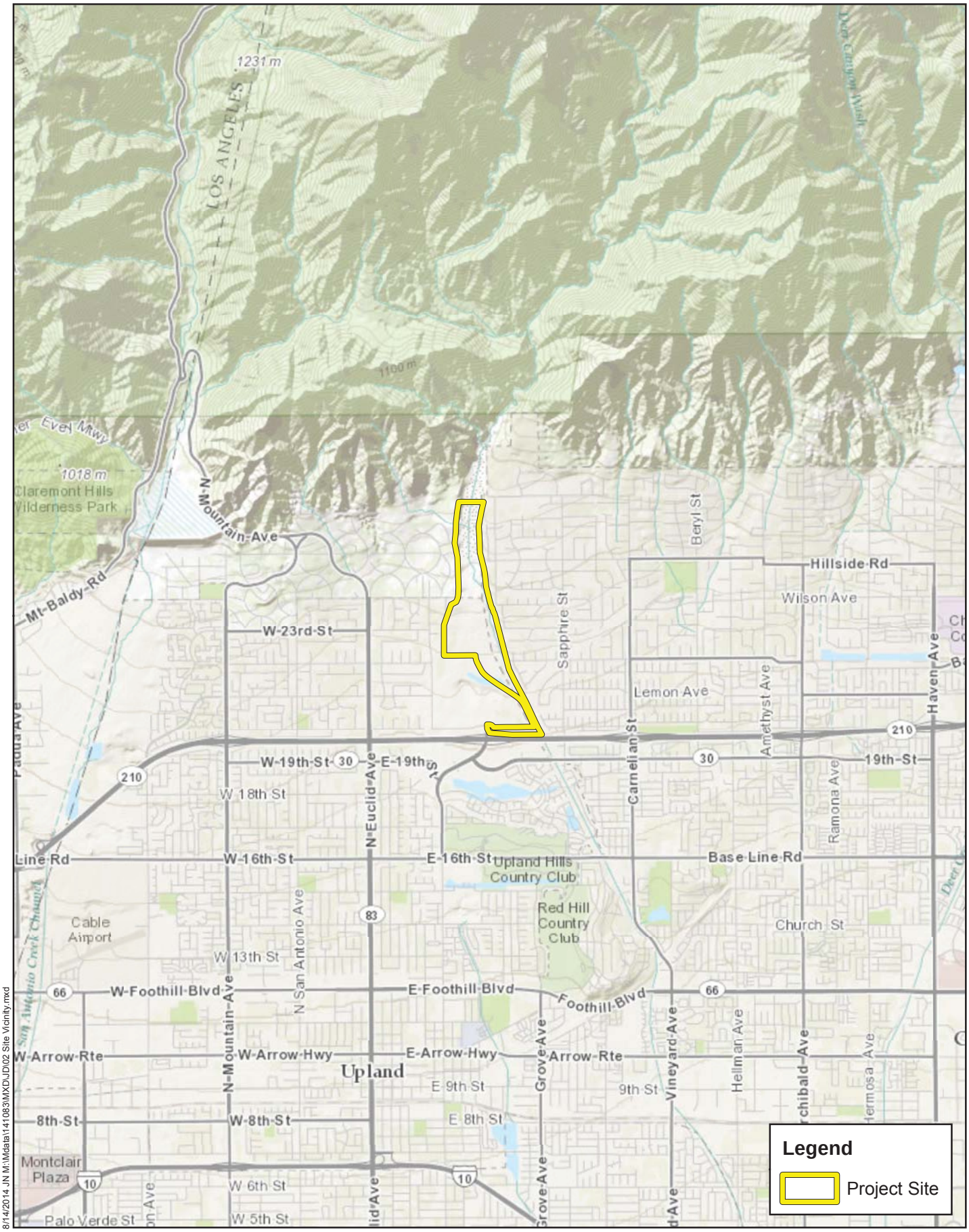
RBF CONSULTING
A Baker Company

0 2.5 5 10 Miles

Source: ESRI Relief Map, National Highway Planning Network

Regional Vicinity

Exhibit 1



8/14/2014 JN M:\Mdata\141083\MXD\JD\02 Site Vicinity.mxd

CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT
DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

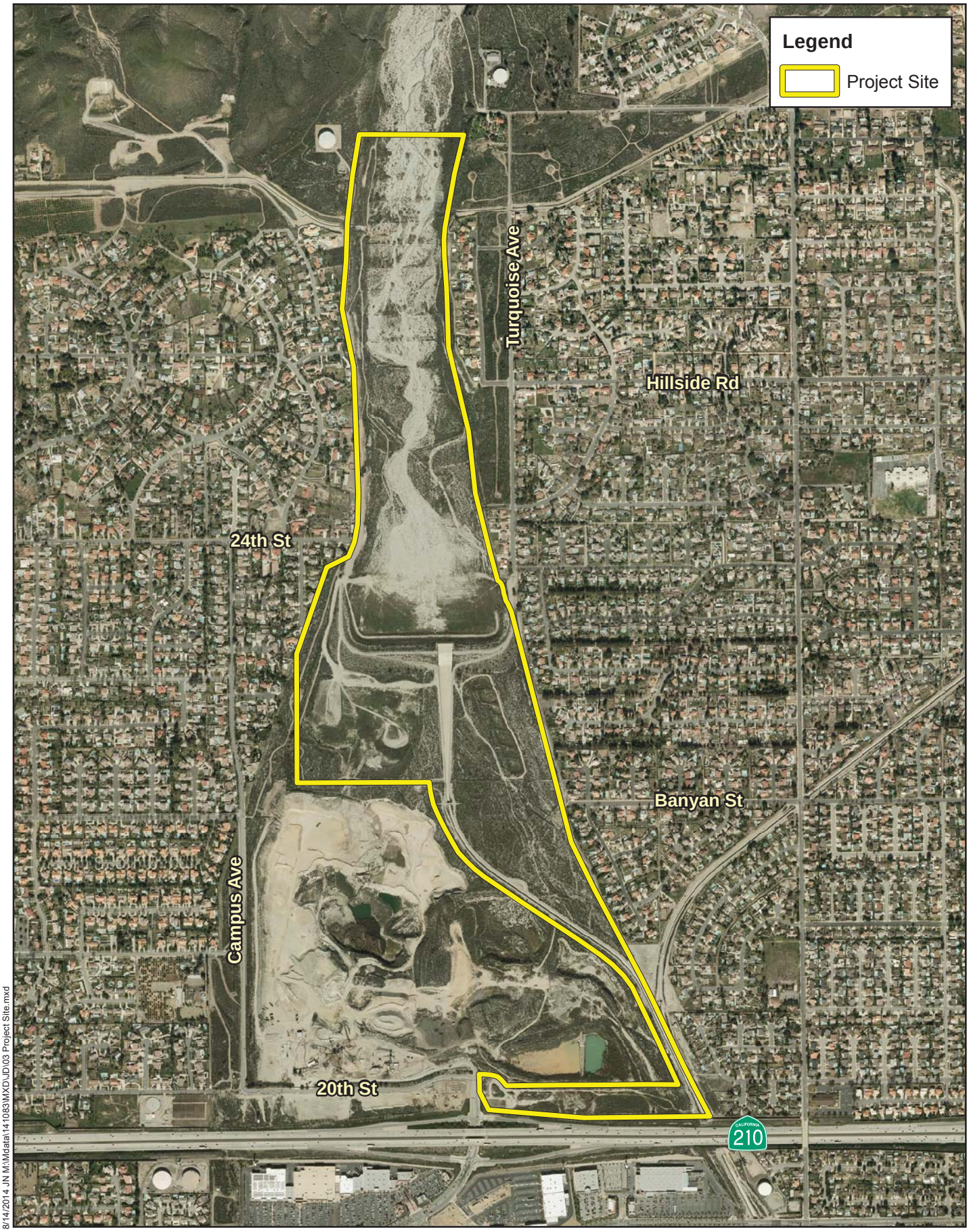
RBF CONSULTING A Baker Company

0 0.5 1 2 Miles

Source: ESRI World Topographic Basemap

Site Vicinity

Exhibit 2



8/14/2014 JN M:\Mdata\141083\MXD\JD\03 Project Site.mxd

CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT
DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

RBF CONSULTING
A Baker Company

0 625 1,250 2,500 Feet

Source: Eagle Aerial 2013, SESPE Consulting

Project Site

Exhibit 3

Section 2 Regulations and Methodology

2.1 SUMMARY OF REGULATIONS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. CDFW regulates activities under the Fish and Game Code Section 1600-1616, and the Regional Board regulates activities pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act. For a detailed summary of regulations, refer to Appendix B.

2.1.1 FEDERAL JURISDICTIONAL WATERS

Generally, the Corps and Environmental Protection Agency (EPA) will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries

The Corps and EPA will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with traditional navigable water:

- Non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters. It should be noted a significant nexus includes consideration of hydrologic and ecologic factors.

The Corps and EPA generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

2.1.2 STATE JURISDICTIONAL AREAS

2.1.2.1 California Regional Water Quality Control Boards

The California *Porter-Cologne Water Quality Control Act* gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters.

2.1.2.2 California Department of Fish and Wildlife Jurisdiction

Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state. The Fish and Wildlife's regulatory authority extends to include riparian habitat (including wetlands) supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFW takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation.

2.2 METHODOLOGY

RBF conducted a site reconnaissance to determine jurisdictional "waters of the United States" and "waters of the State" (including potential wetlands and vernal pools), located within the boundaries of the project site. The literature review and site visit are utilized to define:

- the Corps' ordinary high water mark (OHWM) and any three (3) parameter wetlands on-site. The actual presence or absence of wetlands on-site was verified through the determination of the presence of hydrologic conditions, hydrophytic vegetation, and hydric soils pursuant to the September 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*.

- the CDFW's jurisdiction being identified via the top of bank of the on-site streambed or to the outer drip line of riparian vegetation (if present) pursuant to the 1994 CDFW *Field Guide to Lake and Streambed Alteration Agreements*; and,

- in cases where isolated and/or Rapanos conditions are present, the delineation would identify areas under the jurisdiction of the Regional Board pursuant to the California Porter-Cologne Water Quality Act.

Analysis presented in this document is supported by field surveys and verification of current conditions conducted on July 23, 2014 and August 6, 2014. While in the field, jurisdictional areas were recorded onto a base map at a scale of 1" = 100' using the topographic contours and visible landmarks as guidelines. Data points were obtained with a Garmin 62 Global Positioning System (GPS) Map62 in order to record and identify specific widths for the ordinary high water marks (OHWM), soil pit locations, picture point locations, and pertinent jurisdictional features. This data was then transferred via USB port as a .shp file and added to the project's jurisdictional map. The jurisdictional map was prepared in ESRI ArcInfo Version 10. For a detailed summary of methodology, refer to Appendix C.

Section 3 Literature Review

Review of relevant literature and materials often aids in preliminarily identifying areas that may fall under an agency's jurisdiction. A summary of RBF's literature review is provided below (refer to Section 7.0 for a complete list of references used during the course of this delineation). In addition, refer to Appendix D for further documentation.

3.1 WATERSHED REVIEW

The project site is located within the northwest portion of the Santa Ana River Watershed (Hydrologic Unit Code 18070203). Cucamonga Creek flows north to south and acts as the primary source of drainage of the project site. Cucamonga Creek receives flows from the San Gabriel Mountains to the north and eventually meanders through the cities of Rancho Cucamonga, Ontario, and Chino before eventually discharging to Prado Basin and the Santa Ana River. The Santa Ana River watershed includes much of Orange County, the northwestern corner of Riverside County, the southwestern corner of San Bernardino County, and a small portion of Los Angeles County. The watershed is bound to the south by the Santa Margarita watershed, on the east by the Salton Sea and Southern Mojave watersheds, and on the north/west by the Mojave and San Gabriel watersheds. The watershed is approximately 2,800 square miles in area and substantially urbanized with approximately 32% of the land being residential, commercial, or industrial.

The watershed is located in the Peninsular Ranges and Transverse Ranges Geomorphic Provinces of Southern California (California Geological Survey Note 36). The highest elevations (upper reaches) of the watershed occur in the San Bernardino (San Gorgonio Peak – 11,485 feet in elevation) and eastern San Gabriel Mountains (Transverse Ranges Province; Mt. Baldy – 10,080 feet in elevation) and in the San Jacinto Mountains (Peninsular Ranges Province, Mt. San Jacinto – 10,804 feet in elevation). Further downstream, the Santa Ana Mountains and the Chino Hills form a topographic high before the river flows into the Coastal Plain (in Orange County) and into the Pacific Ocean. Primary slope direction is northeast to southwest, with secondary slopes controlled by local topography.

Tributaries of the Santa Ana River within Riverside County include the San Jacinto River Watershed and the Middle Santa Ana River Watershed. The headwaters of the Santa Ana River are located in the San Bernardino Mountains and include Bear Creek and Mill Creek. Other tributaries include Lytle Creek, originating in the San Gabriel Mountains, and the San Jacinto River, originating in the San Jacinto Mountains. These main tributaries come together to form the Santa Ana River in the San Bernardino Valley, located at the southern base of the Transverse Ranges of the San Bernardino Mountains. The Santa Ana River flows through the San Bernardino Valley before traversing through the Santa Ana Mountains and flowing to the Orange Coastal Plain discharging to the Pacific Ocean.

3.2 LOCAL CLIMATE

The region has a year-round Mediterranean climate or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Average annual precipitation ranges from 12 inches per year in the coastal plain to 18 inches per year in the inland alluvial valleys, reaching 40 inches or more in the San Bernardino Mountains. Most of the precipitation occurs between November and March in the form of rain with variable amounts of snow in the higher elevations. The climatological cycle of the region results in higher surface water flows in the spring and early summer and lower flows during the dry season. Winter and spring floods generated by storms are not uncommon in wet years. Similarly, during the dry season, infrequent summer storms can cause torrential floods in local streams. It should be noted that the project site along with the State of California, has been in a severe drought. As a result, recent precipitation and high flows have not occurred. Weather conditions during the site visit included temperatures in the mid-80s (degrees Fahrenheit) with calm wind conditions and minimal to no cloud cover.

3.3 USGS TOPOGRAPHIC QUADRANGLE

The project site is located within Section 29, Township 5 South, Range 3 West, San Bernardino Base Meridian of the USGS *Romoland, California* quadrangle. On-site topography ranges from approximately 1,480 to 2,050 feet above msl. According to the topographic map the majority of the project site consists of vacant, undeveloped land. One (1) intermittent stream is visible within the project site and generally flows in a north to south direction. Cucamonga Dam and multiple flood control channels are also shown. Two (2) gravel pits/ponds are visible to the west of the project site. Residential, recreational, agricultural, and transportation land uses surrounding the project site to the south, east, and west and vacant land uses are located to the north.

3.4 AERIAL PHOTOGRAPH

Prior to the field visit, RBF reviewed a current aerial photograph (dated April 16, 2013) of the project site from Google Earth Imaging. Aerial photographs can be useful during the delineation process, as the photographs often indicate drainages and vegetation (i.e., riparian vegetation) present within the boundaries of the project site (if any). According to the aerial photograph the majority of the project site appears to consist of vacant, undeveloped land. Cucamonga Creek is located in the central portion of the project site and flows in a north to south direction to Cucamonga Dam. South of Cucamonga Dam, the creek has been converted to a concrete-lined flood control channel. The locations of multiple crosswalls are shown in the northern portion of the project site within Cucamonga Creek. Multiple detention basins are located to the east of the concrete-lined flood control channel and surface mining operations are located to the west of the southern portion of the project site.

3.5 SOIL SURVEY

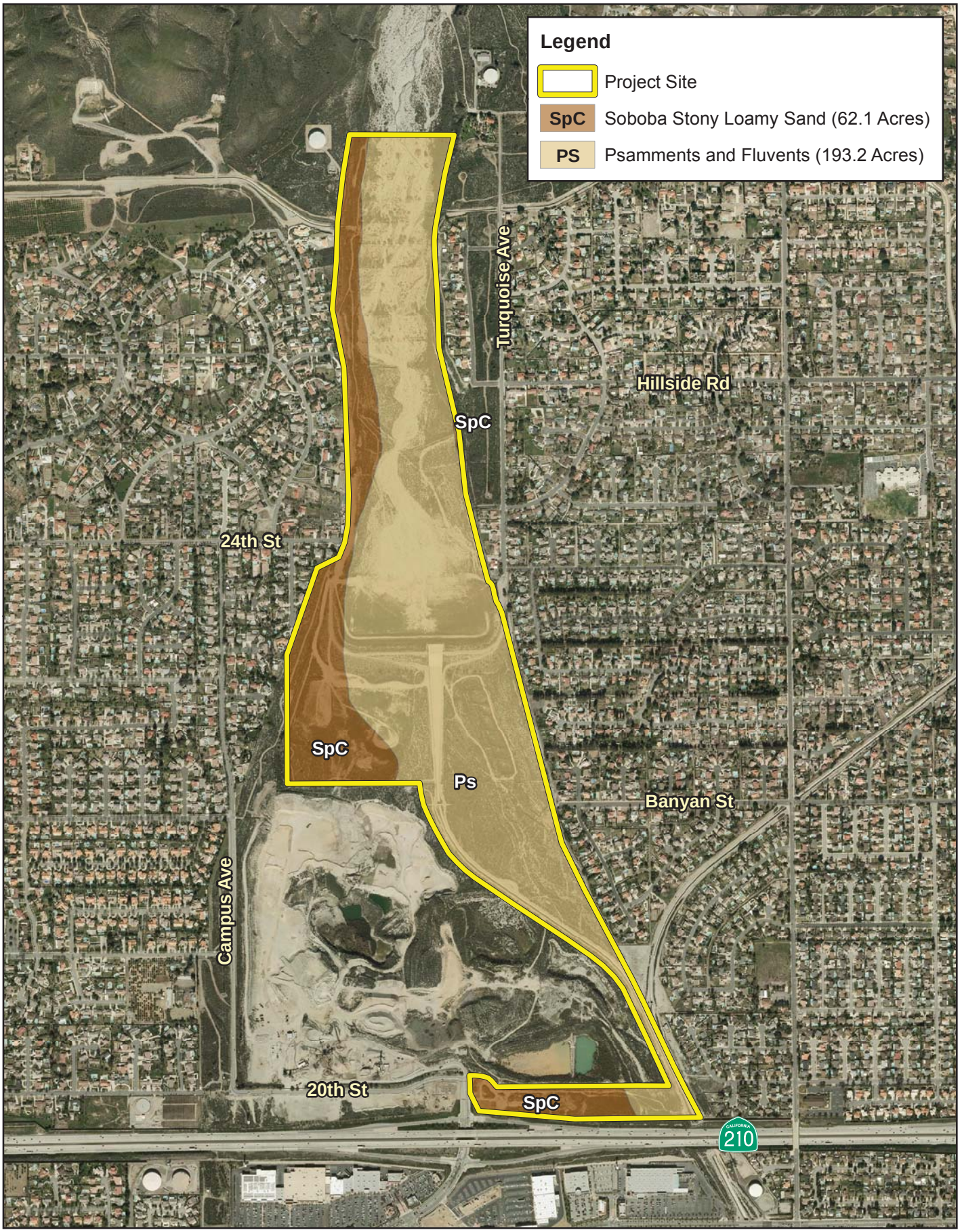
On-site and adjoining soils were researched prior to the field visit using the U.S. Department of Agriculture (USDA), Soil Conservation Service, the Natural Resources Conservation Service (NRCS), and Custom Soil Resource Report for San Bernardino County Southwestern Part, California. The presence of hydric soils is initially investigated by comparing the mapped soil series for the site to the County list of hydric soils. Soil surveys furnish soil maps and interpretations originally needed in providing technical assistance to farmers and ranchers; in guiding other decisions about soil selection, use, and management; and in planning, research, and disseminating the results of the research. In addition, soil surveys are now heavily utilized in order to obtain soil information with respect to potential wetland environments and jurisdictional areas (i.e., soil characteristics, drainage, and color). According to the USDA NRCS Soil Survey, surface soils on the project site consist of three soil series: Soboba Gravelly Loamy Sand (0 to 9 Percent Slopes); Soboba Stony Loamy Sand (2 to 9 Percent Slopes); and Psamments and Fluvents (Frequently Flooded). Refer to Exhibit 4, *Soils Map*, and the following subsections for descriptions of on-site soils.

3.5.1 Soboba Stony Loamy Sand, 2 to 9 Percent Slopes (SpC)

This soil type is excessively-drained and is developed in alluvium derived from granitic material. In the western San Bernardino County area, this soil is found on alluvial fans at an elevation of 10 to 4,200 feet above msl. The mean annual precipitation for where this soil type occurs in this area is 10 to 25 inches, with a mean annual air temperature range of 59° to 64°F and a frost-free period of 210 to 350 days. The typical profile of this soil for the western San Bernardino County area includes very stony loamy sand from 0 to 10 inches and very stony sand from 10 to 60 inches. The depth to a restrictive feature is more than 80 inches, the depth to the water table is more than 80 inches, and the available water capacity is very low at approximately 2.5 inches. This soil type is not classified as prime farmland.

3.5.2 Psamments and Fluvents, Frequently Flooded (Ps)

This soil type is somewhat excessively-drained and is developed in sandy alluvium. In the western San Bernardino County area it is found in drainageways at an elevation of 10 to 1,500 feet above msl. The mean annual precipitation for where this soil type occurs is 10 to 25 inches, with a mean annual air temperature range of 59 to 64F and frost-free period of 250 to 350 days. The typical profile of this soil for the western San Bernardino County area includes sand from 0 to 12 inches; loamy sand, fine sand, and sand from 12 to 48 inches; and stratified gravelly sand to gravelly loamy sand from 48 to 60 inches. The depth to a restrictive feature is more than 80 inches, the depth to the water table is more than 80 inches, and the available water capacity is high at approximately 9.1 inches. This soil type is not classified as prime farmland.



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CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT
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RBF CONSULTING A Baker Company

0 625 1,250 2,500 Feet

Source: NRCS Soils Data-ca677, Eagle Aerial 2013, SESPE Consulting

Soils Map

Exhibit 4

3.6 HYDRIC SOILS LIST OF CALIFORNIA

RBF reviewed the Hydric Soils List of California, dated March 2014, provided by the Natural Resources Conservation Service, in an effort to verify whether or not on-site soils are considered to be hydric. It should be noted that lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but they are not a substitute for on-site investigations. According to the soils list, Psamments and Fluvents, Frequently Flooded, are listed as hydric.

3.7 NATIONAL WETLANDS INVENTORY

RBF reviewed the U.S. Fish and Wildlife Service's National Wetland Inventory maps. Eleven (11) wetland classifications were noted within the boundaries of the project site and are described in further detail below. In addition, refer to Appendix D, *Documentation*, for a depiction of on-site wetland classifications.

Freshwater Emergent Wetland (PEMCh)

The freshwater emergent wetland feature is classified as a palustrine system that includes all non-tidal wetlands dominated by trees, shrubs, emergents, mosses or lichens, and all such wetlands that occur in tidal areas. This wetland feature is listed under the emergent class and is characterized by erect, rooted, herbaceous hydrophytes. Additionally, this wetland feature exhibits a seasonally flooded water regime with surface water being present for extended periods especially early in the growing season. This wetland feature has also been created or modified by a man-made barrier or dam which obstructs the inflow or outflow of water.

Freshwater Forested/Shrub Wetland (PSSA)

The freshwater forested/shrub wetland feature is classified as a palustrine system that includes all non-tidal wetlands dominated by trees, shrubs, emergents, mosses or lichens, and all such wetlands that occur in tidal areas. This wetland feature is listed under the scrub-shrub class and includes areas dominated by woody vegetation less than 6 meters (20 feet) tall. Additionally, this wetland feature exhibits a temporarily flooded water regime with surface water being present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the growing season.

Freshwater Pond Wetland (PUSCh)

The freshwater pond wetland feature is classified as a palustrine system that includes all non-tidal wetlands dominated by trees, shrubs, emergents, mosses or lichens, and all such wetlands that occur in tidal areas. This wetland feature has an unconsolidated shore and

includes all wetland habitats with less than 75 percent cover of stones, boulders or bedrock and a vegetative cover less than 30 percent. Additionally, this wetland feature exhibits a seasonally flooded water regime with surface water being present for extended periods especially early in the growing season, but absent by the end of the growing season. This wetland feature has also been created or modified by a man-made barrier or dam which obstructs the inflow or outflow of water.

Riverine Wetland

Riverine Wetland (R4SBA)

The riverine wetland feature is classified as a riverine system that includes all wetlands and deepwater habitats contained in natural or artificial channels periodically or continuously containing flowing water or which forms a connecting link between the two bodies of standing water. This wetland feature falls within the intermittent subsystem and streambed class and includes channels that contain flowing water only part of the year, but may contain isolated pools when the flow stops. Additionally, this wetland feature exhibits a temporarily flooded water regime with surface water being present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the growing season.

Riverine Wetland (R4SBAx)

The riverine wetland feature is classified as a riverine system that includes all wetlands and deepwater habitats contained in natural or artificial channels periodically or continuously containing flowing water or which forms a connecting link between the two bodies of standing water. This wetland feature falls within the intermittent subsystem and streambed class and includes channels that contain flowing water only part of the year, but may contain isolated pools when the flow stops. Additionally, this wetland feature exhibits a temporarily flooded water regime with surface water being present for brief periods during the growing season. This wetland feature also lies within a basin or channel that has been dug, blasted, or suctioned through artificial means by man.

3.8 FLOOD ZONE

RBF searched the Federal Emergency Management Agency website for flood data for the project site. Based on the Flood Insurance Rate Map No. 06065C2055G, dated August 28, 2008, the majority of the project site is located within areas that have been identified as special flood hazard areas that are subject to inundation by the 1% (100-year) annual chance flood. The project site is also located within Zones A, AO, and X. Refer to Appendix D, *Documentation*.

Section 4 Site Conditions

RBF field biologist, Travis J. McGill, and regulatory analyst, Thomas C. Millington visited the project site from approximately 6:30 a.m. to 12:30 p.m. on July 23, 2014 to verify existing conditions and document potential jurisdictional areas. In addition, RBF field staff conducted a follow-up site visit on August 6, 2014. Temperatures during the site visit were in the mid 80's (degrees Fahrenheit) with clear skies and calm wind conditions. RBF encountered no limitations during the site visit. Refer to Appendix A for representative photographs taken throughout the project site.

4.1 JURISDICTIONAL FEATURES

4.1.1 Cucamonga Creek

Cucamonga Creek drains from the San Gabriel Mountains and generally flows through the project site in a north to south direction. As the creek moves south, flows pass through a series of rock-filled gabion walls designed to slow velocities and collect sediment and debris before reaching Cucamonga Dam. After passing the series of gabions, water flow collects within the Cucamonga Basin located just upstream of Cucamonga Dam, allowing for percolation and groundwater recharge. South of Cucamonga Dam, the creek has been transformed into a concrete-lined flood control channel. This channel generally runs to north to south and flows through the cities of Rancho Cucamonga, Ontario, and Chino before discharging to Prado Basin and the Santa Ana River.

Within the northern and central portions of the project site, Cucamonga Creek consists of an active flood plain characterized by a sandy substrate with a regular distribution of cobble and boulders. No surface water was present within Cucamonga Creek; however, evidence of a Corps ordinary high water mark (OHWM) and surface hydrology was observed via the following indicators: scour; drift/debris; wrack lines; shelving; sediment deposits; changes in particle size distribution; and destruction of terrestrial vegetation.

Due to periodic flooding within Cucamonga Creek, a series of step-like terraces have been created, each exhibiting a different successional phase of vegetation. The active streambed within Cucamonga Creek consists mostly of sand, cobble, and boulders and supports sparse vegetation indicative of a pioneer Riversidean alluvial fan sage scrub (RAFSS) plant community. Plant species occurring within the active channel and along recently scoured banks include scale broom (*Lepidospartum squamatum*), mulefat (*Baccharis salicifolia*), mugwort (*Artemisia douglasiana*), and a variety of non-native grasses. Above the active channel, elevated terraces receive less scouring from the fluvial processes of Cucamonga Creek and therefore, are vegetated with a moderate density of plant species. These areas exhibit characteristics of an intermediate RAFSS plant community and are vegetated with California buckwheat (*Eriogonum fasciculatum*), California croton (*Croton californicus*),

deerweed (*Acmispon glaber*), California sagebrush (*Artemisia californica*), pine goldenbush (*Ericameria pinifolia*), mulefat, scale broom, and mugwort. Due to the collection of sediment and ponding behind existing crosswalls, isolated patches of riparian vegetation including arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), cottonwood (*Populus fremontii*), and western sycamore (*Platanus racemosa*) also occur. Cucamonga Basin is routinely maintained by the San Bernardino County Flood Control District and is mostly unvegetated; however, some areas are vegetated with a variety of non-native grasses and upland plant species associated with surrounding Riversidean sage scrub (RSS) and RAFSS plant communities. South of Cucamonga Dam, Cucamonga Creek has been converted to a concrete-lined flood control channel and is entirely devoid of vegetation. Due to an absence of dominant hydrophytic vegetation, soil samples were not taken.

4.2 NON-JURISDICTIONAL FEATURES

4.2.1 Detention Basins

It should be noted that a series of detention basins are located within the eastern portion of the project site. These detention basins are currently abandoned and were constructed in the uplands. Due to channelization of Cucamonga Creek, the on-site detention basins no longer exhibit a surface hydrologic connection to Cucamonga Creek. Therefore, on-site detention basins were determined to be non-jurisdictional.

Section 5 Findings

This delineation has been prepared for the Altum Group, in order to document the jurisdictional authority of the Corps, Regional Board, and CDFW within the boundaries of the project site. This report presents RBF's best effort at determining the jurisdictional boundaries using the most up-to-date regulations (as of report publication), written policy, and guidance from the regulatory agencies.

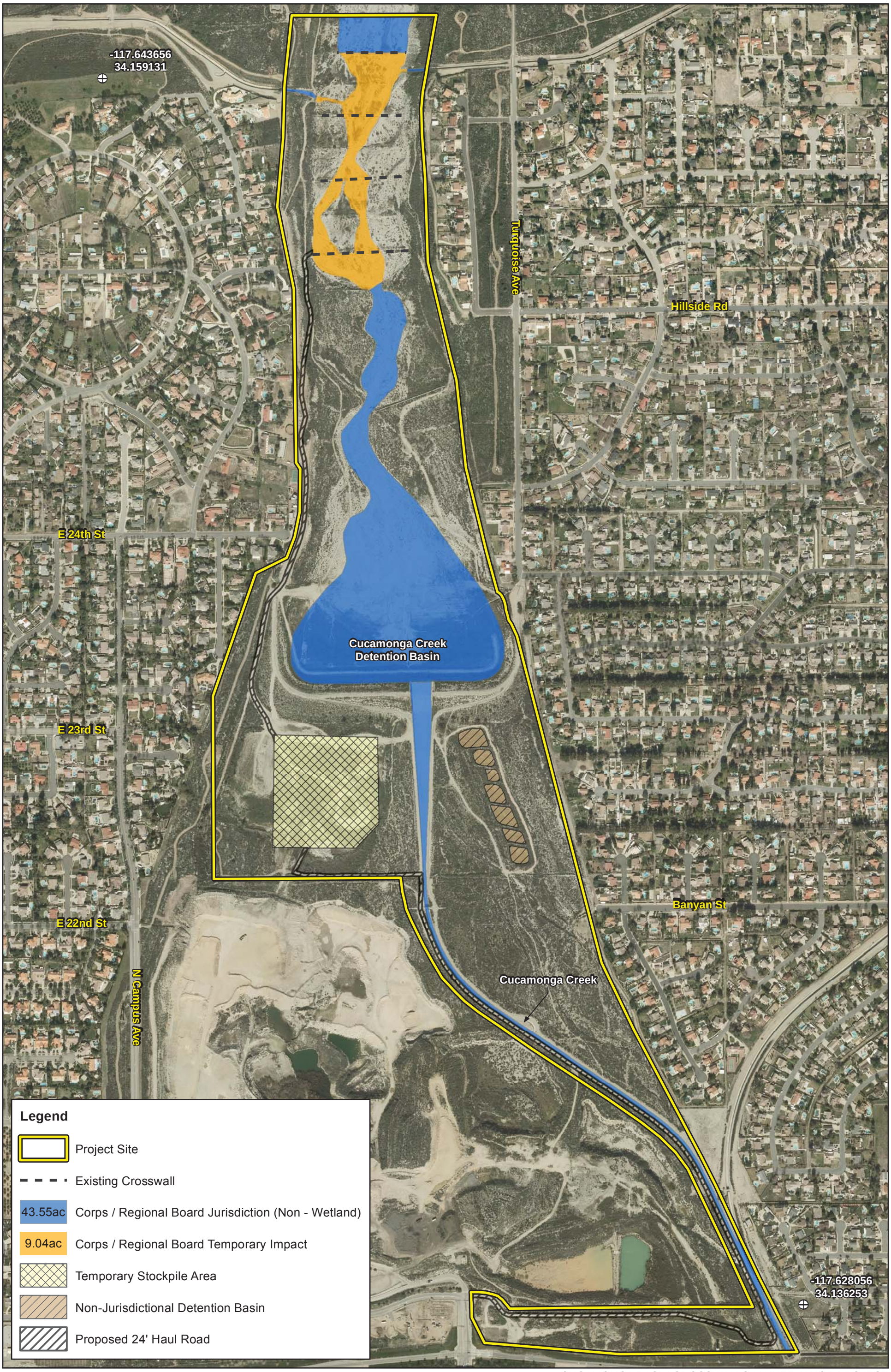
5.1 U.S. ARMY CORPS OF ENGINEERS DETERMINATION

Evidence of an OHWM was noted within the project site, which totaled approximately 52.58-acres. Cucamonga Creek is tributary to the Santa Ana River (RPW) and ultimately the Pacific Ocean (TNW). Therefore, Cucamonga Creek exhibits a hydrologic connection to downstream waters and is considered "Waters of the United States," which falls within Corps' jurisdiction. Based on project design plans, approximately 9.04-acre of Corps jurisdiction (non-wetland) will be temporarily impacted. Temporary impacts will occur as a result of rehabilitation of existing crosswalls and removal of sediment and debris. Refer to Table 1 for a summary of the jurisdictional areas on-site, and Exhibit 5A, *Corps/Regional Board Jurisdictional Map*, for an illustration of on-site jurisdictional areas.

Table 1 – Jurisdictional Area and Impact Summary

Jurisdictional Feature Name	Corps / Regional Board		CDFW	
	Jurisdictional Area	Jurisdictional Impact Area	Jurisdictional Area	Jurisdictional Impact Area
	Acreage	Temporary	Acreage	Temporary
Cucamonga Creek	52.59	9.04	70.62	20.22
Totals	**52.59**	**9.04**	**70.62**	**20.22**

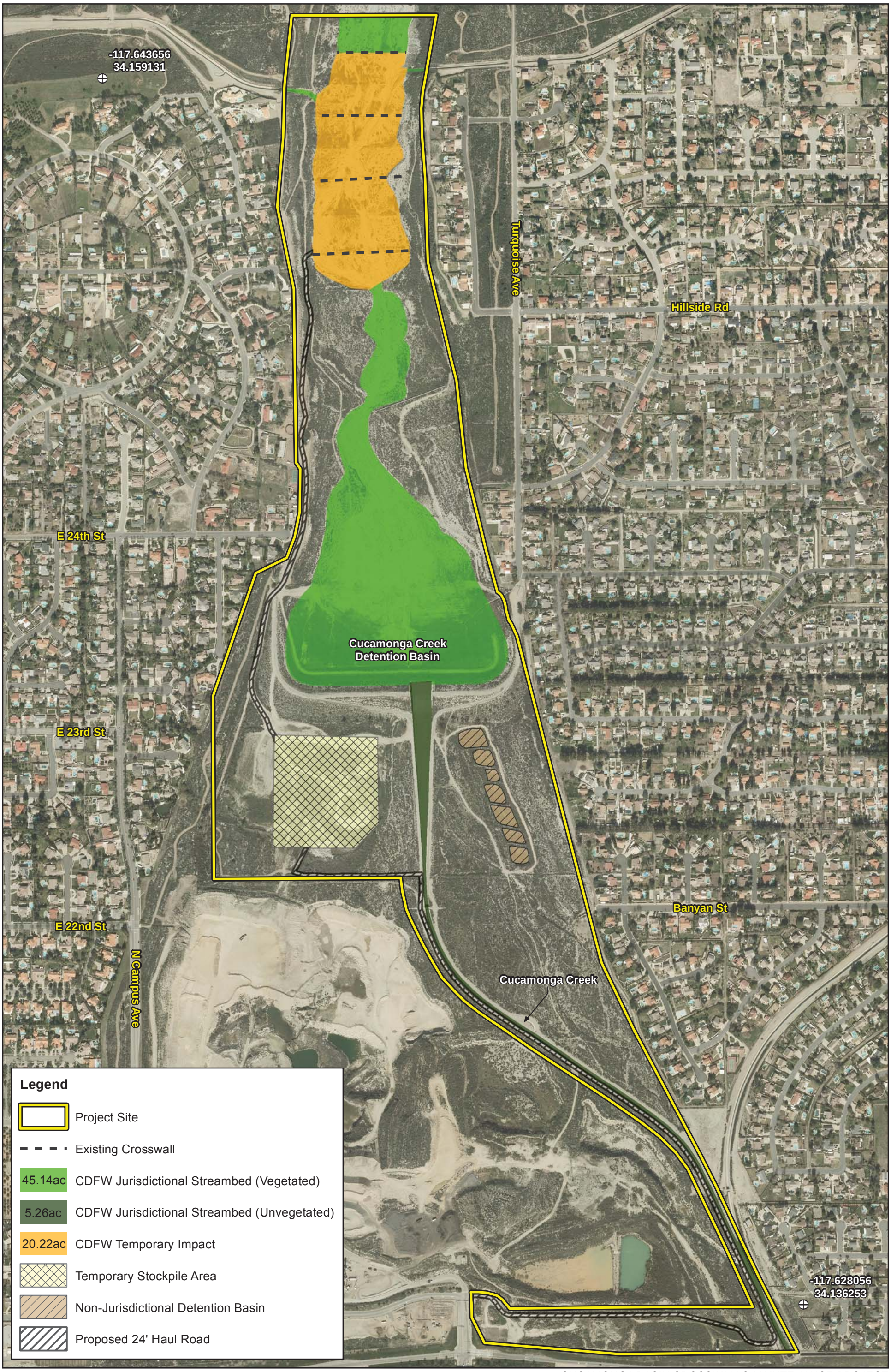
As previously noted, an area must exhibit all three wetland parameters described in the Corps Regional Supplement to be considered a jurisdictional wetland. Although hydrophytic vegetation and wetland hydrology was present, substrate within Cucamonga Creek is composed of fine sediment, gravel, cobble, and boulders, and therefore did not allow RBF field staff to take soil samples. Although this would be considered a limitation, RBF relied on the NRCS Custom Soils Report and previous/current documentation of the project site obtained during the literature review to determine the potential presence of hydric soils. Based on the results of the literature review and site visit, it was determined that no areas met all three wetland parameters. Therefore, no jurisdictional wetland features are anticipated on the project site.



CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT
DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

Corps / Regional Board Jurisdictional Map

Exhibit 5A



8/19/2014 JN M:\Mdata\141083\GIS\MXD\Ex 5b CDFW Jurisdictional Map.mxd

0 600 1,200 Feet

Source: Eagle Aerial 2013

CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT
DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS

CDFW Jurisdictional Map

Exhibit 5B

5.2 REGIONAL WATER QUALITY CONTROL BOARD DETERMINATION

No isolated or Rapanos conditions were observed within the boundaries of the project site; therefore, the Regional Board follows that of Corps jurisdiction.

5.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE DETERMINATION

Cucamonga Creek exhibited a clear bed and bank and would qualify as CDFW jurisdictional streambed. Based on the results of the field investigation, approximately 70.62-acres of CDFW jurisdictional streambed occurs within the project site. Based on project design plans, approximately 20.22-acre of CDFW jurisdictional streambed (vegetated) will be temporarily impacted. Temporary impacts will occur as a result of rehabilitation of existing crosswalls and removal of sediment and debris. Refer to Exhibit 5B, *CDFW Jurisdictional Map*.

Section 6 Regulatory Approval Process

The following is a summary of the various permits, agreements, and certifications required before construction activities take place within the jurisdictional areas.

6.1 U.S. ARMY CORPS OF ENGINEERS

The Corps regulates discharges of dredged or fill materials into WoUS and wetlands pursuant to Section 404 of the CWA. Therefore, it will be necessary for the project applicant to acquire a Section 404 permit from the Corps for impacts occurring within Corps jurisdictional areas. Based on project design plans, it is anticipated that the proposed project can be authorized via a Nationwide Permit (NWP), specifically NWP No. 3: *Maintenance*.

6.2 REGIONAL WATER QUALITY CONTROL BOARD

The Regional Board regulates discharges to surface waters under the Federal CWA and the California Porter-Cologne Water Quality Control Act. Therefore, it will be necessary for the project applicant to obtain CWA Section 401 Water Quality Certification from the Regional Board for impacts occurring within Regional Board jurisdictional areas.

6.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The CDFW regulates alterations to streambed under the California Fish and Game Code. Therefore, it will be necessary for the project applicant to formally notify the CDFW prior to impacts occurring within CDFW jurisdictional areas.

6.4 RECOMMENDATION

As part of the regulatory permitting process, this delineation will be forwarded to each of the regulatory agencies for their concurrence. The concurrence/receipt would be valid up to five years and would solidify findings noted within this report.

Section 7 References

The following resources were utilized during preparation of this Delineation of State and Federal Jurisdictional Waters:

California Department of Fish and Game, *Field Guide to Lake and Streambed Alteration Agreements Section 1600-1607 California Fish and Game Code*, January 1994

California Department of Fish and Wildlife, *Lake and Streambed Alteration Program*. (http://www.dfg.ca.gov/habcon/1600/)

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U.S. Fish and Wildlife Service, National Wetlands Inventory, accessed July 23, 2014 (http://www.fws.gov/wetlands/Data/Mapper.html)

U.S. Geological Survey, 7.5 Minute Series Topographic Quadrangle, *Mount Baldy, California*, 1967, Photorevised 1988

Vyverberg, Kris, *A Review of Stream Processes and Forms in Dryland Watersheds*, California Department of Fish and Game, December 2010

Appendix A Site Photographs

Photograph 1- Looking north at Cucamonga Creek on the northern portion of the project site.

Photograph 2- Looking south at Cucamonga Creek.

Photograph 3- Looking southwest at active channel within Cucamonga Creek.

Photograph 4- Looking north at Cucamonga Creek and existing crosswall on the northern portion of the project site.

Photograph 5- Looking south at active wash and Cucamonga Creek detention basin.

Photograph 6- Looking west at Cucamonga Creek detention basin on the central portion of the project site.

Photograph 7- Looking north at concrete-lined flood control channel south of Cucamonga Dam.

Photograph 8- Looking west at non-jurisdictional detention basin on the southern portion of the project site.

Appendix B Regulations

U.S. ARMY CORPS OF ENGINEERS

Since 1972, the Corps and U.S. Environmental Protection Agency (EPA) have jointly regulated the filling of "waters of the U.S.", including wetlands, pursuant to Section 404 of the CWA. The Corps has regulatory authority over the discharge of dredged or fill material into the waters of the United States (WoUS) under Section 404 of the CWA. The Corps and EPA define "fill material" to include any "material placed in waters of the United States where the material has the effect of: (i) replacing any portion of a water of the United States with dry land; or (ii) changing the bottom elevation of any portion of the waters of the United States." Examples include, but are not limited to, sand, rock, clay, construction debris, wood chips, and "materials used to create any structure or infrastructure in the waters of the United States." The term WoUS is defined as follows:[3]

(1) all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) all interstate waters including interstate wetlands;

(3) all waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) which are used or could be used for industrial purpose by industries in interstate commerce;

(4) all impoundments of waters otherwise defined as WoUS under the definition;

(5) tributaries of waters identified in paragraphs (1)-(4) mentioned above;

(6) the territorial seas; and,

(7) wetlands adjacent to the waters identified in paragraphs (1)-(6) mentioned above.

Wetlands, a subset of jurisdictional waters, are jointly defined by the Corps and EPA as "*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of*

[3] CWA regulations 33 CFR §328.3(a).

vegetation typically adapted for life in saturated soil conditions."[4] Wetlands generally include swamps, marshes, bogs, and similar areas.

The Corps' regulatory program continues to evolve due to court rulings associated with litigation. Sections 2.1.1 and 2.1.2, below, briefly discuss court cases that have impacted the Corps' jurisdiction over the past decade. The Corps does not regulate isolated waters and wetlands with no interstate or foreign commerce connection.[5]

The Corps will assert jurisdiction over traditional navigable waters (TNWs) and all wetlands adjacent to TNWs, as well as non-navigable tributaries of TNWs that are relatively permanent waters (RPW) (i.e., the tributaries typically flow year-round or have a continuous flow at least seasonally) and wetlands with a continuous surface connection that directly abut such tributaries; however, the agencies will evaluate jurisdiction over the following features based on a fact-specific analysis to determine whether they have a significant nexus with a TNW:[6]

- Non-navigable tributaries that are not relatively permanent (do not flow typically year-round or have a continuous flow at least seasonally);
- Wetlands adjacent to such tributaries; and,
- Wetlands adjacent to, but that do not directly abut, a relatively permanent non-navigable tributary.

A case-by-case "significant nexus" analysis is conducted to determine whether the waters noted above and their adjacent wetlands are jurisdictional. A "significant nexus" may be found where waters, including adjacent wetlands, affect the chemical, physical, or biological integrity of downstream TNWs. The significant nexus analysis also includes consideration of hydrologic and ecologic factors relative to TNWs.

REGIONAL WATER QUALITY CONTROL BOARD

Applicants for a federal license or permit for activities which may discharge to waters of the United States must seek Water Quality Certification from the state or Indian tribe with jurisdiction. [7] Such Certification is based on a finding that the discharge will meet water quality standards and other applicable requirements. In California, Regional Boards issue or deny Certification for discharges within their geographical jurisdiction. Water Quality Certification must be based on a finding that the proposed discharge will comply with water quality standards, which are defined as numeric and narrative objectives in each Regional

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4 CWA regulations 33 CFR §328.3(b).

5 *Solid Waste Agency of Northern Cook County v. United States Corps of Engineers* (SWANCC)

6 *Rapanos v. United States* 547 U.S. 715 (2006) (Rapanos)

7 Title 33, United States Code, Section 1341; Clean Water Act Section.

Board's Basin Plan. Where applicable, the State Water Resources Control Board has this responsibility for projects affecting waters within multiple Regional Boards. The Regional Board's jurisdiction extends to all waters of the State (includes SWANCC and Rapanos conditions) and to all WoUS, including wetlands.

Additionally, the California *Porter-Cologne Water Quality Control Act* gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool in the post SWANCC and Rapanos regulatory environment, with respect to the state's authority over isolated and insignificant waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a Report of Waste Discharge in the event that there is no Section 404/401 nexus. Although "waste" is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

California Fish and Game Code Sections 1600-1616 establish a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely impact fish and wildlife resources, or, when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Fish and Game Code Section 1602 requires any person, state, or local governmental agency or public utility to notify the CDFW before beginning any activity that will do one or more of the following:

(1) substantially obstruct or divert the natural flow of a river, stream, or lake;

(2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or

(3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state. The Fish and Wildlife's regulatory authority extends to include riparian habitat (including wetlands) supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFW takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and

watercourses having a surface or subsurface flow that support or have supported riparian vegetation.

Any of the below criteria could be applicable in determining what constitutes a stream depending on the potential for the proposed activity to adversely affect fish and other stream-dependent wildlife resources.

(1) The term “stream” can include intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams based on United States Geological Survey (USGS) maps, and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.

(2) Biological components of a stream may include aquatic and riparian vegetation, along with all aquatic animals including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system.

(3) As a physical system, a stream not only includes water (at least on an intermittent or ephemeral basis), but also a bed or channel, a bank and/or levee, in-stream features such as logs or snags, and various flood plains depending on the return frequency of the flood event being considered (i.e., 10, 50, or 100 years, etc.).

(4) The lateral extent of a stream can be measured in several ways depending on a particular situation and the type of fish or wildlife resource at risk. The following criteria are presented in order from the most inclusive to the least inclusive:

    (a) The flood plain of a stream can be the broadest measurement of a stream’s lateral extent depending on the return frequency of the flood event used. For most flood control purposes, the 100-year flood plain exists for many streams. However, the 100-year flood plain may include significant amounts of upland or urban habitat and therefore may not be appropriate in many cases.

    (b) The outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats and is therefore a reasonable and identifiable boundary for the lateral extent of a stream. In most cases, the use of this criterion should result in protecting the fish and wildlife resources at risk.

    (c) Most streams have a natural bank which confines flows to the bed or channel except during flooding. In some instances, particularly on smaller streams or dry washes with little or no riparian habitat, the bank should be used to mark the lateral extent of a stream.

(d) A levee or other artificial stream bank would also be used to mark the lateral extent of a stream. However, in many instances, there can be extensive areas of valuable riparian habitat located behind a levee.

Appendix C Methodology

WATERS OF THE U.S. AND STATE WATERS

The limits of the Corps' jurisdiction in non-tidal waters extend to the OHWM, which is defined as "*. . . that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*"[8] An OHWM can be determined by the observation of a natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; presence of litter and debris; wracking; vegetation matted down, bent, or absent; sediment sorting; leaf litter disturbed or washed away; scour; deposition; multiple observed flow events; bed and banks; water staining; and/or change in plant community. The Regional Board shares the Corps' jurisdictional methodology, unless SWANCC or Rapanos conditions are present. In the latter case, the Regional Board considers such drainages to be jurisdictional waters of the State. The CDFW's jurisdiction extends to the top of bank of the stream/channel or to the limit (outer dripline) of the adjacent riparian vegetation.

WETLANDS

For this project location, Corps jurisdictional wetlands are delineated using the methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (Corps, 2008). This document is one of a series of Regional Supplements to the 1987 Corps Wetland Delineation Manual (Corps Manual). According to the Corps Manual, identification of wetlands is based on a three-parameter approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. In order to be considered a wetland, an area must exhibit at least minimal characteristics within these three (3) parameters. The Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. In the field, vegetation, soils, and evidence of hydrology have been examined using the methodology listed below and documented on Corps' wetland data sheets, when applicable. It should be noted that both the Regional Board and the CDFW jurisdictional wetlands encompass those of the Corps.

Vegetation

Nearly 5,000 plant types in the United States may occur in wetlands. These plants, often referred to as hydrophytic vegetation, are listed in regional publications by the U.S. Fish and Wildlife Service (USFWS). In general, hydrophytic vegetation is present when the plant community is dominated by species that can tolerate prolonged inundation or soil saturation during growing season. Hydrophytic vegetation decisions are based on the assemblage

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[8] CWA regulations 33 CFR §328.3(e).

of plant species growing on a site, rather than the presence or absence of particular indicator species. Vegetation strata are sampled separately when evaluating indicators of hydrophytic vegetation. A stratum for sampling purposes is defined as having 5 percent or more total plant cover. The following vegetation strata are recommended for use across the Arid West:

- *Tree Stratum:* Consists of woody plants 3 inches or more in diameter at breast height (DBH), regardless of height;
- *Sapling/shrub stratum:* Consists of woody plants less than 3 inches DBH, regardless of height;
- *Herb stratum:* Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size; and,
- *Woody vines:* Consists of all woody vines, regardless of size.

The following indicator is applied per the test method below.[9] Hydrophytic vegetation is present if any of the indicators are satisfied.

<u>Indicator 1 – Dominance Test</u>

Cover of vegetation is estimated and is ranked according to their dominance. Species that contribute to a cumulative total of 50% of the total dominant coverage, plus any species that comprise at least 20% (also known as the "50/20 rule") of the total dominant coverage, are recorded on a wetland data sheet. Wetland indicator status in California (Region 0) is assigned to each species using the *National Wetland Plant List, version 2.4.0* (Corps, 2012). If greater than 50% of the dominant species from all strata were Obligate, Facultative-wetland, or Facultative species, the criteria for wetland vegetation is considered to be met. Plant indicator status categories are described below:

- *Obligate Wetland (OBL):* Plants that almost always occur in wetlands;
- *Facultative Wetland (FACW):* Plants that usually occur in wetlands, but may occur in non-wetlands;
- *Facultative (FAC):* Plants that occur in wetlands and non-wetlands;

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[9] Although the Dominance Test is utilized in the majority of wetland delineations, other indicator tests may be employed. If one indicator of hydric soil and one primary or two secondary indicators of wetland hydrology are present, then the Prevalence Test (Indicator 2) may be performed. If the plant community satisfies the Prevalence Test, then the vegetation is hydric. If the Prevalence Test fails, then the Morphological Adaptation Test may be performed, where the delineator analyzes the vegetation for potential morphological features.

- *Facultative Upland (FACU):* Plants that usually occur in non-wetlands, but may occur in wetlands; and,

- *Obligate Upland (UPL):* Plants that almost never occur in wetlands.

Hydrology

Wetland hydrology indicators are presented in four (4) groups, which include:

Group A – Observation of Surface Water or Saturated Soils

Group A is based on the direct observation of surface water or groundwater during the site visit.

Group B – Evidence of Recent Inundation

Group B consists of evidence that the site is subject to flooding or ponding, although it may not be inundated currently. These indicators include water marks, drift deposits, sediment deposits, and similar features.

Group C – Evidence of Recent Soil Saturation

Group C consists of indirect evidence that the soil was saturated recently. Some of these indicators, such as oxidized rhizopheres surrounding living roots and the presence of reduced iron or sulfur in the soil profile, indicate that the soil has been saturated for an extended period.

Group D – Evidence from Other Site Conditions or Data

Group D consists of vegetation and soil features that indicate contemporary rather than historical wet conditions, and include shallow aquitard and the FAC-neutral test.

If wetland vegetation criteria is met, the presence of wetland hydrology is evaluated at each transect by recording the extent of observed surface flows, depth of inundation, depth to saturated soils, and depth to free water in the soil test pits. The lateral extent of the hydrology indicators are used as a guide for locating soil pits for evaluation of hydric soils and jurisdictional areas. In portions of the stream where the flow is divided by multiple channels with intermediate sand bars, the entire area between the channels is considered within the OHWM and the wetland hydrology indicator is considered met for the entire area.

Soils

A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper 16-20

inches.[10] The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. It should also be noted that the limits of wetland hydrology indicators are used as a guide for locating soil pits. If any hydric soil features are located, progressive pits are dug moving laterally away from the active channel until hydric features are no longer present within the top 20 inches of the soil profile.

Once in the field, soil characteristics are verified by digging soil pits along each transect to an excavation depth of 20 inches; in areas of high sediment deposition, soil pit depth may be increased. Soil pit locations are usually placed within the drainage invert or within adjoining vegetation. At each soil pit, the soil texture and color are recorded by comparison with standard plates within a *Munsell Soil Chart* (2009). Munsell Soil Charts aid in designating color labels to soils, based by degrees of three simple variables – hue, value, and chroma. Any indicators of hydric soils, such as organic accumulation, iron reduction, translocation, and accumulation, and sulfate reduction, are also recorded.

Hydric soil indicators are present in three groups, which include:

<u>All Soils</u>

"All soils" refers to soils with any United States Department of Agriculture (USDA) soil texture. Hydric soil indicators within this group include histosol, histic epipedon, black histic, hydrogen sulfide, stratified layers, 1 cm muck, depleted below dark surface, and thick dark surface.

<u>Sandy Soils</u>

"Sandy soils" refers to soil materials with a USDA soil texture of loamy fine sand and coarser. Hydric soil indicators within this group include sandy mucky mineral, sandy gleyed matrix, sandy redox, and stripped matrix.

<u>Loamy and Clayey Soils</u>

"Loamy and clayey soils" refers to soil materials with a USDA soil texture of loamy very fine sand and finer. Hydric soil indicators within this group include loamy mucky mineral, loamy gleyed matrix, depleted matrix, redox dark surface, depleted dark surface, redox depressions, and vernal pools.

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[10] According to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0 (Corps 2008), growing season dates are determined through on-site observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature.

SWANCC WATERS

The term “isolated waters” is generally applied to waters/wetlands that are not connected by surface water to a river, lake, ocean, or other body of water. In the presence of isolated conditions, the Regional Board and CDFW take jurisdiction through the application of the OHWM/streambed and/or the 3-parameter wetland methodology utilized by the Corps.

RAPANOS WATERS

The Corps will assert jurisdiction over non-navigable, not relatively permanent tributaries and their adjacent wetlands where such tributaries and wetlands have a significant nexus to a TNW. The flow characteristics and functions of the tributary itself, in combination with the functions performed by any wetlands adjacent to the tributary, determine if these waters/wetlands significantly affect the chemical, physical, and biological integrity of the TNWs. Factors considered in the significant nexus evaluation include:

(1) The consideration of hydrologic factors including, but not limited to, the following:

- volume, duration, and frequency of flow, including consideration of certain physical characteristics of the tributary
- proximity to the TNW
- size of the watershed average annual rainfall
- average annual winter snow pack

(2) The consideration of ecologic factors including, but not limited to, the following:

- the ability for tributaries to carry pollutants and flood waters to TNWs
- the ability of a tributary to provide aquatic habitat that supports a TNW
- the ability of wetlands to trap and filter pollutants or store flood waters
- maintenance of water quality

Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow) and ditches (including roadside ditches) excavated wholly in, and draining only, uplands and that do not carry a relatively permanent flow of water, are generally not considered jurisdictional waters.

In the presence of Rapanos drainage conditions, the Regional Board and CDFW take jurisdiction via the OHWM and/or the 3-parameter wetland methodology utilized by the Corps.

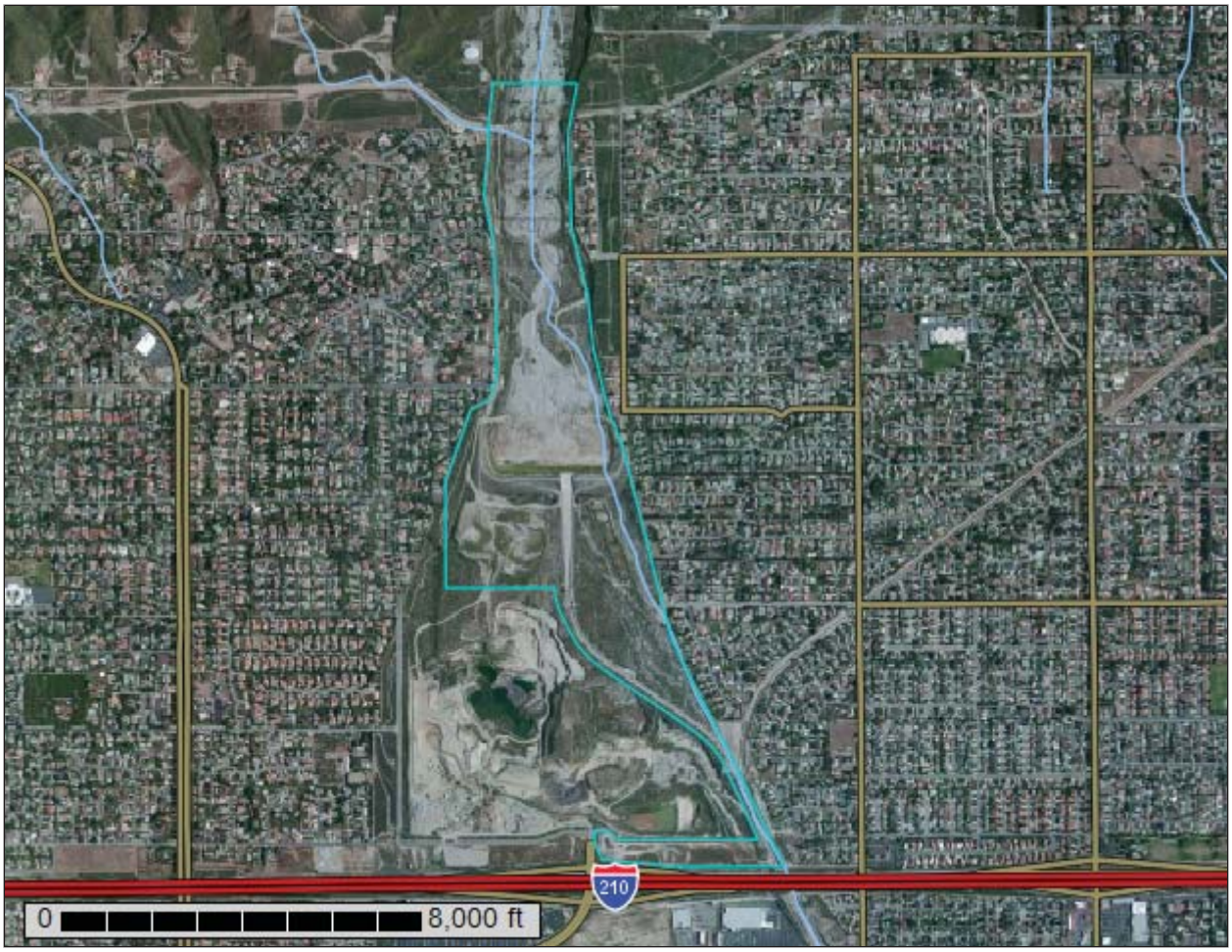
Appendix D Documentation

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for San Bernardino County Southwestern Part, California



August 19, 2014

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

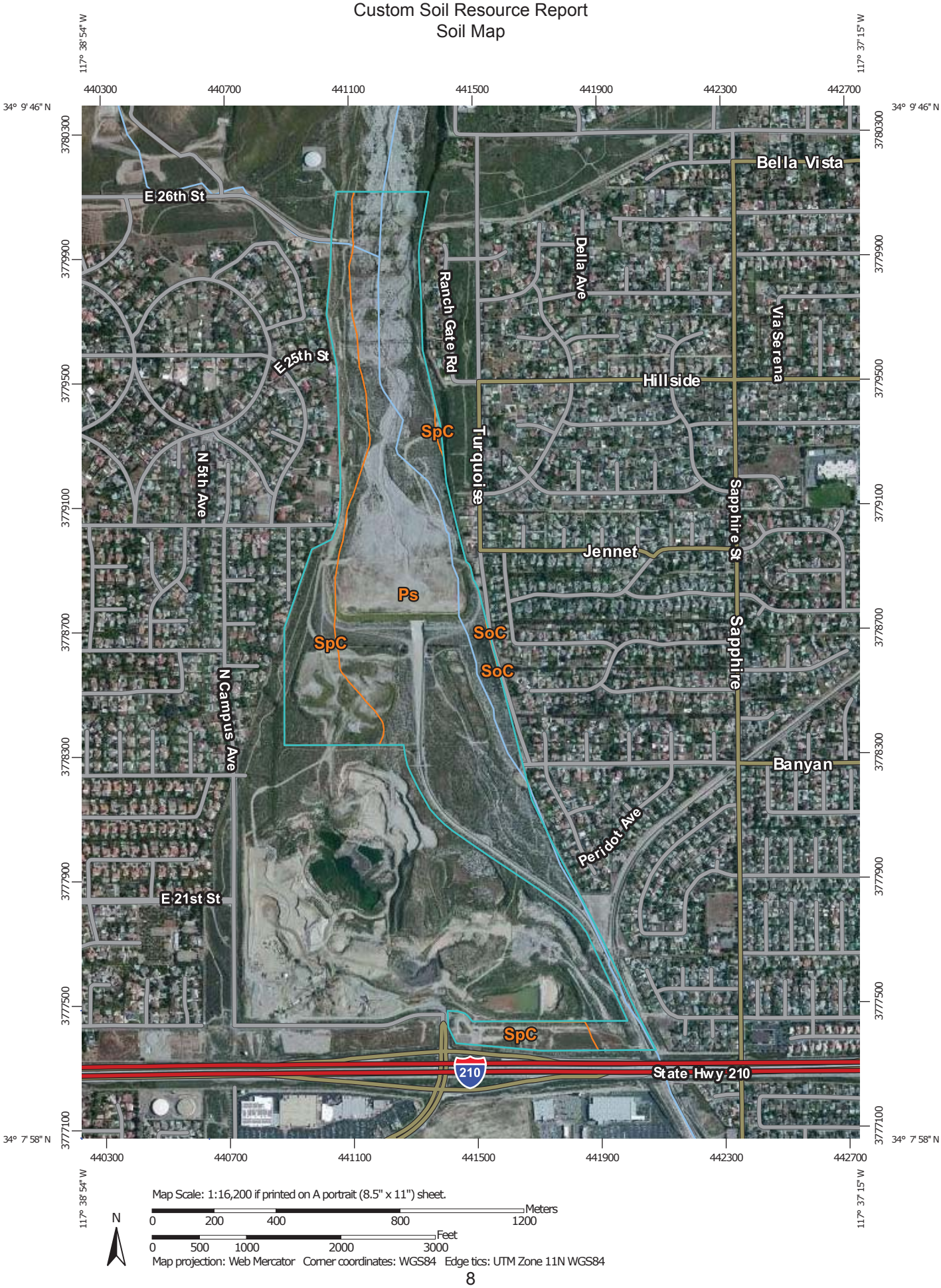
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:16,200 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 200 400 800 1200

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County Southwestern Part, California
Survey Area Data: Version 5, Dec 17, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 5, 2010—Jul 3, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

San Bernardino County Southwestern Part, California (CA677)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Ps	Psamments, Fluvents and Frequently flooded soils	186.7	75.6%
SoC	Soboba gravelly loamy sand, 0 to 9 percent slopes	0.1	0.0%
SpC	Soboba stony loamy sand, 2 to 9 percent slopes	60.0	24.3%
Totals for Area of Interest		**246.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments

on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Bernardino County Southwestern Part, California

Ps—Psamments, Fluvents and Frequently flooded soils

Map Unit Setting

National map unit symbol: hckh
Elevation: 10 to 1,500 feet
Mean annual precipitation: 10 to 25 inches
Mean annual air temperature: 59 to 64 degrees F
Frost-free period: 250 to 350 days
Farmland classification: Not prime farmland

Map Unit Composition

Fluvents and similar soils: 50 percent
Psamments and similar soils: 50 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Psamments

Setting

Landform: Drainageways
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium

Typical profile

A - 0 to 12 inches: sand
C1 - 12 to 48 inches: loamy sand, fine sand, sand
C1 - 12 to 48 inches: stratified gravelly sand to gravelly loamy sand
C1 - 12 to 48 inches:
C2 - 48 to 60 inches:

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A

Description of Fluvents

Setting

Landform: Drainageways
Landform position (three-dimensional): Riser
Down-slope shape: Linear

Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 10 inches: gravelly sand
C1 - 10 to 30 inches: stratified gravelly sand to gravelly loam
C2 - 30 to 60 inches: stratified gravelly sand to gravelly loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A

SoC—Soboba gravelly loamy sand, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: hckt
Elevation: 30 to 4,200 feet
Mean annual precipitation: 10 to 20 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 175 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Soboba and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Soboba

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 12 inches: gravelly loamy sand

H2 - 12 to 36 inches: very gravelly loamy sand
H3 - 36 to 60 inches: very stony sand

Properties and qualities

Slope: 0 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A

Minor Components

Unnamed

Percent of map unit: 5 percent

Delhi, fine sand

Percent of map unit: 5 percent

Tujunga, gravelly loam

Percent of map unit: 3 percent

Unnamed

Percent of map unit: 2 percent
Landform: Drainageways

SpC—Soboba stony loamy sand, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hckv
Elevation: 10 to 4,200 feet
Mean annual precipitation: 10 to 25 inches
Mean annual air temperature: 59 to 64 degrees F
Frost-free period: 210 to 350 days
Farmland classification: Not prime farmland

Map Unit Composition

Soboba and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Soboba

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 10 inches: very stony loamy sand
C - 10 to 60 inches: very stony sand

Properties and qualities

Slope: 2 to 9 percent
Percent of area covered with surface fragments: 0.1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A

Minor Components

Hanford

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Tujunga, gravelly loamy coarse sand

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Ramona

Percent of map unit: 5 percent
Landform: Terraces, alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

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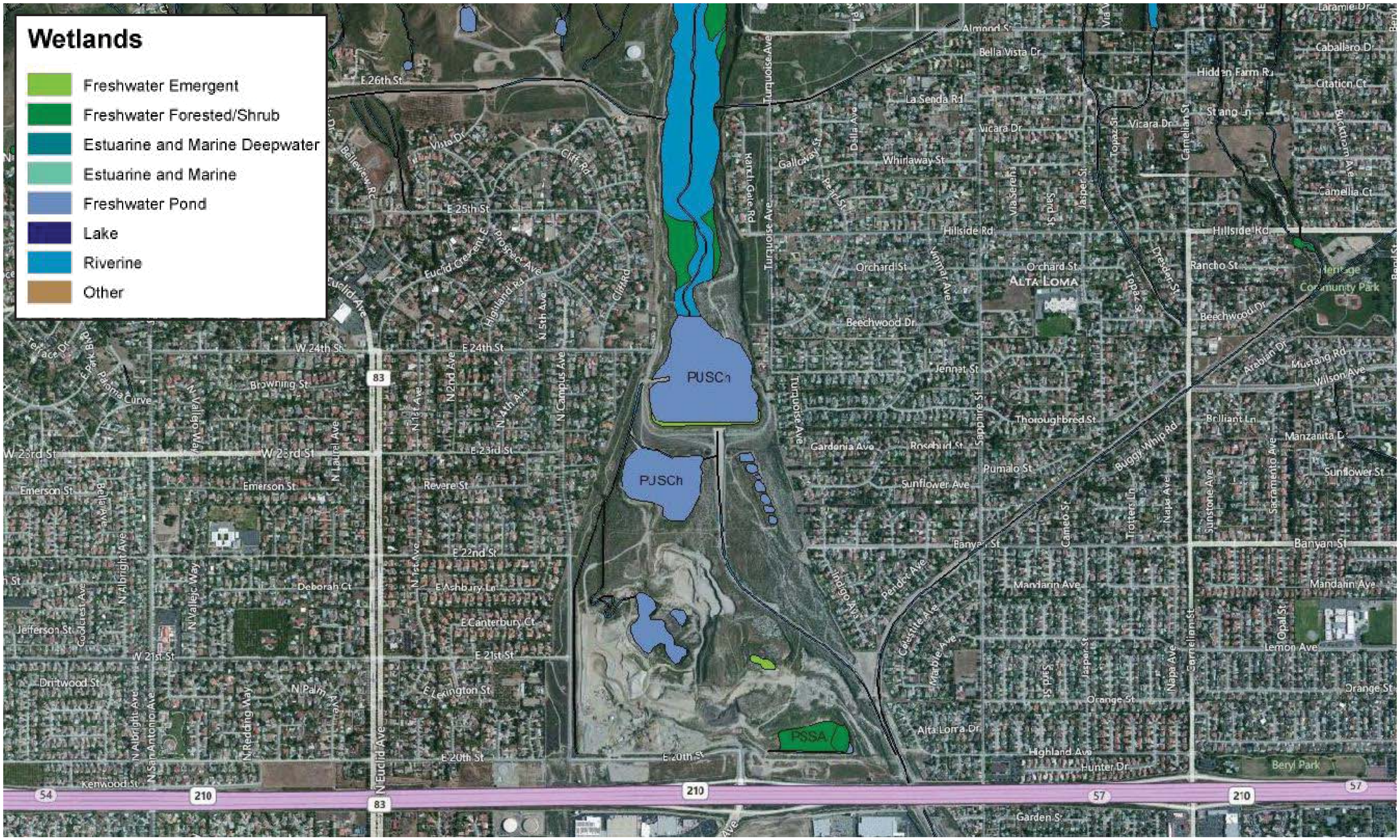
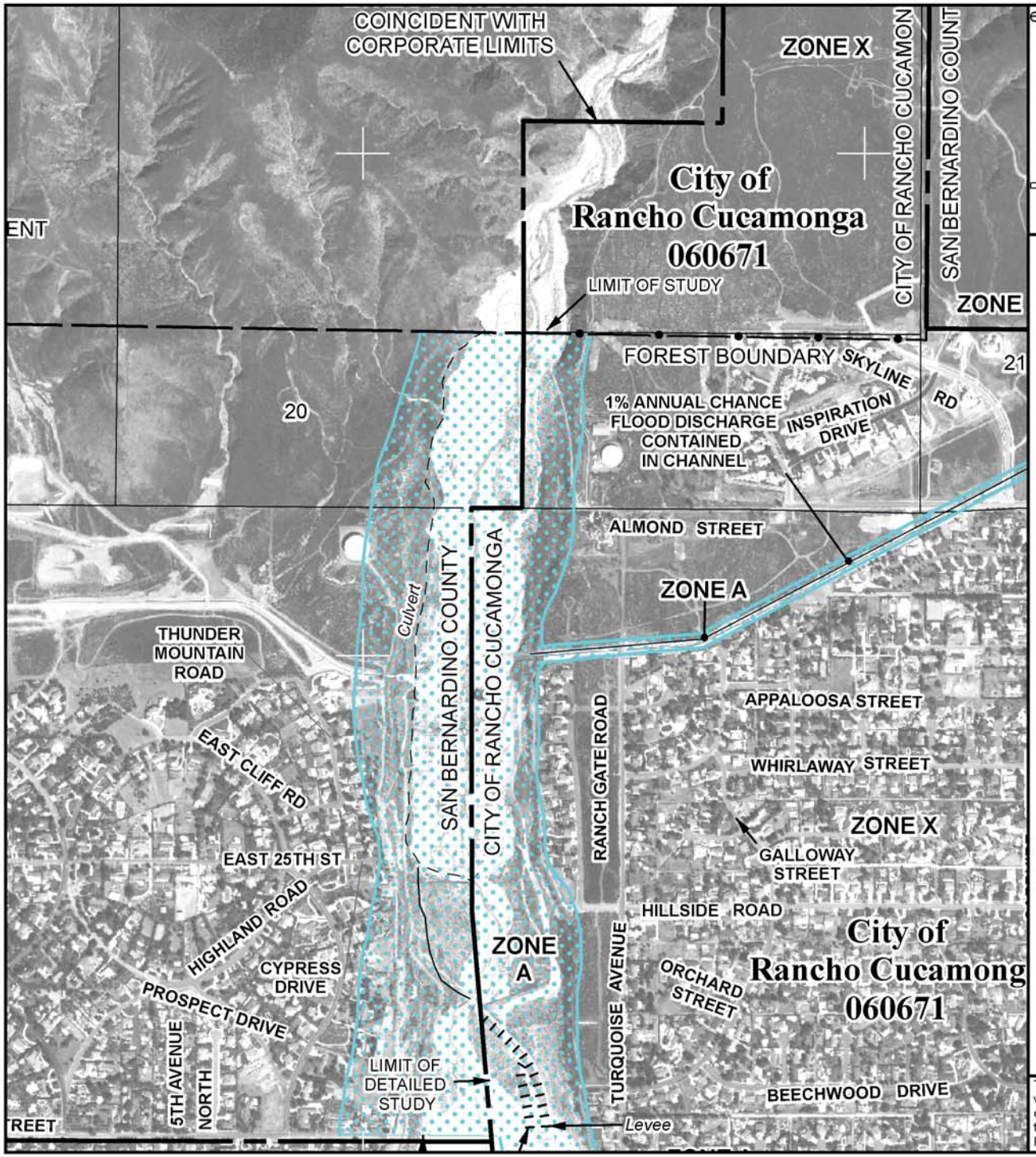
U.S. Fish and Wildlife Service

National Wetlands Inventory

Cucamonga Basin
Crosswalls Maintenance



This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



e National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 7870H

FIRM

FLOOD INSURANCE RATE MAP

SAN BERNARDINO COUNTY, CALIFORNIA

AND INCORPORATED AREAS

PANEL 7870 OF 9400

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
RANCHO CUCAMONGA, CITY OF	060671	7870	H
SAN BERNARDINO COUNTY	060270	7870	H
UPLAND, CITY OF	065067	7870	H

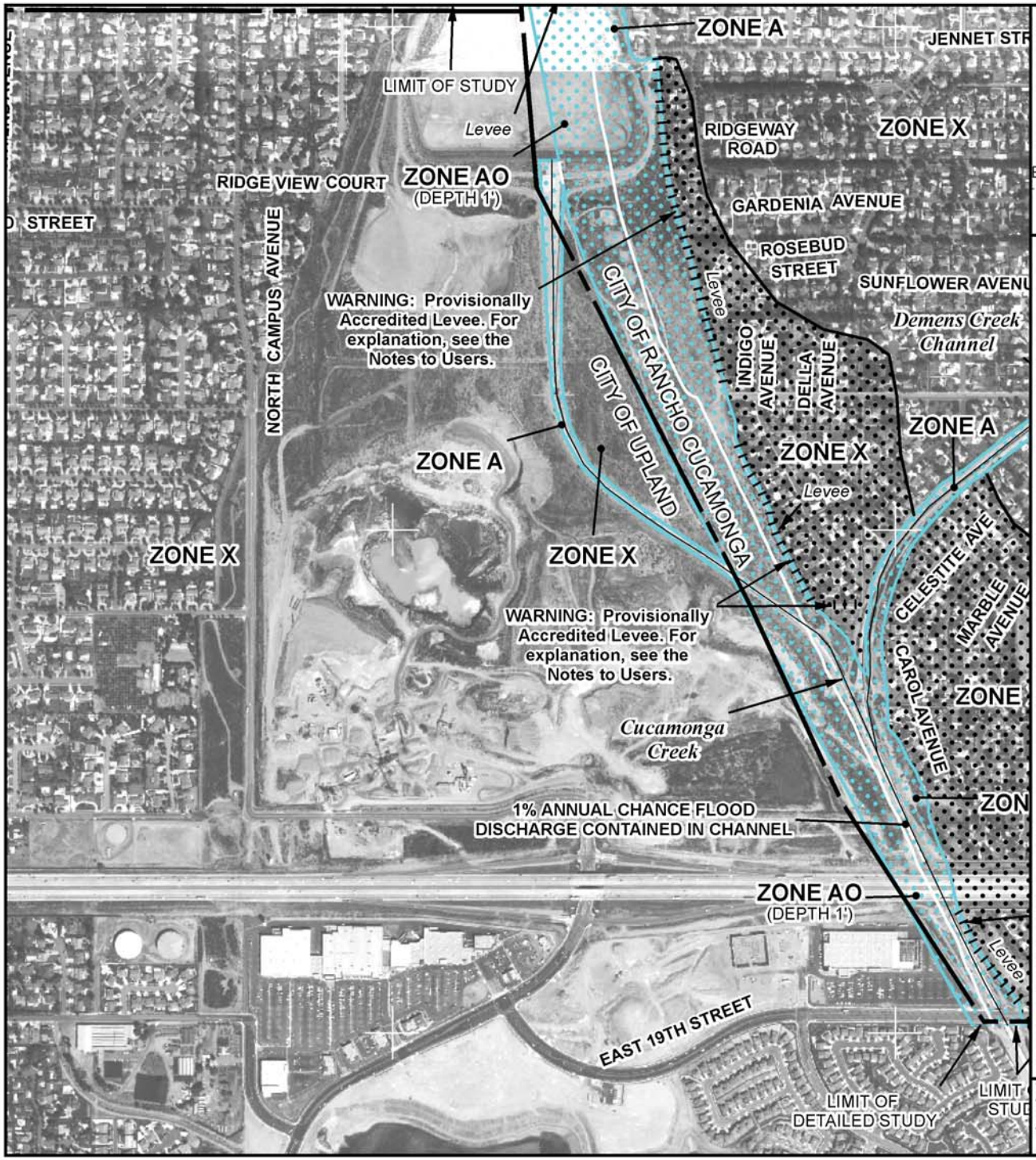
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06071C7870H

MAP REVISED
AUGUST 28, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 7870H

FIRM

FLOOD INSURANCE RATE MAP

SAN BERNARDINO COUNTY, CALIFORNIA

AND INCORPORATED AREAS

PANEL 7870 OF 9400

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

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Appendix B.6
Habitat Assessment Update (2014)

CUCAMONGA BASIN CROSSWALLS MAINTENANCE

Upland, California

Habitat Assessment

Prepared For:
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909.947.4907

May 2014
JN 134265

CUCAMONGA BASIN
CROSSWALLS MAINTENANCE

CITY OF UPLAND, SAN BERNARDINO COUNTY, CALIFORNIA

Habitat Assessment

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.

Travis J. McGill
Biologist
Natural Resources

Thomas J. McGill, Ph.D.
Vice President
Natural Resources

May 2014

Executive Summary

There are four (4) plant communities within the boundaries of the Cucamonga Basin Crosswalls Maintenance Project site: Riversidean Sage Scrub (RSS), Riversidean Alluvial Fan Sage Scrub (RAFSS), disturbed, and developed. The RSS community occurs along the upper terraces of Cucamonga Creek, outside of the active flood plain. RAFSS habitat is found within the flood plain of the project site in all three phases: pioneer, intermediate, and mature. The pioneer phase was observed within the active flood plain of Cucamonga Creek supports sparse vegetation and is subject to routine scouring events. The intermediate phase is located on terraces above the active flood plain of Cucamonga Creek, upstream of Cucamonga Dam. The mature phase occurs within the southern portion of the project site, downstream of Cucamonga Dam. This area has been cut-off from the fluvial processes and scouring regimes associated with Cucamonga Creek resulting in the maturation of the RAFSS plant community.

No special-status plant or wildlife species were observed on the project site during the site visit. Based on the habitat assessment, it was determined that the RSS and RAFSS vegetation communities within the project site have the potential to provide suitable habitat for coastal California gnatcatcher (*Polioptila californica californica* [CAGN]). However, CAGN is not expected to nest within project boundaries due to disturbances associated with water conservation activities, a multipurpose trail, and sand and gravel mining operations. CAGN were not detected within the boundaries of the project site during focused surveys conducted in 2009 and 2012, as well as during the 2013 habitat assessment.

Pursuant to the Migratory Bird Treaty Act and California Fish and Game Code, construction activities and/or the removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from early February 1 through August 31, but can vary slightly from year to year based upon seasonal weather conditions. A pre-construction nesting bird clearance survey should also document the continued absence of CAGN as well as other nesting birds from the project site.

Cucamonga Creek flows through the project site in a north to south direction and is expected to qualify as jurisdictional “Waters of the United States” and “Waters of the State”. Project activities will require the preparation of a jurisdictional delineation in order to identify the limits of State and federal jurisdiction, quantify project impacts, and outline a permitting strategy.

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APPENDIX

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Appendix D *Biological Resources Report (2009)*
Appendix E *Coastal California Gnatcatcher Focused Survey (2009)*
Appendix F *Coastal California Gnatcatcher Focused Survey (2012)*

LIST OF ACRONYMS

CAGN	Coastal California Gnatcatcher
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
Corps	United States Army Corps of Engineers
GIS	Geographic Information System
NRCS	Natural Resources Conservation Service
PCEs	Primary Constituent Elements
RAFSS	Riversidean Alluvial Fan Sage Scrub
RBF	RBF Consulting
RSS	Riversidean Sage Scrub
RWQCB	Regional Water Quality Control Board
SAWCo	San Antonio Water Company
SBKR	San Bernardino Kangaroo Rat
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

Section 1 Introduction

This report contains the findings of RBF Consulting's (RBF) habitat assessment for the Cucamonga Basin Crosswalls Maintenance Project (project site or site). RBF biologists Travis J. McGill and Ryan Winkleman inventoried and evaluated the condition of the habitat within the project boundaries on April 23, 2014. The habitat assessment was conducted to characterize existing site conditions and to assess the probability of occurrence for sensitive flora and fauna that could pose a constraint to implementation of the proposed project. Special attention was given to the suitability of the habitat within the northern half of the property, north of the existing rock quarry operations, to support five federally listed species identified by the CNDDB as potentially occurring in the area: San Bernardino kangaroo rat *(Dipodomys merriami parvus)* (SBKR), a federally endangered species; coastal California gnatcatcher *(Polioptila californica californica)* (CAGN), a federally threatened species; arroyo toad (*Anaxyrus californicus*), a federally endangered species; Sierra Madre yellow-legged frog (*Rana muscosa*), a state and federally endangered species; and Nevin's barberry (*Berberis nevinii*), a state and federally endangered plant species.

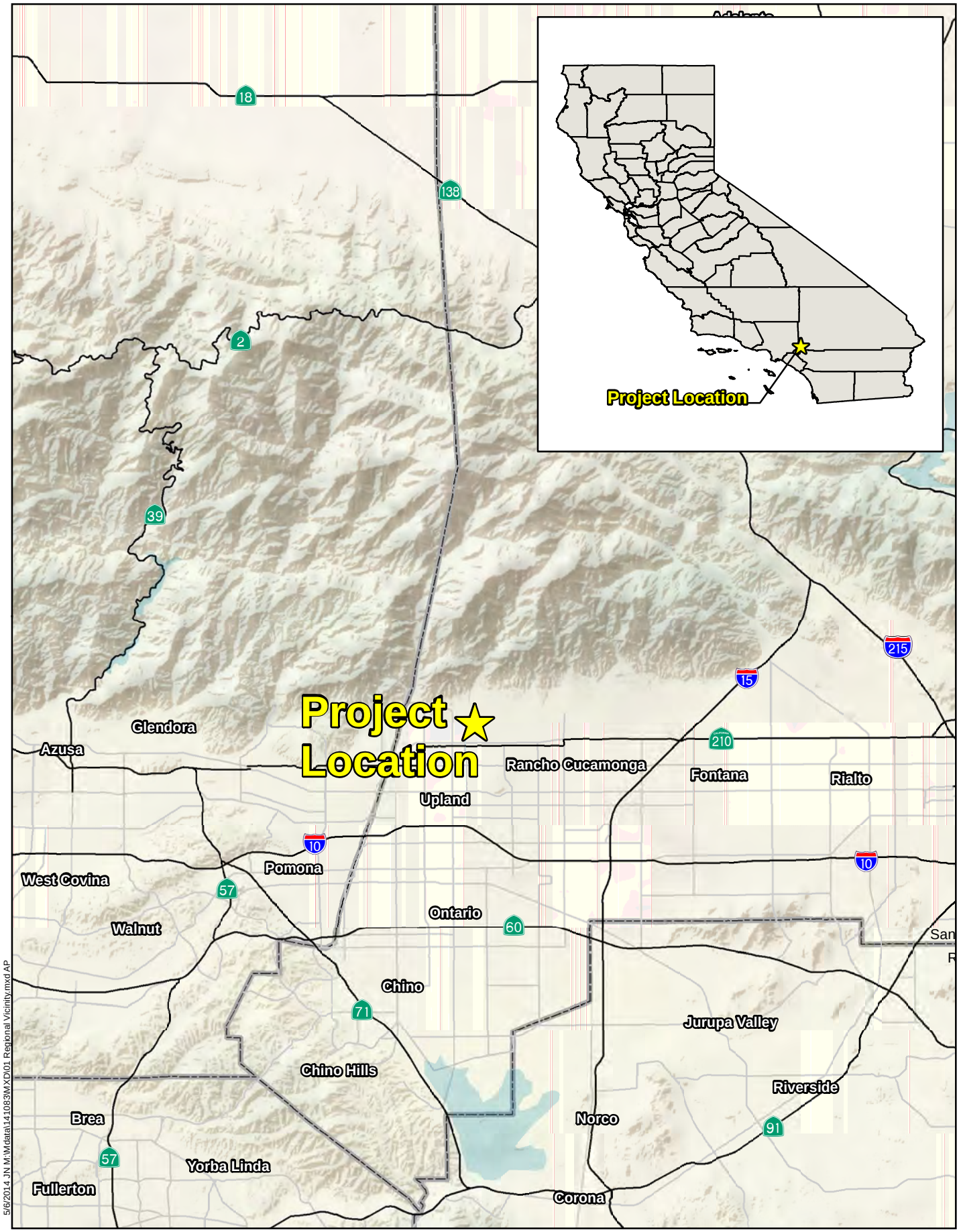
1.1 PROJECT LOCATION

The project site is generally located north of Interstate 10, west of Interstate 15, east of State Route 57 at the southern foothills of the San Gabriel Mountains in the Cities of Upland and Rancho Cucamonga and San Bernardino County land, San Bernardino County, California (Exhibit 1, *Regional Vicinity*). The project site is depicted on the Mount Baldy United States Geological Survey (USGS) 7.5-minute quadrangle within a Land Grant Area of Rancho Cucamonga in Township 1 south, Range 7 west (Exhibit 2, *Site Vicinity*). Specifically, the project site is located within Cucamonga Creek, north of State Route 210, east of State Route 83 (Euclid Avenue), and west of Sapphire Street (Exhibit 3, *Project Site*).

1.2 PROJECT DESCRIPTION

San Antonio Water Company (SAWCo's) crosswall water conservation facility consist of a series of rock-filled gabion walls designed to collect sediment and debris from flows before they reach Cucamonga dam. The area behind the dam is used to percolate the water into the groundwater. The crosswalls can be seen in Exhibit 2 as perpendicular features across the wash at intervals catching the debris and sediment while allowing the water to flow in the central channel. The project proposes to remove excessive materials that have accumulated over the years behind the crosswalls by using a track excavator and bulldozer. The excavated material will then be loaded and transported to the existing stock pile south of the dam by an articulated hauler. Materials will then be crushed, screened and separated. The processed materials will then be loaded on trucks and hauled off site via the existing county

access roadway along the Cucamonga channel south to 20th Street to the new Campus Avenue and freeway on ramps. Please refer to Exhibit 4 for a depiction of the proposed project.



5/6/2014 JN M:\Wdata\141083\MXD\01 Regional Vicinity.mxd AP

RBF CONSULTING A Baker Company

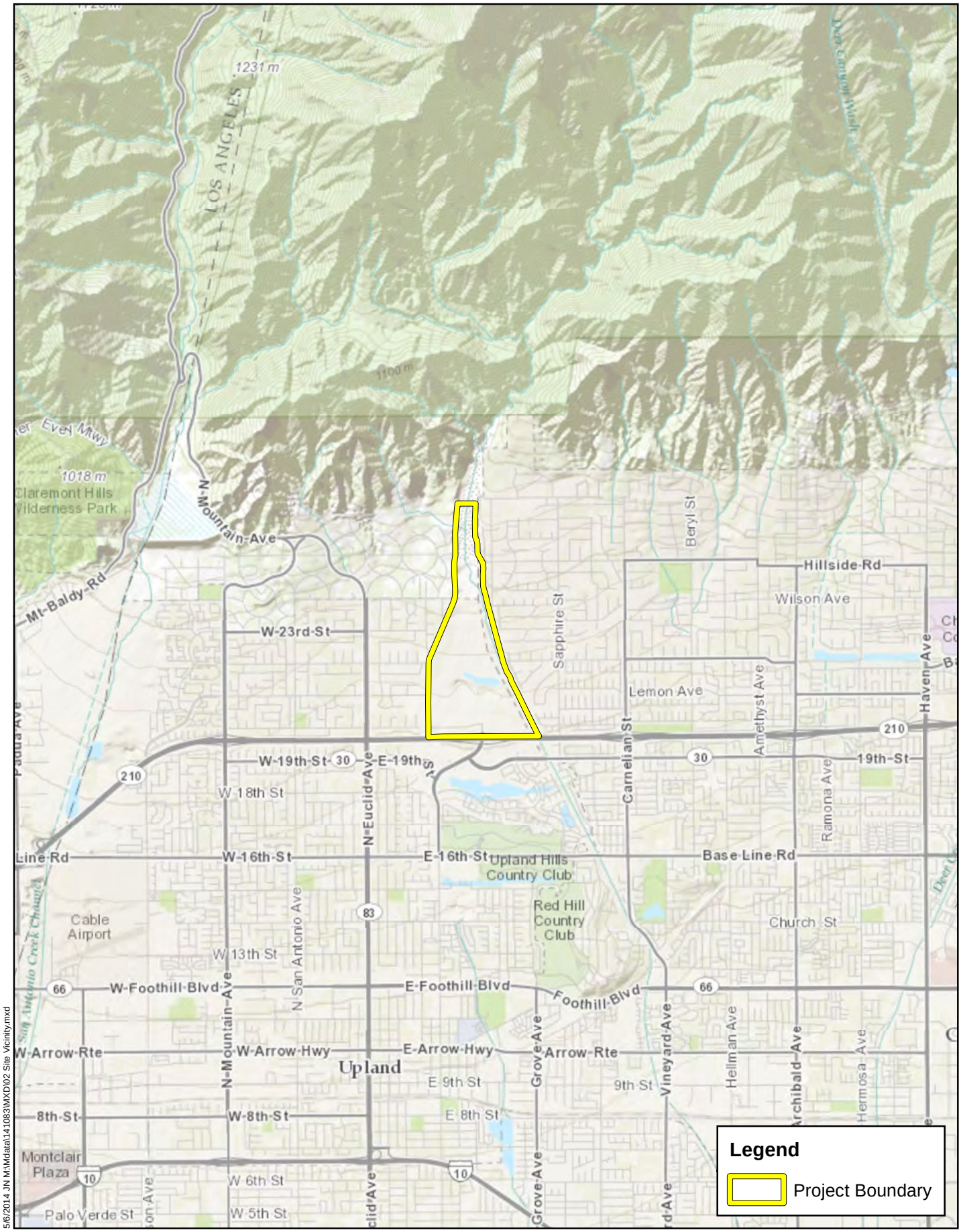
0 2.5 5 10 Miles

Source: ESRI Relief Map, National Highway Planning Network

CUCAMONGA CROSSWALLS PROJECT

Regional Vicinity Map

Exhibit 1



5/6/2014 JN M:\Mdata\141083\MXD\02 Site Vicinity.mxd

RBF CONSULTING A Baker Company

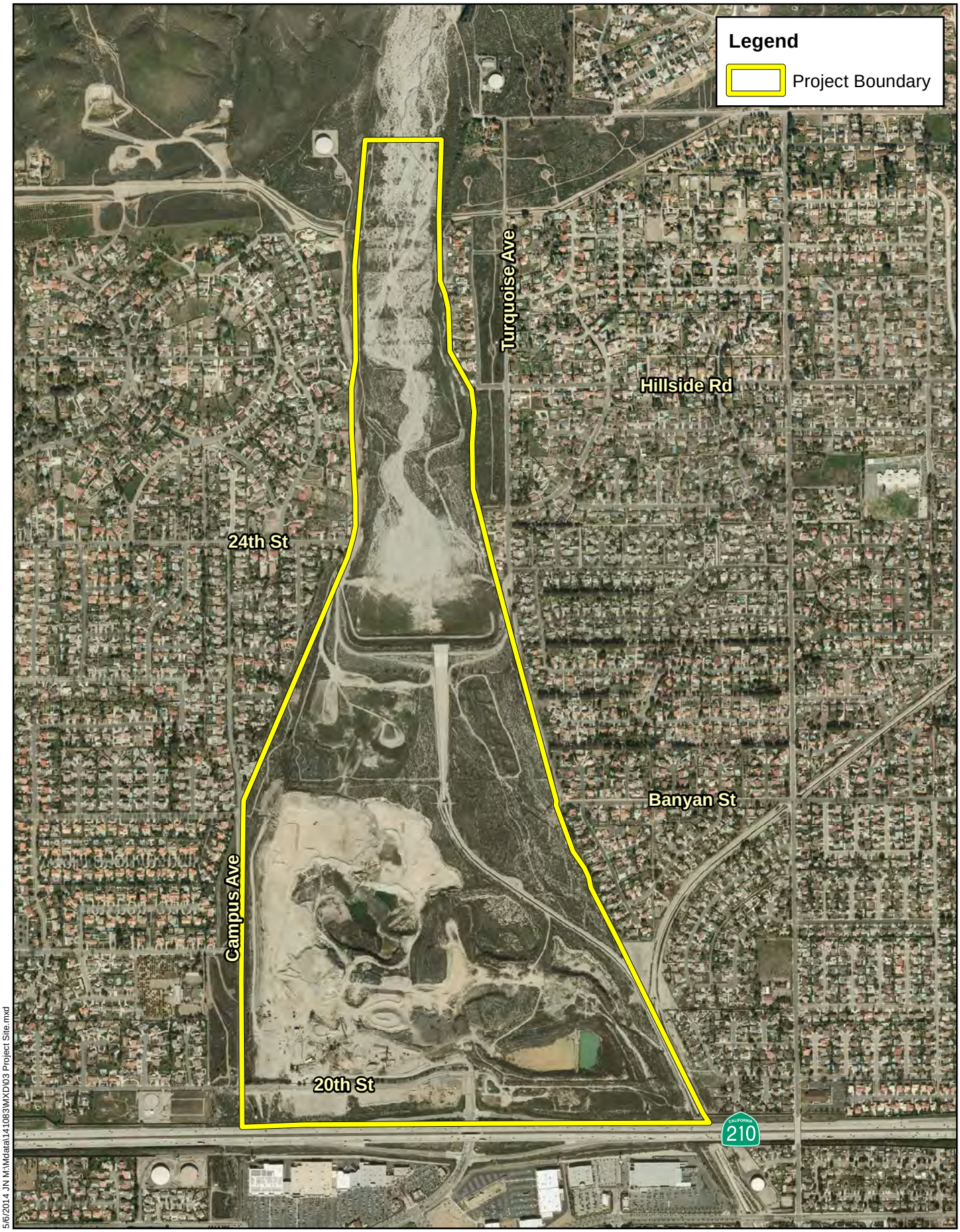
0 0.5 1 2 Miles

Source: ESRI World Topographic Basemap

CUCAMONGA CROSSWALLS PROJECT

Site Vicinity

Exhibit 2



5/6/2014 JN M:\Mdata\141083\MXD\03 Project Site.mxd

RBF CONSULTING A Baker Company

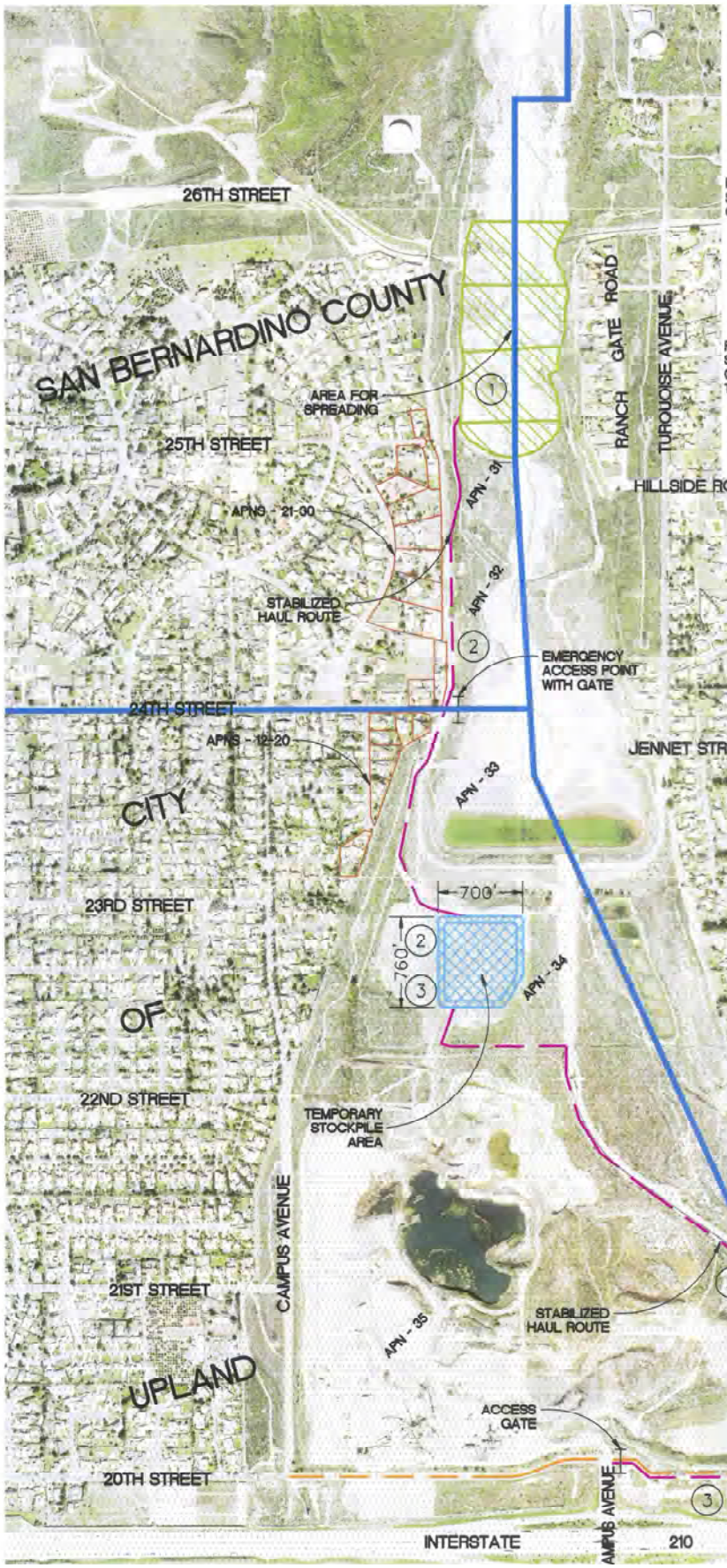
0 625 1,250 2,500 Feet

Source: Eagle Aerial 2013, SESPE Consulting

CUCAMONGA CROSSWALLS PROJECT

Project Site Map

Exhibit 3



EQUIPMENT SCHEDULE

WORK WILL BEGIN BY REMOVING THE MATERIALS BUILT UP BEHIND THE CROSSWALLS BY USING A TRACK EXCAVATOR AND BULLDOZER AS SHOWN.

(1)

MATERIAL WILL BE LOADED AND TRANSPORTED TO THE EXISTING STOCK PILE SOUTH OF THE DAM BY AN ARTICULATED HAULER. MATERIALS ARE THEN CRUSHED, SCREENED AN SEPARATED AS SHOWN BELOW.

(2)

PROCESSED MATERIALS ARE THEN LOADED ON TO TRUCKS AND HAULED OFF SITE VIA THE EXISTING COUNTY ACCESS ROADWAY ALONG THE CUCAMONGA CHANNEL SOUTH TO 20TH STREET, THEN WESTERLY ALONG 20TH STREET TO THE NEW CAMPUS AVENUE AND FREEWAY ON RAMPS.

(3)

	NAME	APN LIST	APN #
1.	Lyle + Cynthia Mathewson		0201-891-02
2.	Sherry Heywood		0201-891-03
3.	Ryan + Wanda Lewis		1062-641-31
4.	N/A		1062-641-32
5.	Timothy + Teresa Lilley		1062-641-33
6.	Juan + Linda Oliva		1062-641-34
7.	Juan + Rafaela Moreno		1062-641-35
8.	Beverly Mc Murtrey		1062-641-36
9.	Mark Brown + Dincy Marzoline		1062-641-37
10.	Steve + Paula Sisco		1043-421-08
11.	Michael + Maria Gassner		1043-421-07
12.	Donald + Julia Mack		1043-571-06
13.	Allen + Sherry Armstrong		1043-571-09
14.	Robert + Sandra Weamer		1043-571-10
15.	William + Anicete Kelly		1043-571-11
16.	Gloria Morrow		1043-571-12
17.	William + Carol Reed		1043-571-13
18.	Chunyan Jiang		1043-571-14
19.	Albert Romano		1043-571-15
20.	Michael Sereno		1003-011-09
21.	Lisa Cheung		1003-011-14
22.	Eugene + Lisa Crosmer		1003-011-12
23.	Fahim + Susan Gheybi		1003-021-05
24.	Richard + Barbara Williams		1003-021-04
25.	Bill + Emmy Wilson		1003-021-07
26.	Anita + Patricia Kalousek		1003-031-13
27.	Hyung + Soon Kim		1003-031-12
28.	Eugene + Judy Bohatch		1003-031-10
29.	Rawlee + Joyce Genchi		1003-031-07
30.	Kenneth + Karen Krupnick		1003-031-14
31.	SBC Flood Control District		1003-031-02
32.	SBC Flood Control District		1003-021-02
33.	SBC Flood Control District		1043-091-03
34.	SBC Flood Control District		1043-171-03
35.	Holliday Trucking Inc.		1043-441-02

LEGEND:

- CURRENT SPREADING AREA
- TEMPORARY AREA FOR STOCKPILING (MAX 25' HEIGHT)
- PROPOSED 24' WIDE STABILIZED HAUL ROUTE PER BMP TC-2
- 20TH STREET DEDICATION LIMITS
- CITY/COUNTY BOUNDARY LINES
- (#) EQUIPMENT/PROCESS PROCEDURE

RBF CONSULTING A Baker Company

Not to Scale

Source: TKE Engineering

HABITAT ASSESSMENT
CUCAMONGA BASIN CROSSWALLS MAINTENANCE PROJECT

Depiction of Proposed Project

Exhibit 4

Section 2 Methodology

2.1 LITERATURE REVIEW

Prior to conducting the field visit, a literature review and records search was conducted for sensitive biological resources potentially occurring on or within the vicinity of the project site. Previously recorded occurrences of special-status plant and wildlife species and their proximity to the project site were determined through a query of the CDFW *California Natural Diversity Database* (CNDDB) Rarefind 5, the California Native Plant Society's *Electronic Inventory of rare and Endangered Vascular Plants of California*, Calflora Database, compendia of special-status species published by CDFW, and United States Fish and Wildlife Service (USFWS) species listings.

Literature detailing biological resources previously observed near the project site and historical land uses were reviewed to understand the extent of disturbances to the habitats onsite. Standard field guides and texts on sensitive and non-sensitive biological resources were reviewed for habitat requirements, as well as the following resources:

- Calflora Database;
- CDFW compendia of special-status species;
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Soil Survey;
- USFWS Critical Habitat designations for Threatened and Endangered Species;
- USFWS Endangered Species Profile and Primary Constituent Elements (PCEs) for Arroyo Toad;
- USFWS Endangered Species Profile and PCEs for Sierra Madre Yellow-legged Frog;
- USFWS Endangered Species Profile and PCEs for San Bernardino Kangaroo Rat;
- USFWS Endangered Species Profile and PCEs for Coastal California Gnatcatcher;
- USFWS Endangered Species Profile and PCEs for Nevin's Barberry;
- Focused California Gnatcatcher Survey Report, Cucamonga Crosswalls Project, Compliance Biology, Inc. 2012;
- Focused California Gnatcatcher Survey Report in the Area of the Cucamonga Creek Flood Control Basin, ICF Jones & Stokes 2009; and
- Biological Resources Report: San Antonio Heights Basin 5 & 6 Stockpile and Cucamonga Crosswall Excavation, San Bernardino County Department of Public Works 2009.

The literature review provided a baseline from which to inventory the biological resources potentially occurring on the project site. Additional recorded occurrences of these species

found on or near the project site were derived from database queries. The CNDDB ArcGIS database was used, together with ArcGIS software, to locate the nearest occurrence and determine the distance from the project site.

2.2 HABITAT ASSESSMENT AND FIELD INVESTIGATION

RBF biologists Travis J. McGill and Ryan Winkleman inventoried and evaluated the extent and conditions of the plant communities found within the boundaries of the Cucamonga Crosswalls project site on April 23, 2014. Plant communities identified by signature on aerial photographs during the literature review were ground-truthed by walking meandering transects through the plant communities and along boundaries between plant communities. The plant communities were evaluated for their potential to support sensitive plant and wildlife species as well as the identification of riparian/riverine habitat, and/or corridors and linkages that may support the movement of wildlife through the area.

All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded. Notes were taken during the survey of all plant and animal species observed and potential jurisdictional features were identified. Observations of animal species included scat, trails, tracks, burrows, nests, visual and aural observation. In addition, site characteristics such as soil condition, topography, presence of indicator species, condition of the plant communities, hydrology, and evidence of human use of the site were noted. The plant communities were classified in accordance with CDFW (2003) and Holland (1986), delineated on an aerial photograph, and then digitized into GIS Arcview. The Arcview application was used to compute the area of each plant community in acres.

Section 3 Existing Conditions

3.1 LOCAL CLIMATE

The region has a year-round Mediterranean climate or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Average annual precipitation ranges from 12 inches per year in the coastal plain to 18 inches per year in the inland alluvial valleys, reaching 40 inches or more in the San Bernardino Mountains. Most of the precipitation occurs between November and March in the form of rain with variable amounts of snow in the higher elevations. The climatological cycle of the region results in higher surface water flows in the spring and early summer and lower flows during the dry season. Winter and spring floods generated by storms are not uncommon in wet years. Similarly, during the dry season, infrequent summer storms can cause torrential floods in local streams.

3.2 TOPOGRAPHY AND SOILS

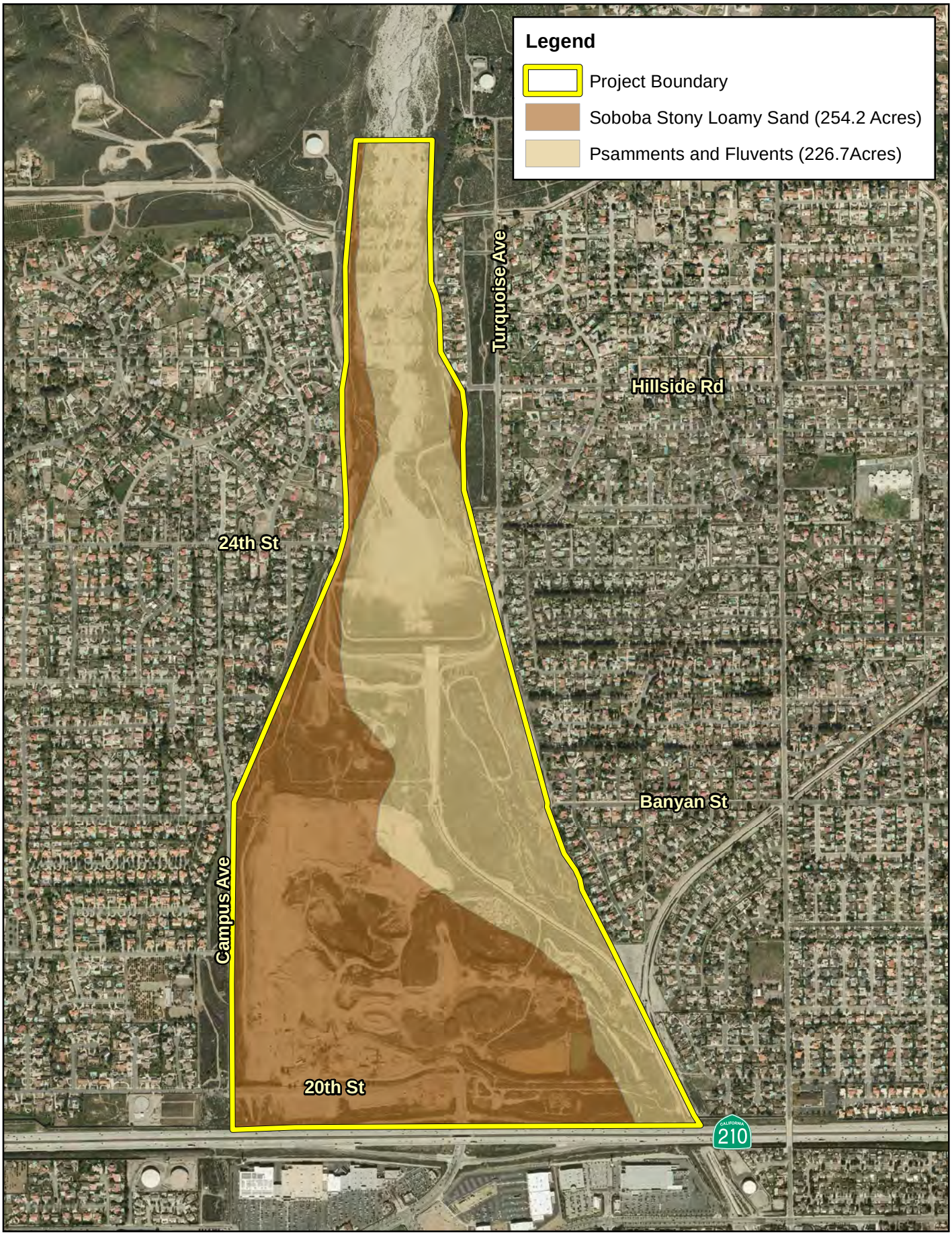
On-site topography ranges from approximately 1,800 to 2,180 feet above mean sea level and generally slopes to the south with no areas of significant topographic relief. According to the USDA NRCS Soil Survey, surface soils are moderately well drained consisting of a three soils series: Soboba Stony Loamy Sand (2 to 9 percent), Soboba Gravelly Loamy Sand (0 to 9 percent), and Psamments and Fluvents (frequently flooded) (refer to Exhibit 5, *NRCS Soils Map*).

SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES (SpC):

This soil type is excessively-drained and is developed in alluvium derived from granite. In the western San Bernardino County area it is found in alluvial fans at an elevation of 10 to 4,200 feet. The mean annual precipitation for where this soil type occurs in this area is 10 to 25 inches, with a mean annual air temperature range of 59 to 64°F and a frost-free period of 210 to 350 days. The typical profile of this soil for the western San Bernardino County area includes very stony loamy sand from 0 to 10 inches and very stony sand from 10 to 60 inches. The depth to a restrictive feature is more than 80 inches, the depth to the water table is more than 80 inches, and the available water capacity is very low at approximately 2.5 inches. This soil type is not classified as prime farmland.

SOBOBA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES (SoC):

This soil type is excessively-drained and is developed in alluvium derived from granite. In the western San Bernardino County area it is found in alluvial fans at an elevation of 30 to 4,200 feet. The mean annual precipitation for where this soil type occurs in this area is 10 to 20 inches, with a mean annual air temperature range of 61 to 63°F and a frost-free period of 175 to 250 days. The typical profile of this soil for the western San Bernardino County area



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RBF CONSULTING A Baker Company

0 625 1,250 2,500 Feet

Source: NRCS Soils Data-ca677, Eagle Aerial 2013, SESPE Consulting

CUCAMONGA CROSSWALLS PROJECT

Soils Map

Exhibit 5

includes gravelly loamy sand from 0 to 12 inches, very gravelly loamy sand from 12 to 36 inches, and very stony sand from 36 to 60 inches. The depth to a restrictive feature is more than 80 inches, the depth to the water table is more than 80 inches, and the available water capacity is low at approximately 3.2 inches. This soil type is not classified as prime farmland.

PSAMMENTS AND FLUVENTS, FREQUENTLY FLOODED (Ps):

This soil type is somewhat excessively-drained and is developed in sandy alluvium. In the western San Bernardino County area it is found in drainageways at an elevation of 10 to 1,500 feet. The mean annual precipitation for where this soil type occurs in this area is 10 to 25 inches, with a mean annual air temperature range of 59 to 64°F and a frost-free period of 250 to 350 days. The typical profile of this soil for the western San Bernardino County area includes sand from 0 to 12 inches; loamy sand, fine sand, and sand from 12 to 48 inches; and stratified gravelly sand to gravelly loamy sand from 48 to 60 inches. The depth to a restrictive feature is more than 80 inches, the depth to the water table is more than 80 inches, and the available water capacity is high at approximately 9.1 inches. This soil type is not classified as prime farmland.

3.3 SURROUNDING LAND USES

The project site is located within the southern reach of Cucamonga Creek where it exits the San Gabriel Mountains. This portion of the creek has been converted into a series of percolation basins. On the southern end of the percolation basin, Cucamonga Creek has been dammed and is then channelized into a concrete-lined channel. South of the dam and west of the southern half of the project site is a desilting basin and gravel pit operation. North of the property is the southern foothills of the San Gabriel Mountains and the San Bernardino National Forest. The upper terraces above Cucamonga Creek (east and west of the project site) are comprised of single-family residential, county flood control infrastructure, municipal water storage (tanks), unpaved maintenance roads, the Cucamonga Creek multipurpose trail (along the west side of the wash) and open space. South of the project site is State Route 210, with the Colonies Crossroads shopping center located on the other side. South of Cucamonga Dam, the study area is relatively flat and consists of a mix of disturbed and native habitats.

Section 4 Discussion

4.1 SITE CONDITIONS

The study area for the proposed project is located within the floodplain and upper terraces of Cucamonga Creek, where the creek flows from the San Gabriel Mountains. The Cucamonga Creek floodplain is an active floodplain subject to annual flooding. Raised terraces (or benches) bordering the floodplain are subject to less flooding, and therefore consist of stabilized soils that support a greater density of shrubs. Upstream (north) of the Cucamonga Creek flood control dam, the walls of the canyon are tall and steep, with the tallest slopes on the north side. The southern half of the creek, downstream of Cucamonga Dam, is located within a cement channel. Additionally, the area south of the Cucamonga Dam primarily consists of an active rock quarry.

4.2 PLANT COMMUNITIES

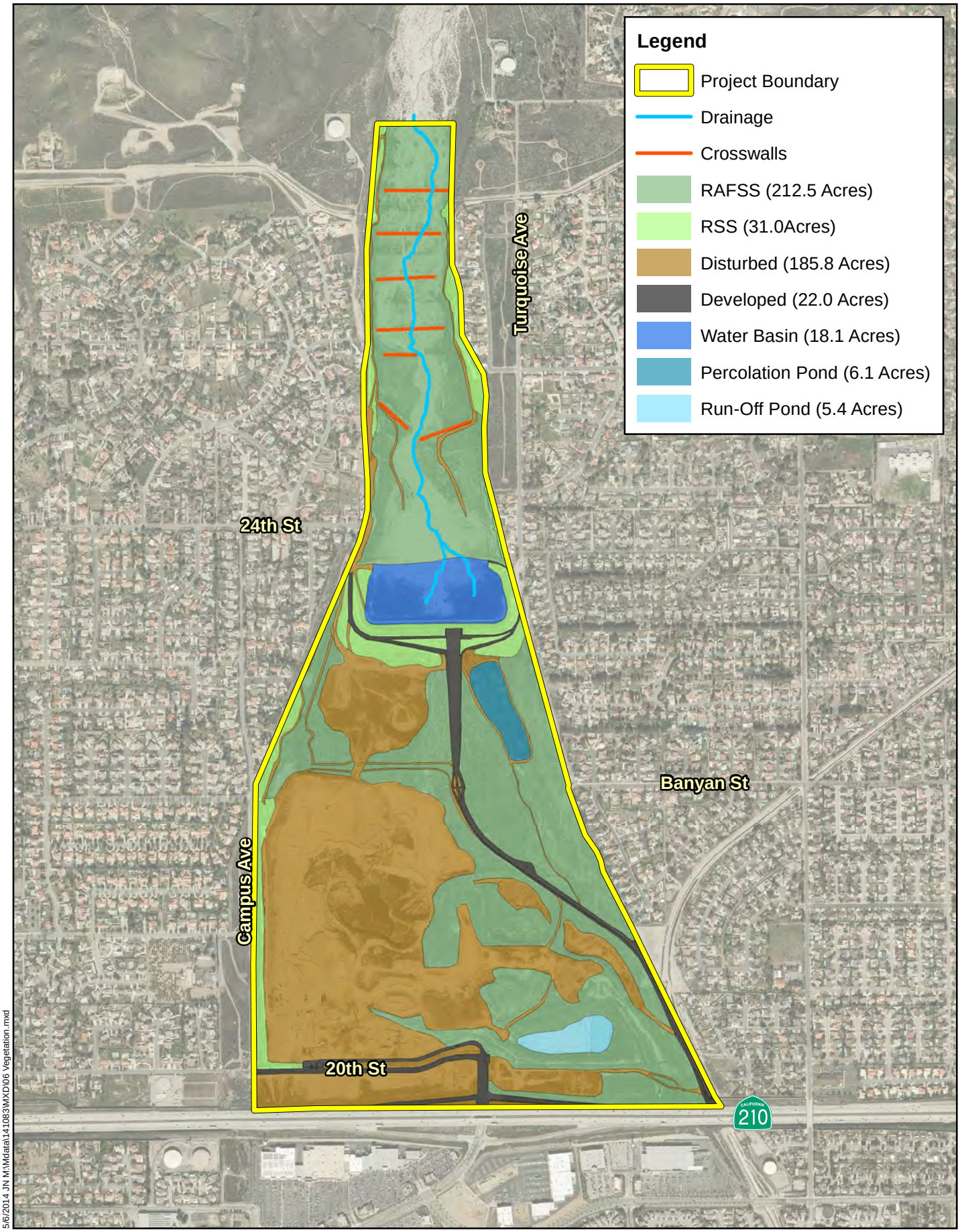
There are four plant communities that occur within the boundaries of the project site: Riversidean Sage Scrub (RSS), Riversidean Alluvial Fan Sage Scrub (RAFSS), disturbed, and developed (Exhibit 6, *Vegetation Map*). These plant communities are identified in Table 1 and described in further detail below. Additionally, a detailed list of plant species observed within these communities is provided in Appendix C.

Table 1: Plant Communities

Habitat	Acreage
Riversidean Sage Scrub (RSS)	31.0
Riversidean Alluvial Fan Sage Scrub (RAFSS)	212.5
Disturbed	185.8
Developed	22.0
Total	**221.6**
*****Plant communities within the project site were classified according to the CDFW's List of Terrestrial Natural Communities (2003) and cross-referenced with descriptions provided in Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986).	

4.2.1 Riversidean Sage Scrub

The RSS plant community occurs within the eastern and western portions of the project site along the upper terraces outside of the active floodplain. These areas are not subject to scouring from flooding and therefore, support a more mature and denser plant community. Dominant plant species observed within this community include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and yerba santa (*Eriodictyon trichocalyx*). Other common species observed include chaparral yucca



5/6/2014 JN M:\Mdata\141083\MXD\06 Vegetation.mxd

RBF CONSULTING A Baker Company

0 625 1,250 2,500 Feet

Source: Eagle Aerial 2013, SESPE Consulting

CUCAMONGA CROSSWALLS PROJECT

Vegetation Map

Exhibit 6

(*Hesperoyucca whipplei*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and common sunflower (*Helianthus annuus*). Non-native species include tree tobacco (*Nicotiana glauca*), jimson weed (*Datura stramonium*), and castor bean (*Ricinus communis*). Woody, chaparral species were also observed intermixed within the RSS plant community. These species included hoaryleaf ceanothus (*Ceanothus crassifolius*), chaparral whitethorn (*Ceanothus leucodermis*), and whiteflower currant (*Ribes indecorum*).

4.2.2 Riversidean Alluvial Fan Sage Scrub

RAFSS is considered a sensitive plant community, and is listed by CDFW as rare. All three phases of RAFSS habitat occur within the boundaries of the project site: pioneer, intermediate, and mature RAFSS. The pioneer phase or colonizing form of RAFSS is typically located within active stream channels or along recently scoured banks. This phase was observed within the active flood channel of Cucamonga Creek and only supports sparse vegetation including scale broom (*Lepidospartum squamatum*), mulefat (*Baccharis salicifolia*), and mugwort (*Artemisia douglasiana*).

The intermediate phase is located on terraces just above the active flood plain. The elevated terraces receive less scouring from fluvial processes and allows for the establishment of moderate vegetation. This phase occurs along the natural portions of Cucamonga Creek located upstream of Cucamonga Dam. Vegetation observed within this phase includes California buckwheat, scale broom, yerba santa, deerweed (*Acmispon glaber*), California sagebrush, and pine bush (*Ericameria pinifolia*).

The mature phase occurs within the southern portion of the project site that has been effectively cut-off from the fluvial processes. The conversion of the creek from a natural wash system to a concrete-lined flood control facility has removed the scouring regime from this portion of the project site. The habitat in this area has transitioned to the mature phase of RAFSS with emergent woody species characteristic of a RSS/Chaparral plant community. Vegetation within this phase includes California buckwheat, black sage, yerba santa, mountain mahogany (*Cercocarpus betuloides*), laurel sumac (*Malosma laurina*), and Mexican elderberry (*Sambucus nigra*).

4.2.3 Disturbed

Disturbed areas within the project site no longer support a defined plant community. These areas are primarily associated with continual human activities and flood control and mining activities. Disturbed areas include the Cucamonga Creek multipurpose trail, Cucamonga Basin, unpaved maintenance roads, rock quarry operations, and stockpiling areas associated with sand and gravel mining activities. Plant species observed within these areas included short-pod mustard (*Hirschfeldia incana*) and non-native grasses (*Bromus* sp.).

4.2.4 Developed

Developed areas within the project site are unvegetated and consist of concrete-lined flood control channels and paved maintenance roads.

4.3 WILDLIFE

The plant communities described above provide suitable habitat for several wildlife species. This section provides a discussion of those wildlife species observed or expected to occur onsite. This list is to be used as a general reference and is limited by the season, time of day, and weather condition in which the survey was conducted.

4.3.1 Amphibians

No amphibian species were observed during the habitat assessment; however, Cucamonga Creek upstream of the dam (before it becomes channelized) has the potential to provide suitable habitat for common amphibian species such as Pacific chorus frog (*Pseudacris regilla*), western toad (*Anaxyrus boreas*), and California chorus frog (*Pseudacris cadaverina*).

4.3.2 Reptiles

Western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), and southern alligator lizard (*Elgaria multicarinata webbii*) were observed on-site during the 2014 habitat assessment. The RSS and RAFSS plant communities within the project site have the potential to support a variety of additional reptilian species including red racer (*Coluber flagellum piceus*), gopher snake (*Pituophis catenifer*), and southern pacific rattlesnake (*Crotalus oreganus helleri*).

4.3.3 Avian

The RSS and RAFSS plant communities within the project site provide foraging and cover habitat for a wide variety of year-round resident, seasonal resident, and migratory avian species. A large number of avian species were detected during the 2014 habitat assessment, but the most common house finch (*Carpodacus mexicanus*), mourning dove (*Zenaida macroura*), lesser goldfinch (*Spinus psaltria*), northern mockingbird (*Mimus polyglottos*), California towhee (*Pipilo crissalis*), California quail (*Callipepla californica*), Anna's hummingbird (*Calypte anna*), northern rough-winged swallow (*Stelgidopteryx serripennis*), and rock wren (*Salpinctes obsoletus*).

4.3.4 Mammals

The plant communities within the project site are anticipated to provide suitable habitat for a number of mammalian species acclimated to human presence and disturbance. However,

most mammal species are nocturnal and are difficult to observe during a diurnal field visit. Mammals and/or sign detected during the field assessment included desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Otospermophilus beecheyi*), coyote (*Canis latrans*), and woodrat (*Neotoma* sp.). Additionally, small mammal burrows were observed throughout the project site. Field sign for kangaroo rat, including SBKR, is distinctive and readily noted in the field. No sign (burrows, dusting baths, and/or tail drags) were noted on the project site. Additionally, soils within Cucamonga Creek, north of the Cucamonga dam, are rocky and do not provide suitable habitat for SBKR.

4.4 NESTING BIRDS

The plant communities within and adjacent to the project site have the potential to provide suitable avian nesting opportunities for raptors and passerines. However, development within the immediate area reduces the suitability of the habitat for nesting within the project site. Although the 2014 habitat assessment was conducted well within the general avian nesting season, no nests were observed.

4.5 MIGRATORY CORRIDORS AND LINKAGES

The project site is not identified within the San Bernardino County General Plan as a Wildlife Corridor or Linkage and does not provide any connectivity between natural open space areas. The project site, due to its historic use as a water spreading area, is heavily developed, lies above the cities of Upland and Rancho Cucamonga and no longer provides any connectivity. The construction of the Cucamonga Dam and the conversion of Cucamonga Creek to a concrete-lined channel have further reduced the ability for the creek to provide for the movement of wildlife throughout the region.

4.6 JURISDICTIONAL AREAS

The U.S. Army Corps of Engineers (Corps) and the Regional Water Quality Control Board (RWQCB) regulate discharge of fill into waters of the Unites States under Section 404 and 401 of the federal Clean Water Act, respectively. The CDFW regulates alterations to stream courses including adjacent riparian habitat areas under Section 1600 of the State Fish and Game Code. In addition, modifications to Corps engineered, funded, or maintained flood control structures, require the issuance of a Section 408 permit to insure that the function of the structure will not be compromised as a result of a proposed project.

Cucamonga Creek drains from the San Gabriel Mountains and generally flows through the project site in a north to south direction. Within the northern and central portions of the project site, Cucamonga Creek consists of an active flood plain characterized by sand, cobbles, and boulders that support sparse vegetation. As the creek moves south, flows pass through a series of rock-filled gabion walls designed to slow velocities and collect sediment

and/or debris before reaching Cucamonga Dam. The collection of sediment and ponding behind the gabions has allowed for the establishment of isolated patches of riparian vegetation including mulefat, arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), and western sycamore (*Platanus racemosa*).

After passing the gabions, water flow collects within the Cucamonga Basin located just upstream of Cucamonga Dam, allowing for percolation and groundwater recharge. The basin is routinely maintained by the San Bernardino County Flood Control District and is mostly unvegetated; however, some areas are vegetated with a variety of non-native grasses and upland species associated with surrounding RSS and RAFSS plant communities. South of Cucamonga Dam, the creek has been transformed into a concrete-lined flood control channel that eventually flows into the Santa Ana River. Cucamonga Creek is expected to qualify as both a “Water of the U.S.” and a “Water of the State.”

4.7 SENSITIVE BIOLOGICAL RESOURCES

The CNDDB was queried for reported locations of listed and sensitive plant and wildlife species as well as sensitive natural plant communities within the Mount Baldy and Cucamonga Peak USGS 7.5-minute quadrangles. A search of published records of these species was conducted within this quadrangle using the CNDDB Rarefind 5 online software. The habitat assessment evaluated the conditions of the habitat(s) within the boundaries of the project site to determine if the existing plant communities at the time of this survey have the potential to provide suitable habitat(s) for sensitive plant and wildlife species.

The literature search identified 24 sensitive wildlife species, 20 sensitive plant species, and 7 sensitive habitats as having the potential to occur within the Mount Baldy and Cucamonga Peak quadrangles. Sensitive plant and wildlife species were evaluated for their potential to occur within the project boundaries based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in Appendix B, *Sensitive Habitats and Potentially Occurring Sensitive Plant and Wildlife Species*. Appendix B summarizes conclusions from analysis and field surveys regarding the potential occurrence of listed and sensitive plant and wildlife species within the project site.

Of the 44 special-status plant and wildlife species identified as having the potential to occur within the Mount Baldy and Cucamonga Peak quadrangles, one CDFW Watch List avian species, southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), was observed within the boundaries of the project site during the habitat assessment. The federally listed species arroyo toad and CAGN have a low to moderate potential to occur within the project site. In addition, coastal whiptail (*Aspidoscelis tigris stejnegeri*) and coast horned lizard (*Phrynosoma blainvillii*) have moderate potentials to occur, and San Diego

black-tailed jackrabbit (*Lepus californicus bennettii*), slender mariposa lily (*Calochortus clavatus* var. *gracilis*), and Plummer's mariposa lily (*Calochortus plummerae*) have low potentials to occur. Based on current distribution, habitat requirements, and absence of suitable habitat on and surrounding the project site, SBKR, Sierra Madre yellow-legged frog, Nevin's barberry and the remaining special-status plant and wildlife species are considered to be absent from the project site. Additionally, the project site is not located within any federally designated Critical Habitat (Exhibit 7, *Critical Habitat Map*).

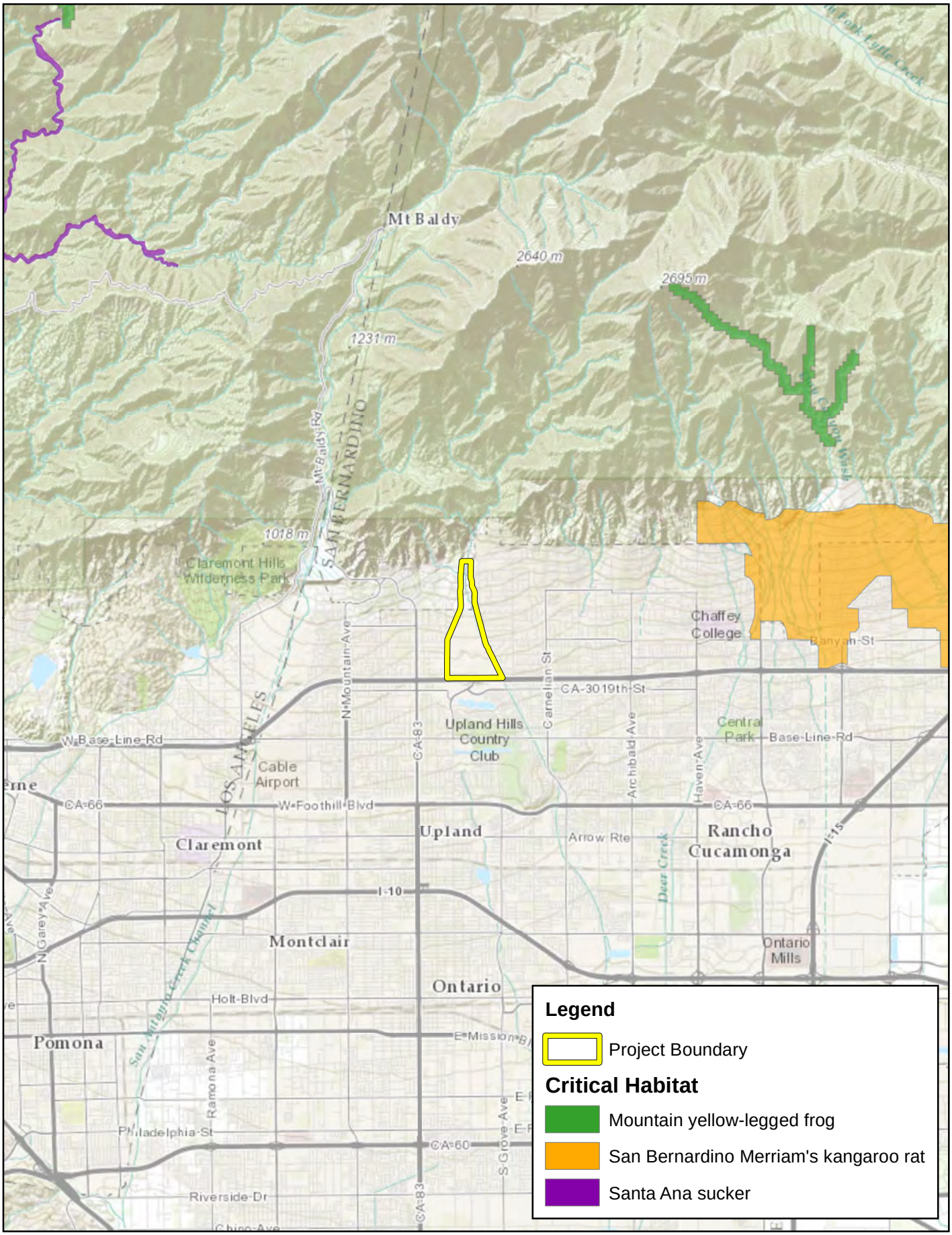
4.7.1 Coastal California Gnatcatcher

CAGN, a federally threatened species and California species of special concern, has restricted habitat requirements and is an obligate resident of sage scrub habitats dominated by California sagebrush (*Artemisia californica*). This species generally occurs below 750 feet elevation in coastal regions and below 1,500 feet inland. It ranges from the Ventura County south to San Diego County and northern Baja California and it is less common in sage scrub with a high percentage of tall shrubs. It prefers habitat with more low-growing vegetation. CAGN breed between mid-February and at the end of August, with the peak of activity from mid-March to mid-May.

The project site is not within designated critical habitat for CAGN. Although the RSS and RAFSS plant communities found on the project site provide suitable foraging habitat for CAGN, focused surveys conducted in 2009 and 2012 were negative. Despite the fact that the on-site habitat suggests a moderate potential for this species to occur, due to the extensive disturbance within this area of Cucamonga Creek and its long-standing use as a water conservation facility, combined with the two negative focused surveys for California gnatcatcher on the project site, it can be reasonably concluded that California gnatcatcher can be presumed absent from the project site.

4.7.2 Arroyo Toad

The arroyo toad is federally listed as endangered, and is a California species of special concern. Appropriate habitat for the arroyo toad is created and maintained by the fluctuating hydrological, geological, and ecological processes operating in riparian ecosystems and the adjacent uplands. Specifically, arroyo toads require shallow, slow-moving streams, and riparian habitats that are disturbed naturally on a regular basis, primarily by flooding. Periodic flooding helps maintain areas of open, sparsely vegetated sandy stream channels and terraces, and maintains loose soils to dig burrows. Throughout their range, arroyo toads are typically found in medium- to large sized streams, in stretches where riverbed gradients are low, there are adjacent alluvial terraces, and surface waters form shallow pools that persist at least through the early summer months. Suitable stream habitat often includes species such as mulefat (*Baccharis salicifolia*) and willow (*Salix* sp.) in moderate, but not



5/6/2014 JN M:\Mdata\141083\MXD\07 Critical Habitat.mxd

RBF CONSULTING A Baker Company

0 1 2 4 Miles

Source: ESRI World Topographic Basemap

CUCAMONGA CROSSWALLS PROJECT

Critical Habitat

Exhibit 7

dense, cover. Upland habitats used by arroyo toads during both the breeding and nonbreeding seasons include alluvial scrub, coastal sage scrub, chaparral, grassland, and oak woodland. Although the arroyo toad is present year round, adult toads are typically only above-ground from approximately March until July, during which time they feed, mate and lay egg masses. During the remainder of the year adult toads are typically aestivating, though they may emerge for brief periods following rains. Juvenile toads are usually active later in the year and into the fall after metamorphosing out of their tadpole stage.

The CNDDB identified arroyo toad as occurring within the upper reaches of Cucamonga Creek on the San Bernardino National Forest in 1999. The exact location was listed as unknown and was considered upland foraging habitat but not breeding habitat. Potential breeding habitat was assumed to occur further downstream south of the Forest Service boundary. In an effort to locate arroyo toad breeding habitat an addition eight surveys were conducted between 1999 and 2005 (4 surveys in 1999 following the initial observation, 3 surveys in 2001, and a final survey in 2005). All of these surveys were conducted in the upper reach of Cucamonga Creek just below the Forest Service's southern boundary, and all eight surveys were negative for arroyo toad. The project site is located downstream from these survey locations and has been developed into as a series of water spreading basins that have been actively used for several decades by SAWCo's water conservation. Habitat within this area is marginal for arroyo toad, and is generally much too rocky, with not enough of a sandy substrate for burrowing and not enough in-stream vegetation to help create the aquatic microhabitat that this species requires for breeding. While the marginal creek habitat would suggest a low potential for occurrence, due to the extensive disturbance within this area of Cucamonga Creek and its long-standing use as a water conservation facility, combined with the eight negative surveys upstream of the project site, it can be reasonably concluded that arroyo toad can be presumed absent from the project site.

Section 5 Conclusion and Recommendations

The project site is located within the southern reach of Cucamonga Creek where it exits the San Gabriel Mountains. This portion of the creek flows into a series of percolation basins and is then channelized into a concrete-lined channel.

Suitable habitat is present in the upland areas to support CAGN, and marginal habitat is present in the creek to support arroyo toad. Based on the suitability of on-site habitat, CAGN is expected to have a moderate potential to occur and arroyo toad is expected to have a low potential to occur. However, there have also been two years of negative surveys for CAGN on the project site and eight negative surveys for arroyo toad immediately upstream of the project site, and the project site in addition has a long-standing history of use as a water conservation facility. For those reasons, while suitable habitat is present that could support these species, neither is expected to be present.

The only special-status species that was detected during the 2014 habitat assessment was southern California rufous-crowned sparrow; this species was also documented during the 2013 habitat assessment. The project site also has a moderate potential to support coastal whiptail and coast horned lizard, and a low potential to support San Diego black-tailed jackrabbit, slender mariposa lily, and Plummer's mariposa lily. No other special-status plant or wildlife species are expected to occur.

The Riversidean Sage Scrub and Riversidean Alluvial Fan Sage Scrub communities within the project site provide foraging and cover habitat for year-round resident, seasonal resident, and migrating songbirds. A pre-construction nesting bird clearance survey is recommended to ensure compliance with the Migratory Bird Treaty Act and Fish and Game Code. If ground-disturbing activities or removal of any trees, shrubs, or any other potential nesting habitat are scheduled within the avian nesting season (nesting season generally extend from February 1 - August 31, but can vary from year to year based upon seasonal weather conditions), a pre-construction clearance survey for nesting birds should be conducted within 10 days prior to any ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active bird nests will occur. If an active avian nest is discovered during the 10-day preconstruction clearance survey, maintenance activities should stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet.

Cucamonga Creek flows through the project site in a north to south direction and falls under the jurisdiction of the Corps, the RWQCB, and CDFW. It is recommended that a formal

jurisdictional delineation be prepared in order to identify the limits of State and federal jurisdiction, quantify project impacts, and outline a permitting strategy.

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Appendix A *Site Photographs*

Photograph 1: Facing northeast from the western boundary of the project site. Cucamonga Creek is in the distance running horizontal across the photo.

Photograph 2: Facing south along the proposed haul route through Cucamonga Creek.

Photograph 3: Facing north along the proposed haul route through Cucamonga Creek.

Photograph 4: Facing southwest. The proposed route through Cucamonga Creek exits the creek into the uplands just north of the dam.

Photograph 5: Facing south along the proposed haul route, west of the dam.

Photograph 6: Facing east. A large disturbed area is present south of the dam. This general area was previously excavated as part of the mining operations.

Photograph 7: Facing south. The southern portion of the proposed haul route goes alongside the cement channel located on the left side of the photo.

Photograph 8: Facing south along the proposed haul route, which is located on the right side of the photo.

Appendix B *Sensitive Habitats and Potentially Occurring Sensitive Plant and Wildlife Species*

Sensitive Habitats and Potentially Occurring Sensitive Plant and Wildlife Species

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
WILDLIFE SPECIES				
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	Fed: None CA: WL	Typically found between 3,000 and 6,000 feet in elevation. Breed in sparsely vegetated shrublands on hillsides and canyons. Prefers coastal sage scrub dominated by California sagebrush (*Artemisia californica*), but can also be found breeding in coastal bluff scrub, low-growing serpentine chaparral, and along the edges of tall chaparral habitats.	Yes	**Present:** This species was observed on-site during both the 2013 and 2014 habitat assessments.
Anaxyrus californicus Arroyo toad	Fed: **END** CA: CSC	Breeding habitat is restricted to shallow, slow-moving stream, and riparian habitats. Breeds in shallow, sandy pools, usually bordered by sand and gravel flood terraces. Occurs in a variety of upland habitats including sycamore-cottonwood woodlands, coastal sage scrub, chaparral, and grassland. Requires areas of sandy or friable soils for burrowing.	No	**Low:** The habitat within Cucamonga Creek is marginal and very rocky. This species was recorded in a single sighting in Cucamonga Creek in 1999 upstream of the project site within the National Forest.
Anniella pulchra pulchra Silvery legless lizard	Fed: None CA: CSC	Occurs primarily in areas with sandy or loose loamy soils under sparse vegetation of beaches, chaparral, or pine-oak woodland; or near sycamores, oaks, or cottonwoods that grow on stream terraces. Often found under or in the close vicinity of logs, rocks, old boards, and the compacted debris of woodrat nests.	No	**Presumed Absent:** No Suitable Habitat
Aspidoscelis tigris stejnegeri Coastal whiptail	Fed: None CA: None	Found in a variety of ecosystems, primarily hot and dry open areas with sparse foliage; chaparral, woodland, and riparian areas.	No	**Moderate:** The upland portions of the site contain suitable habitat for this species. It may also be found crossing the creekbed when dry.
Batrachoseps gabrieli San Gabriel slender salamander	Fed: None CA: None	Occurs only in the San Gabriel Mountains. Often found under rocks, wood, fern fronds, and on soil at the base of talus slopes. Most active on the surface in winter and early spring.	No	**Presumed Absent:** No Suitable Habitat
Callophrys mossii hidakupa San Gabriel Mountains elfin butterfly	Fed: None CA: None	Species is restricted to the San Gabriel and San Bernardino Mountains at elevations of 3,000 to 5,500 feet above msl. The larval host plant is the stonecrop (*Sedum spathulifolium*).	No	**Presumed Absent:** No Suitable Habitat
Catostomus santaanae Santa Ana sucker	Fed: **THR** CA: CSC	Occurs in small shallow streams, less than seven meters in width. Found in permanent streams in water ranging in depth from a few centimeters to a meter or more. Preferred substrates are generally course and consist of gravel, rubble, and boulders with growths of filamentous algae, but occasionally they are found on sand/mud. Most abundant where the water is cool, clean, and clear, although the species can tolerate seasonally turbid water.	No	**Presumed Absent:** No Suitable Habitat

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	Fed: None CA: CSC	Occurs in desert and coastal habitats in southern California, Mexico, and northern Baja California, from sea level to at least 1,400 meters above msl. Found in a variety of temperate habitats ranging from chaparral and grasslands to scrub forests and deserts. Requires low growing vegetation or rocky outcroppings, as well as sandy soils for burrowing.	No	**Presumed Absent:** No Suitable Habitat
Cypseloides niger Black swift	Fed: None CA: CSC	Primarily a mountainous species, occurring over a range of highland habitats with rugged terrain and coastal cliffs. Nests on canyon walls near water and sheltered by overhanging rock or moss, preferably near waterfalls or on sea cliffs.	No	**Presumed Absent:** No Suitable Habitat
Dipodomys merriami parvus San Bernardino kangaroo rat	Fed: **END** CA: CSC	Primarily found in Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. May occur at lower densities in Riversidean upland sage scrub, chaparral and grassland in uplands and tributaries in proximity to Riversidean alluvial fan sage scrub habitats. Tend to avoid rocky substrates and prefer sandy loam substrates for digging of shallow burrows.	No	**Presumed Absent:** No suitable habitat; Additionally, project site is located outside of known range. Nearest recorded occurrence is 7.5 miles (2008).
Eumops perotis californicus Western mastiff bat	Fed: None CA: CSC	Primarily a cliff-dwelling species, roost generally under exfoliating rock slabs. Roosts are generally high above the ground, usually allowing a clear vertical drop of at least three meters below the entrance for flight. In California, it is most frequently encountered in broad open areas. Its foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas.	No	**Presumed Absent:** No Suitable Habitat
Gila orcuttii Arroyo chub	Fed: None CA: CSC	Prefers slow moving or backwater sections of warm to cool streams with substrates of sand or mud. The depth of the stream is typically greater than 40 centimeters.	No	**Presumed Absent:** No Suitable Habitat
Lampropeltis zonata (*parvirubra*) California mountain kingsnake (San Bernardino population)	Fed: None CA: CSC	Found in diverse habitats including coniferous forest, oak-pine woodlands, riparian woodland, chaparral, Manzanita, and coastal sage scrub. Wooded areas near a stream with rock outcrops, talus or rotting logs that are exposed to the sun.	No	**Presumed Absent:** No Suitable Habitat
Lasiurus cinereus Hoary bat	Fed: None CA: None	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees.	No	**Presumed Absent:** No Suitable Habitat
Lasiurus xanthinus Western yellow bat	Fed: None CA: CSC	Occurs in valley-foothill riparian, desert riparian, desert wash, and palm oasis habitats below 2,000 feet in elevations. Roosts in trees.	No	**Presumed Absent:** No Suitable Habitat
Lepus californicus bennettii San Diego black-tailed jackrabbit	Fed: None CA: CSC	Occurs in diverse habitats, but primarily is found in arid regions supporting shortgrass habitats. Openness of open scrub habitat is preferred over dense chaparral.	No	**Low:** This species could occur in the upland portions of the project site, but the habitat is bordering on getting too dense.

Scientific Name Common Name	**Status**		**Habitat**	**Observed Onsite**	**Potential to Occur**
Neotoma lepida intermedia San Diego desert woodrat	Fed: CA:	None CSC	Occurs in a variety of shrub and desert habitats, primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth. Also occurs within pinyon-juniper hillsides at lower elevations and juniper woodlands. Often associated with large cactus patches and with coastal sage scrub communities.	No	**Presumed Absent**: No Suitable habitat
Ovis canadensis nelsoni Nelson's bighorn sheep	Fed: CA:	None None	Require a variety of habitat characteristics related to topography, visibility, forage quality and quantity, and water availability (USFWS 2000). Prefer areas on or near mountainous terrain that are visually open, as well as steep and rocky. Alluvial fans and washed in flatter terrain is also used for foraging, water, and connectivity between mountainous areas. Tend to avoid dense vegetation and higher elevations that support chaparral.	No	**Presumed Absent:** No Suitable Habitat
Perognathus longimembris brevinasus Los Angeles pocket mouse	Fed: CA:	None CSC	Occurs in lower elevation grasslands and coastal sage scrub communities in and around the Los Angeles Basin. Prefers open ground with fine sandy soils. May not dig extensive burrows, but instead will seek refuge under weeds and dead leaves instead.	No	**Presumed Absent:** No Suitable Habitat
Phrynosoma blainvillii Coast horned lizard	Fed: CA:	None CSC	Occurs in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (i.e. fire, floods, roads, grazing, fire breaks). The key elements of such habitats are loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	No	**Moderate:** There is suitable habitat both in the upland and creekbed portions of the project site. This species would be most likely to be found in an area with elevated perches that also has nearby shrub cover.
Polioptila californica californica Coastal California gnatcatcher	Fed: CA:	**THR** CSC	Obligate resident of sage scrub habitats that are dominated by California sagebrush (*Artemisia californica*). This species generally occurs below 750 feet elevation in coastal regions and below 1,500 feet inland. Ranges from the Ventura County, south to San Diego County and northern Baja California and it is less common in sage scrub with a high percentage of tall shrubs. Prefers habitat with more low-growing vegetation.	No	**Moderate:** Suitable RSS and RAFSS habitat within project site, but this species has not been found during multiple focused surveys, Nearest CNDDB occurrence is 4.3 miles away (1999) and is possibly extirpated.
Rana muscosa Sierra Madre yellow-legged frog	Fed: CA:	**END** **END**	Occurs in lower elevation habitats characterized by rocky streambeds and wet meadows, while higher elevation habitats include lakes, ponds, and streams. Occupy streams in narrow, rock-walled canyons.	No	**Presumed Absent:** No Suitable Habitat
Taricha torosa Coast Range newt	Fed: CA:	None CSC	Occurs in wet forests, oak forests, chaparral, and rolling grasslands. In southern California, drier chaparral, oak woodland, and grassland are used.	No	**Presumed Absent:** No Suitable Habitat
Thamnophis hammondii Two-striped garter snake	Fed: CA:	None CSC	Occurs in or near permanent fresh water, often along streams with rocky beds and riparian growth up to 7,000 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
PLANT SPECIES				
Arctostaphylos glandulosa ssp. *gabrielensis* San Gabriel manzanita	Fed: None CA: None CNPS: 1B.2	Occurs along rocky outcrops in chaparral plant communities up to 4,921 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat
Berberis nevinii Nevin's barberry	Fed: **END** CA: **END** CNPS: 1B.1	Occurs on sandy or gravelly soils in chaparral, cismontane woodland, coastal scrub, and riparian scrub plant communities. From 951 to 5,167 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat
Calochortus clavatus var. *gracilis* Slender mariposa-lily	Fed: None CA: None CNPS: 1B.2	Occurs on shaded foothill canyons and chaparral at the south base of the San Gabriel Mountains. From 1,378 to 2,493 feet in elevation.	No	**Low:** This species could occur in intershrub spaces in the upland area.
Calochortus plummerae Plummer's mariposa-lily	Fed: None CA: None CNPS: 4.2	Prefers openings in chaparral, foothill woodland, coastal sage scrub, valley foothill grasslands, cismontane woodland, lower montane coniferous forest and yellow pine forest. Often found on dry, rocky slopes and soils and brushy areas. Can be very common after a fire. From 328 to 5,577 feet in elevation.	No	**Low:** This species could occur in intershrub spaces in the upland area.
Chorizanthe parryi var. *parryi* Parry's spineflower	Fed: None CA: None CNPS: 1B.1	Occurs on sandy and/or rocky soils in chaparral, coastal sage scrub, and sandy openings within alluvial washes and margins. From 131 to 5,594 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat
Claytonia lanceolata var. *peirsonii* Peirson's spring beauty	Fed: None CA: None CNPS: 3.1	Occurs on granitic slopes, often with a sandy or fine soil component and granitic cobbles in upper montane coniferous forest and subalpine coniferous forest. From 7,005 to 9,006 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Dudleya multicaulis Many-stemmed dudleya	Fed: None CA: None CNPS: 1B.2	Often occurs on clay soils and around granitic outcrops in chaparral, coastal sage scrub, and grasslands. From 0 to 2,592 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat
Eriogonum microthecum var. *johnstonii* Johnston's buckwheat	Fed: None CA: None CNPS: 1B.3	Occurs on granite or limestone slopes and ridges in subalpine coniferous forest, upper montane coniferous forests. From 7,251 to 9,514 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Horkelia cuneata var. *puberula* Mesa horkelia	Fed: None CA: None CNPS: 1B.1	Occurs on sandy or gravelly soils in chaparral, woodlands, and coastal scrub plant communities. From 230 to 2,657 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	Fed: None CA: None CNPS: 4.3	Typically occurs in dry opening within chaparral, coastal sage scrub, and alluvial fan sage scrub plant communities. From 3 to 2,904 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat
Lilium parryi Lemon lily	Fed: None CA: None CNPS: 1B.2	Occurs in moist openings of meadows and along streams within riparian, lower montane coniferous, and upper montane coniferous forests. From 4,003 to 9,006 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Linanthus concinnus San Gabriel linanthus	Fed: None CA: None CNPS: 1B.2	Occurs on rocky soils in lower and upper montane coniferous forests from 5,167 to 8,350 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Monardella australis ssp. *jokerstii* Jokerst's monardella	Fed: None CA: None CNPS: 1B.1	Often found in lower montane coniferous forest and chaparral plant communities from 4,429 to 5,741 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Monardella macrantha ssp. *hallii* Hall's monardella	Fed: None CA: None CNPS: 1B.3	Found on dry slopes, ridges and openings in broadleaved upland forest, chaparral, lower montane coniferous forest, cismontane woodland, and valley and foothill grassland. From 2,395 to 7,201 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Oreonana vestita Woolly mountain-parsley	Fed: None CA: None CNPS: 1B.3	Occurs in lower and upper montane coniferous forests as well as subalpine coniferous forest. Prefers gravelly or talus substrate. From 7,907 to 11,483 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Orobanche valida ssp. *valida* Rock Creek broomrape	Fed: None CA: None CNPS: 1B.2	Occurs in chaparral and pinyon-juniper woodland, on slopes of loose decomposed granite. From 5,594 to 5,971 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Sagittaria sanfordii Sanford's arrowhead	Fed: None CA: None CNPS: 1B.2	Occurs in freshwater marshes, ponds, and ditches and various other shallow freshwater habitats. From 0 to 2,133 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat
Streptanthus bernardinus Laguna Mountains jewel-flower	Fed: None CA: None CNPS: 4.3	Occurs on clay or decomposed granitic soils, sometimes in disturbed areas such as streamside or roadcuts. Found in chaparral and lower montane coniferous forest. From 4,724 to 8,202 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Symphyotrichum greatae Greata's aster	Fed: None CA: None CNPS: 1B.3	Found in broad-leaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland habitats. From 2,625 to 4,921 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat and the project site is outside of the known elevation range of this species.
Thysanocarpus rigidus Rigid fringepod	Fed: None CA: None CNPS: 1B.2	Occurs along rocky ridges, slopes and washes in woodland and chaparral plant communities. From 1,969 to 7,218 feet in elevation.	No	**Presumed Absent:** No Suitable Habitat
CDFW SENSITIVE HABITATS				

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
California Walnut Woodland	**CDFW Sensitive Habitat**	Similar to and integrating with Interior Live Oak Woodland or Coast Live Oak Woodland, but with a more open tree canopy dominated by California walnut (*Juglans californica*). Occurs on relatively moist, fine-textured soils of valley slopes and bottoms, as well as encircling rocky outcrops. South side of the San Gabriel Mountains to the Santa Ana Mountains, mostly between 500 and 3,000 feet above msl.	No	**Not Present**
Canyon Live Oak Ravine Forest	**CDFW Sensitive Habitat**	Similar to Coast Live Oak Forest, but usually denser and not so tall. Typically forms forests with little understory up to 20 meters tall in canyons or on north-facing slopes, and low, chaparral-like stands. Trees often with multiple trunks.	No	**Not Present**
Coastal and Valley Freshwater Marsh	**CDFW Sensitive Habitat**	Characterized by perennial, emergent monocots such as bulrushes and cattails that occurs in permanently or semi-permanently saturated soils. Along the coast and in coastal valleys near river mouths and around the margins of lakes and springs.	No	**Not Present**
Riversidean Alluvial Fan Sage Scrub	**CDFW Sensitive Habitat**	Considered a distinct and rare plant community found primarily on alluvial fans and flood plains along the southern bases of the Transverse Ranges and portions of the Peninsular Ranges in southern California. Relatively open vegetation type is adapted to periodic flooding and erosion and is comprised of an assortment of drought-deciduous shrubs and larger evergreen woody shrubs characteristic of both coastal sage scrub and chaparral communities.	Yes	**Present:** RAFSS habitat is located within and adjacent to Cucamonga Creek.
Southern California Arroyo Chub/Santa Ana Sucker Stream	**CDFW Sensitive Habitat**	Characterized by a functioning hydrological system that experiences peaks and ebbs in the water volume throughout the year; a mosaic of loose sand, gravel, cobble, and boulder substrates in a series of riffles, runs, pools and shallow sandy stream margins; water depths great than 1.2 inches and water bottom velocities of more than 0.01 feet per second; non-turbid conditions or only seasonally turbid water; water temperatures less than 86 degrees Fahrenheit; and stream habitat that includes algae, aquatic emergent vegetation, macroinvertebrates, and riparian vegetation.	No	**Not Present**
Southern Coast Live Oak Riparian Forest	**CDFW Sensitive Habitat**	Open to locally dense evergreen riparian woodlands dominated by *Quercus agrifolia*. This type appears to be richer in herbs and poorer in understory shrubs than other riparian communities. Bottomlands and outer floodplains along larger streams, on fine-grained, rich alluvium. Canyons and valleys of coastal southern California.	No	**Not Present**

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Southern Sycamore Alder Riparian Woodland	**CDFW Sensitive Habitat**	Occurs below 2,000 meters in elevation, sycamore and alder often occur along seasonally-flooded banks; cottonwoods and willows are also often present. Poison oak, mugwort, elderberry and wild raspberry may be present in understory.	No	**Not Present**

U.S. Fish and Wildlife Service (USFWS) – Federal

END – Federal Endangered

THR – Federal Threatened

California Department of Fish and Wildlife (CDFW) - California

END – California Endangered

CSC – California Species of Concern

WL – Watch List

California Native Plant Society (CNPS)

California Rare Plant Rank

1A	Plants rare, threatened, or endangered in California and elsewhere
1B	Plants rare, threatened, or endangered in California but more common elsewhere
2	Lack information to assign a rank (review list)
3	Limited Distribution or infrequent throughout a broader area in California (watch list)

Threat Ranks

0.1 – Seriously threatened in California

0.2 – Fairly threatened in California

0.3 – Not very threatened in California

Appendix C *Flora and Fauna Compendium*

Flora Compendium

Scientific Name	Common Name
Acmispon glaber	deerweed
Adenostoma fasciculatum	chamise
Ambrosia sp.	ragweed
Artemisia californica	California sagebrush
Artemisia douglasiana	mugwort
Avena sp.	oat
Baccharis salicifolia	mulefat
Baccharis sarothroides	broom baccharis
Bromus diandrus	ripgut brome
Bromus madritensis	red brome
Bromus tectorum	cheatgrass
Camissonia californica	false mustard
Ceanothus sp.	ceanothus
Centaurea melitensis	tocalote
Cercocarpus betuloides	mountain mahogany
Chenopodium sp.	pigweed
Convolvulus arvensis	field bindweed
Cortaderia sp.	pampas grass
Cryptantha sp.	popcornflower
Datura wrightii	jimson weed
Dendromecon rigida	bush poppy
Encelia farinose	brittlebush
Ericameria pinifolia	pine goldenbush
Eriodictyon californicum	yerba santa
Eriogonum fasciculatum	California buckwheat
Erodium sp.	filaree
Eucalyptus sp.	eucalyptus
Helianthus annuus	common sunflower
Hesperoyucca whipplei	our Lord's candle
Heterotheca grandiflora	telegraph weed
Hirschfeldia incana	shortpod mustard
Isocoma menziesii	Menzies' goldenbush
Lepidospartum squamatum	scale broom
Lupinus hirsutissimus	stinging lupine
Lupinus succulentus	arroyo lupine
Malosma laurina	laurel sumac
Marah macrocarpus	wild cucumber

Scientific Name	Common Name
Mentzelia laevicaulis	giant blazing star
Mimulus aurantiacus	sticky monkeyflower
Nasturtium officinale	watercress
Nicotiana glauca	tree tobacco
Penstemon spectabilis	showy penstemon
Phacelia campanularia	California bluebells
Phacelia distans	common phacelia
Piptatherum miliaceum	smilo grass
Plantago sp.	plantain
Prunus ilicifolia	holly-leafed cherry
Pseudognaphalium sp.	everlasting
Rafinesquia californica	California chicory
Rhamnus crocea	spiny redberry
Rhus aromatica	basketbush
Ricinus communis	castor bean
Salix lasiolepis	arroyo willow
Salvia apiana	white sage
Salvia columbariae	chia
Salvia mellifera	black sage
Sambucus nigra	Mexican elderberry

Fauna Compendium

Scientific Name	Common Name
Birds	
Accipiter cooperii	Cooper's hawk
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow
Aphelocoma californica	western scrub-jay
Buteo jamaicensis	red-tailed hawk
Buteo lineatus	red-shouldered hawk
Callipepla californica	California quail
Calypte anna	Anna's hummingbird
Calypte costae	Costa's hummingbird
Cardellina pusilla	Wilson's warbler
Carduelis psaltria	lesser goldfinch
Chamaea fasciata	wrentit
Chordeiles acutipennis	lesser nighthawk
Falco sparverius	American kestrel
Geothlypis tolmiei	MacGillivray's warbler
Haemorhous mexicanus	house finch
Hirundo rustica	barn swallow
Icterus bullockii	Bullock's oriole
Melospiza melodia	song sparrow
Melozone crissalis	California towhee
Mimus polyglottos	northern mockingbird
Pheucticus melanocephalus	black-headed grosbeak
Picoides nuttallii	Nuttall's woodpecker
Pipilo maculatus	spotted towhee
Psaltriparus minimus	bushtit
Salpinctes obsoletus	rock wren
Sayornis saya	Say's phoebe
Selasphorus sasin	Allen's hummingbird
Stelgidopteryx serripennis	northern rough-winged swallow
Sturnus vulgaris	European starling
Thryomanes bewickii	Bewick's wren
Toxostoma redivivum	California thrasher
Tyrannus vociferans	Cassin's kingbird
Zenaida macroura	mourning dove
Mammals	
Canis latrans	coyote
Neotoma sp.	woodrat (middens)
Otospermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	desert cottontail
Reptiles	
Elgaria multicarinata	southern alligator lizard
Sceloporus occidentalis	western fence lizard
Uta stansburiana	common side-blotched lizard

Appendix D *Biological Resources Report (2009)*

BIOLOGICAL RESOURCES REPORT
SAN ANTONIO HEIGHTS BASIN 5 & 6 STOCKPILE AND CUCAMONGA CROSSWALL EXCAVATION
SAN ANTONIO HEIGHTS, CA

Prepared by: Brandy Wood, Ecological Resource Specialist
San Bernardino County
Department of Public Works
Environmental Management Division
(909) 387-7971

Date: February 12, 2009

USGS Mt. Baldy Quad T1N, R7W, Sections 19 / 20
Thomas Guide page 572, C & D-1

Background

The proposed project is located in San Antonio Heights within the city of Upland, CA. Proposed work consists of:

1. The excavation of the sediment load within the Cucamonga crosswalls, along Cucamonga Creek Channel, north of the Cucamonga debris dam. The sediment from the crosswalls will be deposited in front of the Cucamonga dam.
2. Two stockpiles from the front of San Antonio Heights basins 5 & 6 will be moved to an area below the Cucamonga dam. Construction equipment will include, but not be limited to, front-end loader, water truck, grader, backhoe, and dump trucks.

Environmental Setting

Cucamonga Crosswalls

The Cucamonga crosswalls are composed of a series of rock-filled gabion walls designed to collect sediment and debris from flows reaching Cucamonga dam. The crosswalls are in a perpendicular orientation to the channel flowing between them (figure 1). The channel itself contains native vegetation composed of open Riversidean alluvial fan sage scrub, a California Department of Fish and Game (CDFG) sensitive habitat, surrounded by non native grasses and annuals such as mustard (*Brassica sp*.) and tree tobacco (*Nicotiana glauca*). Also, between the crosswalls there are several small ponds with mulefat (*Baccharis salicifolia*), willows (*Salix sp*.) and Fremont cottonwood (*Populus fremontii*).

Riversidean alluvial fan sage scrub (RAFSS) consists of drought-deciduous sub-shrubs and large evergreen woody shrubs adapted to survive intense, periodic flooding and scouring of the substrate. Pioneer, intermediate-aged, and mature-aged describe the three stages of the RAFSS plant community. Pioneer RAFSS has sparse vegetation and low plant diversity; this stage is present within the crosswalls. Intermediate RAFSS is characterized by more dense vegetation dominated by sub-shrubs, and the mature RAFSS has dense full grown sub-shrubs, along with evergreen woody shrubs and other components of a more chaparral type habitat. Intermediate

and mature RAFSS dominate the edges, banks and upper benches of the overall area. Also found in the area is scale-broom (*Lepidospartum squamatum*), which is a common shrub species that is often found on alluvial soils associated with drainages and is considered an indicator species of RAFSS. Other common species associated with RAFSS include California sagebrush (*Artemisia californica),* California buckwheat (*Eriogonum fasciculatum*), yerba santa (*Eriodictyon trichocalyx*), sugarbush (*Rhus ovata*), birch-leaved mountain mahogany (*Cercocarpus betuloides*) and deerweed (*Lotus scoparius*).

San Antonio Heights Basin stockpiles

Two stockpiles in front of the San Antonio Heights Basins 5 and 6 are located north of 26th street. The western stockpile (9 acres) has an area on top that is heavily disturbed by operations type vehicle traffic and is lacking vegetation (1.65 acres). On the top of the stockpile, there are two large mounds of earth within this area that are vegetated, the largest can be described as mule fat scrub; a combination of coastal sage scrub with several large mulefat plants, the other mound consisting of coastal sage components and weeds. On the sides of the stockpile, both eastern and southwest portions are heavily vegetated by Riversidian "coastal" sage scrub/Riversidian alluvial fan sage scrub. Characteristic plants found here include California sagebrush (*Artemisia californica*), scalebroom (*Leptospartum squamatum*), white sage (*Salvia apiana*), California buckwheat (*Eriogonum fasciculatum*), yerba santa (*Eriodictyon trichocalyx*), deer weed (*Lotus scoparius*), and tarragon (*Artemisia dracunculus*).

The eastern stockpile (0.5 acres) is covered with annual grasses and forbs.

Endangered Species Review

The California Natural Diversity Database (CNDDB, 2009) for the Ontario, CA Quad as well as the Mt. Baldy quad was reviewed, along with aerial photographs. The California gnatcatcher (*Polioptila californica californica),*a federally threatened species have historically occurred in southwestern San Bernardino County, and although they have not been found within the project site in recent years, there have been observations of gnatcatchers in nearby areas. More importantly there is suitable habitat for the gnatcatcher on both sites. From the USFWS final rule, the coastal California gnatcatcher occurs almost exclusively in the coastal sage scrub plant community.

Additionally, several species of special concern also have a high potential of occurring on site including:

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)
San Diego desert woodrat (*Neotoma lepida intermedia*)
Coast horned lizard (*Phrynosoma coronatum blainvillii*)

Plummer's mariposa-lily (*Calochortus plummerae*)
Parry's spineflower (*Chorizanthe parryi* var. *parryi*)
Mesa horkelia (*Horkelia cuneata* ssp. *puberula*)

Determination

In San Bernardino County, coastal sage scrub and Riversidian alluvial fan sage scrub are becoming increasingly rare habitats. Urbanization, anthropogenic and natural disturbances have led to an estimated loss of 70%-90% of the coastal sage scrub in southern California (Rundel 2007). Loss of sage scrub habitat has led to the listing of 11 mammal, 26 bird, and 10 reptile species as threatened or endangered (Keeley and Swift 1995). Riversidian alluvial fan sage scrub is ranked very threatened (S1.1) by state ranking and the highest global ranking (G1) meaning there are less than 6 viable element occurrences or less than 2000 acres left (www.dfg.ca.gov). Both projects are vegetated by Riversidian alluvial sage scrub, which is considered a very rare and threatened sensitive biological resource by the California Plant Society and the California Department of Fish and Game (CDFG). The law requires notification of CDFG, the Regional Water Quality Control Board, and Army Corps of Engineers for projects that may affect state special status species, alter a stream bed, bank, or channel, and will affect water quality and/or "Waters of the United States".

Protocol level focused survey for California gnatcatcher would be required.

Recommendations

All construction activity should occur outside of bird-nesting season (February 15- August 15).

Impacts to sensitive species for construction/work other than what is described in this report have not been evaluated. Future work should be reviewed by a qualified biologist and/or ecologist.

Cucamonga Channel
Crosswall
Crosswall
Crosswall
Crosswall
Crosswall
Crosswall
Crosswall
Channel
Crosswall
Crosswall
Ranch Gate Rd
shapefiles (c) 2008 San Bernardino
February 2008 Image 1ft (c) I.K. Curtis Services, Inc.
W elev 1991 ft
Streaming 100%

Figure 1

Appendix E *Coastal California Gnatcatcher Focused Survey (2009)*

Focused Surveys for California Gnatcatcher, in the Area of the Cucamonga Creek Flood Control Basin San Bernardino County, California

Section 20 (plus lands not sectioned), Township 1 North,
Range 7 West, USGS Mt. Baldy
7.5-Minute Topographic Quadrangle

Prepared for:

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Prepared by:

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December 2009

ICF Jones & Stokes. 2009. Focused Surveys for California Gnatcatcher in the Area of the Cucamonga Creek Flood Control Basin, San Bernardino County, California. December. (JSA 00449.08) Irvine, CA.

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Abbreviations and Acronyms

CNDDB	California Natural Diversity Database
CDFG	California Department of Fish and Game
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Chapter 1
Introduction

This report summarizes the findings of focused surveys to determine the presence or absence of Coastal California Gnatcatcher (*Polioptila californica californica*) on and adjacent to proposed sediment removal activities in the area of the Cucamonga Creek Flood Control Basin. The study area included habitat potentially suitable of supporting Coastal California Gnatcatcher within the proposed area of disturbance, plus a 500-foot buffer.

The study area is in the floodplain and upper terraces of Cucamonga Creek, where the creek empties from the foothills of the San Gabriel Mountains. It is located in the San Antonio Heights area of Upland, San Bernardino County, California (Figure 1).

The study area is in Section 20 (plus lands not sectioned), Township 1 North, Range 7 West (San Bernardino Baseline and Meridian), San Bernardino County, California (Figure 2). This location is shown on the Mt. Baldy, California 7.5-minute U.S. Geological Survey (USGS) quadrangle (Mt. Baldy 2007) and on page 572 (blocks D1, D2, and D3) of the San Bernardino County Street Guide and Directory (Thomas Brothers Maps Design 2007).

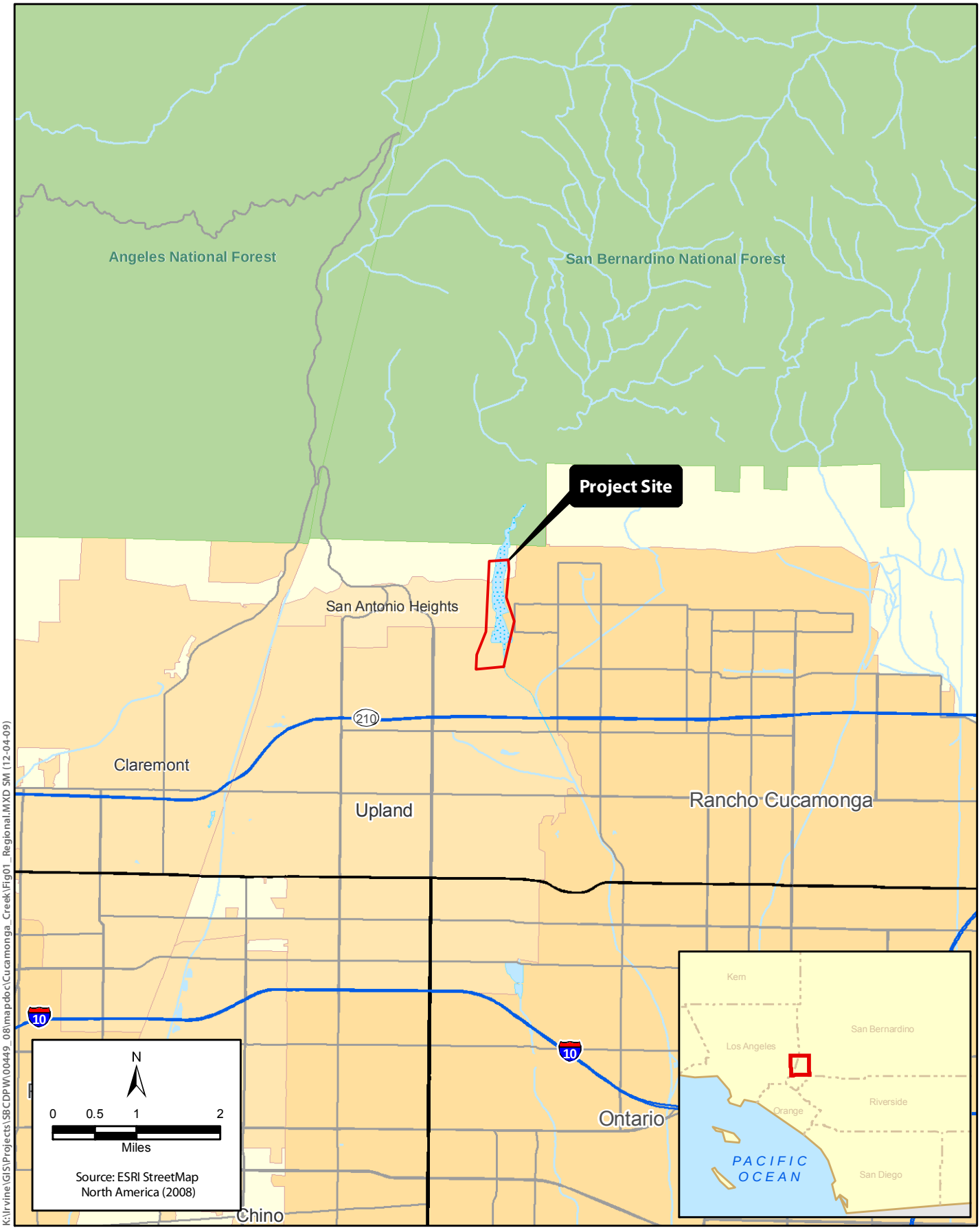

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Figure 1
Regional Vicinity Map
Focused California Gnatcatcher Survey-
Cucamonga Creek

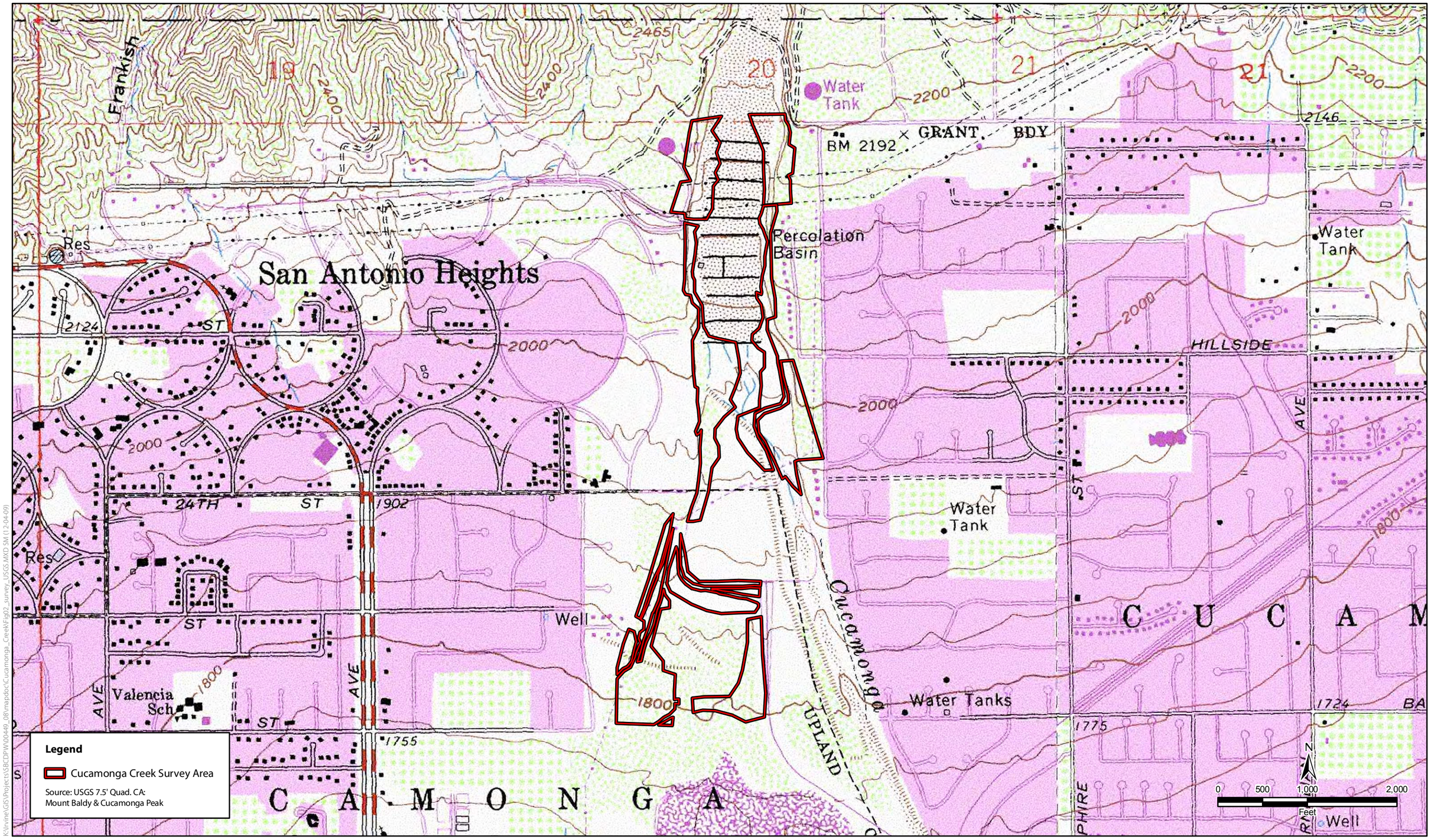

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Figure 2
Suitable Habitat Surveyed for California Gnatcatcher
Focused California Gnatcatcher Surveys-
Cucamonga Creek

Chapter 2
Study Area Conditions

This chapter summarizes conditions in the study area and surrounding lands. For purposes of this report, the term *study area* includes potentially suitable habitat within the limits of disturbance and a surrounding 500-foot buffer (Figure 3). The term *project site* encompasses the proposed limits of disturbance. The study area includes approximately 80 acres of potentially suitable habitat for Coastal California Gnatcatcher.

2.1 Physical Conditions

The study area is in the floodplain and upper terraces of Cucamonga Creek, where the creek empties from the foothills of the San Gabriel Mountains. The Cucamonga Creek floodplain is an active floodplain subject to annual flooding. As a result, much of the floodplain is scoured and consists of sand, cobles, and boulders and supporting little to no vegetation. Raised terraces (or benches) within the floodplain are less subject to flooding, and therefore consist of stabilized soils that support mixed densities of shrubs. Upstream (north) of the Cucamonga Creek flood control dam, the walls of the floodplain are tall and steep, with the tallest slopes along the north end of the study area. In general, the walls of the floodplain support scattered sage scrub shrubs on the west side (east facing) and dense chaparral shrubs on the east side (west facing). The upper terraces above the floodplain are comprised of mixed residential, county flood control infrastructure, municipal water storage (tanks), dirt maintenance roads, and open space. Open space on these upper terraces consists of a dense cover of shrubs. South of the Cucamonga Creek flood control dam, the study area is relatively flat and consists of a mix of disturbed habitat and mixed densities of native shrubs. Elevation in the study area ranges from 1,800 feet to 2,170 feet above sea level.

2.2 Vegetation

Dominant vegetation communities in the study area include alluvial fan sage scrub and southern mixed chaparral. Other vegetation communities present include southern willow scrub, mule fat scrub, disturbed habitat (ruderal), ornamental vegetation, and development.

K:\Irvine\GIS\Projects\SBCDPW\00449_08\mapdoc\Cucamonga_Creek\Fig03_survey_aerial.MXD SM (12-04-09)

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Figure 3
Suitable Habitat Surveyed for California Gnatcatcher
Focused California Gnatcatcher Surveys-
Cucamonga Creek

Alluvial fan sage scrub is composed of an assortment of drought-deciduous subshrubs and large evergreen woody shrubs adapted to the porous, low-fertility substrate and to survival of intense, periodic flooding and erosion. Step-like shrub-covered terraces above wash channels exhibit different phases of alluvial fan sage scrub vegetation. Physical and biological characteristics on each terrace directly relate to the distance from the main flood channels, amount of time since the last flood event, and various other related factors such as duration, velocity, and magnitude of the last flood event. Three primary seral phases of alluvial fan sage scrub vegetation, frequently blending into each other, have been recognized within the area of the survey site. The three phases are referred to as pioneer, intermediate, and mature phase alluvialfan sage scrub vegetation (Smith 1980 and Hanes et al. 1989). The pioneer phase is the initial colonizing form of alluvial scrub vegetation and exists where there have been recent flood events. It generally occupies the central axis of drainage channels scoured during flood flows and, accordingly, is on the lowest terraces in the study area. Vegetation tends to be sparse. The intermediate phase is composed mainly of subshrubs that have existed for an intermediate period and are generally supported on terraces above scoured channels. The mature phase is characterized by large woody shrubs at a generally higher density than the intermediate phase. Vegetation associated with the mature phase is supported on stabilized soils of terraces that are generally higher or farther away from active flood channels.

Alluvial fan sage scrub in the study area is dominated by Scale-broom (*Lepidospartum squamatum*), California Buckwheat (*Eriogonum fasciculatum*), Yerba Santa (*Eriodictyon trichocalyx* var. *trichocalyx*), California Sagebrush (*Artemisia californica*), Pine Goldenbush (*Ericameria pinifolia*), Holly-leaved Cherry (*Prunus ilicifolia*), Sugarbush (*Rhus ovata*), Spiny Redberry (*Rhamnus crocea*), Hoaryleaf Ceanothus (*Ceanothus crassifolius*), and Chaparral Whitethorn (*Ceanothus leucodermis*).

Other vegetation communities in the study area include disturbed habitat dominated by non-native grasses (e.g., *Bromus* sp.) and Short-pod Mustard (*Hirschfeldia incana*), Mule Fat Scrub dominated by Mule Fat (*Baccharis salicifolia*), and Southern Mixed Chaparral dominated by Chamise (*Adenostoma fasciculatum*), Spiny Redberry, Holly-leaved Cherry, Hoaryleaf Ceanothus, Chaparral Whitethorn. There is a dense stand of Southern Willow Scrub clustered around a water outlet along the northeast corner of the study area. Species associated with this vegetation community include *Salix* sp. and Mule Fat. Trees in the floodplain are limited to only a few scattered individual Western Sycamores (*Platanus racemosa*) and Black Willows (*Salix gooddingii*). In contrast, residential development on both sides of the floodplain supports numerous ornamental trees and other plantings.

2.3 Wildlife

The study area supports wildlife species typically found in urban settings, and species that can be associated with disturbed natural settings.

Observed reptile species include Western Fence Lizard (*Sceloporus occidentalis*), Side-blotched Lizard (*Uta stansburiana*), and Southern Alligator Lizard (*Elgaria multicarinata*).

Common observed bird species include Red-tailed Hawk (*Buteo jamaicensis*), American Kestrel (*Falco sparverius*), Mourning Dove (*Zenaida macroura*), Anna's Hummingbird (*Calypte anna*), Costa's Hummingbird (*Calypte costae*), American Crow (*Corvus brachyrhynchos*), Common Raven (*Corvus corax*), Bewick's Wren (*Thryomanes bewickii*), House Wren (*Troglodytes aedon*), Wrentit (*Chamaea fasciata*), Northern Mockingbird (*Mimus polyglottos*), Yellow-rumped Warbler (*Dendroica coronata*), Blue-gray Gnatcatcher (*Polioptila caerulea*), Califoria Towhee (*Pipilo crissalis*), Spotted Towhee (*Pipilo maculatus*), Bushtit (*Psaltriparus minimus*), House Finch (*Carpodacus mexicanus*), and Lesser Goldfinch (*Carduelis psaltria*). A complete listing of the bird species detected is provided in Appendix B.

Detected mammal species include Botta's pocket gopher (*Thomomys bottae*), California Ground Squirrel (*Spermophilus beecheyi*), and Coyote (*Canis latrans*).

No special-status wildlife species were detected in the study area.

Chapter 3

California Gnatcatcher Focused Survey

This chapter describes the background, methods, and results of the focused survey for Coastal California Gnatcatcher in the study area.

3.1 Background

The Coastal California Gnatcatcher is a resident species in coastal (Diegan or Venturan) and inland (Riversidean) sage scrub plant communities of southern California, especially where dominated by California Sagebrush and California Buckwheat. Examples of other shrubs in habitat occupied by Coastal California Gnatcatcher include California Bush Sunflower (*Encelia californica*), Brittlebush (*Encelia farinosa*), Black Sage (*Salvia mellifera*), White Sage (*Salvia apiana*), and Deerweed (*Lotus scoparius*). Coastal California Gnatcatcher has a restricted range in the United States, primarily limited to Orange, western Riverside, and San Diego Counties. Relatively small, fragmented populations of Coastal California Gnatcatcher are known to occur in Los Angeles and southwestern San Bernardino Counties. An extremely isolated population was recently rediscovered in Ventura County, where this species was considered extirpated. Coastal California Gnatcatcher is generally found at elevations below 250 meters (800 feet) along the coast and up to 250 to 500 meters (800 to 1,600 feet) at inland locations (Atwood 1993).

North of Mexico, Coastal California Gnatcatcher underwent significant population declines during the late 1900s. As of 1990, the gnatcatcher population in California was estimated at approximately 2,000 or fewer pairs (Atwood 1993). A U.S. Fish and Wildlife Service (USFWS) estimate in 1999 revised the total to approximately 3,000 pairs (Atwood and Bontrager 2001). This species' decline has been attributed to loss of its preferred habitat from development, agricultural conversion, fuel modification, and brood parasitism by brown-headed cowbirds (*Molothrus ater*). Thus, the USFWS proposed the Coastal California Gnatcatcher for listing as a federally endangered/threatened species in September 1991, and officially designated it as a federally threatened species in March 1993.

The study area is not in lands designated as critical habitat for Coastal California Gnatcatcher as defined by the USFWS. Critical habitat refers to specific geographic areas essential for the conservation of a threatened or endangered species and that might require special management consideration or protection.

A critical habitat designation on private land has no affect on private landowner activities that do not require federal funding or permits. Such a designation applies only to federal activities. Similarly, the designation of critical habitat has no affect on whether an area is determined to be suitable for an threatened or endangered species; in other words, it is quite reasonable that suitable habitat be found and focused surveys required in suitable habitat that is outside of critical habitat, as is the case for this project.

Although the study area is not on critical habitat for this species, for the sake of clarification, the study area was on lands designated as critical habitat in the past. Specifically, at the time of the designation in 2000 (Federal Register 2000), the study area was associated with critical habitat referred to as Unit 13. Unit 13 was one of 15 units that included portions of San Diego, Orange, Los Angeles, Riverside, and San Bernardino Counties. Unit 13 encompassed approximately 30,076 hectares (74,316 acres) along the foothills of the San Gabriel Mountains and within the Jurupa Hills on the border of San Bernardino and Riverside Counties. In 2003, the USFWS revised their proposed areas to designate as critical habitat for the species (Federal Register 2003). The proposed revision included 13 units (instead of 15) and included a portion of Ventura County. The total area associated with San Bernardino County was reduced and fell into an area referred to as Unit 11. Finally, in 2007 the USFWS issued their final rule regarding critical habitat for the Coastal California Gnatcatcher (Federal Register 2007). In this rule, the USFWS removed all lands proposed as critical habitat in Unit 11 (6,065 hectares [14,990 acres]) from the revised final designation.

According BIOS, a system designed to enable the management, visualization, and analysis of biogeographic data, in this case collected by the Carlsbad US Fish and Wildlife Service, the nearest reported occurrence of Coastal California Gnatcatchers is 4.6 6 miles east of the study area on an alluvial fan associated with Deer Creek. There is also a Coastal California Gnatcatcher occurrence approximately 6.4 miles to the southeast of the study area within Day Creek. The reported occurrences are from 1999. There are additional occurrences reported for California gnatcatcher further east along the Etiwanda Fan. No reported occurrences of Coastal California Gnatcatcher are reported on the California Natural Diversity Database (CNDDB) for the Mt. Baldy quadrangle.

3.2 Methods

The survey protocol to determine presence or absence of Coastal California Gnatcatcher requires a federal 10(A)1(a) permit. From August 13 through December 3, 2009, Phillip Richards (permit # TE-095896) and Kylie Fischer (permit # TE-321039) performed a focused survey for Coastal California Gnatcatcher in potential habitat in the study area. . Table 3-1 summarizes the dates, times, and conditions for each visit.

Table 3-1. Dates, Times, and Conditions for California Gnatcatcher Survey Visits

Date	Times	Biologist	Conditions
08/13/09	0655-1025	Phillip Richards	68 – 85°F, sunny, no dew, wind 0-4 mph, good visibility
08/27/09	0620-1100	Phillip Richards	73 – 94°F, sunny, no dew, wind 0-3 mph, good visibility
09/10/09	0619-1150	Phillip Richards	71 – 87°F, sunny, no dew, wind 0-5 mph, good visibility
09/24/09	0628-1155	Phillip Richards	75 – 88°F, sunny, no dew, wind 0-4 mph, good visibility
10/08/09	0640-1200	Phillip Richards	50 – 72°F, sunny, no dew, wind 1-4 mph, good visibility
10/22/09	0645-1155	Phillip Richards	62 – 84°F, sunny, no dew, wind 0-4 mph, good visibility
11/05/09	0600-1015	Kylie Fischer	52 – 63°F, sunny, no dew, wind 0 mph, good visibility
11/19/09	0645-1045	Phillip Richards	50 – 69°F, sunny, no dew, wind 0-4 mph, good visibility
12/03/09	0650-1115	Phillip Richards	45 – 61°F, cloudy to sunny, no dew, wind 0-6 mph, good visibility

The surveys followed the published survey methodology for Coastal California Gnatcatcher (USFWS 1997). On each of the nine survey visits, surveyors carefully checked all potential habitat for this species. The survey included slow walking with frequent stops to listen and play taped coastal California Gnatcatcher vocalizations. During each visit, surveyors played tape vocalizations at least once in all potential habitat at distance intervals of approximately 23 to 30 meters (75 to 100 feet).

All potential suitable habitat in the study area was surveyed during the morning hours according to the current protocol for such work. The rate of coverage during each survey visit was approximately 6 to 8 hectares (15 to 20 acres) per hour. Component floral species and their physical structures and conditions were evaluated based on both personal experience with and published literature on this species' habitat requirements. Habitat structure was not analyzed quantitatively.

3.3 Results

Surveyors did not detect Coastal California Gnatcatcher on or in the immediate vicinity of the study area. The species can be considered absent at this time. Typically, the results of a focused survey are valid for one year.

Chapter 4
Conclusions

From August 13 through December 3, 2009, surveyors performed USFWS protocol focused surveys to determine the presence or absence of Coastal California Gnatcatcher on and 500 feet beyond the proposed limits of disturbance from proposed sediment removal activities within Cucamonga Creek.

Surveyors did not detect Coastal California Gnatcatcher on or in the immediate vicinity of the study area; the species can be considered absent at this time. Typically, the results of a focused survey are valid for one year.

Chapter 5
Certification

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

_____ December 8, 2009
Phillip Richards Date
Staff Biologist

_____ December 8, 2009
Kylie Fischer Date
Wildlife Biologist

Chapter 6
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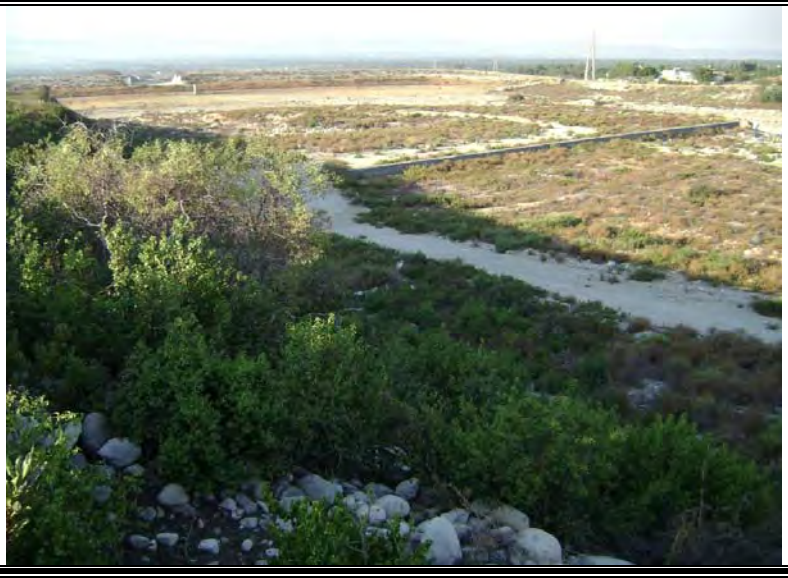
Appendix A

Photographic Log



Photograph: 1

Photo Date: August 27, 2009

Location: East side of creek on upper terrace, about 0.5 miles north of dam.

Direction: View facing southwest

Comment: Photo depicts floodplain, flood control dam and shrub cover within and on slopes of floodplain.

Photograph: 2

Photo Date: August 27, 2009

Location: East side of creek at base of floodplain terrace, about 0.80 miles north of dam.

Direction: View facing southwest

Comment: Photo depicts floor of floodplain.

Photograph: 3

Photo Date: August 27, 2009

Location: East side of creek at base of floodplain terrace, about 1.0 miles north of dam.

Direction: View facing southwest.

Comment: Photo depicts floodplain as seen from the top of the upper terrace.

Photograph: 4

Photo Date: August 27, 2009

Location: West side of creek from top of upper terrace, about 0.75 miles north of dam.

Direction: View facing east across floodplain.

Comment: Photo depicts floodplain as seen from top of upper terrace.

Photograph: 5

Photo Date: August 27, 2009

Location: Parcel southwest of dam.

Direction: View facing east.

Comment: Photo depicts extant scrub supported on edges of parcel, south of dam.

Photograph: 6

Photo Date: August 27, 2009

Location: Parcel southwest of dam.

Direction: View facing southwest.

Comment: Photo depicts disturbed conditions located south of dam.

Appendix B

Avian Species Detected

Appendix B. Avian Species Detected

Scientific Name	Common Name	Special Status
VERTEBRATES		
Birds		
Callipepla californica	California Quail	
Accipiter cooperii	Cooper's Hawk	
Buteo jamaicensis	Red-tailed Hawk	
Falco sparverius	American Kestrel	
Falco mexicanus	Prairie Falcon	
Charadrius vociferus	Killdeer	
**Columba livia*	Rock Pigeon	
Zenaida macroura	Mourning Dove	
Columbina passerina	Common Ground-Dove	
Chordeiles acutipennis	Lesser Nighthawk	
Calypte anna	Anna's Hummingbird	
Calypte costae	Costa's Hummingbird	
Picoides nuttallii	Nuttall's Woodpecker	
Colaptes auratus	Northern Flicker	
Sayornis nigricans	Black Phoebe	
Sayornis saya	Say's Phoebe	
Tyrannus vociferans	Cassin's Kingbird	
Tyrannus verticalis	Western Kingbird	
Aphelocoma californica	Western Scrub-Jay	
Corvus corax	Common Raven	
Psaltriparus minimus	Bushtit	
Salpinctes obsoletus	Rock Wren	
Thryomanes bewickii	Bewick's Wren	
Troglodytes aedon	House Wren	
Regulus calendula	Ruby-crowned Kinglet	
Polioptila caerulea	Blue-gray Gnatcatcher	
Chamaea fasciata	Wrentit	
Mimus polyglottos	Northern Mockingbird	
Toxostoma redivivum	California Thrasher	
Phainopepla nitens	Phainopepla	

Scientific Name	Common Name	Special Status
Dendroica coronata	Yellow-rumped Warbler	
Pipilo maculatus	Spotted Towhee	
Pipilo crissalis	California Towhee	
Aimophila ruficeps canescens	Southern California Rufous-crowned Sparro	
Chondestes grammacus	Lark Sparrow	
Melospiza melodia	Song Sparrow	
Zonotrichia leucophrys	White-crowned Sparrow	
Junco hyemalis	Dark-eyed Junco	
Sturnella neglecta	Western Meadowlark	
Icterus bullockii	Bullock's Oriole	
Carpodacus mexicanus	House Finch	
Carduelis psaltria	Lesser Goldfinch	

Legend

*= Non-native or invasive species

Special Status:

Federal:
FE = Endangered
FT = Threatened

State:
SE = Endangered
ST =Threatened
CSC = Species of Special Concern
FPS = California Fully Protected Species

Appendix F *Coastal California Gnatcatcher Focused Survey (2012)*

July 23, 2012

Impact Sciences, Inc.
803 Camarillo Springs Road
Suite A
Camarillo, CA 93012
Attention: Mr. Daryl Koutnik

Subject: Results of Focused California Gnatcatcher Surveys on the Cucmonga Crosswalls Project Site, County of San Bernardino, CA

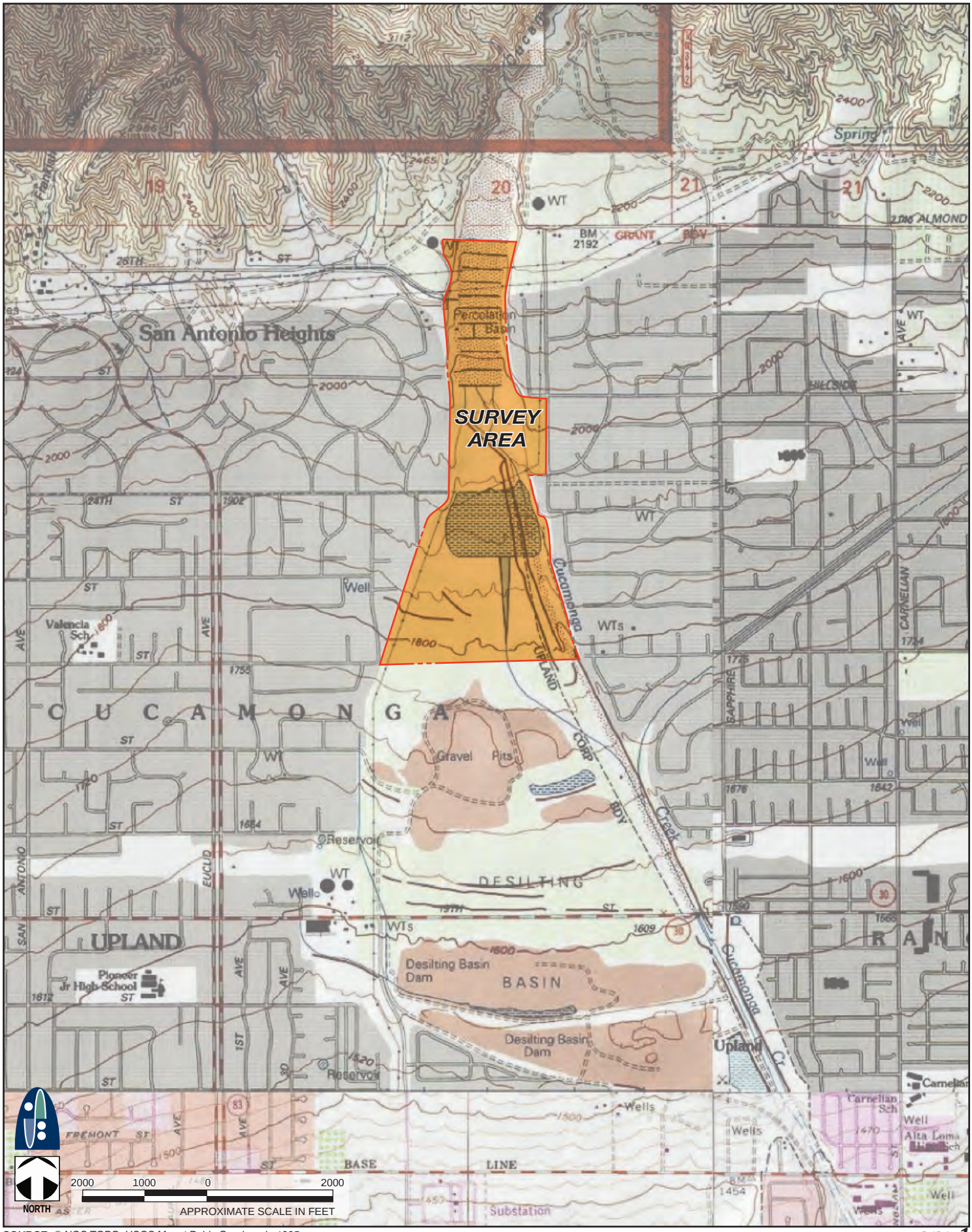
Dear Mr. Koutnik,

This letter report summarizes the methodology and findings of surveys for the federally-listed Threatened California gnatcatcher (*Polioptila californica*) (herein CAGN) conducted by Compliance Biology, Inc. on the 232-acre Cucamonga Crosswalls project site in the County of San Bernardino, California. The surveys were conducted for the purpose of determining the presence or absence of CAGN and any other special-status bird species within the study area.

SURVEY SITE

The survey location is situated at T1N, R7W, in a Land Grant area of Rancho Cucamonga, on the Mount Baldy, California U.S.G.S. 7.5-minute quadrangle map (**Exhibit 1**). The project site is located north of 19th Street and east of Euclid Avenue. The site totals approximately 232 acres with no more than 160 acres of suitable to marginally suitable CAGN habitat (**Exhibit 2**).

The subject site is characterized as a percolation basin at the southern reach of Cucamonga Canyon Creek. The study area is situated within the San Antonio Heights area of Rancho Cucamonga. Existing residential development abuts the study area to the east and west and a desilting basin and gravel pit operation is situated to the south. North of the property is the foothills of the San Bernardino Mountains and the San Bernardino National Forest. Elevations at the project site range from approximately 1,850 feet to approximately 2,250 feet above mean sea level.



SOURCE: © NGS TOPO: USGS Mount Baldy Quadrangle 1995.

exhibit **1**

PROJECT LOCATION: USGS 7.5' "MOUNT BALDY, CA" QUADRANGLE

Cucamonga • California Gnatcatcher Survey • July 2012

SOURCE: © Google Earth, 2012.

exhibit **2**

PROJECT LOCATION: AERIAL

Cucamonga • California Gnatcatcher Survey • July 2012

EXISTING CONDITIONS

The majority of the site is characterized by sandy to rocky alluvium with sage scrub and alluvial wash scrub vegetation. Dominant species present include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*) and yerba santa (*Eriodictyon crassifolium*). Secondary though common species include yucca whipplei), blue elderberry (*Sambucus mexicana*), and deerweed (*Lotus scoparius*). Concentrations and density of various species varied considerably throughout the site. Substrate varied from sandy to large cobble.

METHODOLOGY

Service recommended survey guidelines stipulate a minimum of six surveys shall be conducted at least one week apart between March 15 through June 30, and from July 1 through March 14, a minimum of nine surveys shall be conducted at least 14 days apart. Guidelines also recommend that a) surveys be completed between 6:00 a.m. and 12 p.m.; b) that they shall avoid periods of inclement weather or excessive heat, rain, wind, and fog; and c) the rate of coverage should be no more than 80 acres per day per permitted biologist.

Based on the seasonal timing and size of the study area two surveys were conducted weekly (at least 7 days apart) for a period of six weeks, for a total of 12 surveys. All surveys were performed by David Crawford under the authority of his individual Section 10(a)(1)(A) Endangered Species Recovery Permit.

Surveys were conducted on May 25 and 26, June 1, 2, 8, 9, 15, 16, 22, 23, 29, and 30. Half of all suitable habitat on the project site was surveyed each date. All potential habitat areas were systematically surveyed on foot by walking slowly and methodically along random transect routes. The location of transects and survey points along each transect were based on the vegetation and topographic conditions (size, location, and shape of habitat) of the area surveyed to ensure complete coverage. A combination of recorded vocalizations (played at 20-30 second increments) and "pishing" sounds were used at each calling point to illicit response from any potentially occurring CAGN.

Weather conditions during the surveys varied considerably, but no surveys were conducted during periods of high wind or temperatures exceeding 85° Fahrenheit (F). All surveys were conducted between the hours of about 6:00 a.m. and approximately 11:00 a.m. Temperatures varied from approximately 54° F to a maximum of about 82° F. Wind speed ranged from 0 to 15 mph during the surveys and typically averaged less than 5 mph. Cloud cover varied from completely overcast to sunny and clear.

RESULTS

No CAGN or other state- or federally-listed endangered, threatened, or candidate or other species considered to be of special-status were recorded on the project site during the focused protocol surveys. A total of 43 avian species was observed or detected on the subject property. A complete list of all vertebrate species observed during the survey efforts is included as **Attachment A**.

Three species included on the CDFG "Special Animals" list were observed and include great egret (*Aredea alba*), Allen's hummingbird (*Selasphorus sasin*) and lark sparrow (*Chondestes grammacus*). CDFG is interested in tracking nesting locations of these species. Great egret was only observed once and lark sparrow on two occasions and typical nesting habitat is not present on the subject property for either species. Therefore, nesting on site is not expected. Conversely, several Allen's hummingbirds were observed during each site survey and are expected to be nesting on site. Coastal whiptail (*Aspidoscelis tigris stejnegeri*), also a CDFG "Special Animal," was the only other wildlife species included on the Special Animals list that was observed or detected during the protocol surveys.

CONCLUSIONS

No CAGN or other state- or federally-listed endangered or threatened species were observed or detected within or adjacent to the subject site during the protocol survey effort. Based on the results of these surveys, CAGN are considered to be absent from the site at this time. As such impacts to this species are not expected to occur by alteration of the subject property.

Further, although only three of the 43 individual bird species observed on the project site are included on the Special Animals list, most of the species occurring on site are protected under the federal Migratory Bird Species Treaty Act (1985) while actively nesting. As such, grading and/or any other activity resulting in the removal of vegetation should be conducted outside the typical nesting season (February 1 through July 30). Should such activities be unavoidable during this period of time, it is recommended that nesting bird surveys be conducted consistent with California Department of Fish and Game guidelines.

Please feel free to contact me if you have any questions regarding the contents of this report.

Sincerely,

Dave Crawford

Dave Crawford
President/Principal Biologist

Cc: Ms. Susie Tharratt; US Fish and Wildlife Service, Carlsbad Field Office

I certify that the information in this survey report and attached exhibits, fully and accurately reflects my work.

7/23/12

Dave Crawford; Permit # TE-821229-5

REFERENCES

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Appendix C
Soils Report

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for San Bernardino County Southwestern Part, California

Cucamonga Creek Crosswalls

December 18, 2011

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Units

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Gully

Short Steep Slope

Other

Political Features

Cities

PLSS Township and Range

PLSS Section

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

MAP INFORMATION

Map Scale: 1:4,380 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 11N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County Southwestern Part, California
Survey Area Data: Version 4, Jan 3, 2008

Date(s) aerial images were photographed: 8/23/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

San Bernardino County Southwestern Part, California (CA677)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Ps	PSAMMENTS AND FLUVENTS, FREQUENTLY FLOODED	69.7	81.0%
SoC	SOBOBA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	3.6	4.2%
SpC	SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES	12.8	14.8%
Totals for Area of Interest		**86.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments

on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Bernardino County Southwestern Part, California

Ps—PSAMMENTS AND FLUVENTS, FREQUENTLY FLOODED

Map Unit Setting

Elevation: 10 to 1,500 feet
Mean annual precipitation: 10 to 25 inches
Mean annual air temperature: 59 to 64 degrees F
Frost-free period: 250 to 350 days

Map Unit Composition

Fluvents and similar soils: 50 percent
Psamments and similar soils: 50 percent

Description of Psamments

Setting

Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water capacity: High (about 9.1 inches)

Interpretive groups

Land capability (nonirrigated): 8w

Typical profile

0 to 12 inches: Sand
12 to 48 inches: Loamy sand, fine sand, sand
48 to 60 inches: Stratified gravelly sand to gravelly loamy sand

Description of Fluvents

Setting

Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 6.1 inches)

Interpretive groups
Land capability (nonirrigated): 8w

Typical profile
0 to 10 inches: Gravelly sand
10 to 30 inches: Stratified gravelly sand to gravelly loam
30 to 60 inches: Stratified gravelly sand to gravelly loam

SoC—SOBOBA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES

Map Unit Setting
Elevation: 30 to 4,200 feet
Mean annual precipitation: 10 to 20 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 175 to 250 days

Map Unit Composition
Soboba and similar soils: 85 percent
Minor components: 15 percent

Description of Soboba

Setting
Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Properties and qualities
Slope: 0 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water capacity: Low (about 3.2 inches)

Interpretive groups
Land capability classification (irrigated): 4s

Land capability (nonirrigated): 6s

Typical profile

0 to 12 inches: Gravelly loamy sand
12 to 36 inches: Very gravelly loamy sand
36 to 60 inches: Very stony sand

Minor Components

Delhi fine sand

Percent of map unit: 5 percent

Unnamed

Percent of map unit: 5 percent

Tujunga gravelly loam

Percent of map unit: 3 percent

Unnamed

Percent of map unit: 2 percent
Landform: Drainageways

SpC—SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES

Map Unit Setting

Elevation: 30 to 4,200 feet
Mean annual precipitation: 10 to 20 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 210 to 330 days

Map Unit Composition

Soboba and similar soils: 85 percent
Minor components: 15 percent

Description of Soboba

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Properties and qualities

Slope: 2 to 9 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: Rare
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water capacity: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability (nonirrigated): 6s

Typical profile

0 to 10 inches: Very stony loamy sand
10 to 60 inches: Very stony sand

Minor Components

Ramona

Percent of map unit: 5 percent

Tujunga gravelly loamy coarse sand

Percent of map unit: 5 percent

Hanford

Percent of map unit: 5 percent

Appendix D
Draft Stormwater Pollution Prevention Plan

SESPE
CONSULTING, INC.

468 Poli Street, Suite 2E • Ventura, California 93001

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Cucamonga Crosswalls Project

WDID# _____

June 3, 2013

Prepared for: GRB Equipment Rental
3126 S Leland Street
San Pedro, CA 90731-6140

Prepared by: Sespe Consulting, Inc.
468 Poli Street, Suite 2E
Ventura, California 93001
(805) 275-1515

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Cucamonga Crosswalls Project

June 3, 2013

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SESPE
CONSULTING, INC.

468 Poli Street, Suite 2E • Ventura, California 93001

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Cucamonga Crosswalls Project
June 3, 2013

1.0 PURPOSE AND GENERAL REQUIREMENTS OF PLAN

In 1987, Congress enacted the Water Quality Act, amending the Federal Water Pollution Control Act to include regulation of the discharge of storm water from industrial and certain municipal sources. EPA issued final regulations establishing permit application requirements for storm water in the November 16, 1990 Federal Register (55 FR 47990). The regulations provide for individual and group applications and for the issuance of individual and general permits.

In California, the State Water Resources Control Board (SWRCB) elected to issue a statewide general permit (Permit) that applies to all storm water discharges requiring a permit, except those from construction activities. The Board adopted the Permit and Fact Sheet on November 19, 1991. The information provided in this document is based on the Fact Sheet and Permit that were reissued on April 17, 1997.

The Permit requires that each facility:

- Eliminate unauthorized non-storm water discharges;
- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP); and
- Perform monitoring of storm water discharges and authorized non-storm water discharges.

This Storm Water Pollution Prevention Plan (SWPPP) has been prepared for the Cucamonga Crosswalls Project site located near the Cucamonga Dam (Project). It has been developed as required by the Permit to fulfill two major objectives:

- Identify and evaluate sources of pollutants associated with industrial activities that may affect the quality of storm water discharges and authorized non-storm water discharges from the site; and
- To identify and implement site-specific best management practices (BMPs) to reduce or prevent pollutants associated with industrial activities in storm water discharges and authorized non-storm water discharges.

Please note: this SWPPP has been prepared as a preliminary document for the planning process. This SWPPP must be updated and finalized prior to conducting Project operations at the site. If necessary, a Notice of Intent (NOI) must be prepared and submitted prior to conducting the Project.

A copy of the General Permit is included in Appendix B. A record of revisions to this SWPPP is included in Appendix C. The Waste Discharge Identification (WDID) number that has been assigned to the Project site will be noted on the cover of this plan when it is received from the State Water Resources Control Board.

2.0 GENERAL SITE INFORMATION

2.1 Responsible Personnel

The management of GRB Equipment Rental, Inc. (GRB Equipment) has been involved in the preparation and review of this Plan and has provided certification of its accuracy. The following individuals comprise the Cucamonga Crosswalls Project Pollution Prevention Team and are responsible for development, implementation, and maintenance of this SWPPP:

Table 1: Pollution Prevention Team

Name	Role	Phone Number
Roko Grbic	Plan Coordinator	(310) 748-5654
Mile Grbic	Alternate Coordinator	(310) 748-9254

2.2 Site Operations and Land Use

A number of water conservation structures have been installed in the Cucamonga Wash to capture storm water flows to allow for percolation back into the groundwater basin. These structures include a series of crosswalls constructed of gabions (wire cages filled with rock). The crosswalls, which are located north of Cucamonga Dam, are in need of repair and de-silting.

The purpose of the Project is to repair the existing crosswalls used for water conservation. The Project involves the excavation and removal of approximately 200,000 cubic yards of aggregate material (rock, gravel, and sand). The excavated material will be loaded into haul trucks and hauled to the stockpile location just south of the Cucamonga Dam. Currently, there is approximately 200,000 cubic yards of material stockpiled at this location from previous projects. This material, along with the material hauled down from the Cucamonga Crosswalls Project, will be processed at the site using portable screens and/or crushers and sold to contractors, landscape companies, etc. for use on their projects.

The site is almost entirely pervious. There are very little impervious surfaces (paved areas, buildings, etc.).

Activities that may contribute pollutants to stormwater at the Project site are described below:

Crosswall Repair and Desilting
Material behind the crosswalls will be excavated using heavy equipment (dozer, excavator, etc.).

Material Processing and Storage
Material removed from behind the crosswalls will undergo crushing, screening, material conveying, and stockpiling.

Equipment Fueling / Fuel Storage
Equipment will be filled by an on-site fuel tank or by a mobile fueler.

Equipment Maintenance
Equipment will not undergo routine maintenance while at the site. However, if equipment needs repair, it may be necessary to conduct maintenance activities at the site.

Vehicle Parking
Vehicles and equipment will be parked when not in use.

Unpaved Roads
There are various unpaved roads throughout the site.

2.3 Site Description and Drainage Characteristics

The project site is located in the Cucamonga Wash, north of the 210 freeway.

Water that flows down the Wash flows past the crosswalls and is held behind the Cucamonga Dam.

The processing and stockpile storage area is located south of the dam. Water from this area collects in desilting basins at the south end of the site. Under normal conditions, there is no storm water discharge from the site.

The locations of the crosswall repair, haul routes, and processing area are shown on the Site Plan (Figure 2).

2.3.1 Drainage Area

This Project site consists of one (1) drainage area (DA-1). Drainage from the northern portion of the site is held behind Cucamonga Dam. Drainage from the southern portion of the site collects in settling ponds. Under normal circumstances, there is no storm water discharge from the site.

Industrial activities that occur in DA-1 include:

- Crosswall repair and desilting.
- Aggregate material hauling.
- Aggregate material processing and storage.
- Equipment fueling / fuel storage.
- Equipment maintenance.
- Vehicle parking.
- Unpaved roads.

2.3.2 Outfalls

As discuss above, there is no storm water outfall from the site.

3.0 POTENTIAL SOURCES OF POLLUTION

The following sources have the potential to add pollutants to storm water.

3.1 Crosswall Repair and Desiliting

Crosswall repair and desilting involves removing material using heavy equipment (dozer, excavator, etc.) and loading it into trucks for deliver to the processing area. Potential sources of pollution include the following:

- Suspended solids from material removal and handling processes
- Oil and grease from vehicle and equipment operation.

3.2 Aggregate Material Hauling

Material will be hauled from the crosswalls to the processing area by haul trucks. Potential sources of pollution include the following:

- Oil, grease, and other fluids from equipment.
- Suspended solids associated with material from the haul trucks.

3.3 Material Processing and Storage

Materials are processed in a portable plant where they undergo crushing, screening, material conveying, and stockpiling. Potential sources of pollution include the following:

- Suspended solids from material processing and stockpiling.
- Oil and grease from vehicle and loader operation.

3.4 Equipment Fueling / Fuel Storage

A potential source of pollution includes diesel fuel spilled during equipment refueling and fuel transfer operations.

3.5 Equipment Maintenance

Equipment repairs are conducted at the site as necessary. Potential sources of pollution include the following:

- Oil, grease, and other fluids from equipment.
- Suspended solids associated with dirt from equipment.

3.6 Vehicle Parking

Vehicles and equipment will be parked when not in use. Potential sources of pollution may include the following:

- Oil, grease, fuel or other fluids from various vehicles.
- Suspended solids associated with road dust.

3.7 Unpaved Roads

There are various unpaved roads throughout the site. Potential sources of pollution may include the following:

- Oil, grease, fuel or other fluids from various vehicles.
- Suspended solids associated with road dust.

3.8 Summary of Potential Pollutant Sources and Best Management Practices

The following table summarizes the potential pollutant sources present at the Project site.

Table 3: Summary of Potential Pollutant Sources and Best Management Practices

Source	Activity	Outfall	Pollutants	Best Management Practices
Crosswall repair and desilting (DA-1)	- Removing material from behind crosswalls - Material loading - Mobile equipment use	None	- Diesel - Oil and grease - TSS	- Good housekeeping - Preventive maintenance - Spill response - Inspections
Aggregate material hauling (DA-1)	- Hauling aggregate material	None	- Diesel - Oil and grease - TSS	- Good housekeeping - Preventive maintenance - Spill response - Inspections
Material processing and storage (DA-1)	- Crushing, sizing and sorting of aggregate material - Material stockpiling - Mobile equipment usage	None	- Diesel - Oil and grease - TSS	- Good housekeeping - Preventive maintenance - Spill response - Inspections
Equipment fueling / fuel storage (DA-1)	- Fueling equipment	None	- Diesel	- Good housekeeping - Preventive maintenance - Spill response - Material handling and storage - Inspections
Equipment maintenance (DA-1)	- Maintenance and repair of equipment	None	- Oil and grease - TSS	- Good housekeeping - Preventive maintenance - Spill response - Material handling and storage - Inspections
Vehicle parking (DA-1)	- Vehicle parking	None	- Diesel - Gasoline - Oil and grease - TSS	- Good housekeeping - Preventive maintenance - Spill response - Inspections
Unpaved roads (DA-1)	- Mobile equipment usage	None	- Diesel - Oil and grease - TSS	- Good housekeeping - Inspections

3.9 List of Significant Materials

Significant materials that are handled or stored at the Project site include the following:

- **Aggregate material** is processed and stored in various areas throughout the site. These materials have the potential to cause elevated TSS concentrations in storm water runoff.
- **Diesel fuel** is used to fuel mobile equipment that travels throughout the site. Diesel has the potential to enter storm water runoff.
- **Vehicle fluids** are used in mobile equipment that travels throughout the site. Maintenance fluids have the potential to cause elevated oil and grease concentrations in storm water runoff.

4.0 HAZARDOUS MATERIAL RELEASES

This Project has not experienced a discharge in excess of the reportable quantity. There have been no significant spills or leaks of toxic or hazardous pollutants to storm water as part of this Project.

5.0 STRUCTURAL BEST MANAGEMENT PRACTICES (BMPS)

Structural BMPs at the Project site are in place to control erosion and prevent sediment and pollutants from being discharged. This includes erosion and sediment control BMPs as well as other structural BMPs such as secondary containment structures. Each of these is discussed in more detail in the following sections.

5.1 Erosion and Sediment Control BMPs

Increased erosion occurs when water moves swiftly over slopes with high erosion potential. Sediment controls allow sediment to settle out of storm water prior to discharge. Erosion and sediment control structures in place at the site are listed below:

- **Crosswalls** – The crosswalls slow the speed of the water minimizing the potential for erosion and allow sediment to settle out of storm water.

- **Cucamonga Dam** – The Cucamonga Dam holds storm water allowing sediment to settle out and limits the potential for storm water discharges from the site.

- **Settling Ponds –** The settling ponds on the southern portion of the site collect storm water which allows sediment to settle out and limits the potential for storm water discharges from the site.

5.2 Other Existing Structural BMPs

As this is a temporary project, there are no other existing structural BMPs in place at the site.

6.0 NON-STRUCTURAL BEST MANAGEMENT PRACTICES (BMP)

6.1 Pollution Prevention Team

GRB Equipment has designated a Pollution Prevention Team. Members of the Team have primary responsibility for storm water pollution prevention. The Team members have the training and understanding to effectively implement the storm water pollution prevention functions.

The Pollution Prevention Team is presented in Table 1.

6.2 Preventive Maintenance

Preventive maintenance is routinely practiced during the Project and includes inspections of machinery and vehicles to ensure that they are in good operating condition. Machinery and vehicles are maintained on a routine basis to minimize the possibility of contamination or storm water runoff.

Maintenance activities related to storm water pollution will be documented. Documentation will include the date, maintenance performed, location, and further action required.

6.3 Sediment and Erosion Prevention

The following general principles are followed to control erosion and sedimentation in areas of exposed soils:

- **Inspection and Maintenance -** The site is inspected quarterly and during rain events. These inspections are recorded on inspection forms. Corrective measures are promptly initiated if significant erosion is identified.

- **Wind Erosion Control -** Where there is evidence of wind driven dust (e.g., sand loading/unloading areas, unpaved vehicle access road and parking areas, etc.) watering or other dust suppressant methods are applied to roadways, in sufficient quantities and frequencies to maintain a stabilized surface. Excluded are any areas that are inaccessible to watering vehicles due to excessive slope or other safety conditions.

6.4 Good Housekeeping

Good housekeeping practices are followed at the Project site. The Plan Coordinator is responsible for implementing good housekeeping practices. Housekeeping practices to control contamination of storm water runoff include:

- **Material Handling Areas** – These areas are inspected and maintained to reduce the potential for pollutants to contaminate storm water discharges.

- **Trash and Debris** – Trash receptacles (dumpsters and waste containers) are placed at appropriate locations and emptied regularly. In addition, trash receptacles are covered to prevent exposure to storm water.

- **Boneyard Areas** – Storage of obsolete equipment, inoperable vehicles, surplus materials and other items not required for the day-to-day operation of the Project present a potential source of hydrocarbons, heavy metals, hydraulic fluids and other storm water pollutants. Therefore, these items will not be stored at the site.

- **Vehicle Maintenance Area** – After maintenance is conducted on vehicles and equipment, the area where the maintenance was performed will be inspected and cleaned up to minimize storm water contact with pollutants.

- **Machinery** – Machinery is a potential source of oil and grease, solvents, fuels, hydraulic fluids and metals. Machinery will be maintained to remove accumulated oil and grease and minimize the potential for equipment failure.

- **Vehicles** – Vehicles present a potential source of oil, fuel, antifreeze, hydraulic fluid, and other significant storm water pollutants. Drip pans are placed under the crankcase and transmissions of leaking parked vehicles. Proper cleanup and disposal of leaked material will be completed upon discovery.

- **Storage Tanks and Bins** – Materials stored in aboveground tanks are a potential source of storm water pollutants. Tanks should be closed on top and should have secondary containment. Rainfall collected in secondary containment will either be recycled or tested prior to discharge or disposal. Tank levels will be gauged prior to material deliveries to prevent overfilling.

6.5 Spill Prevention and Response

Spill prevention measures in place at the Project site include:

- Maintaining spill control and recovery equipment.
- Using on-site equipment to contain spills.
- Ensuring that the secondary containment is used when large quantities of hazardous materials are stored at the site.
- Training personnel in spill prevention and response.
- Performing periodic inspections.

6.6 Pollution Prevention

During the Project, efforts will be taken to minimize storm water runoff contact with hazardous materials. Management measures include:

- Covering materials stored outside that have a potential to impact storm water runoff.
- Ensuring leakage from fuel transfer operations are minimized and/or eliminated.
- Ensuring inspections, maintenance, and good housekeeping practices are implemented.

Additional storm water management practices may be adopted if elevated contaminant levels are found in the discharge during implementation of the monitoring program. Data will be collected as described in Section 7.3 to identify levels of pollutants and demonstrate whether additional management practices are necessary.

6.7 Training

Effective management of storm water pollution requires Project staff to be alert to conditions that may cause storm water pollution. Affected employees are trained in the storm water program at the time of hire and annually in conjunction with other training. Training consists of a review of this SWPPP as it relates to the area in which the employee works including:

- Requirements of the SWPPP;
- Onsite erosion and sediment control structures and their maintenance requirements;
- Spill response and reporting procedures;
- Good housekeeping;
- Material management practices; and
- Proper fueling and storage procedures.

The occurrence and attendance of training sessions will be documented and maintained in Appendix D. Pollution Prevention Team members (see Table 1) are to be familiar with this Plan as well as the inspection and sampling requirements described in Section 7.

6.8 Record Keeping and Internal Reporting

Current record keeping and internal reporting practices are discussed in Section 7.

7.0 STORM WATER MONITORING PROGRAM

7.1 Program Objectives

This Monitoring Program has been developed as part of the SWPPP to:

- Ensure that storm water discharges are in compliance with discharge prohibitions and receiving water limitations.
- Ensure practices used at the Project site to reduce or prevent pollutants in storm water discharges are and authorized non-storm water discharges are evaluated and revised to meet changing conditions.
- Aid in the implementation and revision of the SWPPP.
- Measure the effectiveness of best management practices (BMPs) to prevent or reduce pollutants in of storm water discharges and authorized non-storm water discharges.

The following forms are provided in Appendix E for recording visual inspections and sampling activities:

Form 1	Sampling and Analysis Results
Form 2	Quarterly Visual Observations of Authorized Non-Storm Water Discharges
Form 3	Quarterly Visual Observations of Unauthorized Non-Storm Water Discharges
Form 4	Monthly Visual Observations of Storm Water Discharges
Form 5	Annual Comprehensive Site Compliance Evaluation Form (ACSCE)

7.2 Inspection Program

The objective of the inspection program is to characterize the quality of the storm water associated with industrial activities. The inspection program includes:

- Quarterly non-storm water discharge inspections
- Monthly storm water discharge inspections
- Sampling and analysis of two storm water discharge events
- Annual Comprehensive Site Compliance Evaluation

Record keeping forms are included in Appendix E.

7.2.1 Non-Storm Water Visual Inspections

Visual observations will be made on a quarterly basis, within 6 to 18 weeks of each other, in each of the following periods: January–March, April–June, July–September, and October–December. Visual inspections of the drainage area shall be conducted to detect the presence of unauthorized non-storm water discharges and determine the condition of authorized non-storm water discharges. Visual observations will be made of authorized and unauthorized non-storm water discharges and their sources. Authorized non-storm water discharges known to exist at the site include springs that may flow year round. Visual observations shall document the presence of stains, odors, floating objects or other abnormal conditions, as well as the source of the discharge. Observations will be made during scheduled Project operating hours. The inspections will be recorded on Forms 2 and 3, located in Appendix E.

The person conducting the visual inspections will note:

- The inspector's name, title, and signature.
- The drainage location.
- The date and time of the inspection.
- A description of non-storm water discharges.

7.2.2 Storm Water Visual Inspections

During the wet season (October 1 - May 30), visual observations of storm water discharges will be made during the first hour of one storm event per month that is preceded by three working days of dry weather and produces a discharge. Observations will be made of all stored or contained storm water at the time of discharge. If pollutants are observed, they must be described. The inspections will be recorded on Form 4, located in Appendix E.

The person conducting the visual inspections will note:

- The inspector's name, title, and signature.
- The drainage location description.
- The date and time of the inspection.
- The date and time discharge began.
- Whether or not pollutants were observed and, if they were, a description of them.

7.3 Sampling Program

During the wet season (October through May) each year, samples will be collected from the first storm event and one other storm event that produce significant discharge and are preceded by three working days of dry weather. Samples will be collected during the first hour of discharge. If the first hour of discharge is not during Project operating hours, samples do not need to be taken. If samples cannot be collected during the first hour of discharge the sampling should be delayed to a storm later in the season and the reasons for not obtaining the samples should be documented and filed for future reference.

7.3.1 Sampling Locations

Samples will be taken at the location of the storm water discharge from the site.

7.3.2 Sampling Methods

Sampling will consist of grab samples from a storm event that produces discharge preceded by at least 72 hours of dry weather provided that flow exists at the outfall.

Procedure for Obtaining a Grab Sample: A plastic scoop or the sample containers may be used to collect storm water samples. If a scoop is used, it should be decontaminated between each sampling location using the decontamination procedure described in Appendix F. Samples should be obtained using the following procedure:

1. Collect grab samples from where storm water leaves the site using the appropriate container (see Table 5). Ensure that the sample is free of excess debris (i.e. leaves, paper fragments, etc.). Fill the container to the top.
2. Some sample containers may contain a small amount of preservative. Be sure not to lose the preservative when transferring the sample into the container.
3. Label all samples with the following information:

Company Name	Date Sampled
Time Sampled	Collection Point
Sample Description	Preservative
Analysis Required	Special Requirements

4. The closed bottle may be sealed with custody tape which can be obtained from the test lab with the sample bottles. Do not seal the bottles with other tapes (scotch, duct, cellophane, etc.) as organic material from the tape may contaminate the sample.
5. Complete a Chain-of-Custody form recording all pertinent information including the information listed above and the signature of the person taking the sample. Chain-of-Custody forms will be furnished by the test lab.
6. Chill the samples to 4°C (40°F) until the samples are delivered to the laboratory. Do not freeze the samples.

7.3.3 Analytical Methods

Analysis will be performed for potential pollutants based on the evaluation of the industrial activities at the site. The pollutants to be monitored and the associated analytical methods are listed in Table 5. All laboratory analysis shall be conducted by a laboratory certified by the State Department of Health Services.

Table 5: Sampling Requirements for All Outfalls

Potential Pollutant	Analytical Method	Detection Limit (mg/L)	Sample Type	Sample Container	Preservative	Other
Oil and grease (O&G)	413.1	1.0	Grab	1 liter amber glass	HCl or H_2SO_4	Cool to 4°C (40°F)
Total suspended solids (TSS)	160.2	1.0	Grab	1 liter plastic	None	Cool to 4°C (40°F)
pH	150.1	n/a	Grab	1 liter plastic	None	Cool to 4°C (40°F)
Specific conductance	120.1	n/a	Grab	1 liter plastic	None	Cool to 4°C (40°F)
Nitrate/nitrite nitrogen (N+N)	351.1	1.0	Grab	1 liter plastic	None	Cool to 4°C (40°F)

7.3.4 Data Analysis

Analytical results from each storm event will be tabulated on Form 1 for data analysis and kept in Appendix E. Laboratory reports will be kept in Appendix G.

7.3.5 Quality Assurance/Quality Control (QA/QC)

Field and laboratory quality assurance procedures are required in order to produce accurate and valid storm water monitoring results. As part of the QA/QC protocol, Chain-of-Custody forms will be prepared for all samples collected during the storm water event. The Chain-of-Custody forms document the possession and the responsibility for the sample from sample collection through sample analysis. All personnel responsible for the sample will sign, date and retain one copy of the form. The test laboratory will receive the original form along with the sample. All samples will be submitted to a laboratory that is certified by the State of California Department of Health Services.

7.3.6 Exceptions

In no case should any employee put himself or herself in danger to take sample or conduct inspections. If performing visual inspections or collecting the required samples is rendered impossible due to adverse climatic conditions or other reasons, a description of why the sampling or visual inspections could not be conducted, including the documentation of all significant storm water discharge events shall be submitted within the annual report.

7.4 Reporting

The purpose of maintaining and establishing the following records is to evaluate the effectiveness of the BMPs and to monitor the effluent quality. The records listed below must be on file to document compliance with the General Industrial NPDES Permit No. CAS000001.

7.4.1 Record Keeping

The following will be retained for at least 5 years on-site and made available for inspection if requested:

- Sampling and Analysis Results (Form 1)
- Quarterly Visual Observation of Non-Storm Water Discharges (Forms 2 and 3)
- Monthly Visual Observations of Storm Water Discharges (Form 4)
- Annual Comprehensive Site Compliance Evaluation (Form 5)

7.4.2 Annual Comprehensive Site Compliance Evaluation (ACSCE)

An ACSCE of the Project site will be conducted every year and will be submitted as part of the annual report by July 1 of each year. The ACSCE is performed to evaluate whether the best management practices defined in Sections 5 and 6 are adequate and properly implemented or if additional control measures are needed.

The findings of this inspection will be recorded on Form 5, located in Appendix E, and will include (as necessary):

- Date, place and time of the inspections, sampling and visual observations.
- Who performed the inspections, sampling and visual observations.
- Records of corrective actions and follow-up activities that resulted from the inspections.
- Date and approximate time of sampling.
- Analytical results, method detection limits, and the techniques or methods used.
- Quality assurance/control records (e.g. chain of custody forms).
- Review of sampling and analysis results.
- Calibration and maintenance records of on-site instruments (if used).
- Visual inspection of potential pollutant sources for evidence of pollutants leaving the site.
- Review and evaluation of Best Management Practices (BMPs) to determine whether the BMPs are adequate, properly implemented and maintained, and whether additional BMPs are needed; including a visual inspection of equipment needed to implement the SWPPP.
- Necessary SWPPP revisions.
- Incidents of noncompliance and the corrective actions taken.
- Certification that the Project site is in compliance with the NPDES Permit No. CAS000001 or an explanation of why the Project is not in compliance with this Permit.

The completed ACSCE and Annual Report must be maintained with the SWPPP for five (5) years.

7.4.3 Annual Report

An annual report must be prepared by July 1st of each year and submitted to the Regional Water Quality Control Board (RWQCB). The report must include the following:

- Sampling and Analysis Results (Form 1)
- Quarterly Visual Observation of Non-Storm Water Discharges (Forms 2 and 3)
- Monthly Visual Observations of Storm Water Discharges (Form 4)
- Annual Comprehensive Site Compliance Evaluation (Form 5)

8.0 ADMINISTRATION

8.1 Notification of Non-Compliance

If the Project cannot certify compliance with the Permit, a notification must be made to the RWQCB identifying:

- The type(s) of non-compliance.
- The actions necessary to achieve compliance.
- A time schedule indicating when compliance will be achieved.

The verbal notification shall be made as soon as possible and a written report shall be submitted within 30 days of the identification of non-compliance.

8.2 Plan Revision

Based on the annual report and Project operations, the sampling location and the list of analyses may be modified according to the previous findings and changes in the Project operation. The revised plan will be retained on site, and made available upon request, to a representative of the RWQCB.

8.3 Public Viewing

The SWPPP is available for public review by contacting a GRB Equipment Rental representative (see Section 2.1) during normal business hours at (310) 748-5654.

9.0 SUMMARY OF COMPLIANCE REQUIREMENTS

The following list summarizes the storm water compliance requirements at the Project site:

- Maintain BMPs to reduce impacts to storm water.
- During the storm water compliance year (July 1 – June 30), conduct quarterly non-storm water visual inspections to detect the presence of authorized and unauthorized non-storm water discharges and their sources. The inspections shall be recorded on Forms 2 and 3, Appendix E.
- During the wet season (October - May), conduct a visual inspection during the first hour of one storm event per month that produces a discharge. The inspections shall be recorded on Form 4, Appendix E.
- During the wet season, take at least two samples for potential pollutants from the outfall during the first hour of discharge and have them analyzed for the potential pollutants listed in Table 5. Sampling activities must be recorded on Form 1, Appendix E.
- An ACSCE of the Project site shall be conducted in June of each year using Form 5, Appendix E.
- Submit an annual report by July 1 of each year to the Executive Officer of the RWQCB.

10.0 CERTIFICATION

10.1 Project Identification

Name of Project: Cucamonga Crosswalls Project

Type of Project: Aggregate Material Processing

Location of Project: Cucamonga Wash

Designated person(s) accountable for Storm Water Pollution Prevention at this Project site are shown in Table 1.

10.2 Required EPA Assurance of Accuracy

CERTIFICATION
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Certified by,

Mile Grbic
GRB Equipment Rental

Date

FIGURES

0 1,000 2,000 4,000 Feet

1 inch = 2,000 feet

S:\GR05 - GRB Equipment\Crosswalls\GR05-06-03-Location Map.mxd

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(805) 275-1515 WWW.Sespeconsulting.com

CUCAMONGA CROSSWALLS PROJECT

Location Map

Desilt & Crosswall Repair

Approximate Project Boundary

Rock Truck Haul Route

Stockpile/Processing Location

Cucamonga Dam

Truck Haul Route

20 th ST

210 FWY

210 FWY

bing

Image courtesy of USGS © 2013 Microsoft Corporation Image courtesy of LaRC-LAC

0 400 800 1,600 Feet

1 inch = 800 feet

S:\GR05 - GRB Equipment\Crosswalls\GR05-06-03-Location Map.mxd

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CUCAMONGA CROSSWALLS PROJECT

Site Plan

APPENDIX A

NOTICE OF INTENT

APPENDIX B

NPDES GENERAL PERMIT 97-03-DWQ

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

To: STORM WATER DISCHARGER

SUBJECT: CHECKLIST FOR SUBMITTING A NOTICE OF INTENT

In order for the State Water Resources Control Board to expeditiously process your Notice of Intent (NOI), the following items must be submitted to either of the addresses indicated below:

1._____ NOI (please keep a copy for your files) with all applicable sections completed and original signature of the facility operator;

2._____ Check made out to the "State Water Resources Control Board" with the appropriate fee. The total annual fee is $**1359.00.**

3. _____ Site Map of the facility (see NOI instructions). DO NOT SEND BLUEPRINTS

U.S. Postal Service Address

State Water Resources Control Board
Division of Water Quality
Attn: Storm Water Section
P.O. Box 1977
Sacramento, CA 95812-1977

Overnight Mailing Address

State Water Resources Control Board
Division Of Water Quality
Attn: Storm Water, 15th Floor
1001 I Street
Sacramento, CA 95814

NOIs are processed in the order they are received. A NOI receipt letter will be mailed to the facility operator within approximately two weeks. Incomplete NOI submittals will be returned to the facility operator within the same timeframe and will specify the reason(s) for return. If you need a receipt letter by a specific date (for example, to provide to a local agency), we advise that you submit your NOI thirty (30) days prior to the date the receipt letter is needed.

Please do not call us to verify your NOI status. A copy of your NOI receipt letter will be available on our web page within twenty-four (24) hours of processing. Go to https://smarts.waterboards.ca.gov and click on View SW data. If you have any questions regarding this matter, please contact us at 1-866-563-3107 or stormwater@waterboards.ca.gov

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BACKGROUND

In 1972, the Federal Water Pollution Control Act (also referred to as the Clean Water Act [CWA]) was amended to provide that the discharge of pollutants to waters of the United States from any point source is effectively prohibited unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p) that establishes a framework for regulating municipal and industrial storm water discharges under the NPDES Program. On November 16, 1990, the U.S. Environmental Protection Agency (U.S. EPA) published final regulations that establish application requirements for storm water permits. The regulations require that storm water associated with industrial activity (storm water) that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit.

U.S. EPA developed a four-tier permit issuance strategy for storm water discharges associated with industrial activity as follows:

Tier I, Baseline Permitting--One or more general permits will be developed to initially cover the majority of storm water discharges associated with industrial activity.

Tier II, Watershed Permitting--Facilities within watersheds shown to be adversely impacted by storm water discharges associated with industrial activity will be targeted for individual or watershed-specific general permits.

Tier III, Industry-Specific Permitting--Specific industry categories will be targeted for individual or Industry-specific general permits.

Tier IV, Facility-Specific Permitting--A variety of factors will be used to target specific facilities for individual permits.

The regulations allow authorized states to issue general permits or individual permits to regulate storm water discharges.

Consistent with Tier I, Baseline Permitting, of the U.S. EPA permitting strategy, the State Water Board issued a statewide General Permit on November 19, 1991 that applied to all storm water discharges requiring a permit except construction activity. The monitoring requirements of this General Permit were amended September 17, 1992. A separate statewide general permit has been issued for construction activity.

To obtain authorization for continued and future storm water discharge under this General Permit, each facility operator must submit a Notice of Intent (NOI). This approach is consistent with the four-tier permitting strategy described in Federal regulations, i.e., Tier 1, Baseline Permitting. Tier 1, Baseline Permitting, enables the State to begin reducing pollutants in industrial storm water in the most efficient manner possible.

This General Permit generally requires facility operators to:

1. Eliminate unauthorized non-storm water discharges;
2. Develop and implement a storm water pollution prevention plan (SWPPP); and
3. Perform monitoring of storm water discharges and authorized non-storm water discharges.

TYPES OF STORM WATER DISCHARGES COVERED BY THIS GENERAL PERMIT

This General Permit is intended to cover all new or existing storm water discharges and authorized non-storm water discharges from facilities required by Federal regulations to obtain a permit including those (1) facilities previously covered by the San Francisco Bay Regional Water Quality Control Board Order No. 92-011 (as amended by Order No. 92-116), (2) facilities designated by the Regional Water Quality Control Boards (Regional Water Boards), (3) facilities whose operators seek coverage under this General Permit, (4) and facilities required by future U.S. EPA storm water regulations.

The General Permit is intended to cover all facilities described in Attachment 1, whether the facility is primary or is auxiliary to the facility operator's function. For example, although a school district's primary function is education, a facility that it operates for vehicle maintenance of school buses is a transportation facility that is covered by this General Permit.

The definition of "storm water associated with industrial activity" is provided in Attachment 4, Definition 9, of this General Permit. Facilities that discharge storm water associated with industrial activity requiring a General Permit are listed by category in 40 Code of Federal Regulations (CFR) Section 122.26(b)(14) (Federal Register, Volume 55 on

Pages 48065-66) and in Attachment 1 of this General Permit. The facilities can be publicly or privately owned. General descriptions of these categories are:

1. Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR Subchapter N);

2. Manufacturing facilities;

3. Mining/oil and gas facilities;

4. Hazardous waste treatment, storage, or disposal facilities;

5. Landfills, land application sites, and open dumps that receive industrial waste;

6. Recycling facilities such as metal scrap yards, battery reclaimers, salvage yards, automobile yards;

7. Steam electric generating facilities;

8. Transportation facilities that conduct any type of vehicle maintenance such as fueling, cleaning, repairing, etc.;

9. Sewage treatment plants;

10. Construction activity (covered by a separate general permit); and

11. Certain facilities (often referred to as "light industry") where industrial materials, equipment, or activities are exposed to storm water.

For the most part, these facilities are identified in the Federal regulations by a Standard Industrial Classification (SIC).

<u>Category 1 Dischargers</u>

The following categories of facilities currently have storm water effluent limitation guidelines for at least one of their subcategories. They are cement manufacturing (40 CFR Part 411); feedlots (40 CFR Part 412); fertilizer manufacturing (40 CFR Part 418); petroleum refining (40 CFR Part 419); phosphate manufacturing (40 CFR Part 422); steam electric power generation (40 CFR Part 423); coal mining (40 CFR Part 434); mineral mining and processing (40 CFR Part 436); ore mining and dressing (40 CFR Part 440); and asphalt emulsion (40 CFR Part 443). A facility operator whose facility falls into one of these general categories should examine the effluent guidelines to determine if the facility is categorized in one of the subcategories that have storm water effluent guidelines. If

a facility is classified as one of those subcategories, that facility is subject to the standards listed in the CFR for that category and is subject to this General Permit. This General Permit contains additional requirements (see Section B.6.) for facilities with storm water effluent limitations guidelines.

Category 5 Dischargers

Inactive or closed landfills, land application sites, and open dumps that have received industrial wastes (Category 5) may be subject to this General Permit unless the storm water discharges from the sites are already regulated by an NPDES permit issued by the appropriate Regional Water Board. Facility operators of closed landfills that are regulated by waste discharge requirements (WDRs) may be required to comply with this General Permit. In some cases, it may be appropriate for closed landfills to be covered by the State Water Board's General Permit during closure activities. The Construction Activities General Permit should cover new landfill construction. Facility operators should contact their Regional Water Board to determine the appropriate permit coverage.

Category 10 Dischargers

Facility operators of Category 10 (light industry) facilities are not subject to this General Permit if they can certify that the following minimum conditions at their facilities are met:

1. All prohibited non-storm water discharges have been eliminated or otherwise permitted.

2. All areas of past exposure have been inspected and cleaned, as appropriate.

3. All materials related to industrial activity (including waste materials) are not exposed to storm water or authorized non-storm water discharges.

4. All industrial activities and industrial equipment are not exposed to storm water or authorized non-storm water discharges.

5. There is no exposure of materials associated with industrial activity through other direct or indirect pathways such as particulates from stacks and exhaust systems.

6. There is periodic re-evaluation of the facility to ensure Conditions 1, 3, 4, and 5 are continuously met.

Currently, facility operators that can certify that the above conditions are met are not required to notify the State Water

Board or Regional Water Board. These facility operators are advised to retain such certification documentation on site.

The Ninth Circuit Court of Appeals invalidated the exemption granted by U.S. EPA for storm water discharges from facilities in Category 11 that do not have exposure and remanded the regulation to U.S. EPA for further action. The State Water Board, at this time, is not requiring storm water discharges from facilities in Category 11 that do not have exposure to be covered by this General Permit. Instead, the State Water Board will await future U.S. EPA or court action clarifying the types of storm water discharges that must be permitted. If necessary, the State Water Board will reopen the General Permit to accommodate such a clarification.

Section 1068 of the Intermodal Surface Transportation Act of 1991 exempts municipal agencies serving populations of less than 100,000 from Phase I permit requirements for most facilities they operate (uncontrolled sanitary landfills, power plants, and airports are still required to be permitted in Phase I). Phase II of the Permit Program scheduled to begin August 7, 2001 will cover the facilities that are exempt from Phase I permit requirements.

TYPES OF DISCHARGES NOT COVERED BY THIS GENERAL PERMIT

1. CONSTRUCTION ACTIVITY: Discharges from construction activity of five acres or more, including clearing, grading, and excavation. A separate general permit was adopted on August 20, 1992 for this industrial category.

2. FACILITIES WHICH HAVE NPDES PERMITS CONTAINING STORM WATER PROVISIONS: Some storm water discharges may be regulated by other individual or general NPDES permits issued by the State Water Board or the Regional Water Boards. This General Permit shall not regulate these discharges. When the individual or general NPDES permits for such discharges expire, the State Water Board or Regional Water Board may authorize coverage under this General Permit or another general NPDES permit, or may issue a new individual NPDES permit consistent with the Federal and State storm water regulations. Interested parties may petition the State Water Board or appropriate Regional Water Board to issue individual or General NPDES Permits. General Permits may be issued for a particular industrial group or watershed area.

3. FACILITIES DETERMINED INELIGIBLE BY REGIONAL WATER BOARDS: Regional Water Boards may determine that discharges from a facility or groups of facilities, otherwise eligible for coverage under this General Permit, have potential water quality impacts that may not be appropriately addressed by

this General Permit. In such cases, a Regional Water Board may require such discharges to be covered by an individual or general NPDES permit. Interested persons may petition the appropriate Regional Water Board to issue individual NPDES permits. The applicability of this General Permit to such discharges will be terminated upon adoption of an individual NPDES permit or a different general NPDES permit.

4. FACILITIES WHICH DO NOT DISCHARGE STORM WATER TO WATERS OF THE UNITED STATES: The discharges from the following facilities are not required to be permitted:

   a. FACILITIES THAT DISCHARGE STORM WATER TO MUNICIPAL SANITARY SEWER SYSTEMS: Facilities that discharge storm water to municipal sanitary sewer systems or combined sewer systems are not required by Federal regulations to be covered by an NPDES storm water permit or to submit an NOI to comply with this General Permit. (It should be noted that many municipalities have sewer use ordinances that prohibit storm drain connections to their sanitary sewers.)

   b. FACILITIES THAT DO NOT DISCHARGE STORM WATER TO SURFACE WATERS OR SEPARATE STORM SEWERS: Storm water that is captured and treated and/or disposed of with the facility's NPDES permitted process wastewater and storm water that is disposed of to evaporation ponds, percolation ponds, or combined sewer systems are not required to obtain a storm water permit. To avoid liability, the facility operator should be certain that no discharge of storm water to surface waters would occur under any circumstances.

5. MOST SILVICULTURAL ACTIVITIES: Storm water discharges from most silvicultural activities such as thinning, harvesting operations, surface drainage, or road construction and maintenance are exempt from this permit. Log sorting or log storage facilities that fall within SIC 2411 are required to be permitted.

6. MINING AND OIL AND GAS FACILITIES: Oil and gas facilities that have not released storm water resulting in a discharge of a reportable quantity (RQ) for which notification is or was required pursuant to 40 CFR Parts 110, 117, and 302 at any time after November 19, 1987 are not required to be permitted unless the industrial storm water discharge contributed to a violation of a water quality standard. Mining facilities that discharge storm water that does not come into contact with any overburden, raw materials, intermediate product, finished product, by-product, or waste product located at the facility are not required to be permitted. These facilities must be permitted if they have a new release of storm water resulting in a discharge of an RQ.

7. FACILITIES ON INDIAN LANDS: the U.S. EPA will regulate Discharges from facilities on Indian lands.

NOTIFICATION REQUIREMENTS

Storm water discharges from facilities described in the section titled "Types of Storm Water Discharges Covered by This General Permit" must be covered by an NPDES permit. An NOI must be submitted by the facility operator for each individual facility to obtain coverage. Certification of the NOI signifies that the facility operator intends to comply with the provisions of the General Permit. Facility operators who have filed NOIs for the State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) or San Francisco Bay Regional Water Board Order No. 92-011 (as amended by Order No. 92-116) will be sent an abbreviated NOI soon after adopting this General Permit that must be completed and returned within 45 days of receipt. Where operations have discontinued and significant materials remain on site (such as at closed landfills), the landowner may be responsible for filing an NOI and complying with this General Permit. A landowner may also file an NOI for a facility if the landowner, rather than the facility operator(s), is responsible for compliance with this General Permit.

A facility operator that does not submit an NOI for a facility must submit an application for an individual NPDES permit. U.S. EPA's regulations [40 CFR 122.21 (a)] exclude facility operators covered by a general permit from requirements to submit an individual permit application unless required by the Regional Water Board. The NOI requirements of this General Permit are intended to establish a mechanism which can be used to establish a clear accounting of the number of facility operators complying with the General Permit, their identities, the nature of operations at the facilities, and location.

All facility operators filing an NOI after the adoption of this General Permit must comply with this General Permit. Existing facility operators who have filed NOIs prior to the adoption of this General Permit shall continue to complete the requirements of the previous General Permit through June 30, 1997 including submitting annual reports to the Regional Water Boards by July 1, 1997. Group Leaders are required to submit a 1996-97 Group Evaluation Report by August 1, 1997.

DESCRIPTION OF GENERAL PERMIT CONDITIONS

Prohibitions

This General Permit authorizes storm water and authorized non-storm water discharges from facilities that are required to be covered by a storm water permit. This General Permit prohibits discharges of material other than storm water (non-storm water discharges) that are not authorized by the General Permit and discharges containing hazardous substances in storm water in excess of reportable quantities established at 40 CFR 117.3 and 40 CFR 302.4. Authorized non-storm water discharges are addressed in the Special Conditions of the General Permit.

Effluent Limitations

NPDES Permits for storm water discharges must meet all applicable provisions of Sections 301 and 402 of the CWA. These provisions require control of pollutant discharges using best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT) to prevent and reduce pollutants and any more stringent controls necessary to meet water quality standards.

U.S. EPA regulations (40 CFR Subchapter N) establish effluent limitation guidelines for storm water discharges from facilities in ten industrial categories. For these facilities, compliance with the effluent limitation guidelines constitutes compliance with BAT and BCT for the specified pollutants and must be met to comply with this General Permit.

For storm water discharges from facilities not among the ten industrial categories listed in 40 CFR Subchapter N, it is not feasible at this time to establish numeric effluent limitations. The reasons why establishment of numeric effluent limitations is not feasible are discussed in detail in State Water Board Orders No. WQ 91-03 and WQ 91-04. Therefore, this General Permit allows the facility operator to implement best management practices (BMPs) to comply with the requirements of this General Permit. This approach is consistent with the U.S. EPA's August 1, 1996 "Interim Permitting Approach for Water Quality Based Effluent Limitations in Storm Water Permits".

Receiving Water Limitations

Storm water discharges shall not cause or contribute to a violation of an applicable water quality standard. The General Permit requires facility operators to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges through the development and implementation of BMPs which constitutes compliance with BAT and BCT and, in most cases, compliance with water quality standards. If receiving water quality standards are exceeded, facility operators are required to submit a written report providing additional BMPs that will be implemented to achieve water quality standards.

Storm Water Pollution Prevention Plans (SWPPPs)

All facility operators must prepare, retain on site, and implement an SWPPP. The SWPPP has two major objectives: (1) to help identify the sources of pollution that affect the quality of industrial storm water discharges and authorized non-storm water discharges, and (2) to describe and ensure the implementation of BMPs to reduce or prevent pollutants in industrial storm water discharges and authorized non-storm water discharges.

This General Permit requires development and implementation of an SWPPP emphasizing BMPs. This approach provides the flexibility necessary to establish appropriate BMPs for different types of industrial activities and pollutant sources. As this General Permit covers vastly different types of facilities, the State Water Board recognizes that there is no single best way of developing or organizing an SWPPP. The SWPPP requirements contain the essential elements that all facility operators must consider and address in the SWPPP. This General Permit's SWPPP requirements are more detailed than the previous general permit's SWPPP requirements, and the suggested order of the SWPPP elements have been rearranged (1) to correspond more closely with other storm water permits in effect throughout the country, and (2) to generally follow a more logical path. Facility operators that have already developed and implemented SWPPPs under previous general permits are required to review the SWPPP's requirements contained in this General Permit and then review their existing SWPPP for adequacy. If the existing SWPPP adequately identifies and assesses all potential sources of pollutants and describes the appropriate BMPs necessary to reduce or prevent pollutants, the facility operator is not required to revise the existing SWPPP.

One of the major elements of the SWPPP is the elimination of unauthorized non-storm water discharges to the facility's storm drain system. Unauthorized non-storm water discharges can be generated from a wide variety of potential pollutant sources. They include waters from the rinsing or washing of vehicles, equipment, buildings, or pavement; materials that have been improperly disposed of or dumped, and spilled; or leaked materials. Unauthorized non-storm water discharges can contribute a significant pollutant load to receiving waters. Measures to control spills, leakage, and dumping can often be addressed through BMPs. Unauthorized non-storm water discharges may enter the storm drain system via conveyances such as floor drains. All conveyances should be evaluated to determine whether they convey unauthorized non-storm water discharges to the storm drain system. Unauthorized non-storm water discharges (even when commingled with storm water) shall be eliminated or covered by a separate NPDES Permit.

There are many non-storm water discharges that, under certain conditions, should not contain pollutants associated with

industrial activity (i.e., air conditioning condensate, potable water line testing, landscaping overflow, etc.). Item D, Special Conditions, provides the conditions where certain listed non-storm water discharges are authorized by this General Permit.

Monitoring Program

The General Permit requires development and implementation of a monitoring program. The objectives of the monitoring program are to (1) demonstrate compliance with the General Permit, (2) aid in the implementation of the SWPPP, and (3) measure the effectiveness of the BMPs in reducing or preventing pollutants in storm water discharges and authorized non-storm water discharges.

All facility operators (with the exception of inactive mining operations) are required to:

1. Perform visual observations of storm water discharges and authorized storm water discharges.

2. Collect and analyze samples of storm water discharges. Analysis must include pH, total suspended solids (TSS), total organic carbon (TOC), specific conductance, toxic chemicals, and other pollutants which are likely to be present in storm water discharges in significant quantities, and those parameters listed in Table D of this General Permit. The Table D parameters are those listed in the U.S. EPA Multi-Sector General Permit. Facility operators subject to Federal storm water effluent limitation guidelines in 40 CFR Subchapter N must also sample and analyze for any pollutant specified in the appropriate category of 40 CFR Subchapter N.

Facility operators are not required to collect samples or perform visual observations during adverse climatic conditions. Sample collection and visual observations are required only during scheduled facility operating hours. Visual observations are required only during daylight hours. Facility operators that are unable to collect any of the required samples or visual observations because of the above circumstances must provide documentation to the Regional Water Board in their annual report.

Facility operators may be exempt from performing sampling and analysis if they: (1) do not have areas of industrial activity exposed to storm water, (2) receive an exemption from a local agency which has jurisdiction over the storm sewer system, or (3) receive an exemption from the appropriate Regional Water Board. Facility operators must always perform sampling and analysis for any pollutant specified in storm water effluent limitation guidelines.

This General Permit contains a new procedure where facility operators, if they meet certain minimum conditions, may certify compliance with the General Permit and reduce the number of

sampling events required to be sampled for the remaining term of the General Permit. Each Regional Water Board may develop instructions, guidance, and checklists to assist facility operators to complete sampling reduction requests.

Local agencies that wish to provide sampling and analysis exemptions or reductions to facility operators within their jurisdiction shall develop a certification program that clearly indicates the certification procedures and criteria used by the local agency. At a minimum, these programs should include site inspections, a review of the facility operator's SWPPP, and a review of other records such as monitoring data, receiving water data, etc. The certification program shall be approved by the local Regional Water Board before implementation.

Alternative Monitoring

Facility operators are required to develop a facility-specific monitoring program that satisfies both the minimum monitoring program requirements and the objectives of the monitoring program. Some facility operators have indicated that cost-effective alternative monitoring programs can be developed that provide equivalent or more accurate indicators of pollutants and/or BMP performance than a monitoring program based upon the minimum monitoring program requirements. An example of such an alternative monitoring program would be one that identifies sample locations at or near pollutant sources rather than sampling an entire drainage area where the storm water discharge has been diluted with storm water from areas with little or no industrial activity.

The State Water Board does not want to preclude facility operators from developing better, and perhaps more cost-effective, monitoring programs. This General Permit allows facility operators to submit alternative monitoring programs for approval by the Regional Water Board. For individual facilities, these proposals must be facility specific and demonstrate how the alternative monitoring program will result in an equivalent or more accurate indicator of pollutants and/or BMP effectiveness. Facility operators with similar industrial activities may also propose alternative monitoring programs for approval by the Regional Water Boards. These proposals must demonstrate how the alternative monitoring program will result in an equivalent or more accurate indicator of pollutants and/or BMP effectiveness for all of the participating facilities.

Facility operators shall continue to comply with the existing monitoring program requirements until receiving approval by the Regional Water Board.

Group Monitoring

Each facility operator may either perform sampling and analysis individually or participate in a group monitoring program. A group monitoring program may be developed either by a group leader representing a group of similar facilities or by a local agency which holds a storm water permit for a municipal separate storm sewer system for industrial facilities within its jurisdiction. The group leader or local agency responsible for the group monitoring program must schedule all participating facilities to sample two storm events over the life of this General Permit. Facility operators subject to Federal effluent limitations guidelines in 40 CFR Subchapter N must individually sample and analyze for pollutants listed in the appropriate Federal regulations.

Participants within a group may be located within the jurisdiction of more than one Regional Water Board. Multi-Regional Water Board groups must receive the approval of the State Water Board Executive Director (with the concurrence of the appropriate Regional Water Boards).

Each group leader or local agency responsible for group sampling must: (1) provide guidance or training so that the monitoring is done correctly, (2) recommend appropriate BMPs to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges from group participants, (3) evaluate and report the monitoring data to the State Water Board and/or the appropriate Regional Water Board(s), and (4) conduct two on-site inspections at each facility over the five year term of this General Permit to evaluate facility compliance and recommend BMPs to achieve compliance with this General Permit. The group leader or local agency may designate, hire, or train inspectors to conduct these inspections that are or are not directly affiliated with the group leader or local agency. It is the group leader's or local agency's responsibility to select inspectors that are capable of evaluating each facility's compliance with the General Permit and can recommend appropriate BMPs. All group monitoring plans are subject to State Water Board and/or Regional Water Board(s) review. Consistent with the four-tier permitting strategy described in the Federal regulations, the Regional Water Board(s) may evaluate the data and results from group monitoring to establish future permitting decisions. As appropriate, the State Water Board and/or the Regional Water Board(s) may terminate or require substantial amendment to the group monitoring plans. The State Water Board and/or the Regional Water Board(s) may terminate a facility's participation in group monitoring or require additional monitoring activities.

Retention of Records

The facility operator is required to retain records of all monitoring information, copies of all reports required by this General Permit, and records of all data used to complete the NOI for a period of five years from the date of measurement, report, or monitoring activity. This period may be extended by the State and/or Regional Water Boards. All records are public documents and must be provided to the Regional Water Boards on request.

Watershed Management

The State and Regional Water Boards are undertaking a focussed effort in watershed management throughout the State. In reissuing this General Permit, the State Water Board recognizes both the evolving nature of watershed management and the long-term desirability of structuring monitoring programs to support the Watershed Management Initiative. Therefore, the amended monitoring and reporting provisions provide flexibility for individual facility operators or groups of facility operators to propose and participate in, subject to Regional Water Board approval, watershed monitoring programs in lieu of some or all of the monitoring requirements contained in this General Permit.

Facility Operator Compliance Responsibilities

This General Permit has been written to encourage individual facility operators to develop their own SWPPP and monitoring programs. Many facility operators, however, choose to obtain compliance assistance either by hiring a consultant on an individual basis or by participating in a group monitoring plan. Regardless of how a facility operator chooses to pursue compliance, it is the facility operator that is responsible for compliance with this General Permit.

The State Water Board recognizes that industrial activities and operating conditions at many facilities change over time. In addition, new and more effective BMPs are being developed by various facility operators and by industrial groups. The SWPPP and monitoring program requirements include various inspections, reviews, and observations all of which recognize, encourage, and mandate an iterative self-evaluation process that is necessary to consistently comply with this General Permit. In general, facility operators that develop and implement SWPPPs that comply with this General Permit should not be penalized when discovering minor violations through this iterative self-evaluation process. The General Permit provides facility operators up to 90 days to revise and implement the SWPPP to correct such violations.

STATE WATER RESOURCES CONTROL BOARD (STATE WATER BOARD)
WATER QUALITY ORDER NO. 97-03-DWQ
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WASTE DISCHARGE REQUIREMENTS (WDRS)
FOR
DISCHARGES OF STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITIES
EXCLUDING CONSTRUCTION ACTIVITIES

The State Water Board finds that:

1. Federal regulations for storm water discharges were issued by the U.S. Environmental Protection Agency (U.S. EPA) on November 16, 1990 (40 Code of Federal Regulations [CFR] Parts 122, 123, and 124). The regulations require operators of specific categories of facilities where discharges of storm water associated with industrial activity (storm water) occur to obtain an NPDES permit and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm discharges.

2. This General Permit shall regulate storm water discharges and authorized non-storm water discharges from specific categories of industrial facilities identified in Attachment 1, storm water discharges and authorized non-storm water discharges from facilities as designated by the Regional Water Quality Control Boards (Regional Water Boards), and storm water discharges and authorized non-storm water discharges from other facilities seeking General Permit coverage. This General Permit may also regulate storm water discharges and authorized non-storm water discharges from facilities as required by U.S. EPA regulations. This General Permit shall regulate storm water discharges and authorized non-storm water discharges previously regulated by San Francisco Bay Regional Water Board Order, No.92-11 (as amended by Order No. 92-116). This General Permit excludes storm water discharges and non-storm water discharges that are regulated by other individual or general NPDES permits, storm water discharges and non-storm water discharges from construction activities, and storm water discharges and non-storm water discharges excluded by the Regional Water Boards for coverage by this General Permit. Attachment 2 contains the addresses and telephone numbers of each Regional Water Board office.

3. To obtain coverage for storm water discharges and authorized non-storm water discharges pursuant to this General Permit, operators of facilities (facility operators) must submit a Notice of Intent (NOI), in accordance with the Attachment 3

instructions, and appropriate annual fee to the State Water Board. This includes facility operators that have participated in U.S. EPA's group application process.

4. This General Permit does not preempt or supersede the authority of local agencies to prohibit, restrict, or control storm water discharges and authorized non-storm water discharges to storm drain systems or other water-courses within their jurisdictions as allowed by State and Federal law.

5. If an individual NPDES permit is issued to a facility operator otherwise subject to this General Permit or an alternative NPDES general permit is subsequently adopted which covers storm water discharges and/or authorized non-storm water discharges regulated by this General Permit, the applicability of this General Permit to such discharges is automatically terminated on the effective date of the individual NPDES permit or the date of approval for coverage under the subsequent NPDES general permit.

6. Effluent limitations and toxic and effluent standards established in Sections 208(b), 301, 302, 303(d), 304, 306, 307, and 403 of the Federal Clean Water Act (CWA), as amended, are applicable to storm water discharges and authorized non-storm water discharges regulated by this General Permit.

7. This action to adopt an NPDES general permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the California Water Code.

8. Federal regulations (40 CFR Subchapter N) establish effluent limitations guidelines for storm water discharges from some facilities in ten industrial categories.

9. For facilities which do not have established effluent limitation guidelines for storm water discharges in 40 CFR Subchapter N, it is not feasible at this time to establish numeric effluent limitations. This is due to the large number of discharges and the complex nature of storm water discharges. This is also consistent with the U.S. EPA's August 1, 1996 "Interim Permitting Approach for Water Quality Based Effluent Limitations in Storm Water Permits."

10. Facility operators are required to comply with the terms and conditions of this General Permit. Compliance with the terms and conditions of this General Permit constitutes compliance with BAT/BCT requirements and with requirements to achieve water quality standards. This includes the development and implementation of an effective Storm Water Pollution Prevention Plan (SWPPP) to reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm water discharges.

11. Best Management Practices (BMPs) to reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm water discharges are appropriate where numeric effluent limitations are infeasible, and the implementation of BMPs is adequate to achieve compliance with BAT/BCT and with water quality standards.

12. The State Water Board has adopted a Watershed Management Initiative that encourages watershed management throughout the State. This General Permit recognizes the Watershed Management Initiative by supporting the development of watershed monitoring programs authorized by the Regional Water Boards.

13. Following adoption of this General Permit, the Regional Water Boards shall enforce its provisions.

14. Following public notice in accordance with State and Federal laws and regulations, the State Water Board held a public hearing on November 12, 1996 and heard and considered all comments pertaining to this General Permit. A response to all significant comments has been prepared and is available for public review.

15. This Order is an NPDES General Permit in compliance with Section 402 of the CWA and shall take effect upon adoption by the State Water Board.

16. All terms that are defined in the CWA, U.S. EPA storm water regulations and the Porter-Cologne Water Quality Control Act will have the same definition in this General Permit unless otherwise stated.

IT IS HEREBY ORDERED that all facility operators required to be regulated by this General Permit shall comply with the following:

A. DISCHARGE PROHIBITIONS:

1. Except as allowed in Special Conditions (D.1.) of this General Permit, materials other than storm water (non-storm water discharges) that discharge either directly or indirectly to waters of the United States are prohibited. Prohibited non-storm water discharges must be either eliminated or permitted by a separate NPDES permit.

2. Storm water discharges and authorized non-storm water discharges shall not cause or threaten to cause pollution, contamination, or nuisance.

B. EFFLUENT LIMITATIONS:

1. Storm water discharges from facilities subject to storm water effluent limitation guidelines in Federal regulations (40 CFR

Subchapter N) shall not exceed the specified effluent limitations.

2. Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of a reportable quantity listed in 40 CFR Part 117 and/or 40 CFR Part 302.

3. Facility operators covered by this General Permit must reduce or prevent pollutants associated with industrial activity in storm water discharges and authorized non-storm water discharges through implementation of BAT for toxic and non-conventional pollutants and BCT for conventional pollutants. Development and implementation of an SWPPP that complies with the requirements in Section A of the General Permit and that includes BMPs that achieve BAT/BCT constitutes compliance with this requirement.

C. RECEIVING WATER LIMITATIONS:

1. Storm water discharges and authorized non-storm water discharges to any surface or ground water shall not adversely impact human health or the environment.

2. Storm water discharges and authorized non-storm water discharges shall not cause or contribute to an exceedance of any applicable water quality standards contained in a Statewide Water Quality Control Plan or the applicable Regional Water Board's Basin Plan.

3. A facility operator will not be in violation of Receiving Water Limitation C.2. as long as the facility operator has implemented BMPs that achieve BAT/BCT and the following procedure is followed:

   a. The facility operator shall submit a report to the appropriate Regional Water Board that describes the BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of water quality standards. The report shall include an implementation schedule. The Regional Water Board may require modifications to the report.

   b. Following approval of the report described above by the Regional Water Board, the facility operator shall revise its SWPPP and monitoring program to incorporate the additional BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring required.

4. A facility operator shall be in violation of this General Permit if he/she fails to do any of the following:

a. Submit the report described above within 60 days after either the facility operator or the Regional Water Board determines that discharges are causing or contributing to an exceedance of an applicable water quality standard;

b. Submit a report that is approved by the Regional Water Board; or

c. Revise its SWPPP and monitoring program as required by the approved report.

D. SPECIAL CONDITIONS

1. Non-Storm Water Discharges

a. The following non-storm water discharges are authorized by this General Permit provided that they satisfy the conditions specified in Paragraph b. below: fire hydrant flushing; potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems; drinking fountain water; atmospheric condensates including refrigeration, air conditioning, and compressor condensate; irrigation drainage; landscape watering; springs; ground water; foundation or footing drainage; and sea water infiltration where the sea waters are discharged back into the sea water source.

b. The non-storm water discharges as provided in Paragraph a. above are authorized by this General Permit if all the following conditions are met:

i. The non-storm water discharges are in compliance with Regional Water Board requirements.

ii. The non-storm water discharges are in compliance with local agency ordinances and/or requirements.

iii. BMPs are specifically included in the SWPPP to (1) prevent or reduce the contact of non-storm water discharges with significant materials or equipment and (2) minimize, to the extent practicable, the flow or volume of non-storm water discharges.

iv. The non-storm water discharges do not contain significant quantities of pollutants.

v. The monitoring program includes quarterly visual observations of each non-storm water discharge and its sources to ensure that BMPs are being implemented and are effective.

vi. The non-storm water discharges are reported and described annually as part of the annual report.

c. The Regional Water Board or its designee may establish additional monitoring programs and reporting requirements for any non-storm water discharge authorized by this General Permit.

d. Discharges from firefighting activities are authorized by this General Permit and are not subject to the conditions of Paragraph b. above.

E. PROVISIONS

1. All facility operators seeking coverage by this General Permit must submit an NOI for each of the facilities they operate. Facility operators filing an NOI after the adoption of this General Permit shall use the NOI form and instructions (Attachment 3) attached to this General Permit. Existing facility operators who have filed an NOI pursuant to State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) or San Francisco Bay Regional Water Board Order No. 92-11 (as amended by Order No. 92-116) shall submit an abbreviated NOI form provided by the State Water Board. The abbreviated NOI form shall be submitted within 45 days of receipt.

2. Facility operators who have filed an NOI, pursuant to State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) or San Francisco Bay Regional Water Board Order No. 92-11 (as amended by Order No. 92-116), shall continue to implement their existing SWPPP and shall implement any necessary revisions to their SWPPP in accordance with Section A of this General Permit in a timely manner, but in no case later than August 1, 1997. Facility operators beginning industrial activities after adoption of this General Permit must develop and implement an SWPPP in accordance with Section A of this General Permit when the industrial activities begin.

3. Facility operators who have filed an NOI, pursuant to State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) or San Francisco Bay Regional Water Board Order No. 92-11 (as amended by Order No. 92-116), shall continue to implement their existing Monitoring Program and shall implement any necessary revisions to their Monitoring Program in accordance with Section B of the General Permit in a timely manner, but in no case later than August 1, 1997. Facility operators beginning industrial activities after adoption of this General Permit must develop and implement a Monitoring Program in

accordance with Section B of this General Permit when industrial activities begin.

4. Facility operators of feedlots as defined in 40 CFR Part 412 that are in full compliance with Section 2560 to Section 2565, Title 23, California Code of Regulations (Chapter 15) will be in compliance with all effluent limitations and prohibitions contained in this General Permit. Facility operators of feedlots that comply with Chapter 15, however, must perform monitoring in compliance with the requirements of Section B.4.d. and B.14. of this General Permit. Facility operators of feedlots must also comply with any Regional Water Board WDRs or NPDES general permit regulating their storm water discharges.

5. All facility operators must comply with lawful requirements of municipalities, counties, drainage districts, and other local agencies regarding storm water discharges and non-storm water discharges entering storm drain systems or other watercourses under their jurisdiction, including applicable requirements in municipal storm water management programs developed to comply with NPDES permits issued by the Regional Water Boards to local agencies.

6. All facility operators must comply with the standard provisions and reporting requirements for each facility covered by this General Permit contained in Section C, Standard Provisions.

7. Facility operators that operate facilities with co-located industrial activities (facilities that have industrial activities that meet more than one of the descriptions in Attachment 1) that are contiguous to one another are authorized to file a single NOI to comply with the General Permit. Storm water discharges and authorized non-storm water discharges from the co-located industrial activities are authorized if the SWPPP and Monitoring Program addresses each co-located industrial activity.

8. Upon reissuance of a successor NPDES general permit by the State Water Board, the facility operators subject to this reissued General Permit may be required to file an NOI.

9. Facility operators may request to terminate their coverage under this General Permit by filing a Notice of Termination (NOT) with the Regional Water Board. The NOT shall provide all documentation requested by the Regional Water Board. The facility operator will be notified when the NOT has been approved. Should the NOT be denied, facility operators are responsible for continued compliance with the requirements of this General Permit.

10. Facility operators who have filed an NOI, pursuant to State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12) or San Francisco Bay Regional Water Board Order No. 92-11 (as amended by Order No. 92-116) shall:

    a. Complete the 1996-97 activities required by those general permits. These include, but are not limited to, conducting any remaining visual observations, sample collection, annual site inspection, annual report submittal, and (for group monitoring leaders) Group Evaluation Reports; and

    b. Comply with the requirements of this General Permit no later than August 1, 1997.

11. If the Regional Water Board determines that a discharge may be causing or contributing to an exceedance of any applicable water quality standards contained in a Statewide Water Quality Control Plan or the applicable Regional Water Board's Basin Plan, the Regional Water Board may order the facility operator to comply with the requirements described in Receiving Water Limitation C.3. The facility operator shall comply with the requirements within the time schedule established by the Regional Water Board.

12. If the facility operator determines that its storm water discharges or authorized non-storm water discharges are causing or contributing to an exceedance of any applicable water quality standards, the facility operator shall comply with the requirements described in Receiving Water Limitation C.3.

13. State Water Board Order No. 91-013-DWQ (as amended by Order No. 92-12-DWQ) and San Francisco Bay Regional Water Board Order No. 91-011 (as amended by Order No. 92-116) are hereby rescinded.

F. REGIONAL WATER BOARD AUTHORITIES

1. Following adoption of this General Permit, Regional Water Boards shall:

    a. Implement the provisions of this General Permit, including, but not limited to, reviewing SWPPPs, reviewing annual reports, conducting compliance inspections, and taking enforcement actions.

    b. Issue other NPDES general permits or individual NPDES storm water permits as they deem appropriate to individual facility operators, facility operators of specific categories of industrial activities, or facility operators in a watershed or geographic area. Upon issuance of such NPDES permits by a Regional Water Board, the affected facility operator shall no longer

be regulated by this General Permit. Any new NPDES permit issued by the Regional Water Board may contain different requirements than the requirements of this General Permit.

2. Regional Water Boards may provide guidance to facility operators on the SWPPP and the Monitoring Program and reporting implementation.

3. Regional Water Boards may require facility operators to conduct additional SWPPP and Monitoring Program and reporting activities necessary to achieve compliance with this General Permit.

4. Regional Water Boards may approve requests from facility operators whose facilities include co-located industrial activities that are not contiguous within the facilities (e.g., some military bases) to comply with this General Permit under a single NOI. Storm water discharges and authorized non-storm water discharges from the co-located industrial activities and from other sources within the facility that may generate significant quantities of pollutants are authorized provided the SWPPP and Monitoring Program addresses each co-located industrial activity and other sources that may generate significant quantities of pollutants.

CERTIFICATION

The undersigned, Administrative Assistant to the State Water Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on April 17, 1997.

AYE: John P. Caffrey
John W. Brown
James M. Stubchaer
Marc Del Piero
Mary Jane Forster

NO: None

ABSENT: None

ABSTAIN: None

Maureen Marché

Administrative Assistant to the Board

SECTION A: STORM WATER POLLUTION PREVENTION PLAN REQUIREMENTS

1. *Implementation Schedule*

A storm water pollution prevention plan (SWPPP) shall be developed and implemented for each facility covered by this General Permit in accordance with the following schedule.

a. Facility operators beginning industrial activities before October 1, 1992 shall develop and implement the SWPPP no later than October 1, 1992. Facility operators beginning industrial activities after October 1, 1992 shall develop and implement the SWPPP when industrial activities begin.

b. Existing facility operators that submitted a Notice of Intent (NOI), pursuant to State Water Resources Control Board (State Water Board) Order No. 91-013-DWQ (as amended by Order No. 92-12) or San Francisco Bay Regional Water Quality Control Board (Regional Water Board) Order No. 92-11 (as amended by Order No. 92-116), shall continue to implement their existing SWPPP and shall implement any necessary revisions to their SWPPP in a timely manner, but in no case later than August 1, 1997.

2. *Objectives*

The SWPPP has two major objectives: (a) to identify and evaluate sources of pollutants associated with industrial activities that may affect the quality of storm water discharges and authorized non-storm water discharges from the facility; and (b) to identify and implement site-specific best management practices (BMPs) to reduce or prevent pollutants associated with industrial activities in storm water discharges and authorized non-storm water discharges. BMPs may include a variety of pollution prevention measures or other low-cost and pollution control measures. They are generally categorized as non-structural BMPs (activity schedules, prohibitions of practices, maintenance procedures, and other low-cost measures) and as structural BMPs (treatment measures, run-off controls, overhead coverage.) To achieve these objectives, facility operators should consider the five phase process for SWPPP development and implementation as shown in Table A.

The SWPPP requirements are designed to be sufficiently flexible to meet the needs of various facilities. SWPPP requirements that are not applicable to a facility should not be included in the SWPPP.

A facility's SWPPP is a written document that shall contain a compliance activity schedule, a description of industrial activities and pollutant sources, descriptions of BMPs, drawings, maps, and relevant copies or references of parts of other plans. The SWPPP shall be revised whenever appropriate and shall be readily available for review by facility employees or Regional Water Board inspectors.

3. *Planning and Organization*

a. *Pollution Prevention Team*

The SWPPP shall identify a specific individual or individuals and their positions within the facility organization as members of a storm water pollution prevention team responsible for developing the SWPPP, assisting the facility manager in SWPPP implementation and revision, and conducting all monitoring program activities required in Section B of this General Permit. The SWPPP shall clearly identify the General Permit related responsibilities, duties, and activities of each team member. For small facilities, storm water pollution prevention teams may consist of one individual where appropriate.

b. *Review Other Requirements and Existing Facility Plans*

The SWPPP may incorporate or reference the appropriate elements of other regulatory requirements. Facility operators should review all local, State, and Federal requirements that impact, complement, or are consistent with the requirements of this General Permit. Facility operators should identify any existing facility plans that contain storm water pollutant control measures or relate to the requirements of this General Permit. As examples, facility operators whose facilities are subject to Federal Spill Prevention Control and Countermeasures' requirements should already have instituted a plan to control spills of certain hazardous materials. Similarly, facility operators whose facilities are subject to air quality related permits and regulations may already have evaluated industrial activities that generate dust or particulates.

4. *Site Map*

The SWPPP shall include a site map. The site map shall be provided on an 8-½ x 11 inch or larger sheet and include notes, legends, and other data as appropriate to ensure that the site map is clear and understandable. If necessary, facility operators may provide the required information on multiple site maps.

TABLE A
FIVE PHASES FOR DEVELOPING AND IMPLEMENTING INDUSTRIAL STORM WATER POLLUTION PREVENTION PLANS

PLANNING AND ORGANIZATION

*Form Pollution Prevention Team
*Review other plans

↓

ASSESSMENT PHASE

*Develop a site map
*Identify potential pollutant sources
*Inventory of materials and chemicals
*List significant spills and leaks
*Identify non-storm water discharges
*Assess pollutant Risks

↓

BEST MANAGEMENT PRACTICES IDENTIFICATION PHASE

*Non-structural BMPs
*Structural BMPs
*Select activity and site-specific BMPs

↓

IMPLEMENTATION PHASE

*Train employees
*Implement BMPs
*Conduct recordkeeping and reporting

↓

EVALUATION / MONITORING

*Conduct annual site evaluation
*Review monitoring information
*Evaluate BMPs
*Review and revise SWPPP

The following information shall be included on the site map:

a. The facility boundaries; the outline of all storm water drainage areas within the facility boundaries; portions of the drainage area impacted by run-on from surrounding areas; and direction of flow of each drainage area, on-site surface water bodies, and areas of soil erosion. The map shall also identify nearby water bodies (such as rivers, lakes, and ponds) and municipal storm drain inlets

where the facility's storm water discharges and authorized non-storm water discharges may be received.

b. The location of the storm water collection and conveyance system, associated points of discharge, and direction of flow. Include any structural control measures that affect storm water discharges, authorized non-storm water discharges, and run-on. Examples of structural control measures are catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers, etc.

c. An outline of all impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures.

d. Locations where materials are directly exposed to precipitation and the locations where significant spills or leaks identified in Section A.6.a.iv. below have occurred.

e. Areas of industrial activity. This shall include the locations of all storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and rinsing areas, and other areas of industrial activity which are potential pollutant sources.

5. *List of Significant Materials*

The SWPPP shall include a list of significant materials handled and stored at the site. For each material on the list, describe the locations where the material is being stored, received, shipped, and handled, as well as the typical quantities and frequency. Materials shall include raw materials, intermediate products, final or finished products, recycled materials, and waste or disposed materials.

6. *Description of Potential Pollutant Sources*

a. The SWPPP shall include a narrative description of the facility's industrial activities, as identified in Section A.4.e above, associated potential pollutant sources, and potential pollutants that could be discharged in storm water discharges or authorized non-storm water discharges. At a minimum, the following items related to a facility's industrial activities shall be considered:

i. Industrial Processes

Describe each industrial process, the type, characteristics, and quantity of significant materials used in or resulting from the process, and a description of the manufacturing, cleaning, rinsing, recycling, disposal, or other activities related to the process. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

ii. Material Handling and Storage Areas

Describe each handling and storage area, type, characteristics, and quantity of significant materials handled or stored, description of the shipping, receiving, and loading procedures, and the spill or leak prevention and response procedures. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

iii. Dust and Particulate Generating Activities

Describe all industrial activities that generate dust or particulates that may be deposited within the facility's boundaries and identify their discharge locations; the characteristics of dust and particulate pollutants; the approximate quantity of dust and particulate pollutants that may be deposited within the facility boundaries; and a description of the primary areas of the facility where dust and particulate pollutants would settle.

iv. Significant Spills and Leaks

Describe materials that have spilled or leaked in significant quantities in storm water discharges or non-storm water discharges since April 17, 1994. Include toxic chemicals (listed in 40 CFR, Part 302) that have been discharged to storm water as reported on U.S. Environmental Protection Agency (U.S. EPA) Form R, and oil and hazardous substances in excess of reportable quantities (see 40 Code of Federal Regulations [CFR], Parts 110, 117, and 302).

The description shall include the type, characteristics, and approximate quantity of the material spilled or leaked, the cleanup or remedial actions that have occurred or are planned, the approximate remaining quantity of materials that may be exposed to storm water or non-storm water

discharges, and the preventative measures taken to ensure spill or leaks do not reoccur. Such list shall be updated as appropriate during the term of this General Permit.

v. Non-Storm Water Discharges

Facility operators shall investigate the facility to identify all non-storm water discharges and their sources. As part of this investigation, all drains (inlets and outlets) shall be evaluated to identify whether they connect to the storm drain system.

All non-storm water discharges shall be described. This shall include the source, quantity, frequency, and characteristics of the non-storm water discharges and associated drainage area.

Non-storm water discharges that contain significant quantities of pollutants or that do not meet the conditions provided in Special Conditions D. are prohibited by this General Permit (Examples of prohibited non-storm water discharges are contact and non-contact cooling water, boiler blowdown, rinse water, wash water, etc.). Non-storm water discharges that meet the conditions provided in Special Condition D. are authorized by this General Permit. The SWPPP must include BMPs to prevent or reduce contact of non-storm water discharges with significant materials or equipment.

vi. Soil Erosion

Describe the facility locations where soil erosion may occur as a result of industrial activity, storm water discharges associated with industrial activity, or authorized non-storm water discharges.

b. The SWPPP shall include a summary of all areas of industrial activities, potential pollutant sources, and potential pollutants. This information should be summarized similar to Table B. The last column of Table B, "Control Practices", should be completed in accordance with Section A.8. below.

7. *Assessment of Potential Pollutant Sources*

a. The SWPPP shall include a narrative assessment of all industrial activities and potential pollutant sources as described in A.6. above to determine:

i. Which areas of the facility are likely sources of

pollutants in storm water discharges and authorized non-storm water discharges, and

ii. Which pollutants are likely to be present in storm water discharges and authorized non-storm water discharges. Facility operators shall consider and evaluate various factors when performing this assessment such as current storm water BMPs; quantities of significant materials handled, produced, stored, or disposed of; likelihood of exposure to storm water or authorized non-storm water discharges; history of spill or leaks; and run-on from outside sources.

b. Facility operators shall summarize the areas of the facility that are likely sources of pollutants and the corresponding pollutants that are likely to be present in storm water discharges and authorized non-storm water discharges.

Facility operators are required to develop and implement additional BMPs as appropriate and necessary to prevent or reduce pollutants associated with each pollutant source. The BMPs will be narratively described in Section 8 below.

8. Storm Water Best Management Practices

The SWPPP shall include a narrative description of the storm water BMPs to be implemented at the facility for each potential pollutant and its source identified in the site assessment phase (Sections A.6. and 7. above). The BMPs shall be developed and implemented to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Each pollutant and its source may require one or more BMPs. Some BMPs may be implemented for multiple pollutants and their sources, while other BMPs will be implemented for a very specific pollutant and its source.

TABLE B
EXAMPLE
ASSESSMENT OF POTENTIAL POLLUTION SOURCES AND CORRESPONDING BEST MANAGEMENT PRACTICES SUMMARY

Area	Activity	Pollutant Source	Pollutant	Best Management Practices
Vehicle & Equipment Fueling	Fueling	Spills and leaks during delivery	fuel oil	- Use spill and overflow protection - Minimize run-on of storm water into the fueling area - Cover fueling area - Use dry cleanup methods rather than hosing down area - Implement proper spill prevention control program - Implement adequate preventative maintenance program to preventive tank and line leaks - Inspect fueling areas regularly to detect problems before they occur - Train employees on proper fueling, cleanup, and spill response techniques.
		Spills caused by topping off fuel tanks	fuel oil	
		Hosing or washing down fuel area	fuel oil	
		Leaking storage tanks	fuel oil	
		Rainfall running off fueling area, and rainfall running onto and off fueling area	fuel oil	

The description of the BMPs shall identify the BMPs as (1) existing BMPs, (2) existing BMPs to be revised and implemented, or (3) new BMPs to be implemented. The description shall also include a discussion on the effectiveness of each BMP to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. The SWPPP shall provide a summary of all BMPs implemented for each pollutant source. This information should be summarized similar to Table B.

Facility operators shall consider the following BMPs for implementation at the facility:

a. Non-Structural BMPs

Non-structural BMPs generally consist of processes, prohibitions, procedures, schedule of activities, etc., that prevent pollutants associated with industrial activity from contacting with storm water discharges and authorized non-storm water discharges. They are considered low technology, cost-effective measures. Facility operators should consider all possible non-structural BMPs options before considering additional structural BMPs (see Section A.8.b. below). Below is a list of non-structural BMPs that should be considered:

i. Good Housekeeping

Good housekeeping generally consist of practical procedures to maintain a clean and orderly facility.

ii. Preventive Maintenance

Preventive maintenance includes the regular inspection and maintenance of structural storm water controls (catch basins, oil/water separators, etc.) as well as other facility equipment and systems.

iii. Spill Response

This includes spill clean-up procedures and necessary clean-up equipment based upon the quantities and locations of significant materials that may spill or leak.

iv. Material Handling and Storage

This includes all procedures to minimize the potential for spills and leaks and to minimize exposure of significant materials to storm water and authorized non-storm water discharges.

v. Employee Training

This includes training of personnel who are responsible for (1) implementing activities identified in the SWPPP, (2) conducting inspections, sampling, and visual observations, and (3) managing storm water. Training should address topics such as spill response, good housekeeping, and material handling procedures, and actions necessary to implement all BMPs identified in the SWPPP. The SWPPP shall identify periodic dates for such training. Records shall be maintained of all training sessions held.

vi. Waste Handling/Recycling

This includes the procedures or processes to handle, store, or dispose of waste materials or recyclable materials.

vii. Recordkeeping and Internal Reporting

This includes the procedures to ensure that all records of inspections, spills, maintenance activities, corrective actions, visual observations, etc., are developed, retained, and provided, as necessary, to the appropriate facility personnel.

viii. Erosion Control and Site Stabilization

This includes a description of all sediment and erosion control activities. This may include the planting and maintenance of vegetation, diversion of run-on and runoff, placement of sandbags, silt screens, or other sediment control devices, etc.

ix. Inspections

This includes, in addition to the preventative maintenance inspections identified above, an inspection schedule of all potential pollutant sources. Tracking and follow-up procedures shall be described to ensure adequate corrective actions are taken and SWPPPs are made.

x. Quality Assurance

This includes the procedures to ensure that all elements of the SWPPP and Monitoring Program are adequately conducted.

b. Structural BMPs

Where non-structural BMPs as identified in Section A.8.a. above are not effective, structural BMPs shall be considered. Structural BMPs generally consist of structural devices that reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Below is a list of structural BMPs that should be considered:

i. Overhead Coverage

This includes structures that provide horizontal coverage of materials, chemicals, and pollutant sources from contact with storm water and authorized non-storm water discharges.

ii. Retention Ponds

This includes basins, ponds, surface impoundments, bermed areas, etc. that do not allow storm water to discharge from the facility.

iii. Control Devices

This includes berms or other devices that channel or route run-on and runoff away from pollutant sources.

iv. Secondary Containment Structures

This generally includes containment structures around storage tanks and other areas for the purpose of collecting any leaks or spills.

v. Treatment

This includes inlet controls, infiltration devices, oil/water separators, detention ponds, vegetative swales, etc. that reduce the pollutants in storm water discharges and authorized non-storm water discharges.

9. <u>Annual Comprehensive Site Compliance Evaluation</u>

The facility operator shall conduct one comprehensive site compliance evaluation (evaluation) in each reporting period (July 1-June 30). Evaluations shall be conducted within 8-16 months of each other. The SWPPP shall be revised, as appropriate, and the revisions implemented within 90 days of the evaluation. Evaluations shall include the following:

a. A review of all visual observation records, inspection records, and sampling and analysis results.

b. A visual inspection of all potential pollutant sources for evidence of, or the potential for, pollutants entering the drainage system.

c. A review and evaluation of all BMPs (both structural and non-structural) to determine whether the BMPs are adequate, properly implemented and maintained, or whether additional BMPs are needed. A visual inspection of equipment needed to implement the SWPPP, such as spill response equipment, shall be included.

d. An evaluation report that includes, (i) identification of personnel performing the evaluation, (ii) the date(s) of the evaluation, (iii) necessary SWPPP revisions, (iv) schedule, as required in Section A.10.e, for implementing SWPPP revisions, (v) any incidents of non-compliance and the corrective actions taken, and (vi) a certification that the facility operator is in compliance with this General Permit. If the above certification cannot be provided, explain in the evaluation report why the facility operator is not in compliance with this General Permit. The evaluation report shall be submitted as part of the annual report, retained for at least five years, and signed and certified in accordance with Standard Provisions 9. and 10. of Section C. of this General Permit.

10. *SWPPP General Requirements*

a. The SWPPP shall be retained on site and made available upon request of a representative of the Regional Water Board and/or local storm water management agency (local agency) which receives the storm water discharges.

b. The Regional Water Board and/or local agency may notify the facility operator when the SWPPP does not meet one or more of the minimum requirements of this Section. As requested by the Regional Water Board and/or local agency, the facility operator shall submit an SWPPP revision and implementation schedule that meets the minimum requirements of this section to the Regional Water Board and/or local agency that requested the SWPPP revisions. Within 14 days after implementing the required SWPPP revisions, the facility operator shall provide written certification to the Regional Water Board and/or local agency that the revisions have been implemented.

c. The SWPPP shall be revised, as appropriate, and implemented prior to changes in industrial activities which (i) may significantly increase the quantities of pollutants in storm water discharge, (ii) cause a new area of industrial activity at the facility to be exposed to storm water, or (iii) begin an industrial activity which would introduce a new pollutant source at the facility.

d. Other than as provided in Provisions B.11, B.12, and E.2 of the General Permit, the SWPPP shall be revised and implemented in a timely manner, but in no case more than 90 days after a facility operator determines that the SWPPP is in violation of any requirement(s) of this General Permit.

e. When any part of the SWPPP is infeasible to implement by the deadlines specified in Provision E.2 or Sections A.1, A.9, A.10.c, and A.10.d of this General Permit due to proposed significant structural changes, the facility operator shall submit a report to the Regional Water Board prior to the applicable deadline that (i) describes the portion of the SWPPP that is infeasible to implement by the deadline, (ii) provides justification for a time extension, (iii) provides a schedule for completing and implementing that portion of the SWPPP, and (iv) describes the BMPs that will be implemented in the interim period to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Such reports are subject to Regional Water Board approval and/or modifications. Facility operators shall provide written notification to the Regional Water Board within 14 days after the SWPPP revisions are implemented.

f. The SWPPP shall be provided, upon request, to the Regional Water Board. The SWPPP is considered a report that shall be available to the public by the Regional Water Board under Section 308(b) of the Clean Water Act.

SECTION B. MONITORING PROGRAM AND REPORTING REQUIREMENTS

1. *Implementation Schedule*

Each facility operator shall develop a written monitoring program for each facility covered by this General Permit in accordance with the following schedule:

a. Facility operators beginning industrial activities before October 1, 1992 shall develop and implement a monitoring program no later than October 1, 1992. Facility operators beginning operations after October 1, 1992 shall develop and implement a monitoring program when the industrial activities begin.

b. Facility operators that submitted a Notice Of Intent (NOI) pursuant to State Water Resources Control Board (State Water Board) Order No. 91-013-DWQ (as amended by Order No. 92-12) or San Francisco Bay Regional Water Quality Control Board (Regional Water Board) Order No. 92-11 (as amended by Order No. 92-116), shall continue to implement their existing monitoring program and implement any necessary revisions to their monitoring program in a timely manner, but in no case later than August 1, 1997. These facility operators may use the monitoring results conducted in accordance with those expired general permits to satisfy the pollutant/parameter reduction requirements in Section B.5.c., Sampling and Analysis Exemptions and Reduction certifications in Section B.12., and Group Monitoring Sampling credits in B.15.k. For facilities beginning industrial activities after the adoption of this General Permit, the monitoring program shall be developed and implemented when the facility begins the industrial activities.

2. *Objectives*

The objectives of the monitoring program are to:

a. Ensure that storm water discharges are in compliance with the Discharge Prohibitions, Effluent Limitations, and Receiving Water Limitations specified in this General Permit.

b. Ensure practices at the facility to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges are evaluated and revised to meet changing conditions.

c. Aid in the implementation and revision of the SWPPP required by Section A of this General Permit.

d. Measure the effectiveness of best management practices (BMPs) to prevent or reduce pollutants in storm water

discharges and authorized non-storm water discharges. Much of the information necessary to develop the monitoring program, such as discharge locations, drainage areas, pollutant sources, etc., should be found in the Storm Water Pollution Prevention Plan (SWPPP). The facility's monitoring program shall be a written, site-specific document that shall be revised whenever appropriate and be readily available for review by employees or Regional Water Board inspectors.

3. *Non-storm Water Discharge Visual Observations*

a. Facility operators shall visually observe all drainage areas within their facilities for the presence of unauthorized non-storm water discharges;

b. Facility operators shall visually observe the facility's authorized non-storm water discharges and their sources;

c. The visual observations required above shall occur quarterly, during daylight hours, on days with no storm water discharges, and during scheduled facility operating hours[1]. Quarterly visual observations shall be conducted in each of the following periods: January-March, April-June, July-September, and October-December. Facility operators shall conduct quarterly visual observations within 6-18 weeks of each other.

d. Visual observations shall document the presence of any discolorations, stains, odors, floating materials, etc., as well as the source of any discharge. Records shall be maintained of the visual observation dates, locations observed, observations, and response taken to eliminate unauthorized non-storm water discharges and to reduce or prevent pollutants from contacting non-storm water discharges. The SWPPP shall be revised, as necessary, and implemented in accordance with Section A of this General Permit.

4. *Storm Water Discharge Visual Observations*

a. With the exception of those facilities described in Section B.4.d. below, facility operators shall visually

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[1] "Scheduled facility operating hours" are the time periods when the facility is staffed to conduct any function related to industrial activity, but excluding time periods where only routine maintenance, emergency response, security, and/or janitorial services are performed.

observe storm water discharges from one storm event per month during the wet season (October 1-May 30). These visual observations shall occur during the first hour of discharge and at all discharge locations. Visual observations of stored or contained storm water shall occur at the time of release.

b. Visual observations are only required of storm water discharges that occur during daylight hours that are preceded by at least three (3) working days[2] without storm water discharges and that occur during scheduled facility operating hours.

c. Visual observations shall document the presence of any floating and suspended material, oil and grease, discolorations, turbidity, odor, and source of any pollutants. Records shall be maintained of observation dates, locations observed, observations, and response taken to reduce or prevent pollutants in storm water discharges. The SWPPP shall be revised, as necessary, and implemented in accordance with Section A of this General Permit.

d. Feedlots (subject to Federal effluent limitations guidelines in 40 Code of Federal Regulations [CFR] Part 412) that are in compliance with Sections 2560 to 2565, Article 6, Chapter 15, Title 23, California Code of Regulations, and facility operators with storm water containment facilities shall conduct monthly inspections of their containment areas to detect leaks and ensure maintenance of adequate freeboard. Records shall be maintained of the inspection dates, observations, and any response taken to eliminate leaks and to maintain adequate freeboard.

5. *Sampling and Analysis*

a. Facility operators shall collect storm water samples during the first hour of discharge from (1) the first storm event of the wet season, and (2) at least one other storm event in the wet season. All storm water discharge locations shall be sampled. Sampling of stored or contained storm water shall occur at the time the stored or contained storm water is released. Facility operators that do not collect samples from the first storm event of the wet season are still required to collect samples from two other storm events of the wet season and shall explain in the Annual Report why the first storm event was not sampled.

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[2] Three (3) working days may be separated by non-working days such as weekends and holidays provided that no storm water discharges occur during the three (3) working days and the non-working days.

b. Sample collection is only required of storm water discharges that occur during scheduled facility operating hours and that are preceded by at least (3) three working days without storm water discharge.

c. The samples shall be analyzed for:

i. Total suspended solids (TSS) pH, specific conductance, and total organic carbon (TOC). Oil and grease (O&G) may be substituted for TOC; and

ii. Toxic chemicals and other pollutants that are likely to be present in storm water discharges in significant quantities. If these pollutants are not detected in significant quantities after two consecutive sampling events, the facility operator may eliminate the pollutant from future sample analysis until the pollutant is likely to be present again; and

iii. Other analytical parameters as listed in Table D (located at the end of this Section). These parameters are dependent on the facility's standard industrial classification (SIC) code. Facility operators are not required to analyze a parameter listed in Table D when the parameter is not already required to be analyzed pursuant to Section B.5.c.i. and ii. or B.6 of this General Permit, and either of the two following conditions are met: (1) the parameter has not been detected in significant quantities from the last two consecutive sampling events, or (2) the parameter is not likely to be present in storm water discharges and authorized non-storm water discharges in significant quantities based upon the facility operator's evaluation of the facilities industrial activities, potential pollutant sources, and SWPPP. Facility operators that do not analyze for the applicable Table D parameters shall certify in the Annual Report that the above conditions have been satisfied.

iv. Other parameters as required by the Regional Water Board.

6. *Facilities Subject to Federal Storm Water Effluent Limitation Guidelines*

Facility operators with facilities subject to Federal storm water effluent limitation guidelines, in addition to the requirements in Section B.5. above, must complete the following:

a. Collect and analyze two samples for any pollutant specified in the appropriate category of 40 CFR Subchapter N. The sampling and analysis exemptions and reductions described in Section B.12. of this General Permit do not apply to these pollutants.

b. Estimate or calculate the volume of storm water discharges from each drainage area;

c. Estimate or calculate the mass of each regulated pollutant as defined in the appropriate category of 40 CFR Subchapter N; and

d. Identify the individual(s) performing the estimates or calculations in accordance with Subsections b. and c. above.

7. *Sample Storm Water Discharge Locations*

a. Facility operators shall visually observe and collect samples of storm water discharges from all drainage areas that represent the quality and quantity of the facility's storm water discharges from the storm event.

b. If the facility's storm water discharges are commingled with run-on from surrounding areas, the facility operator should identify other visual observation and sample collection locations that have not been commingled by run-on and that represent the quality and quantity of the facility's storm water discharges from the storm event.

c. If visual observation and sample collection locations are difficult to observe or sample (e.g., sheet flow, submerged outfalls), facility operators shall identify and collect samples from other locations that represent the quality and quantity of the facility's storm water discharges from the storm event.

d. Facility operators that determine that the industrial activities and BMPs within two or more drainage areas are substantially identical may either (i) collect samples from a reduced number of substantially identical

drainage areas, or (ii) collect samples from each substantially identical drainage area and analyze a combined sample from each substantially identical drainage area. Facility operators must document such a determination in the annual report.

8. *Visual Observation and Sample Collection Exceptions*

Facility operators are required to be prepared to collect samples and conduct visual observations at the beginning of the wet season (October 1) and throughout the wet season

until the minimum requirements of Sections B.4. and B.5. are completed with the following exceptions:

a. A facility operator is not required to collect a sample and conduct visual observations in accordance with Section B.4 and Section B.5 due to dangerous weather conditions, such as flooding, electrical storm, etc., when storm water discharges begin after scheduled facility operating hours or when storm water discharges are not preceded by three working days without discharge. Visual observations are only required during daylight hours. Facility operators that do not collect the required samples or visual observations during a wet season due to these exceptions shall include an explanation in the Annual Report why the sampling or visual observations could not be conducted.

b. A facility operator may conduct visual observations and sample collection more than one hour after discharge begins if the facility operator determines that the objectives of this Section will be better satisfied. The facility operator shall include an explanation in the Annual Report why the visual observations and sample collection should be conducted after the first hour of discharge.

9. *Alternative Monitoring Procedures*

Facility operators may propose an alternative monitoring program that meets Section B.2 monitoring program objectives for approval by the Regional Water Board. Facility operators shall continue to comply with the monitoring requirements of this Section and may not implement an alternative monitoring plan until the alternative monitoring plan is approved by the Regional Water Board. Alternative monitoring plans are subject to modification by the Regional Water Boards.

10. *Monitoring Methods*

a. Facility operators shall explain how the facility's monitoring program will satisfy the monitoring program objectives of Section B.2. This shall include:

i. Rationale and description of the visual observation methods, location, and frequency.

ii. Rationale and description of the sampling methods, location, and frequency; and

iii. Identification of the analytical methods and corresponding method detection limits used to detect pollutants in storm water discharges. This shall include justification that the method detection limits are adequate to satisfy the objectives of the monitoring program.

b. All sampling and sample preservation shall be in accordance with the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association). All monitoring instruments and equipment (including a facility operator's own field instruments for measuring pH and Electro Conductivity) shall be calibrated and maintained in accordance with manufacturers' specifications to ensure accurate measurements. All laboratory analyses must be conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in this General Permit or by the Regional Water Board. All metals shall be reported as total metals. With the exception of analysis conducted by facility operators, all laboratory analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. Facility operators may conduct their own sample analyses if the facility operator has sufficient capability (qualified employees, laboratory equipment, etc.) to adequately perform the test procedures.

11. *Inactive Mining Operations*
Inactive mining operations are defined in Attachment 1 of this General Permit. Where comprehensive site compliance evaluations, non-storm water discharge visual observations, storm water discharge visual observations, and storm water sampling are impracticable, facility operators of inactive mining operations may instead obtain certification once every three years by a Registered Professional Engineer that an SWPPP has been prepared for the facility and is being implemented in accordance with the requirements of this General Permit. By means of these certifications, the Registered Professional Engineer having examined the facility and being familiar with the provisions of this General Permit shall attest that the SWPPP has been prepared in accordance with good engineering practices. Facility operators of mining operations who cannot obtain a certification because of noncompliance must notify the appropriate Regional Water Board and, upon request, the local agency which receives the storm water discharge.

12. *Sampling and Analysis* Exemptions and Reductions

A facility operator who qualifies for sampling and analysis exemptions, as described below in Section B.12.a.i., or who qualifies for reduced sampling and analysis, as described below in Section B.12.b., must submit the appropriate certifications and required documentation to the Regional Water Boards prior to the wet season (October 1) and recertify as part of the Annual Report submittal. A facility operator that qualifies for either the Regional Water Board or local agency certification programs, as described below in Section B.12.a.ii. and iii., shall submit certification and documentation in accordance with the requirements of those programs. Facility operators who provide certifications in accordance with this Section are still required to comply with all other monitoring program and reporting requirements. Facility operators shall prepare and submit their certifications using forms and instructions provided by the State Water Board, Regional Water Board, or local agency or shall submit their information on a form that contains equivalent information. Facility operators whose facility no longer meets the certification conditions must notify the Regional Water Boards (and local agency) within 30 days and immediately comply with the Section B.5. sampling and analysis requirements. Should a Regional Water Board (or local agency) determine that a certification does not meet the conditions set forth below, facility operators must immediately comply with the Section B.5. sampling and analysis requirements.

a. Sampling and Analysis Exemptions

A facility operator is not required to collect and analyze samples in accordance with Section B.5. if the facility operator meets all of the conditions of one of the following certification programs:

i. No Exposure Certification (NEC)

This exemption is designed primarily for those facilities where all industrial activities are conducted inside buildings and where all materials stored and handled are not exposed to storm water. To qualify for this exemption, facility operators must certify that their facilities meet all of the following conditions:

(1) All prohibited non-storm water discharges have been eliminated or otherwise permitted.

(2) All authorized non-storm water discharges have been identified and addressed in the SWPPP.

(3) All areas of past exposure have been inspected and cleaned, as appropriate.

(4) All significant materials related to industrial activity (including waste materials) are not exposed to storm water or authorized non-storm water discharges.

(5) All industrial activities and industrial equipment are not exposed to storm water or authorized non-storm water discharges.

(6) There is no exposure of storm water to significant materials associated with industrial activity through other direct or indirect pathways such as from industrial activities that generate dust and particulates.

(7) There is periodic re-evaluation of the facility to ensure conditions (1), (2), (4), (5), and (6) above are continuously met. At a minimum, re-evaluation shall be conducted once a year.

ii. Regional Water Board Certification Programs

The Regional Water Board may grant an exemption to the Section B.5. Sampling and Analysis Requirements if it determines a facility operator has met the conditions set forth in a Regional Water Board certification program. Regional Water Board certification programs may include conditions to (1) exempt facility operators whose facilities infrequently discharge storm water to waters of the United States, and (2) exempt facility operators

that demonstrate compliance with the terms and conditions of this General Permit.

iii. Local Agency Certifications

A local agency may develop a local agency certification program. Such programs must be approved by the Regional Water Board. An approved local agency program may either grant an exemption

from the Section B.5. Sampling and Analysis Requirements or reduce the frequency of sampling if it determines that a facility operator has demonstrated compliance with the terms and conditions of this General Permit.

b. Sampling and Analysis Reduction

i. A facility operator may reduce the number of sampling events required to be sampled for the remaining term of this General Permit if the facility operator provides certification that the following conditions have been met:

(1) The facility operator has collected and analyzed samples from a minimum of six storm events from all required drainage areas;

(2) All prohibited non-storm water discharges have been eliminated or otherwise permitted;

(3) The facility operator demonstrates compliance with the terms and conditions of the General Permit for the previous two years (i.e., completed Annual Reports, performed visual observations, implemented appropriate BMPs, etc.);

(4) The facility operator demonstrates that the facility's storm water discharges and authorized non-storm water discharges do not contain significant quantities of pollutants; and

(5) Conditions (2), (3), and (4) above are expected to remain in effect for a minimum of one year after filing the certification.

ii. Unless otherwise instructed by the Regional Water Board, facility operators shall collect and analyze samples from two additional storm events (or one additional storm event when certification filed for the wet season beginning October 1, 2001) during the remaining term of this General Permit in accordance with Table C below. Facility operators shall collect samples of the first

storm event of the wet season. Facility operators that do not collect samples from the first storm event of the wet season shall collect samples from another storm event during the same wet season. Facility operators that do not collect a sample in a required wet season shall collect the sample from another storm event in the next wet season. Facility operators shall explain in the Annual Report why the first storm event of a wet season was not sampled or a sample was not taken from any storm event in accordance with the Table C schedule.

Table C
REDUCED MONITORING SAMPLING SCHEDULE

Facility Operator Filing Sampling Reduction Certification By	Samples Shall be Collected and Analyzed in These Wet Seasons	
	Sample 1	Sample 2
Oct. 1, 1997	Oct. 1, 1997-May 31, 1998	Oct. 1, 1999-May 31, 2000
Oct. 1, 1998	Oct. 1, 1998-May 31, 1999	Oct. 1, 2000-May 31, 2001
Oct. 1, 1999	Oct. 1, 1999-May 31, 2000	Oct. 1, 2001-May 31, 2002
Oct. 1, 2000	Oct. 1, 2000-May 31, 2001	Oct. 1, 2001-May 31, 2002
Oct. 1, 2001	Oct. 1, 2001-May 31, 2002	-

13. *Records*

Records of all storm water monitoring information and copies of all reports (including the Annual Reports) required by this General Permit shall be retained for a period of at least five years. These records shall include:

a. The date, place, and time of site inspections, sampling, visual observations, and/or measurements;

b. The individual(s) who performed the site inspections, sampling, visual observations, and or measurements;

c. Flow measurements or estimates (if required by Section B.6);

d. The date and approximate time of analyses;

e. The individual(s) who performed the analyses;

f. Analytical results, method detection limits, and the analytical techniques or methods used;

g. Quality assurance/quality control records and results;

h. Non-storm water discharge inspections and visual observations and storm water discharge visual observation records (see Sections B.3. and 4.);

i. Visual observation and sample collection exception records (see Section B.5.a, 7.d, 8, and 12.b.ii.);

j. All calibration and maintenance records of on-site instruments used;

k. All Sampling and Analysis Exemption and Reduction certifications and supporting documentation (see Section B.12);

l. The records of any corrective actions and follow-up activities that resulted from the visual observations.

14. *Annual Report*

All facility operators shall submit an Annual Report by July 1 of each year to the Executive Officer of the Regional Water Board responsible for the area in which the facility is located and to the local agency (if requested).

The report shall include a summary of visual observations and sampling results, an evaluation of the visual observation and sampling and analysis results, laboratory reports, the Annual Comprehensive Site Compliance Evaluation Report required in Section A.9., an explanation of why a facility did not implement any activities required by the General Permit (if not already included in the Evaluation Report), and records specified in Section B.13.i. The method detection limit of each analytical parameter shall be included. Analytical results that are less than the method detection limit shall be reported as "less than the method detection limit." The Annual Report shall be signed and certified in accordance with Standard Provisions 9. and 10. of Section C of this General Permit. Facility operators shall prepare and submit their Annual Reports using the annual report forms provided by the State Water Board or Regional Water Board or shall submit their information on a form that contains equivalent information.

15. *Group Monitoring*

Facility operators may participate in group monitoring as described below. A facility operator that participates in group monitoring shall develop and implement a written site-specific SWPPP and monitoring program in accordance with the General Permit and must satisfy any group monitoring requirements. Group monitoring shall be subject to the following requirements:

a. A group monitoring plan (GMP) shall be developed and implemented by a group leader representing a group of

similar facility operators regulated by this General Permit or by a local agency which holds an NPDES permit (local agency permittee) for a municipal separate storm sewer system. GMPs with participants that discharge storm water within the boundaries of a single Regional Water Board shall be approved by that Regional Water Board. GMPs with participants that discharge storm water within the boundaries of multiple Regional Water Boards shall be approved by the State Water Board. The State Water Board and/or Regional Water Board(s) may disapprove a facility's participation in a GMP or require a GMP participant to conduct additional monitoring activities.

b. Each GMP participant shall collect and analyze samples from at least two storm events in accordance with Section B.5. over the five-year period of this General Permit. The two storm event minimum applies to new and existing members. The group leader or local agency permittee shall schedule sampling to meet the following conditions: (i) to evenly distribute the sample collection over the five-year term of this General Permit, and (ii) to collect samples from the two storm events at each participant's facility in different and non-consecutive wet seasons. New participants who join in Years 4 and 5 of this General Permit are not subject to Condition (ii) above. Group leaders shall explain in the annual Group Evaluation Report why any scheduled samples were not collected and reschedule the sampling so that all required samples are collected during the term of this General Permit.

c. The group leader or local agency permittee must have the appropriate resources to develop and implement the GMP. The group leader or local agency permittee must also have the authority to terminate any participant who is not complying with this General Permit and the GMP.

d. The group leader or local agency permittee is responsible for:

   i. Developing, implementing, and revising the GMP;

   ii. Developing and submitting an annual Group Evaluation Report to the State Water Board and/or Regional Water Board by August 1 of each year that includes:

      (1) An evaluation and summary of all group monitoring data,

      (2) An evaluation of the overall performance of the GMP participants in complying with this General Permit and the GMP,

(3) Recommended baseline and site-specific BMPs that should be considered by each participant based upon Items (1) and (2) above, and

(4) A copy of each evaluation report and recommended BMPs as required in Section B.15.d.v. below.

iii. Recommending appropriate BMPs to reduce or prevent pollutants associated with industrial activities in storm water discharges and authorized non-storm water discharges;

iv. Assisting each participant in completing their Annual Comprehensive Site Compliance Evaluation and Annual Report;

v. Conducting a minimum of two on-site inspections of each participant's facility (it is recommended that these inspections be scheduled during the Annual Comprehensive Site Compliance Evaluation) during the term of this General Permit to evaluate the participant's compliance with this General Permit and the GMP, and to recommend any additional BMPs necessary to achieve compliance with this General Permit. Participants that join in Years 4 and 5 shall be scheduled for one evaluation. A copy of the evaluation and recommended BMPs shall be provided to the participants;

vi. Submitting a GMP (or revisions, as necessary), to the appropriate Regional Water Board(s) and State Water Board no later than September 1, 1997 (or August 1 in subsequent years). Once approved, a group leader or local agency permittee shall submit a letter of intent by August 1 of each year to continue the approved GMP. The letter of intent must include a roster of participants, participant's Waste Discharge Identification number (WDID#), updated sampling schedules, and any other revisions to the GMP;

vii. Revising the GMP as instructed by the Regional Water Board or the State Water Board; and

viii. Providing the State Water Board and/or Regional Water Board with quarterly updates of any new or deleted participants and corresponding changes in the sampling and inspection schedule.

e. The GMP shall:

i. Identify the participants of the GMP by name, location, and WDID number;

ii. Include a narrative description summarizing the industrial activities of participants of the GMP and explain why the participants, as a whole, have sufficiently similar industrial activities and BMPs to be covered by a group monitoring plan;

iii. Include a list of typical potential pollutant sources associated with the group participant's facilities and recommended baseline BMPs to prevent or reduce pollutants associated with industrial activity in the storm water discharges and authorized non-storm water discharges;

iv. Provide a five-year sampling and inspection schedule in accordance with Subsections b. and d.v. above.

v. Identify the pollutants associated with industrial activity that shall be analyzed at each participant's facility in accordance with Section B.5. The selection of these pollutants shall be based upon an assessment of each facility's potential pollutant sources and likelihood that pollutants associated with industrial activity will be present in storm water discharges and authorized non-storm water discharges in significant quantities.

f. Sampling and analysis shall be conducted in accordance with the applicable requirements of this Section.

g. Unless otherwise instructed by the Regional Water Board or the State Water Board Executive Director, the GMPs shall be implemented at the beginning of the wet season (October 1).

h. All participants in an approved GMP that have not been selected to sample in a particular wet season are required to comply with all other monitoring program and reporting requirements of this Section including the submittal of an Annual Report by July 1 of each year to the appropriate Regional Water Board.

i. GMP participants subject to Federal storm water effluent limitation guidelines must perform the monitoring described in Section B.6. and submit the results of the monitoring to the appropriate Regional Water Board within the facility operator's Annual Report.

j. GMPs and Group Evaluation Reports should be prepared in accordance with State Water Board (or Regional Water Board) guidance.

k. GMP participants may receive Sampling and Analysis Reduction sampling credit in accordance with the following conditions:

i. Current or prior participants (group participants) of approved GMPs, who have not collected and analyzed samples from six storm events as required in Section B.7.b.i.(1), may substitute credit earned through participation in a GMP for up to four of the six required storm events. Credits for GMP participation shall be calculated as follows:

(1) Credit may only be earned in years of participation where the GMP participant was not scheduled to sample and the GMP was approved.

(2) One credit will be earned for each year of valid GMP participation.

(3) One additional credit may be earned for each year the overall GMP sample collection performance is greater than 75 percent.

ii. GMP participants substituting credit as calculated above shall provide proof of GMP participation and certification that all the conditions in Section B.12.b.i. have been met. GMP participants substituting credit in accordance with Section B.15.k.i.(3) shall also provide GMP sample collection performance documentation.

iii. GMP participants that qualify for Sampling and Analysis Reduction and have already sampled a storm event after October 1, 1997 shall only be required to sample one additional storm event during the remainder of this General Permit in accordance with the "Sample 2" schedule (or "Sample 1" schedule when certification filed for the wet season beginning October 1, 2001) in Table C of this Section.

n. Group leaders shall furnish, within 60 days of receiving a request from the State Water Board or Regional Water Board, any GMP information and documentation necessary to verify the Section B.15.k. sampling credits. Group leaders may also provide this information and documentation to the group participants.

16. *Watershed Monitoring Option*

Regional Water Boards may approve proposals to substitute watershed monitoring for some or all of the requirements of this Section if the Regional Water Board finds that the watershed monitoring will provide substantially similar monitoring information in evaluating facility operator compliance with the requirements of this General Permit.

TABLE D
ADDITIONAL ANALYTICAL PARAMETERS

Subsector	SIC	Activity Represented	Parameters
SECTOR A. TIMBER PRODUCTS			
A1	2421	General Sawmills and Planing Mills	**COD;TSS;Zn**
A2	2491	Wood Preserving	**As;Cu**
A3	2411	Log Storage and Handling	**TSS**
A4	2426	Hardwood Dimension and Flooring Mills	**COD;TSS**
A4	2429	Special Product Sawmills, Not Elsewhere Classified	**COD;TSS**
A4	243X	Millwork, Veneer, Plywood, and Structural Wood	**COD;TSS**
A4	(except 2434--Wood Kitchen Cabinet Manufacturers)		
A4	244X	Wood Containers	**COD;TSS**
A4	245X	Wood Buildings and Mobile Homes	**COD;TSS**
A4	2493	Reconstituted Wood Products	**COD;TSS**
A4	2499	Wood Products, Not Elsewhere Classified	
SECTOR B. PAPER AND ALLIED PRODUCTS MANUFACTURING			
B1	261X	Pulp Mills	
B2	262X	Paper Mills	
B3	263X	Paperboard Mills	**COD**
B4	265X	Paperboard Containers and Boxes	
B5	267X	Converted Paper and Paperboard Products, Except Containers and Boxes	
SECTOR C. CHEMICAL AND ALLIED PRODUCTS MANUFACTURING			
C1	281X	Industrial Inorganic Chemicals	**Al;Fe;N+N**
C2	282X	Plastics Materials and Synthetic Resins, Synthetic Rubber, Cellulosic, and Other Manmade Fibers Except Glass	**Zn**
C3	283X	Drugs	
C4	284X	Soaps, Detergents, and Cleaning Preparations; Perfumes, Cosmetics, and Other Toilet Preparations	**N+N;Zn**
C5	285X	Paints, Varnishes, Lacquers, Enamels, and Allied Products	
C6	286X	Industrial Organic Chemicals	
C7	287X	Nitrogenous and Phosphatic Basic Fertilizers, Mixed Fertilizer, Pesticides, and Other Agricultural Chemicals	**Fe;N+N;Pb;Zn;P**
C8	289X	Miscellaneous Chemical Products	
	3952	Inks and Paints, Including China Painting Enamels, India Ink, (limited to list) Drawing Ink, Platinum Paints for Burnt Wood or Leather Work, Paints for China Painting, Artist's Paints, and Artist's Watercolors	
SECTOR D. ASPHALT PAVING/ROOFING MATERIALS MANUFACTURERS AND LUBRICANT MANUFACTURERS			
D1	295X	Asphalt Paving and Roofing Materials	**TSS**
D2	2992	Lubricating Oils and Greases	

Parameter Names

Al - Aluminum	Cd - Cadmium	Cu - Copper	Mg - Magnesium	BOD - Biochemical Oxygen Demand
As - Arsenic	CN - Cyanide	Fe - Iron	Ag - Silver	N + N - Nitrate & Nitrite Nitrogen
NH_3- Ammonia	Hg - Mercury	P - Phosphorus	Se - Selenium	Pb - Lead
Zn - Zinc	TSS -Total Suspended Solids	COD - Chemical Oxygen Demand		

Subsector SIC Activity Represented Parameters

SECTOR E. GLASS, CLAY, CEMENT, CONCRETE, AND GYPSUM PRODUCT MANUFACTURING

E1	3211	Flat Glass	
E1	322X	Glass and Glassware, Pressed or Blown	
E1	323X	Glass Products Made of Purchased Glass	
E2	3241	Hydraulic Cement	
E3	325X	Structural Clay Products	**Al**
E3	326X	Pottery and Related Products	**Al**
E3	3297	Non-Clay Refractories	**Al**
E4	327X	Concrete, Gypsum, and Plaster Products (Except Lime) (except 3274).	**TSS;Fe**
E4	3295	Minerals and Earths, Ground, or Otherwise Treated	**TSS;Fe**

SECTOR F. PRIMARY METALS

F1	331X	Steel Works, Blast Furnaces, Rolling & Finishing Mill	**Al;Zn**
F2	332X	Iron and Steel Foundries	**Al;TSS;Cu;Fe;Zn**
F3	333X	Primary Smelting and Refining of Nonferrous Metals	
F4	334X	Secondary Smelting and Refining of Nonferrous Metals	
F5	335X	Rolling, Drawing, and Extruding of Nonferrous Metals	**Cu;Zn**
F6	336X	Nonferrous Foundries (Castings)	**Cu;Zn**
F7	339X	Miscellaneous Primary Metal Products	

SECTOR G. METAL MINING (ORE MINING AND DRESSING) EXCEPT INACTIVE METAL MINING ACTIVITIES ON FEDERAL LANDS WHERE AN OPERATOR CANNOT BE IDENTIFIED

G1	101X	Iron Ores	
G2	102X	Copper Ores	**TSS;COD;N+N**
G3	103X	Lead and Zinc Ores	
G4	104X	Gold and Silver Ores	
G5	106X	Ferroalloy Ores, Except Vanadium	
G6	108X	Metal Mining Services	
G7	109X	Miscellaneous Metal Ores	

SECTOR H. COAL MINES AND COAL MINING-RELATED FACILITIES

NA	12XX	Coal Mines and Coal Mining-Related Facilities	**TSS;Al;Fe**

SECTOR I. COAL MINES AND COAL MINING-RELATED FACILITIES

I1	131X	Crude Petroleum and Natural Gas	
I2	132X	Natural Gas Liquids	
I3	138X	Oil and Gas Field Services	

SECTOR J. MINERAL MINING AND DRESSING EXCEPT INACTIVE MINERAL MINING ACTIVITIES OCCURRING ON FEDERAL LANDS WHERE AN OPERATOR CANNOT BE IDENTIFIED

J1	141X	Dimension Stone	**TSS**
J1	142X	Crushed and Broken Stone, Including Rip Rap	**TSS**
J1	148X	Nonmetallic Minerals, Except Fuels	**TSS**
J2	144X	Sand and Gravel	**TSS;N+N**
J3	145X	Clay, Ceramic, and Refractory Materials	
J4	147X	Chemical and Fertilizer Mineral Mining	
J4	149X	Miscellaneous Nonmetallic Minerals, Except Fuels	

Subsector	SIC	Activity Represented	Parameters
SECTOR K. HAZARDOUS WASTE TREATMENT STORAGE OR DISPOSAL FACILITIES			
NA	4953	Hazardous Waste Treatment Storage or Disposal	**NH_3;Mg;COD;As Cd;CN;Pb Hg;Se;**Ag
SECTOR L. LANDFILLS AND LAND APPLICATION SITES			
NA	4953	Landfills and Land Application Sites That Receive or Have Received Industrial Wastes, Except Inactive Landfills or Land Applications Sites Occurring on Federal Lands Where an Operator Cannot be Identified	**TSS;Fe**
SECTOR M. AUTOMOBILE SALVAGE YARDS			
NA	5015	Facilities Engaged in Dismantling or Wrecking Used Motor Vehicles for Parts Recycling or Resale and for Scrap	**TSS;Fe;Pb;Al**
SECTOR N. SCRAP RECYCLING FACILITIES			
NA	5093	Processing, Reclaiming, and Wholesale Distribution of Scrap and Waste Materials	**TSS;Fe;Pb Al;Cu;Zn;COD**
SECTOR O. STEAM ELECTRIC GENERATING FACILITIES			
NA	4911	Steam Electric Power Generating Facilities	**Fe**
SECTOR P. LAND TRANSPORTATION FACILITIES THAT HAVE VEHICLE AND EQUIPMENT MAINTENANCE SHOPS AND/OR EQUIPMENT CLEANING OPERATIONS			
P1	40XX	Railroad Transportation	
P2	41XX	Local and Highway Passenger Transportation	
P3	42XX	Motor Freight Transportation and Warehousing	
P4	43XX	United States Postal Service	
P5	5171	Petroleum Bulk Stations and Terminals	
SECTOR Q. WATER TRANSPORTATION FACILITIES THAT HAVE VEHICLE (VESSEL) & EQUIPMENT MAINTENANCE SHOPS AND/OR EQUIPMENT CLEANING OPERATIONS			
NA	44XX	Water Transportation	**Al;Fe;Pb;Zn**
SECTOR R. SHIP AND BOAT BUILDING OR REPAIRING YARDS			
NA	373X	Ship and Boat Building or Repairing Yards	
SECTOR S. AIR TRANSPORTATION FACILITIES			
NA	45XX	Air Transportation Facilities That Have Vehicle Maintenance Ships, Material Handing Facilities, Equipment Cleaning Operations, or Airport and/or Aircraft Deicing/Anti-icing Operations	**BOD;COD;NH_3;pH**

Subsector	SIC	Activity Represented	Parameters
SECTOR T. TREATMENT WORKS			
NA	4952	Treatment Works Treating Domestic Sewage or Any Other Sewage Sludge or Wastewater Treatment Device or System Used in the Storage, treatment, recycling, or Reclamation of Municipal or Domestic Sewage with a Design Flow of 1.0 MGD or More or Required to Have an Approved Pretreatment Program	
SECTOR U. FOOD AND KINDRED PRODUCTS			
U1	201X	Meat Products	
U2	202X	Dairy Products	
U3	203X	Canned, Frozen and Preserved Fruits, Vegetables and Food Specialties	
U4	204X	Grain Mill Products	**TSS**
U5	205X	Bakery Products	
U6	206X	Sugar and Confectionery Products	
U7	207X	Fats and Oils	**BOD;COD;TSS;N+N**
U8	208X	Beverages	
U9	209X	Miscellaneous Food Preparations and Kindred Products	
NA	21XX	Tobacco Products	
SECTOR V. TEXTILE MILLS, APPAREL, AND OTHER FABRIC PRODUCT MANUFACTURING			
V1	22XX	Textile Mill Products	
V2	23XX	Apparel and Other Finished Products Made From Fabrics and Similar Materials	
SECTOR W. FURNITURE AND FIXTURES			
NA	25XX	Furniture and Fixtures	
NA	2434	Wood Kitchen Cabinets	
SECTOR X. PRINTING AND PUBLISHING			
NA	2732	Book Printing	
NA	2752	Commercial Printing, Lithographic	
NA	2754	Commercial Printing, Gravure	
NA	2759	Commercial Printing, Nor Elsewhere Classified	
NA	2796	Platemaking and Related Services	
SECTOR Y. RUBBER, MISCELLANEOUS PLASTIC PRODUCTS, AND MISC. MANUFACTURING INDUSTRIES			
Y1	301X	Tires and Inner Tubes	**Zn**
Y1	302X	Rubber and Plastics Footwear	**Zn**
Y1	305X	Gaskets, Packing, and Sealing Devices and Rubber and Plastics Hose and Belting	**Zn**
Y1	306X	Fabricated Rubber Products, Not Elsewhere Classified	**Zn**
Y2	308X	Miscellaneous Plastics Products	

Subsector	SIC	Activity Represented	Parameters
Y2	393X	Musical Instruments	
Y2	394X	Dolls, Toys, Games, and Sporting and Athletic Goods	
Y2	395X	Pens, Pencils, and Other Artists' Materials	
Y2	396X	Costume Jewelry, Costume Novelties, Buttons, and Miscellaneous Notions, Except Precious Metal	
Y2	399X	Miscellaneous Manufacturing Industries	
SECTOR Z. LEATHER TANNING AND FINISHING			
NA	311X	Leather Tanning and Finishing	
NA	NA	Facilities that Make Fertilizer Solely From Leather Scraps and Leather Dust	
SECTOR AA. FABRICATED METAL PRODUCTS			
AA1	3429	Hardware, Not Elsewhere Classified	**Zn;N+N;Fe;Al**
AA1	3441	Fabricated Structural Metal	**Zn;N+N;Fe;Al**
AA1	3442	Metal Doors, Sash, Frames, Molding, and Trim	**Zn;N+N;Fe;Al**
AA1	3443	Fabricated Plate Work (Boiler Shops)	**Zn;N+N;Fe;Al**
AA1	3444	Sheet Metal Work	**Zn;N+N;Fe;Al**
AA1	3451	Screw Machine Products	**Zn;N+N;Fe;Al**
AA1	3452	Bolts, Nuts, Screws, Rivets, and Washers	**Zn;N+N;Fe;Al**
AA1	3462	Iron and Steel Forgings	**Zn;N+N;Fe;Al**
AA1	3471	Electroplating, Plating, Polishing, Anodizing, and Coloring	**Zn;N+N;Fe;Al**
AA1	3494	Valves and Pipe Fittings, Not Elsewhere Classified	**Zn;N+N;Fe;Al**
AA1	3496	Miscellaneous Fabricated Wire Products.	**Zn;N+N;Fe;Al**
AA1	3499	Fabricated Metal Products, Not Elsewhere Classified	**Zn;N+N;Fe;Al**
AA1	391X	Jewelry, Silverware, and Plated Ware	**Zn;N+N;Fe;Al**
AA2	3479	Coating, Engraving, and Allied Services	**Zn;N+N**
SECTOR AB. TRANSPORTATION EQUIPMENT, INDUSTRIAL OR COMMERCIAL MACHINERY			
NA	35XX	Industrial and Commercial Machinery (except 357X Computer and Office Equipment)	
NA	37XX	Transportation Equipment (except 373X Ship and Boat Building and Repairing	
SECTOR AC. ELECTRONIC, ELECTRICAL. PHOTOGRAPHIC, AND OPTICAL GOODS			
NA	36XX	Electronic and Other Electrical Equipment and Components, Except Computer Equipment	
NA	38XX	Measuring, Analyzing, and Controlling Instruments; Photographic, Medical, and Optical Goods; Watches and Clocks	
NA	357X	Computer and Office Equipment	

Section C: STANDARD PROVISIONS

1. Duty to Comply

The facility operator must comply with all of the conditions of this General Permit. Any General Permit noncompliance constitutes a violation of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act and is grounds for (a) enforcement action for (b) General Permit termination, revocation and reissuance, or modification or (c) denial of a General Permit renewal application.

The facility operator shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this General Permit has not yet been modified to incorporate the requirement.

2. General Permit Actions

This General Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the facility operator for a General Permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any General Permit condition.

If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the CWA for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this General Permit, this General Permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition, and the facility operator so notified.

3. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a facility operator in an enforcement action that it would have been necessary to halt or reduce the general permitted activity in order to maintain compliance with the conditions of this General Permit.

4. Duty to Mitigate

The facility operator shall take all responsible steps to minimize or prevent any discharge in violation of this General Permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance

The facility operator at all times shall properly operate and maintain any facilities and systems of treatment and control (and related appurtenances) which are installed or used by the facility operator to achieve compliance with the conditions of this General Permit and with the requirements of storm water pollution prevention plans (SWPPPs). Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance may require the operation of backup or auxiliary facilities or similar systems installed by a facility operator when necessary to achieve compliance with the conditions of this General Permit.

6. Property Rights

This General Permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

7. Duty to Provide Information

The facility operator shall furnish the Regional Water Quality Control Board (Regional Water Board), State Water Resources Control Board (State Water Board), U.S. Environmental Protection Agency (U.S. EPA), or local storm water management agency, within a reasonable time specified by the agencies, any requested information to determine compliance with this General Permit. The facility operator shall also furnish, upon request, copies of records required to be kept by this General Permit.

8. Inspection and Entry

The facility operator shall allow the Regional Water Board, State Water Board, U.S. EPA, and local storm water management agency, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the facility operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this General Permit;

b. Have access to and copy at reasonable times any records that must be kept under the conditions of this General Permit;

c. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment) that are related to or may impact storm water discharge or authorized non-storm water discharge; and

d. Conduct monitoring activities at reasonable times for the purpose of ensuring General Permit compliance.

9. Signatory Requirements

a. All Notices of Intent (NOIs) submitted to the State Water Board shall be signed as follows:

(1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or (b) the manager of the facility if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. The principal executive officer of a Federal agency includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA).

b. All reports, certifications, or other information required by the General Permit or requested by the Regional Water Board, State Water Board, U.S. EPA, or local storm water management agency shall be signed by a person described above or by a duly authorized representative. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described above and retained as part of the SWPPP.

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for named position.)

(3) If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be attached to the SWPPP prior to submittal of any reports, certifications, or information signed by the authorized representative.

10. Certification

Any person signing documents under Provision 9. above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

11. Reporting Requirements

a. Planned changes: The facility operator shall give advance notice to the Regional Water Board and local storm water management agency of any planned physical alteration or additions to the general permitted facility. Notice is required under this provision only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged.

b. Anticipated noncompliance: The facility operator will give advance notice to the Regional Water Board and local storm water management agency of any planned changes at the permitted facility which may result in noncompliance with General Permit requirements.

c. Compliance schedules: Reports of compliance or noncompliance with or any progress reports on interim and final requirements contained in any compliance schedule of this General Permit shall be submitted no later than 14 days following each scheduled date.

d. Noncompliance reporting: The facility operator shall report any noncompliance at the time monitoring reports are submitted. The written submission shall contain (1) a description of the noncompliance and its cause; (2) the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and (3) steps taken or planned to reduce and prevent recurrence of the noncompliance.

12. Oil and Hazardous Substance Liability

Nothing in this General Permit shall be construed to preclude the institution of any legal action or relieve the facility operator from any responsibilities, liabilities, or penalties to which the facility operator is or may be subject under Section 311 of the CWA.

13. Severability

The provisions of this General Permit are severable; and if any provision of this General Permit or the application of any provision of this General Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this General Permit shall not be affected thereby.

14. Reopener Clause

This General Permit may be modified, revoked, and reissued, or terminated for cause due to promulgation of amended regulations, receipt of U.S. EPA guidance concerning regulated activities, judicial decision, or in accordance with 40 CFR 122.62, 122.63, 122.64, and 124.5. This General Permit may be reopened to modify the provisions regarding authorized non-storm water discharges specified in Section D. Special Conditions.

15. Penalties for Violations of General Permit Conditions.

a. Section 309 of the CWA provides significant penalties for any person who violates a General Permit condition

implementing Sections 301, 302, 306, 307 308, 318, or 405 of the CWA, or any General Permit condition or limitation implementing any such section in a General Permit issued under Section 402. Any person who violates any General Permit condition of this General Permit is subject to a civil penalty not to exceed $25,000 per day of such violation, as well as any other appropriate sanction provided by Section 309 of the CWA.

b. The Porter-Cologne Water Quality Control Act also provides for civil and criminal penalties in some cases greater than those under the CWA.

16. Availability

A copy of this General Permit shall be maintained at the facility and be available at all times to the appropriate facility personnel and to Regional Water Board and local agency inspectors.

17. Transfers

This General Permit is not transferable from one facility operator to another facility operator nor may it be transferred from one location to another location. A new facility operator of an existing facility must submit an NOI in accordance with the requirements of this General Permit to be authorized to discharge under this General Permit.

18. Continuation of Expired General Permit

This General Permit continues in force and effect until a new general permit is issued or the State Water Board rescinds the General Permit. Facility operators authorized to discharge under the expiring general permit are required to file an NOI to be covered by the reissued General Permit.

19. Penalties for Falsification of Reports

Section 309(c)(4) of the CWA provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this General Permit, including reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years, or by both.

Attachment 1

FACILITIES COVERED BY THIS GENERAL PERMIT

Industrial facilities include Federal, State, municipally owned, and private facilities from the following categories:

1. FACILITIES SUBJECT TO STORM WATER EFFLUENT LIMITATIONS GUIDELINES, NEW SOURCE PERFORMANCE STANDARDS, OR TOXIC POLLUTANT EFFLUENT STANDARDS (40 Code of Federal Regulations (CFR) SUBCHAPTER N). Currently, categories of facilities subject to storm water effluent limitations guidelines are Cement Manufacturing (40 CFR Part 411), Feedlots (40 CFR Part 412), Fertilizer Manufacturing (40 CFR Part 418), Petroleum Refining (40 CFR Part 419), Phosphate Manufacturing (40 CFR Part 422), Steam Electric (40 CFR Part 423), Coal Mining (40 CFR Part 434), Mineral Mining and Processing (40 CFR Part 436), Ore Mining and Dressing (40 CFR Part 440), and Asphalt Emulsion (40 CFR Part 443).

2. MANUFACTURING FACILITIES: Standard Industrial Classifications (SICs) 24 (except 2434), 26 (except 265 and 267), 28 (except 283 and 285) 29, 311, 32 (except 323), 33, 3441, and 373.

3. OIL AND GAS/MINING FACILITIES: SICs 10 through 14 including active or inactive mining operations (except for areas of coal mining operations meeting the definition of a reclamation area under 40 CFR 434.11(l) because of performance bond issued to the facility by the appropriate Surface Mining Control and Reclamation Act (SMCRA) authority has been released, or except for area of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990); oil and gas exploration, production, processing, or treatment operations; or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with any overburden, raw material, intermediate products, finished products, by-products, or waste products located on the site of such operations. Inactive mining operations are mined sites that are not being actively mined but which have an identifiable facility operator. Inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined material; or sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim.

4. HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL FACILITIES: Includes those operating under interim status or a general permit under Subtitle C of the Federal Resource, Conservation, and Recovery Act (RCRA).

5. LANDFILLS, LAND APPLICATION SITES, AND OPEN DUMPS: Sites that receive or have received industrial waste from any of

the facilities covered by this General Permit, sites subject to regulation under Subtitle D of RCRA, and sites that have accepted wastes from construction activities (construction activities include any clearing, grading, or excavation that results in disturbance of five acres or more).

6. RECYCLING FACILITIES: SICs 5015 and 5093. These codes include metal scrapyards, battery reclaimers, salvage yards, motor vehicle dismantlers and wreckers, and recycling facilities that are engaged in assembling, breaking up, sorting, and wholesale distribution of scrap and waste material such as bottles, wastepaper, textile wastes, oil waste, etc.

7. STEAM ELECTRIC POWER GENERATING FACILITIES: Includes any facility that generates steam for electric power through the combustion of coal, oil, wood, etc.

8. TRANSPORTATION FACILITIES: SICs 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication) or other operations identified herein that are associated with industrial activity.

9. SEWAGE OR WASTEWATER TREATMENT WORKS: Facilities used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility with a design flow of one million gallons per day or more or required to have an approved pretreatment program under 40 CFR Part 403. Not included are farm lands, domestic gardens, or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the Clean Water Act.

10. MANUFACTURING FACILITIES WHERE INDUSTRIAL MATERIALS, EQUIPMENT, OR ACTIVITIES ARE <u>EXPOSED</u> TO STORM WATER: SICs 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, and 4221-4225.

STORM WATER CONTACTS FOR THE STATE AND REGIONAL WATER BOARDS

See Storm Water Contacts at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/contact.shtml

NOTICE OF INTENT (NOI) INSTRUCTIONS

TO COMPLY WITH STATE WATER RESOURCES CONTROL BOARD WATER QUALITY ORDER NO. 97-03-DWQ NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT NO. CAS000001

Who Must Submit

The facility operator must submit an NOI for each industrial facility that is required by U.S. Environmental Protection Agency (U.S.EPA) regulations to obtain a storm water permit. The required industrial facilities are listed in Attachment 1 of the General Permit and are also listed in 40 Code of Federal Regulations Section 122.26(b)(14).

The facility operator is typically the owner of the business or operation where the industrial activities requiring a storm water permit occur. The facility operator is responsible for all permit related activities at the facility.

Where operations have discontinued and significant materials remain on site (such as at closed landfills), the landowner may be responsible for filing an NOI and complying with this General Permit. Landowners may also file an NOI for a facility if the landowner, rather than the facility operator, is responsible for compliance with this General Permit.

How and Where to Apply

The completed NOI form, a site map, and appropriate fee must be mailed to the State Water Resources Control Board (State Water Board) at the following address:

State Water Resources Control Board
Division of Water Quality
P.O. Box 1977
Sacramento, CA 95812-1977
Attn: Storm Water Permitting Unit

Please Note: Do not send the original or copies of the NOI submittal to the Regional Water Quality Control Board (Regional Water Board). The original NOI will be forwarded to the Regional Water Board after processing.

Do not send a copy of your Storm Water Pollution Prevention Plan (SWPPP) with your NOI submittal. Your SWPPP is to be kept on site and made available for review upon request.

When to Apply

Facility operators of existing facilities must file an NOI in accordance with these instructions by March 30, 1992. Facility

operators of new facilities (those beginning operations after March 30, 1992) must file an NOI in accordance with these instructions at least 14 days prior to the beginning of operations.

Once the completed NOI, site map, and appropriate fee have been submitted to the State Water Board, your NOI will be processed and you will be issued a receipt letter with a Waste Discharge Identification (WDID) Number. Please refer to this number when you contact either the State or Regional Water Boards.

Fees

The total annual fee is $1359.00. Checks should be made payable to: SWRCB

Change of Information

If the information provided on the NOI or site map changes, you should report the changes to the State Water Board using an NOI form. Section I of the line-by-line instructions includes information regarding changes to the NOI.

Questions

If you have any questions completing the NOI, please call the appropriate Regional Water Board (Attachment 2) or the State Water Board at (916) 341-5538.

NOI LINE-BY-LINE INSTRUCTIONS

Please type or print your responses on the NOI. Please complete the NOI form in its entirety and sign the certification.

Section I--NOI STATUS

Check box "A" if this is a new NOI registration.

Check box "B" if you are reporting changes to the NOI (e.g., new contact person, phone number, mailing address). Include the facility WDID #. Highlight all the information that has been changed.

Please note that a change of information **does not** apply to a change of facility operator or a change in the location of the facility. These changes require a Notice of Termination (NOT) and submittal of a new NOI and annual fee. Contact the State Water Board or Regional Water Boards for more information on the NOT Form and instructions.

Regardless of whether you are submitting a new or revised NOI, you must complete the NOI in its entirety and the NOI must be signed.

Section II--Facility Operator Information

Part A: The facility operator is the legal entity that is responsible for all permit related compliance activities at the facility. In most cases, the facility operator is the owner of the business or operation where the industrial activity occurs. Give the legal name and the address of the person, firm, public organization, or any other entity that is responsible for complying with the General Permit.

Part B: Check the box that indicates the type of operation.

Section III--Facility Site Information

Part A: Enter the facility's official or legal name and provide the address. Facilities that do not have a street address must provide cross-streets or parcel numbers. Do not include a P.O. Box address in Part A.

Part B: Enter the mailing address of the facility if different than Part A. This address may be a P.O. Box.

The contact person should be the plant or site manager who is familiar with the facility and responsible for overseeing compliance of the General Permit requirements.

Part C: Enter the total size of the facility in either acres or square feet. Also include the percentage of the site that is impervious (areas that water cannot soak into the ground, such as concrete, asphalt, and rooftops).

Part D: Determine the Standard Industrial Classification (SIC) code which best identifies the industrial activity that is taking place at the facility. This information can be obtained by referring to the Standard Industrial Classification Manual prepared by the Federal Office of Management and Budget which is available at public libraries. The code you determine should identify the industrial activity that requires you to submit the NOI. (For example, if the business is high school education and the activity is school bus maintenance, the code you choose would be bus maintenance, not education.) Most facilities have only one code; however, additional spaces are provided for those facilities that have more than one activity.

Part E: Identify the title of the industrial activity that requires you to submit the NOI (e.g., the title of SIC Code 2421 is Sawmills and Planing Mills, General). If you cannot identify the title, provide a description of the regulated activity(s).

Section IV--Address for Correspondence

Correspondence relative to the permit will be mailed occasionally. Check the box which indicates where you would like such correspondence delivered. If you want correspondence sent to another contact person or address different than indicated in Section II or Section III then include the information on an extra sheet of paper.

Section V--Billing Address Information

To continue coverage under the General Permit, the annual fee must be paid. Use this section to indicate where the annual fee invoices should be mailed. Enter the billing address if different than the address given in Sections II or III.

Section VI--Receiving Water Information

Provide the name of the receiving water where storm water discharge flows from your facility. A description of each option is included below.

1. Directly to waters of the United States: Storm water discharges directly from the facility to a river, creek, lake, ocean, etc. Enter the name of the receiving water (e.g., Boulder Creek).

2. Indirectly to waters of the United States: Storm water discharges over adjacent properties or right-of-ways prior to discharging to waters of the United States. Enter the name of the closest receiving water (e.g., Clear Creek).

Section VII--Implementation of Permit Requirements

Parts A and B:	Check the boxes that best describe the status of the Storm Water Pollution Prevention Plan (SWPPP) and the Monitoring Program.
Part C:	Check yes or no to questions 1 through 4. If you answer no to any question, you need to assign a person to these tasks immediately.

As a permit holder you are required to have an SWPPP and Monitoring Program in place prior to the beginning of facility operations. Failure to do so is in direct violation of the General Permit. Do not send a copy of your SWPPP with your NOI submittal.

Please refer to Sections A and B of the General Permit for additional information regarding the SWPPP and Monitoring Program.

Section VIII--Site Map

Provide a "to scale" drawing of the facility and its immediate surroundings. Include as much detail about the site as possible. At a minimum, indicate buildings, material handling and storage areas, roads, names of adjacent streets, storm water discharge points, sample collection points, and a north arrow. Whenever

possible limit the map to a standard size sheet of paper (8.5" x 11" or 11" x 17"). **Do not send blueprints** unless you are sending one page and it meets the size limits as defined above.

A location map may also be included, especially in cases where the facility is difficult to find, but are <u>not to be submitted as a substitute for the site map</u>. The location map can be created from local street maps and U.S. Geological Survey (USGS) quadrangle maps, etc.

A revised site map must be submitted whenever there is a significant change in the facility layout (e.g., new building, change in storage locations, boundary change, etc.).

Section IX--Certification

This section should be read by the facility operator. The certification provides assurances that the NOI and site map were completed by the facility operator in an accurate and complete fashion and with the knowledge that penalties exist for providing false information. It also requires the Responsible Party to certify that the provisions in the General Permit will be complied with.

The NOI must be signed by:

For a Corporation: a responsible corporate officer (or authorized individual).

For a Partnership or Sole Proprietorship: a general partner or the proprietor, respectively.

For a Municipality, State, or other non-Federal Public Agency: either a principal executive officer or ranking elected official.

For a Federal Agency: either the chief or senior executive officer of the agency.

State of California
State Water Resources Control Board

NOTICE OF INTENT

TO COMPLY WITH THE TERMS OF THE
GENERAL PERMIT TO DISCHARGE STORM WATER
ASSOCIATED WITH **INDUSTRIAL ACTIVITY** (WQ ORDER No. 97-03-DWQ)
(*Excluding Construction Activities*)

SECTION I. NOI STATUS (please check only one box)

A. [ ] New Permittee B. [ ] Change of Information WDID # |___|___|___|___|___|___|___|___|___|___|___|

SECTION II. FACILITY OPERATOR INFORMATION (See instructions)

A. NAME: Phone: ___-___-___

Mailing Address:

City: State: Zip Code: ___-___

Contact Person:

B. OPERATOR TYPE:
(check one) 1.[ ] Private Individual 2.[ ]Business 3.[ ]Municipal 4.[ ]State 5.[ ]Federal 6.[ ]Other

SECTION III. FACILITY SITE INFORMATION

A. FACILITY NAME Phone: ___-___-___

Facility Location: County:

City: State: C I A Zip Code: ___-___

B. MAILING ADDRESS:

City: State: Zip Code: ___-___

Contact Person:

C. FACILITY INFORMATION (check one)
Total Size of Site: _____ Acres [ ] Sq. Ft. [ ]

Percent of Site Impervious (*including rooftops*) _____ %

D. SIC CODE(S) OF REGULATED ACTIVITY: E. REGULATED ACTIVITY (*describe each SIC code*):

1. ____
2. ____
3. ____

FOR STATE USE ONLY:

SECTION IV. ADDRESS FOR CORRESPONDENCE

I_I Facility Operator Mailing Address (Section II) I_I Facility Mailing Address (Section III, B.) I_I Both

SECTION V. BILLING ADDRESS INFORMATION

SEND BILL TO: [ ] Facility Operator Mailing Address (Section II) [ ] Facility Mailing Address (Section III, B.) [ ] Other (*enter information below*)

Name: I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I

Phone: I_I_I_I -- I_I_I_I -- I_I_I_I_I

Mailing Address: I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I

City: I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I

State: _I_

Zip Code: I_I_I_I_I_I -- I_I_I_I_I

Contact Person: I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I

SECTION VI. RECEIVING WATER INFORMATION

Your facility's storm water discharges flow: (*check one*) [ ] Directly OR [ ] Indirectly to waters of the United States.

Name of receiving water: I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I
(river, lake, stream, ocean, etc.)

SECTION VII. IMPLEMENTATION OF PERMIT REQUIREMENTS

A. STORM WATER POLLUTION PREVENTION PLAN (SWPPP) (*check one*)
[ ] A SWPPP has been prepared for this facility and is available for review.
[ ] A SWPPP will be prepared and ready for review by (enter date): ____/____/____.

B. MONITORING PROGRAM (check one)
[ ] A Monitoring Program has been prepared for this facility and is available for review.
[ ] A Monitoring Program will be prepared and ready for review by (enter date): ____/____/____.

C. PERMIT COMPLIANCE RESPONSIBILITY
Has a person been assigned responsibility for:
1. Inspecting the facility throughout the year to identify any potential pollution problems? .... ____YES ____NO
2. Collecting storm water samples and having them analyzed?........ ____YES ____NO
3. Preparing and submitting an annual report by July 1 of each year? .... ____YES ____NO
4. Eliminating discharges other than storm water (*such as equipment or vehicle wash-water*) into the storm drain?........ ____YES ____NO

SECTION VIII. SITE MAP

I HAVE ENCLOSED A SITE MAP YES[ ] A new NOI submitted without a site map will be rejected.

SECTION IX. CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that I have read the entire General Permit, including all attachments, and agree to comply with and be bound by all of the provisions, requirements, and prohibitions of the permit, including the development and implementation of a Storm Water Pollution Pervention Plan and a Monitoring Program Plan will be complied with."

Printed Name: ____

Signature: ______________________________________ Date ____________________

Title: ____

DEFINITIONS

1. "Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment measures, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may include any type of pollution prevention and pollution control measure necessary to achieve compliance with this General Permit.

2. Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500 as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; 33 USC. 1251 et seq.

3. "Facility" is a collection of industrial processes discharging storm water associated with industrial activity within the property boundary or operational unit.

4. "Non-Storm Water Discharge" means any discharge to storm sewer systems that is not composed entirely of storm water.

5. "Significant Materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERLCA); any chemical the facility is required to report pursuant to Section 313 of Title III of Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

6. "Significant Quantities" is the volume, concentrations, or mass of a pollutant that can cause or threaten to cause pollution, contamination, or nuisance; adversely impact human health or the environment; and/or cause or contribute to a violation of any applicable water quality standards for the receiving water.

7. "Significant Spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR 110.10 and 117.21) or Section 102 of CERCLA (see 40 CFR 302.4).

8. "Storm water" means storm water runoff, snow melt runoff, and storm water surface runoff and drainage. It excludes infiltration and runoff from agricultural land.

9. "Storm Water Associated with Industrial Activity" means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program. For the facilities identified in Categories 1 through 9 of Attachment 1 of this General Permit, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials; manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process wastewaters (as defined at 40 CFR Part 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water.

   For the facilities identified in Category 10 of Attachment 1 of this General Permit, the term only includes storm water discharges from all areas listed in the previous sentence where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery <u>are exposed to storm water</u>.

   Material handling activities include the: storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product, or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are federally, State, or municipally owned or operated that meet the description of the facilities listed in this paragraph) include those facilities designated under 40 CFR 122.26(a)(1)(v).

ACRONYM LIST

BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
BMPs	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Federal Superfund)
CFR	Code of Federal Regulations
CWA	Clean Water Act
General Permit	General Industrial Activities Storm Water Permit
GMP	Group Monitoring Plan
NEC	No Exposure Certification
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
O&G	Oil and Grease
RCRA	Resource, Conservation, and Recovery Act
Regional Water Board	Regional Water Quality Control Board
RQ	Reportable Quantity
SARA	Superfund Amendments and Reauthorization Act of 1986
SIC	Standard Industrial Classification
SMCRA	Surface Mining Control and Reclamation Act
SPCC	Spill Prevention Control and Countermeasures
State Water Board	State Water Resources Control Board
SWPPP	Storm Water Pollution Prevention Plan
TOC	Total Organic Carbon
TSS	Total Suspended Solids
U.S. EPA	U.S. Environmental Protection Agency
WDID	Waste Discharger Identification
WDRs	Waste Discharge Requirements

APPENDIX C

REVISION RECORDS

STORM WATER POLLUTION PREVENTION PLAN –
REVISIONS AND AMENDMENTS RECORD

Cucamonga Crosswalls Project

Record all additions, changes or deletions made to the SWPPP as a result of changes in equipment, policy or regulatory agency requirements. The SWPPP shall be amended whenever there is a design change. Amendments shall be implemented no later than six months after changes occur.

Date of Amendment	Section Amended	Comments
June 3, 2013	All Sections	New SWPPP.

APPENDIX D

TRAINING RECORDS

STORM WATER POLLUTION PREVENTION PLAN –
EMPLOYEE TRAINING OUTLINE

Cucamonga Crosswalls Project

Purpose: To familiarize employees responsible for storm water compliance with onsite sources of potential pollutants, Best Management Practices, and requirements associated with the Storm Water program.

Topics to be covered:

1. SWPPP purpose and requirements
2. Review potential pollutant sources at the Project site
3. Review of inspection procedures and frequencies
4. Review spill response procedures regarding:
    - Notification of supervisory personnel
    - Spill control
    - On-site spill response equipment
    - Following response procedures outlined in this SWPPP
5. Review Project Best Management Practices (BMPs)
6. Review vehicle fueling practices
7. Discuss past spill events or failures in the plan, malfunctioning components discovered during inspections, and any recently developed or implemented spill measures
8. Review Monitoring Plan
9. Record keeping (5 years for data)

STORM WATER POLLUTION PREVENTION PLAN –

EMPLOYEE TRAINING LOG

Cucamonga Crosswalls Project

Employees charged with responsibilities in this Storm Water Pollution Prevention Plan have been trained in the following areas of this program.

- Program purpose and requirements.
- Review potential pollutant sources at the Project site.
- Review spill response procedures.
- Review Project storm water Best Management Practices (BMPs).
- Recordkeeping requirements.

Instructor Name	Signature	Date

I hereby certify that I have received SWPPP Training. I am familiar with the procedures outlined in and requirements of the SWPPP.

Employee Name	Signature	Date

STORM WATER POLLUTION PREVENTION PLAN –

EMPLOYEE TRAINING OUTLINE

GENERAL	Outline of Initial Storm Water Training
Permit Requires	Eliminate non-storm water discharges Prepare a Storm Water Pollution Prevention Plan (SWPPP) Monitor discharges
SWPPP	Identify sources of pollution Describe and implement practices to reduce pollution
Responsible Person	Roko Grbic
Project Description	Crosswall repair and aggregate processing
Sources of Pollution	Crosswall repair and desilting Material processing and storage Equipment fueling / fuel storage Equipment maintenance Vehicle parking Unpaved roads

Table: Sampling Requirements for All Outfalls

Potential Pollutant	Analytical Method	Detection Limit (mg/L)	Sample Type	Sample Container	Preservative	Other
Oil and grease (O&G)	413.1	1.0	Grab	1 liter amber glass	HCl or H_2SO_4	---
Total suspended solids (TSS)	160.2	1.0	Grab	1 liter plastic	None	---
pH	150.1	n/a	Grab	1 liter plastic	None	If >24 hours store, cool to 4°C (40°F)
Specific conductance	120.1	n/a	Grab	1 liter plastic	None	---
Nitrate/nitrite nitrogen (N+N)	351.1	1.0	Grab	1 liter plastic	None	---

Best Management Practices (BMPs)	SWPPP committee Good housekeeping Pollution prevention Eliminate non storm water discharges Sediment and erosion prevention Storm water monitoring and reporting Preventative maintenance Spill prevention Training Pre-storm inspections Pre-storm corrective actions
Inspection program	Monthly Quarterly Annually

APPENDIX E

INSPECTION FORMS

Form 1 – Sampling and Analysis Results
Form 2 – Quarterly Visual Observations of Authorized Non-Storm Water Discharges
Form 3 – Quarterly Visual Observations of Unauthorized Non-Storm Water Discharges
Form 4 – Monthly Visual Observations of Storm Water Discharges
Form 5 – Annual Comprehensive Site Compliance Evaluation Form (ACSCE)

To Interested Parties:

2012-2013 ANNUAL REPORT ANNUAL REPORT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

Attached is the 2012-21013 annual report that must be mailed to your Regional Board office by July 1, 2013. Dischargers within the Los Angeles Regional Board are required to electronically submit their annual reports via the Storm Water Multi-Application Reporting and Tracking System (SMARTS), email with a PDF attachment(s) to losangeles@waterboards.ca.gov, or mail a disk. Although electronic submittals are not mandatory for dischargers in other regions, we encourage all dischargers to register and use SMARTS. We anticipate that a new Industrial General Permit (IGP) will be adopted sometime next year that will mandate electronic reporting for future reporting years.

To register to use SMARTS please visit: https://smarts.waterboards.ca.gov and download the SMARTS LRP registration form and instructions. Please fill out the form and mail it back to: SMARTS Registration, P.O. Box 1977, Sacramento, CA 95812. Once a complete registration form is received, a login name and password will be emailed to you.

For SMARTS registration questions or information please contact the SMARTS help center at 1-866-563-3107 or by email at stormwater@waterboards.ca.gov.

To receive email updates on Storm Water Industrial permitting issues including updates on the IGP reissuance process (hearings, workshops, schedules, etc.), please sign up at http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml The Storm Water program currently maintains five email lists:

- Storm Water Database Issues
- Storm Water Construction Permitting Issues
- Storm Water Industrial Permitting Issues
- Storm Water Municipal Permitting Issues
- Sustainable Development

Sincerely,

Storm Water Section

State of California
STATE WATER RESOURCES CONTROL BOARD

2012-2013

ANNUAL REPORT

FOR
STORM WATER DISCHARGES ASSOCIATED
WITH INDUSTRIAL ACTIVITIES

Reporting Period July 1, 2012 through June 30, 2013

An annual report is required to be submitted to your local Regional Water Quality Control Board (Regional Board) by July 1 of each year. This document must be certified and signed, under penalty of perjury, by the appropriate official of your company. Many of the Annual Report questions require an explanation. Please provide explanations on a separate sheet as an attachment. **Retain a copy of the completed Annual Report for your records.**

Please circle or highlight any information contained in Items A, B, and C below that is new or revised so we can update our records. Please remember that a Notice of Termination and new Notice of Intent are required whenever a facility operation is relocated or changes ownership.

If you have any questions, please contact your Regional Board Industrial Storm Water Permit Contact. The names, telephone numbers and e-mail addresses of the Regional Board contacts, as well as the Regional Board office addresses can be found at http://www.swrcb.ca.gov/stormwtr/contact.html. To find your Regional Board information, match the first digit of your WDID number with the corresponding number that appears in parenthesis on the first line of each Regional Board office.

GENERAL INFORMATION:

A. Facility Information:

Facility WDID No: _____

Facility Business Name: _____ Contact Person: _____

Physical Address: _____ e-mail: _____

City: _____ **CA** Zip: _____ Phone: _____

Standard Industrial Classification (SIC) Code(s): _____

B. Facility Operator Information:

Operator Name: _____ Contact Person: _____

Mailing Address: _____ e-mail: _____

City: _____ State: ___ Zip: _____ Phone: _____

C. Facility Billing Information:

Operator Name: _____ Contact Person: _____

Mailing Address: _____ e-mail: _____

City: _____ State: ___ Zip: _____ Phone: _____

2012-2013

ANNUAL REPORT

SPECIFIC INFORMATION

MONITORING AND REPORTING PROGRAM

D. SAMPLING AND ANALYSIS EXEMPTIONS AND REDUCTIONS

1. For the reporting period, was your facility exempt from collecting and analyzing samples from **two** storm events in accordance with sections B.12 or 15 of the General Permit?

   ☐ **YES** Go to Item D.2 ☐ **NO** Go to Section E

2. Indicate the reason your facility is exempt from collecting and analyzing samples from **two** storm events. Attach a copy of the first page of the appropriate certification if you check boxes ii, iii, iv, or v.

   i. ☐ Participating in an Approved Group Monitoring Plan **Group Name:** _____

   _____

   ii. ☐ Submitted **No Exposure Certification (NEC)** Date Submitted: _____

   Re-evaluation Date: _____

   Does facility continue to satisfy NEC conditions? ☐ YES ☐ NO

   iii. ☐ Submitted **Sampling Reduction Certification (SRC)** Date Submitted: _____

   Re-evaluation Date: _____

   Does facility continue to satisfy SRC conditions? ☐ YES ☐ NO

   iv. ☐ Received Regional Board Certification Certification Date: _____

   v. ☐ Received Local Agency Certification Cetification Date: _____

3. If you checked boxes i or iii above, were you scheduled to sample **one** storm event during the reporting year?

   ☐ **YES** Go to Section E ☐ **NO** Go to Section F

4. If you checked boxes ii, iv, or v, go to Section F.

E. SAMPLING AND ANALYSIS RESULTS

1. How many storm events did you sample? _____ If less than 2, **attach explanation** (if you checked item D.2.i or iii. above, only attach explanation if you answer "0").

2. Did you collect storm water samples from the first storm of the wet season that produced a discharge during scheduled facility operating hours? (Section B.5 of the General Permit)

   ☐ **YES** ☐ **NO, attach explanation (Please note that if you do not sample the first storm event, you are still required to sample 2 storm events)**

3. How many storm water discharge locations are at your facility? _____

4. For each storm event sampled, did you collect and analyze a sample from each of the facilitys' storm water discharge locations? ☐ YES, go to Item E.6 ☐ NO

5. Was sample collection or analysis reduced in accordance with Section B.7.d of the General Permit? ☐ YES ☐ NO, **attach explanation**

   If "YES", **attach documentation** supporting your determination that two or more drainage areas are substantially identical.

   Date facility's drainage areas were last evaluated _____

6. Were all samples collected during the first hour of discharge? ☐ YES ☐ NO, **attach explanation**

7. Was all storm water sampling preceded by three (3) working days without a storm water discharge? ☐ YES ☐ NO, **attach explanation**

8. Were there any discharges of stormwater that had been temporarily stored or contained? (such as from a pond) ☐ YES ☐ NO, go to Item E.10

9. Did you collect and analyze samples of temporarily stored or contained storm water discharges from two storm events? (or one storm event if you checked item D.2.i or iii. above) ☐ YES ☐ NO, **attach explanation**

10. Section B.5. of the General Permit requires you to analyze storm water samples for pH, Total Suspended Solids (TSS), Specific Conductance (SC), Total Organic Carbon (TOC) or Oil and Grease (O&G), other pollutants likely to be present in storm water discharges in significant quantities, and analytical parameters listed in Table D of the General Permit.

    a. Does Table D contain any additional parameters related to your facility's SIC code(s)? ☐ YES ☐ NO, Go to Item E.11

    b. Did you analyze all storm water samples for the applicable parameters listed in Table D? ☐ YES ☐ NO

    c. If you did not analyze all storm water samples for the applicable Table D parameters, check one of the following reasons:

    _____ In prior sampling years, the parameter(s) have not been detected in significant quantities from two consecutive sampling events. **Attach explanation**

    _____ The parameter(s) is not likely to be present in storm water discharges and authorized non-storm water discharges in significant quantities based upon the facility operator's evaluation. **Attach explanation**

    _____ Other. **Attach explanation**

11. For each storm event sampled, attach a copy of the laboratory analytical reports and report the sampling and analysis results using **Form 1** or its equivalent. The following must be provided for each sample collected:

- Date and time of sample collection
- Name and title of sampler.
- Parameters tested.
- Name of analytical testing laboratory.
- Discharge location identification.
- Testing results.
- Test methods used.
- Test detection limits.
- Date of testing.
- Copies of the laboratory analytical results.

F. QUARTERLY VISUAL OBSERVATIONS

1. **Authorized Non-Storm Water Discharges**
Section B.3.b of the General Permit requires quarterly visual observations of all authorized non-storm water discharges and their sources.

a. Do authorized non-storm water discharges occur at your facility?

☐ **YES** ☐ **NO** Go to Item F.2

b. Indicate whether you visually observed all authorized non-storm water discharges and their sources during the quarters when they were discharged. **Attach an explanation for any "NO" answers**. Indicate "N/A" for quarters without any authorized non-storm water discharges.

July -September	☐ **YES**	☐ **NO**	☐ **N/A**	October-December	☐ **YES**	☐ **NO**	☐ **N/A**
January-March	☐ **YES**	☐ **NO**	☐ **N/A**	April-June	☐ **YES**	☐ **NO**	☐ **N/A**

c. Use **Form 2** to report quarterly visual observations of authorized non-storm water discharges or provide the following information.

i. name of each authorized non-storm water discharge
ii. date and time of observation
iii. source and location of each authorized non-storm water discharge
iv. characteristics of the discharge at its source and impacted drainage area/discharge location
v. name, title, and signature of observer
vi. **any** new or revised BMPs necessary to reduce or prevent pollutants in authorized non-storm water discharges. Provide new or revised BMP implementation date.

2. **Unauthorized Non-Storm Water Discharges**
Section B.3.a of the General Permit requires quarterly visual observations of all drainage areas to detect the presence of unauthorized non-storm water discharges and their sources.

a. Indicate whether you visually observed all drainage areas to detect the presence of unauthorized non-storm water discharges and their sources. **Attach an explanation for any "NO" answers**.

July -September	☐ **YES**	☐ **NO**	October-December	☐ **YES**	☐ **NO**
January-March	☐ **YES**	☐ **NO**	April-June	☐ **YES**	☐ **NO**

b. Based upon the quarterly visual observations, were any unauthorized non-storm water discharges detected?

☐ **YES** ☐ **NO** Go to item F.2.d

c. Have each of the unauthorized non-storm water discharges been eliminated or permitted?

☐ **YES** ☐ **NO** **Attach explanation**

d. Use **Form 3** to report quarterly unauthorized non-storm water discharge visual observations or provide the following information.

i. name of each unauthorized non-storm water discharge.
ii. date and time of observation.
iii. source and location of each unauthorized non-storm water discharge.
iv. characteristics of the discharge at its source and impacted drainage area/discharge location.
v. name, title, and signature of observer.
vi. **any** corrective actions necessary to eliminate the source of each unauthorized non-storm water discharge and to clean impacted drainage areas. Provide date unauthorized non-storm water discharge(s) was eliminated or scheduled to be eliminated.

G. MONTHLY WET SEASON VISUAL OBSERVATIONS

Section B.4.a of the General Permit requires you to conduct monthly visual observations of storm water discharges at all storm water discharge locations during the wet season. These observations shall occur during the first hour of discharge or, in the case of temporarily stored or contained storm water, at the time of discharge.

1. Indicate below whether monthly visual observations of storm water discharges occurred at all discharge locations. **Attach an explanation for any "NO" answers**. Include in this explanation whether any eligible storm events occurred during scheduled facility operating hours that did not result in a storm water discharge, and provide the date, time, name and title of the person who observed that there was no storm water discharge.

	YES	NO		YES	NO
October	☐	☐	February	☐	☐
November	☐	☐	March	☐	☐
December	☐	☐	April	☐	☐
January	☐	☐	May	☐	☐

2. Report monthly wet season visual observations using **Form 4** or provide the following information.

   a. date, time, and location of observation
   b. name and title of observer
   c. characteristics of the discharge (i.e., odor, color, etc.) and source of any pollutants observed.
   d. **any** new or revised BMPs necessary to reduce or prevent pollutants in storm water discharges. Provide new or revised BMP implementation date.

ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION (ACSCE)

H. ACSCE CHECKLIST

Section A.9 of the General Permit requires the facility operator to conduct one ACSCE in each reporting period (July 1-June 30). Evaluations must be conducted within 8-16 months of each other. The SWPPP and monitoring program shall be revised and implemented, as necessary, within 90 days of the evaluation. The checklist below includes the minimum steps necessary to complete a ACSCE. Indicate whether you have performed each step below. **Attach an explanation for any "NO" answers.**

1. Have you inspected all potential pollutant sources and industrial activities areas? ☐ YES ☐ NO
   The following areas should be inspected:

   - areas where spills and leaks have occured during the last year.
   - outdoor wash and rinse areas.
   - process/manufacturing areas.
   - loading, unloading, and transfer areas.
   - waste storage/disposal areas.
   - dust/particulate generating areas.
   - erosion areas.
   - building repair, remodeling, and construction
   - material storage areas
   - vehicle/equipment storage areas
   - truck parking and access areas
   - rooftop equipment areas
   - vehicle fueling/maintenance areas
   - non-storm water discharge generating areas

2. Have you reviewed your SWPPP to assure that its BMPs address existing potential pollutant sources and industrial activities areas? ☐ YES ☐ NO

3. Have you inspected the entire facility to verify that the SWPPP's site map, is up-to-date? The following site map items should be verified: ☐ YES ☐ NO

   - facility boundaries
   - outline of all storm water drainage areas
   - areas impacted by run-on
   - storm water discharges locations
   - storm water collection and conveyance system
   - structural control measures such as catch basins, berms, containment areas, oil/water separators, etc.

4. Have you reviewed all General Permit compliance records generated since the last annual evaluation? ☐ YES ☐ NO

The following records should be reviewed:

- quarterly authorized non-storm water discharge visual observations
- monthly storm water discharge visual observation
- records of spills/leaks and associated clean-up/response activities
- quarterly unauthorized non-storm water discharge visual observations
- Sampling and Analysis records
- preventative maintenance inspection and maintenance records

5. Have you reviewed the major elements of the SWPPP to assure compliance with the General Permit? ☐ YES ☐ NO

The following SWPPP items should be reviewed:

- pollution prevention team
- list of significant materials
- description of potential pollutant sources
- assessment of potential pollutant sources
- identification and description of the BMPs to be implemented for each potential pollutant source

6. Have you reviewed your SWPPP to assure that a) the BMPs are adequate in reducing or preventing pollutants in storm water discharges and authorized non-storm water discharges, and b) the BMPs are being implemented? ☐ YES ☐ NO

The following BMP categories should be reviewed:

- good housekeeping practices
- spill response
- employee training
- erosion control
- quality assurance
- preventative maintenance
- material handling and storage practices
- waste handling/storage
- structural BMPs

7. Has all material handling equipment and equipment needed to implement the SWPPP been inspected? ☐ YES ☐ NO

I. ACSCE EVALUATION REPORT

The facility operator is required to provide an evaluation report that includes:

- identification of personnel performing the evaluation
- the date(s) of the evaluation
- necessary SWPPP revisions
- schedule for implementing SWPPP revisions
- any incidents of non-compliance and the corrective actions taken.

Use **Form 5** to report the results of your evaluation or develop an equivalent form.

J. ACSCE CERTIFICATION

The facility operator is required to certify compliance with the Industrial Activities Storm Water General Permit. To certify compliance, both the SWPPP and Monitoring Program must be up to date and be fully implemented.

Based upon your ACSCE, do you certify compliance with the Industrial Activities Storm Water General Permit? ☐ YES ☐ NO

If you answered "NO" **attach an explanation** to the ACSCE Evaluation Report why you are not in compliance with the Industrial Activities Storm Water General Permit.

ATTACHMENT SUMMARY

Answer the questions below to help you determine what should be attached to this annual report. Answer NA (Not Applicable) to questions 2-4 if you are not required to provide those attachments.

1. Have you attached Forms 1,2,3,4, and 5 or their equivalent?	☐ YES (Mandatory)		
2. If you conducted sampling and analysis, have you attached the laboratory analytical reports?	☐ YES	☐ NO	☐ NA
3. If you checked box II, III, IV, or V in item D.2 of this Annual Report, have you attached the first page of the appropriate certifications?	☐ YES	☐ NO	☐ NA
4. Have you attached an explanation for each "NO" answer in items E.1, E.2, E.5-E.7, E.9, E.10.c, F.1.b, F.2.a, F.2.c, G.1, H.1-H.7, or J?	☐ YES	☐ NO	☐ NA

ANNUAL REPORT CERTIFICATION

I am duly authorized to sign reports required by the INDUSTRIAL ACTIVITIES STORM WATER GENERAL PERMIT (see Standard Provision C.9) and I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those person directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: _____

Signature: _____ Date: _____

Title: _____

DESCRIPTION OF BASIC ANALYTICAL PARAMETERS

The Industrial Activities Storm Water General Permit (General Permit) requires you to analyze storm water samples for at least four parameters. These are pH, Total Suspended Solids (TSS), Specific Conductance (SC),and Total Organic Carbon (TOC). Oil and Grease (O&G) may be substituted for TOC. In addition, you must monitor for any other pollutants which you believe to be present in your storm water discharge as a result of industrial activity and analytical parameters listed in Table D of the General Permit. There are no numeric limitations for the parameters you test for.

The four parameters which the General Permit requires to be tested are considered *indicator* parameters. In other words, regardless of what type of facility you operate, these parameters are nonspecific and general enough to usually provide some indication whether pollutants are present in your storm water discharge. The following briefly explains what each of these parameters mean:

pH is a numeric measure of the hydrogen-ion concentration. The neutral, or acceptable, range is within 6.5 to 8.5. At values less than 6.5, the water is considered acidic; above 8.5 it is considered alkaline or basic. An example of an acidic substance is vinegar, and a alkaline or basic substance is liquid antacid. Pure rainfall tends to have a pH of a little less than 7. There may be sources of materials or industrial activities which could increase or decrease the pH of your storm water discharge. If the pH levels of your storm water discharge are high or low, you should conduct a thorough evaluation of all potential pollutant sources at your site.

Total Suspended Solids (TSS) is a measure of the undissolved solids that are present in your storm water discharge. Sources of TSS include sediment from erosion of exposed land, and dirt from impervious (i.e. paved) areas. Sediment by itself can be very toxic to aquatic life because it covers feeding and breeding grounds, and can smother organisms living on the bottom of a water body. Toxic chemicals and other pollutants also adhere to sediment particles. This provides a medium by which toxic or other pollutants end up in our water ways and ultimately in human and aquatic life. TSS levels vary in runoff from undisturbed land. It has been shown that TSS levels increase significantly due to land development.

Specific Conductance (SC) is a numerical expression of the ability of the water to carry an electric current. SC can be used to assess the degree of mineralization, salinity, or estimate the total dissolved solids concentration of a water sample. Because of air pollution, most rain water has a SC a little above zero. A high SC could affect the usability of waters for drinking, irrigation, and other commercial or industrial use.

Total Organic Carbon (TOC) is a measure of the total organic matter present in water. (All organic matter contains carbon) This test is sensitive and able to detect small concentrations of organic matter. Organic matter is naturally occurring in animals, plants, and man. Organic matter may also be man made (so called synthetic organics). Synthetic organics include pesticides, fuels, solvents, and paints. Natural organic matter utilizes the oxygen in a receiving water to biodegrade. Too much organic matter could place a significant oxygen demand on the water, and possibly impact its quality. Synthetic organics either do not biodegrade or biodegrade very slowly. Synthetic organics are a source of toxic chemicals that can have adverse affects at very low concentrations. Some of these chemicals bioaccumulate in aquatic life. If your levels of TOC are high, you should evaluate all sources of natural or synthetic organics you may use at your site.

Oil and Grease (O&G) is a measure of the amount of oil and grease present in your storm water discharge. At very low concentrations, O&G can cause a sheen (that floating "rainbow") on the surface of water (1 qt. of oil can pollute 250,000 gallons of water). O&G can adversely affect aquatic life and create unsightly floating material and film on water, thus making it undrinkable. Sources of O&G include maintenance shops, vehicles, machines and roadways.

If you have any questions regarding whether or not your constituent concentrations are too high, please contact your local Regional Board office. The United States Environmental Protection Agency (USEPA) has published stormwater discharge benchmarks for a number of parameters. These benchmarks may be helpful when evaluating whether additional BMPs are appropriate. These benchmarks can be accessed at our website at http://www.swrcb.ca.gov. It is contained in the Sampling and Analysis Reduction Certification.

See Storm Water Contacts at

http://www.waterboards.ca.gov/water_issues/programs/stormwater/contact.shtml

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SIDE A

FORM 1-SAMPLING & ANALYSIS RESULTS

FIRST STORM EVENT

- If analytical results are less than the detection limit (or non detectable), show the value as less than the numerical value of the detection limit (example: <.05)
- If you did not analyze for a required parameter, do not report "0". Instead, leave the appropriate box blank
- When analysis is done using portable analysis (such as portable pH meters, SC meters, etc.), indicate "PA" in the appropriate test method used box.
- Make additional copies of this form as necessary.

NAME OF PERSON COLLECTING SAMPLE(S):_____ **TITLE:** _____ **SIGNATURE:** _____

DESCRIBE DISCHARGE LOCATION Example: NW Out Fall	DATE/TIME OF SAMPLE COLLECTION	TIME DISCHARGE STARTED	ANALYTICAL RESULTS For First Storm Event									
			BASIC PARAMETERS					OTHER PARAMETERS				
			pH	TSS	SC	O&G	TOC					
	_____ ☐ AM _____ ☐ PM	_____ ☐ AM _____ ☐ PM										
	_____ ☐ AM _____ ☐ PM	_____ ☐ AM _____ ☐ PM										
	_____ ☐ AM _____ ☐ PM	_____ ☐ AM _____ ☐ PM										
	_____ ☐ AM _____ ☐ PM	_____ ☐ AM _____ ☐ PM										
TEST REPORTING UNITS:			pH Units	mg/l	umho/cm	mg/l	mg/l					
TEST METHOD DETECTION LIMIT:												
TEST METHOD USED:												
ANALYZED BY (SELF/LAB):												

TSS - Total Suspended Solids SC - Specific Conductance O&G - Oil & Grease TOC - Total Organic Carbon

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SIDE B

FORM 1-SAMPLING & ANALYSIS RESULTS

SECOND STORM EVENT

- If analytical results are less than the detection limit (or non detectable), show the value as less than the numerical value of the detection limit (example: <.05)
- If you did not analyze for a required parameter, do not report "0". Instead, leave the appropriate box blank
- When analysis is done using portable analysis (such as portable pH meters, SC meters, etc.), indicate "PA" in the appropriate test method used box.
- Make additional copies of this form as necessary.

NAME OF PERSON COLLECTING SAMPLE(S):_____ **TITLE:** _____ **SIGNATURE:** _____

DESCRIBE DISCHARGE LOCATION Example: NW Out Fall	DATE/TIME OF SAMPLE COLLECTION	TIME DISCHARGE STARTED	ANALYTICAL RESULTS For First Storm Event									
			BASIC PARAMETERS					OTHER PARAMETERS				
			pH	TSS	SC	O&G	TOC					
	_____ ☐ AM _____ ☐ PM	_____ ☐ AM _____ ☐ PM										
	_____ ☐ AM _____ ☐ PM	_____ ☐ AM _____ ☐ PM										
	_____ ☐ AM _____ ☐ PM	_____ ☐ AM _____ ☐ PM										
	_____ ☐ AM _____ ☐ PM	_____ ☐ AM _____ ☐ PM										
TEST REPORTING UNITS:			pH Units	mg/l	umho/cm	mg/l	mg/l					
TEST METHOD DETECTION LIMIT:												
TEST METHOD USED:												
ANALYZED BY (SELF/LAB):												

TSS - Total Suspended Solids SC - Specific Conductance O&G - Oil & Grease TOC - Total Organic Carbon

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SIDE A

FORM 2-QUARTERLY VISUAL OBSERVATIONS OF AUTHORIZED NON-STORM WATER DISCHARGES (NSWDs)

- Quarterly dry weather visual observations are required of each authorized NSWD.
- Observe each authorized NSWD source, impacted drainage area, and discharge location.
- Authorized NSWDs must meet the conditions provided in Section D (pages 5-6), of the General Permit.
- Make additional copies of this form as necessary.

QUARTER: **JULY-SEPT.** DATE: _____	**Observers Name:** _____ **Title:** _____ **Signature:** _____	**WERE ANY AUTHORIZED NSWDs DISCHARGED DURING THIS QUARTER?** ☐ **YES** ☐ **NO** If **YES**, complete reverse side of this form.
QUARTER: **OCT.-DEC.** DATE: _____	**Observers Name:** _____ **Title:** _____ **Signature:** _____	**WERE ANY AUTHORIZED NSWDs DISCHARGED DURING THIS QUARTER?** ☐ **YES** ☐ **NO** If **YES**, complete reverse side of this form.
QUARTER: **JAN.-MARCH** DATE: _____	**Observers Name:** _____ **Title:** _____ **Signature:** _____	**WERE ANY AUTHORIZED NSWDs DISCHARGED DURING THIS QUARTER?** ☐ **YES** ☐ **NO** If **YES**, complete reverse side of this form.
QUARTER: **APRIL-JUNE** DATE: _____	**Observers Name:** _____ **Title:** _____ **Signature:** _____	**WERE ANY AUTHORIZED NSWDs DISCHARGED DURING THIS QUARTER?** ☐ **YES** ☐ **NO** If **YES**, complete reverse side of this form.

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SIDE B

FORM 2-QUARTERLY VISUAL OBSERVATIONS OF AUTHORIZED NON-STORM WATER DISCHARGES (NSWDs)

DATE /TIME OF OBSERVATION	SOURCE AND LOCATION OF AUTHORIZED NSWD EXAMPLE: Air conditioner Units on Building C	NAME OF AUTHORIZED NSWD EXAMPLE: Air conditioner condensate	DESCRIBE AUTHORIZED NSWD CHARACTERISTICS Indicate whether authorized NSWD is clear, cloudy, or discolored, causing staining, contains floating objects or an oil sheen, has odors, etc.		DESCRIBE ANY REVISED OR NEW BMPs AND PROVIDE THEIR IMPLEMENTATION DATE
			At the NSWD Source	At the NSWD Drainage Area and Discharge Location	
_____ _____ ☐ AM ☐ PM					
_____ _____ ☐ AM ☐ PM					
_____ _____ ☐ AM ☐ PM					
_____ _____ ☐ AM ☐ PM					
_____ _____ ☐ AM ☐ PM					

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SIDE A

FORM 3-QUARTERLY VISUAL OBSERVATIONS OF UNAUTHORIZED NON-STORM WATER DISCHARGES (NSWDs)

- Unauthorized NSWDs are discharges (such as wash or rinse waters) that do not meet the conditions provided in Section D (pages 5-6) of the General Permit.
- Quarterly visual observations are required to observe current and detect prior unauthorized NSWDs.
- Quarterly visual observations are required during dry weather and at all facility drainage areas.
- Each unauthorized NSWD source, impacted drainage area, and discharge location must be identified and observed.
- Unauthorized NSWDs that can not be eliminated within 90 days of observation must be reported to the Regional Board in accordance with Section A.10.e of the General Permit.
- Make additional copies of this form as necessary.

QUARTER: **JULY-SEPT.** **DATE/TIME OF OBSERVATIONS** _____ __ __ ☐ AM ☐ PM	**Observers Name:** _____ **Title:** _____ **Signature:** _____	**WERE UNAUTHORIZED NSWDs OBSERVED?** ☐ **YES** ☐ **NO** **WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NSWDs?** ☐ **YES** ☐ **NO**	If **YES** to either question, complete reverse side.
QUARTER: **OCT.-DEC.** **DATE/TIME OF OBSERVATIONS** _____ __ __ ☐ AM ☐ PM	**Observers Name:** _____ **Title:** _____ **Signature:** _____	**WERE UNAUTHORIZED NSWDs OBSERVED?** ☐ **YES** ☐ **NO** **WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NSWDs?** ☐ **YES** ☐ **NO**	If **YES** to either question, complete reverse side.
QUARTER: **JAN.-MARCH** **DATE/TIME OF OBSERVATIONS** _____ __ __ ☐ AM ☐ PM	**Observers Name:** _____ **Title:** _____ **Signature:** _____	**WERE UNAUTHORIZED NSWDs OBSERVED?** ☐ **YES** ☐ **NO** **WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NSWDs?** ☐ **YES** ☐ **NO**	If **YES** to either question, complete reverse side.
QUARTER: **APRIL-JUNE** **DATE/TIME OF OBSERVATIONS** _____ __ __ ☐ AM ☐ PM	**Observers Name:** _____ **Title:** _____ **Signature:** _____	**WERE UNAUTHORIZED NSWDs OBSERVED?** ☐ **YES** ☐ **NO** **WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NSWDs?** ☐ **YES** ☐ **NO**	If **YES** to either question, complete reverse side.

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SIDE B

FORM 3 QUARTERLY VISUAL OBSERVATIONS OF UNAUTHORIZED NON-STORM WATER DISCHARGES (NSWDs)

OBSERVATION DATE (FROM REVERSE SIDE)	NAME OF UNAUTHORIZED NSWD EXAMPLE: Vehicle Wash Water	SOURCE AND LOCATION OF UNAUTHORIZED NSWD EXAMPLE: NW Corner of Parking Lot	DESCRIBE UNAUTHORIZED NSWD CHARACTERISTICS Indicate whether unauthorized NSWD is clear, cloudy, discolored, causing stains; contains floating objects or an oil sheen, has odors, etc.		DESCRIBE CORRECTIVE ACTIONS TO ELIMINATE UNAUTHORIZED NSWD AND TO CLEAN IMPACTED DRAINAGE AREAS. PROVIDE UNAUTHORIZED NSWD ELIMINATION DATE.
			AT THE UNAUTHORIZED NSWD SOURCE	AT THE UNAUTHORIZED NSWD AREA AND DISCHARGE LOCATION	
_____ _____ ☐ AM ☐ PM					
_____ _____ ☐ AM ☐ PM					
_____ _____ ☐ AM ☐ PM					
_____ _____ ☐ AM ☐ PM					

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FORM 4-MONTHLY VISUAL OBSERVATIONS OF

SIDE A

STORM WATER DISCHARGES

- Storm water discharge visual observations are required for at least one storm event per month between October 1 and May 31.
- Visual observations must be conducted during the first hour of discharge at all discharge locations.
- Discharges of temporarily stored or contained storm water must be observed at the time of discharge.
- Indicate "None" in the first column of this form if you did not conduct a monthly visual observation.
- Make additional copies of this form as necessary.
- Until a monthly visual observation is made, record any eligible storm events that do not result in a storm water discharge and note the date, time, name, and title of who observed there was no storm water discharge.

Observation Date: October _____ 2012	Drainage Location Description	#1	#2	#3	#4
Observers Name: _____	Observation Time	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Title: _____	Time Discharge Began	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Signature: _____	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐
Observation Date: November____ 2012	Drainage Location Description	#1	#2	#3	#4
Observers Name: _____	Observation Time	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Title: _____	Time Discharge Began	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Signature: _____	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐
Observation Date: December_____ 2012	Drainage Location Description	#1	#2	#3	#4
Observers Name: _____	Observation Time	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Title: _____	Time Discharge Began	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Signature: _____	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐
Observation Date: January_____ 2013	Drainage Location Description	#1	#2	#3	#4
Observers Name: _____	Observation Time	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Title: _____	Time Discharge Began	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Signature: _____	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐

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SIDE B

FORM 4-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

DATE/TIME OF OBSERVATION (From Reverse Side)	**DRAINAGE AREA DESCRIPTION** EXAMPLE: Discharge from material storage Area #2	**DESCRIBE STORM WATER DISCHARGE CHARACTERISTICS** Indicate whether storm water discharge is clear, cloudy, or discolored; causing staining; containing floating objects or an oil sheen, has odors, etc.	**IDENTIFY AND DESCRIBE SOURCE(S) OF POLLUTANTS** EXAMPLE: Oil sheen caused by oil dripped by trucks in vehicle maintenance area.	**DESCRIBE ANY REVISED OR NEW BMPs AND THEIR DATE OF IMPLEMENTATION**
_____ _____ ☐ AM ☐ PM				
_____ _____ ☐ AM ☐ PM				
_____ _____ ☐ AM ☐ PM				
_____ _____ ☐ AM ☐ PM				
_____ _____ ☐ AM ☐ PM				

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FORM 4 (Continued)-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

SIDE A

- Storm water discharge visual observations are required for at least one storm event per month between October 1 and May 31.
- Visual observations must be conducted during the first hour of discharge at all discharge locations.
- Discharges of temporarily stored or contained storm water must be observed at the time of discharge.
- Indicate "None" in the first column of this form if you did not conduct a monthly visual observation.
- Make additional copies of this form as necessary.
- Until a monthly visual observation is made, record any eligible storm events that do not result in a storm water discharge and note the date, time, name, and title of who observed there was no storm water discharge.

Observation Date: February _____ 2013	Drainage Location Description	#1	#2	#3	#4
Observers Name: _____	Observation Time	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Title: _____	Time Discharge Began	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Signature: _____	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐
Observation Date: March _____ 2013	Drainage Location Description	#1	#2	#3	#4
Observers Name: _____	Observation Time	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Title: _____	Time Discharge Began	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Signature: _____	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐
Observation Date: April _____ 2013	Drainage Location Description	#1	#2	#3	#4
Observers Name: _____	Observation Time	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Title: _____	Time Discharge Began	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Signature: _____	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐
Observation Date: May _____ 2013	Drainage Location Description	#1	#2	#3	#4
Observers Name: _____	Observation Time	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Title: _____	Time Discharge Began	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.	☐ P.M. ☐ A.M.
Signature: _____	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐

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SIDE B

FORM 4 (Continued)-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

DATE/TIME OF OBSERVATION (From Reverse Side)	DRAINAGE AREA DESCRIPTION EXAMPLE: Discharge from material storage Area #2	DESCRIBE STORM WATER DISCHARGE CHARACTERISTICS Indicate whether storm water discharge is clear, cloudy, or discolored; causing staining; containing floating objects or an oil sheen, has odors, etc.	IDENTIFY AND DESCRIBE SOURCE(S) OF POLLUTANTS EXAMPLE: Oil sheen caused by oil dripped by trucks in vehicle maintenance area.	DESCRIBE ANY REVISED OR NEW BMPs AND THEIR DATE OF IMPLEMENTATION
_____ _____ ☐ AM ☐ PM				
_____ _____ ☐ AM ☐ PM				
_____ _____ ☐ AM ☐ PM				
_____ _____ ☐ AM ☐ PM				
_____ _____ ☐ AM ☐ PM				

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SIDE A

FORM 5-ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY BMP STATUS

EVALUATION DATE: _____ **INSPECTOR NAME:** _____ **TITLE:** _____ **SIGNATURE:**_____

POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	**HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED?** ☐ **YES** ☐ **NO** **ARE ADDITIONAL/REVISED BMPs NECESSARY?** ☐ **YES** ☐ **NO**	If yes, to either question, complete the next two columns of this form	**Describe deficiencies in BMPs or BMP implementation**	**Describe additional/revised BMPs or corrective actions and their date(s) of implementation**
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	**HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED?** ☐ **YES** ☐ **NO** **ARE ADDITIONAL/REVISED BMPs NECESSARY?** ☐ **YES** ☐ **NO**	If yes, to either question, complete the next two columns of this form	**Describe deficiencies in BMPs or BMP implementation**	**Describe additional/revised BMPs or corrective actions and their date(s) of implementation**
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	**HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED?** ☐ **YES** ☐ **NO** **ARE ADDITIONAL/REVISED BMPs NECESSARY?** ☐ **YES** ☐ **NO**	If yes, to either question, complete the next two columns of this form	**Describe deficiencies in BMPs or BMP implementation**	**Describe additional/revised BMPs or corrective actions and their date(s) of implementation**
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	**HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED?** ☐ **YES** ☐ **NO** **ARE ADDITIONAL/REVISED BMPs NECESSARY?** ☐ **YES** ☐ **NO**	If yes, to either question, complete the next two columns of this form	**Describe deficiencies in BMPs or BMP implementation**	**Describe additional/revised BMPs or corrective actions and their date(s) of implementation**

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SIDE B

FORM 5 (Continued)-ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY BMP STATUS

EVALUATION DATE: _____ **INSPECTOR NAME:** _____ **TITLE:** _____ **SIGNATURE:**_____

POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	**HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED?** ☐ **YES** ☐ **NO** **ARE ADDITIONAL/REVISED BMPs NECESSARY?** ☐ **YES** ☐ **NO**	If yes, to either question, complete the next two columns of this form	**Describe deficiencies in BMPs or BMP implementation**	**Describe additional/revised BMPs or corrective actions and their date(s) of implementation**
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	**HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED?** ☐ **YES** ☐ **NO** **ARE ADDITIONAL/REVISED BMPs NECESSARY?** ☐ **YES** ☐ **NO**	If yes, to either question, complete the next two columns of this form	**Describe deficiencies in BMPs or BMP implementation**	**Describe additional/revised BMPs or corrective actions and their date(s) of implementation**
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	**HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED?** ☐ **YES** ☐ **NO** **ARE ADDITIONAL/REVISED BMPs NECESSARY?** ☐ **YES** ☐ **NO**	If yes, to either question, complete the next two columns of this form	**Describe deficiencies in BMPs or BMP implementation**	**Describe additional/revised BMPs or corrective actions and their date(s) of implementation**
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	**HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED?** ☐ **YES** ☐ **NO** **ARE ADDITIONAL/REVISED BMPs NECESSARY?** ☐ **YES** ☐ **NO**	If yes, to either question, complete the next two columns of this form	**Describe deficiencies in BMPs or BMP implementation**	**Describe additional/revised BMPs or corrective actions and their date(s) of implementation**

APPENDIX F

SAMPLER DECONTAMINATION PROCEDURE AND TEST METHODS

STORM WATER POLLUTION PREVENTION PLAN

DECONTAMINATION PROCEDURE

Storm water sampling equipment needs to be decontaminated between samples to prevent cross-contamination. The following procedures should be followed when decontaminating storm water sampling equipment.

REQUIRED EQUIPMENT

- Non-phosphate detergent wash;
- Tap water;
- Deionized or distilled water;
- Protective gloves;
- Washing containers (bucket or sink).

SETUP

Gloves should be worn to protect your hands and keep dirt, oil and grease that may be on your hands off of the unit.

PROCEDURE

1. Make a solution of non-phosphate detergent and tap water in the washing container following the instructions on the non-phosphate detergent container.
2. Knock off any debris that may be attached to the sampling unit.
3. Wash the sampling unit in the solution of non-phosphate detergent and tap water.
4. Rinse the unit with tap water.
5. Repeat steps 3 and 4 if necessary.
6. Rinse the unit with deionized or distilled water.
7. Use immediately, or store in a clear sealed plastic bag until needed.

APPENDIX G

LABORATORY ANALYSIS RESULTS