Air Quality and Climate Change Technical Report

for the

North Torrance Wellfield Project

Located in the City of Torrance
County of Los Angeles, California

Prepared for:

City of Torrance
3031 Torrance Blvd.
Torrance, CA 90503

Prepared By

AECOM
999 Town & Country Road
Orange, CA 92868

December 2011

This page intentionally left blank.

TABLE OF CONTENTS

1.0 Introduction 1

1.1 Project Location 1
1.2 Project Description 4

2.0 Regulatory Setting 6

2.1 Air Quality – Criteria Pollutants and Toxic Air Contaminants 6
2.1.1 Federal Authority 6
2.1.2 State Authority 8
2.1.3 Local Authority 9
2.2 Odors 12
2.2.1 Federal Authority 12
2.2.2 State Authority 12
2.2.3 Local Authority 12
2.3 Greenhouse Gas Emissions and Climate Change 12
2.3.1 International Authority 13
2.3.2 Federal Authority 13
2.3.3 State Authority 14
2.3.4 Local Authority 14

3.0 Existing Conditions 16

3.1 Environmental Setting 16
3.1.1 Regional Climate 16
3.1.2 Existing Air Quality 17
3.1.3 Existing Toxic Air Contaminants 19
3.1.4 Existing Odors 20
3.1.5 Existing Greenhouse Gas Emissions 20

4.0 Thresholds of Significance 21

4.1 Significance Criteria for Air Quality 21
4.1.1 CEQA Guidelines 21
4.1.2 SCAQMD - Mass Emission CEQA Thresholds 22
4.1.3 SCAQMD - Localized Significance CEQA Thresholds 22
4.2 Significance Criteria for Greenhouse Gas Emissions and Climate Change 23
4.2.1 CEQA Thresholds 23
4.2.2 State and Local Thresholds 24

5.0 Methodology 26

5.1 Methodology for Quantifying Criteria Pollutant Emissions 26
5.1.1 Construction 26
5.1.2 Operations 27
5.2 Methodology for Quantifying TAC Emissions and Evaluating Health Risk Impacts 27
5.2.1 Construction TAC Emissions 27
5.2.2 Operational TAC Emissions 28
5.3 Methodology for Quantifying Greenhouse Gas Emissions and Evaluating Climate Change Impacts 28
5.3.1 Construction 28

5.3.2 Operation 29

6.0 Environmental Impacts 29

6.1 Air Quality Impacts 29
6.1.1 Construction Impacts 29
6.1.2 Operational Impacts 32
6.2 Potential GHG Emissions and Climate Change Impacts 34
6.2.1 Construction Impacts 34
6.2.2 Operation Impacts 35
6.2.3 GHG Emissions Summary 35
6.3 CEQA Determination 36
6.3.1 Air Quality 36
6.3.2 Greenhouse Gas Emissions and Climate Change 38

7.0 Mitigation Measures 40

7.1 Air Quality 40
7.2 Climate Change and GHG Emissions 40

8.0 List of References 41

Table of Tables

Table 2.1-1 Pollutant Ambient Air Quality Standards and Health Effects 7
Table 3.1-1 Summary of Peak Ambient Air Quality Concentrations (2007 – 2009) 18
Table 4.1-1 SCAQMD Air Quality Significance Thresholds 22
Table 4.1-2 SCAQMD Air Quality Localized Significance Thresholds (lb/day) 23
Table 6.1-1 Construction Equipment and Schedule Description 30
Table 6.1-2 Peak Daily Construction Emissions Summary, lb/day 31
Table 6.1-3 Daily Operations Emissions Summary, lb/day 32
Table 6.1-4 Operational TAC Emissions – Standby Generators and Fuel Tank 33
Table 6.2-1 Construction GHG Emissions Summary 35
Table 6.2-2 Operational GHG Emissions Summary 35
Table 6.2-3 Estimated Total Project CO_2e Emissions 36

Table of Figures

Figure 1 Location Map 2
Figure 2 Conceptual Site Plan 3

Appendices

Appendix A – Emission Summary Tables
Appendix B – URBEMIS Modeling Outputs

List of Acronyms

AB 32	Assembly Bill No. 32 (Chapter 488, Statutes of 2006)
AEGL	Acute Exposure Guideline Levels
AQAP	Air Quality Attainment Plan
AQMP	Air Quality Management Plan
AQ	Air Quality
BHP	Brake Horsepower
BMP	Best management practice(s)
CAA	(Federal) Clean Air Act
CAAA	(Federal) Clean Air Act Amendments of 1990
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CCSP	Climate Change Scoping Plan
CFCs	Chlorofluorocarbons
CFR	Code of Federal Regulations
CH_4	Methane
CI	Circulation and Infrastructure
CO	Carbon monoxide
CO_2	Carbon dioxide
CR	Community Resource
DEIR	Draft Environmental Impact Report
DPM	Diesel particulate matter
eGRID	Emissions and Generation Resource Integrated Database (USEPA)
EIR	Environmental Impact Report
GHG	Greenhouse gases
g/L	Grams per Liter
HDPE	High Density Polyethylene Tank
HI	Hazard Index
H_2S	Hydrogen Sulfide
IPCC	Intergovernmental Panel on Climate Change
I-405	Interstate 405
kW	kilowatt

LOS	Level of service
LU	Land Use
MATES	Multiple Air Toxics Exposure Study
$MTCO_2e$	Metric tons of carbon dioxide equivalent
NAAQS	National Ambient Air Quality Standards
NO_X	Nitrogen oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
ODS	Ozone-depleting substances
OEHHA	(California) Office of Environmental Health Hazard Assessment
OPR	(California Governor's) Office of Planning and Research
O_3	Ozone
Pb	Lead
PM	Particulate matter
ppb	Parts per billion
ppm	Parts per million
REL	Reference exposure level
RO	Reverse Osmosis
SCE	Southern California Edison
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SOx	Sulfates
SO_2	Sulfur dioxide
SRA	Source receptor area
TAC	Toxic air contaminants
UNFCCC	United Nations Framework Convention on Climate Change
URBEMIS	Urban Emissions Model
USEPA	United States Environmental Protection Agency
VFD	Variable Frequency Drive
VMT	Vehicle Miles Travelled
VOC	Volatile organic compounds

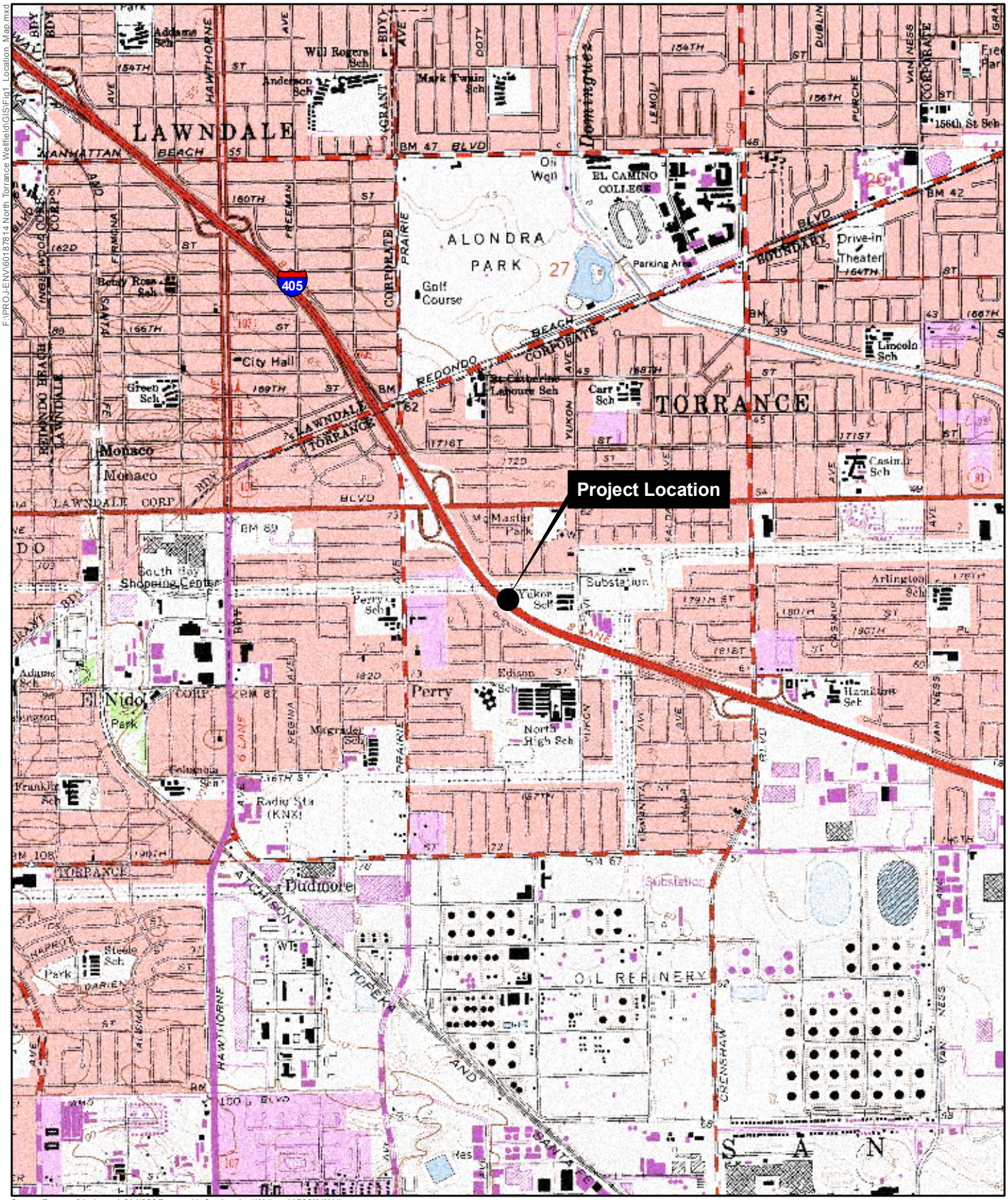
1.0 Introduction

This Technical Report describes the potential air quality and climate change impacts of the construction and operation of the proposed North Torrance Wellfield Project (herein referred to as the "proposed project") located in the City of Torrance (City), California. A brief description of the project location and design features are provided in the subsequent sections provided below.

1.1 Project Location

The proposed project site is located directly west of Yukon Elementary School located at 17815 Yukon Avenue, which is in the City of Torrance, Los Angeles County, California, as presented in Figures 1 and 2. The site is currently undeveloped, approximately 1.5-acres in size, and bounded by Yukon Elementary School, Interstate 405 (I-405), and Southern California Edison (SCE) transmission line property (which Big Seven Nursery currently leases and occupies).

The proposed project also includes off-site work located at the southeast corner of McMaster Park, which is located north of the project site at 3264 Artesia Boulevard, Torrance, CA. Other off-site work includes: construction of a well within an existing median and installation of water discharge line, sewer line, and drain line located between Yukon Avenue and Yukon Elementary School and within Yukon Avenue, between McMaster Park and 182nd Street.



Source: Torrance & Inglewood, CA USGS Topographic Quadrangles (1981), and AECOM (2011).

Scale 1 : 24000
1" = 2000 feet

0 1,000 2,000 4,000 Feet

Figure 1
Location Map

North Torrance Wellfield Project

F:\PROJ-ENV\60187814 North Torrance Wellfield\GIS\Fig2_8.5x11_110421.mxd

Source: Aerial Imagery: Digital Globe (March 1, 2008), and AECOM (2011).

Scale 1 : 3600
1" = 300 feet

0 150 300 600 Feet

Figure 2
Concept Site Plan

North Torrance Wellfield Project

1.2 Project Description

The City proposes to construct both onsite and offsite features in order to increase the available water capacity and fully utilize the City's water rights. The primary onsite features include construction of a 3-million gallon water storage reservoir, wellhead treatment system, and booster pump station. The storage reservoir would be approximately 40-feet high and the structures associated with the wellhead treatment would be approximately 12-feet high.

The proposed wellhead treatment system will be designed for a maximum flow of 9,000 gallons per minute (gpm) and will provide treatment for disinfection, fluoridation, and removal of hydrogen sulfide (H_2S), iron, and manganese. Disinfection treatment will include addition of chorine and ammonia to the water distribution system; this is called "chloramination." This process will require a 5,000-gallon fiberglass storage tank for chlorine, and a 500-gallon steel storage tank for ammonia. Fluoridation, or the addition of fluoride, will require a 500-gallon high density polyethylene tank (HDPE). Following the disinfection process, water would then flow into the reservoir through spray nozzles, providing aeration. The process of aeration would oxidize and remove any undesirable, odorous gases identified in the water treatment system, such as H_2S. Treatment for the removal of iron and manganese will include addition of a phosphate sequestrant/corrosion inhibitor. Sequestrant would be stored in a 1,000-gallon HDPE. In addition, the treatment system will have the capability for reverse osmosis (RO) treatment. The RO system would remove dissolved minerals from the water which would be discharged to the sewer; RO would be conducted prior to water entering the reservoir, as needed. Although the system will have RO capability, RO is not part of the proposed project and would only be installed if determined necessary.

The proposed booster pump station will discharge treated water to the City's distribution system through operation of three vertical turbine pumps powered by electric-driven variable frequency drive (VFD) motors (two primary VFD motors, and one standby). Emergency service will be provided by a 1,250 kilowatt (kW) (or 1,676 brake horsepower (BHP)) standby generator with 4,000-gallon diesel fuel tank. Two additional standby generators, sized at 230 kW (308 BHP) and 300 kW (402 BHP), will be stored onsite and used at pumps operated at well 9 and 11, respectively. The three standby generators are anticipated to operate up to fifteen minutes per week, for maintenance and testing purposes. Additional proposed onsite construction components include well (No. 10) and a paved access road paralleling the existing Caltrans right-of-way adjacent to the I-405.

Additional proposed off-site components are presented in the list below:

- Demolition of the existing reservoir, booster pump station, well (No. 6), and pump house building located at McMaster Park;
- Construction of an offsite well (No. 11) in the median between Yukon Avenue and Yukon Elementary School;
- Construction of a new 20-inch discharge pipeline from an existing well (No. 9) to the proposed wellhead treatment system on the proposed project site (approximately 2,500 feet);
- Construction of a new discharge pipeline (which includes two branches) from the proposed project site through the utility easement to the existing water distribution system in Yukon Avenue.

- The first branch of the discharge pipeline would be a 24-inch line, approximately 1,000 feet in length, to tie into an existing 12-inch water main in Yukon Avenue in front of Yukon Elementary School.

- The second branch would be reduced to an 18-inch line, which would extend south, approximately 800 feet within Yukon Avenue, from the tie-in point in front of Yukon Elementary School to an existing 12-inch water line in 182nd Street at Yukon Avenue

- Construction of a new drain system piping from the proposed project site through the utility easement to existing City sewer and storm drains in Yukon Avenue.

  - This would involve approximately 1,500 feet of a new, 6-inch sewer line to be tied into the existing sewer line in Yukon Avenue in front of Yukon Elementary School, and approximately 1,700 feet of new 30-inch drain line to be tied into an existing storm drain manhole in Yukon Avenue, just north of 182nd Street.

2.0 Regulatory Setting

Federal, state and local requirements geared towards reducing and controlling criteria pollutants and toxic air contaminants (TAC's) are presented in the following subsections.

2.1 Air Quality – Criteria Pollutants and Toxic Air Contaminants

The United States Environmental Protection Agency (USEPA) has identified and established ground-level concentration criteria for seven common air pollutants known to have deleterious human health impacts. These so-called "criteria pollutants" include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and Lead (Pb). The USEPA, under the Clean Air Act (CAA), is charged with establishing National Ambient Air Quality Standards (NAAQS) for each criteria pollutant based on the concentration required to protect public health and welfare. In addition, the state of California has implemented more stringent air quality standards, known as the California AAQS (CAAQS), that aid in effectively reducing harmful emissions in areas with poor air quality or non-attainment designations. Current standards set for the seven criteria pollutants are presented in Table 2.1-1, along with relevant health effects.

2.1.1 Federal Authority

The Federal government first adopted the CAA (USC § 7401) in 1963 to improve air quality and protect citizens' health and welfare, which required implementation of the NAAQS. The NAAQS are revised and changed when scientific evidence indicates a need. The CAA also requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The CAA Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies.

The USEPA has been charged with implementing national air quality programs, which includes the review and approval of all SIPs to determine conformation to the mandates of the CAA and its amendments, and to determine whether implementation of the SIPs will achieve air quality goals. If the USEPA determines that a SIP is inadequate, a Federal Implementation Plan that imposes additional control measures may be prepared for the nonattainment area. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may result in application of sanctions to transportation funding and stationary air pollution sources within the air basin.

Pursuant to the CAA, state and local agencies are responsible for planning for attainment and maintenance of the NAAQS. The USEPA classifies air basins (i.e., distinct geographic regions) as either "attainment" or "non-attainment" for each criteria pollutant, based on whether or not the NAAQS have been achieved. Some air basins have not received sufficient analysis for certain criteria air pollutants and are designated as "unclassified" for those pollutants. The South Coast Air Quality Management District (SCAQMD) and the California Air Resource Board (CARB) are the responsible agencies for providing attainment plans and for demonstrating attainment of these standards within the project area.

Table 2.1-1 Pollutant Ambient Air Quality Standards and Health Effects

Air Pollutant	Concentration/Averaging Time		Most Relevant Health Effects
	State Standard	Federal Primary Standard	
Ozone	0.09 parts per million (ppm), 1-hr. avg., 0.070 ppm, 8-hr avg.	-- 0.075 ppm, 8-hr avg.	(a) Short-term exposures: (1) Decreased pulmonary function and localized lung edema (abnormal build up of fluid in the lungs) in humans and animals (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: 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; (c) Vegetation damage; (d) Property damage
Carbon Monoxide	9.0 ppm, 8-hr avg. 20 ppm, 1-hr avg.	9 ppm, 8-hr avg. 35 ppm, 1-hr avg.	(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	0.030 ppm, annual arithmetic mean; 0.18 ppm 1-hr avg.	0.053 ppm, annual arithmetic mean; 0.100 ppm 1-hr avg.	(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	0.04 ppm, 24-hr avg. 0.25 ppm, 1-hr. avg.	-- .075 ppm, 1-hr avg.	(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 micrograms per cubic meter ($\mu g/m^3$), 24-hr avg 20 $\mu g/m^3$, annual arithmetic mean	150 $\mu g/m^3$, 24-hr avg.	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Excess seasonal declines in pulmonary function, especially in children
Fine Particulate Matter ($PM_{2.5}$)	12 $\mu g/m^3$, annual arithmetic mean	35 $\mu g/m^3$, 24-hr avg. 15 $\mu g/ m^3$, annual arithmetic mean	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Excess seasonal declines in pulmonary function, especially in children
Lead	1.5 $\mu g/ m^3$, 30-day avg.	1.5 $\mu g/ m^3$, calendar quarter	(a) Increased body burden; (b) Impairment of blood formation and nerve conduction

Table 2.1-1 Pollutant Ambient Air Quality Standards and Health Effects

Air Pollutant	Concentration/Averaging Time		Most Relevant Health Effects
	State Standard	Federal Primary Standard	
Acronyms: ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter "—" indicates that there is no applicable standard in place. Source: CARB, 2010.			

The USEPA also administers several programs that regulate emissions of TAC's, also known as hazardous air pollutants (HAP) emissions, from stationary and mobile sources. The USEPA identified 189 HAP emissions that are known or suspected carcinogens and present a threat to human health or the environment and are regulated under control technology programs. Also, the USEPA has identified 33 urban HAP's which pose the greatest threats to public health in urban areas, and are regulated under the Urban Air Toxics Strategy. The USEPA regulates HAP emissions primarily from setting emissions standards for vehicles and technology standards for industrial source categories.

2.1.2 State Authority

The CARB is the state agency that: (1) establishes and enforces emission standards for motor vehicles, fuels and consumer products; (2) establishes health-based air quality standards; (3) conducts research; (4) monitors air quality; (5) identifies and promulgates control measures for TACs; (6) provides compliance assistance for businesses; (7) produces education and outreach programs and materials; and (8) oversees and assists local air quality districts that regulate most non-vehicular sources of air pollution.

In-Use Off-Road Diesel Vehicle Regulation

Relevant to the proposed project, CARB has established various requirements for off-road diesel vehicles typically used during construction activities or facility routine maintenance. Currently enforceable requirements for fleet owners include the following: a written idling policy must be in place; non-essential idling shall be limited to five-minutes; fleet specifications, including model year, manufacturer, and BHP, shall be reported to CARB; and an equipment identification numbers label, obtained from CARB, shall be affixed to each piece of equipment in a clearly visible location.

CO Hotspots Analysis

The California Environmental Quality Act (CEQA) requires projects to consider the potential impacts related to increased levels of CO emissions due to increased traffic, or congestion, due to project implementation. Elevated levels of CO typically occur in urbanized areas and are typically measured at roadway intersections where there is increased congestion from mobile sources including cars and trucks. CO concentrations vary considerably over longer distances; therefore, areas with higher levels of CO concentrations are referred to as "hot spots." Projects that could increase CO concentrations are required to conduct a CO hotspots analysis.

Toxic Air Contaminants

The California air toxics program, developed by the CARB, established the process for identification and control of TAC emissions and includes provisions to make the public aware of significant toxic exposures and to reduce risk. The California Environmental Protection Agency (CalEPA) and the California Office of Environmental Health Hazard Assessment (OEHHA) have developed reference exposure level (REL) thresholds for TAC exposure based on cancer or non-cancer risk, as well as guideline for evaluating TAC emissions through health risk assessment (HRA).

In addition to the CARB, the California Air Pollution Control Officer's Association (CAPCOA), an association representing thirty-five local air quality agencies, has developed the *Health Risk Assessments for Proposed Land Use Projects* guidance to support in the evaluation of health risk assessments (from operations) for various land use projects (CAPCOA 2009); the guidance document does not currently address temporary impacts from construction. Land use projects are categorized as either "impacting sources" or as projects that are "impacted by existing sources." Projects designated as "impacting sources" are evaluated based on the toxic emissions resulting from operations of the proposed source(s); projects designated as "impacted by existing sources" are evaluated based on existing toxic source emissions from operations located within 300 to 1,000 feet from the project site. The CARB has recommended a distance parameter (300 to 1,000 feet), based on source category, for evaluating the minimum distance at which a new sensitive receptor should be placed to reduce risk of exposure, which has been adopted into the CAPCOA guidance.

2.1.3 Local Authority

Local jurisdictions within the project footprint include the SCAQMD, City of Torrance, and the County of Los Angeles. These jurisdictions have adopted rules and regulations, plans (General Plans) or policies geared towards reducing and mitigating air quality impacts related to non-attainment pollutants and achievement of the NAAQS and CAAQS. Applicable local air quality rules, regulations, and goals are described below.

2.1.3.1 SCAQMD

The SCAQMD is the regional agency responsible for regulation and enforcement of federal, state, and local air pollution control regulations in the South Coast Air Basin (SCAB). The SCAQMD operates monitoring stations in the SCAB, develops and enforces rules and regulations for stationary sources and equipment, prepares emissions inventory and air quality management planning documents, and conducts source testing and inspections. The SCAQMD Air Quality Management Plan (AQMP) includes control measures and strategies to be implemented to attain state and federal ambient air quality standards in the SCAB. The SCAQMD then implements these control measures as regulations to control or reduce criteria pollutant emissions from stationary sources or equipment.

Permitting of each new diesel-fueled engine above 50 BHP installed in the SCAQMD is subject to Rule 201, 203, 212, 1401 and Rule 1470. In addition, if three or more non-portable diesel-fueled engines are proposed at the facility, Rule 1472 will be applied at the time of permitting the third and any subsequent engine. Several additional regulations would apply to both operation and construction of the proposed project, which are briefly described below.

Rule 402 – Nuisance

Rule 402 applies to odorous air contaminants and prohibits the discharge from any source which causes injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endangers 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.

Rule 403 – Fugitive Dust

This rule prohibits any active construction or operation, open storage piles or disturbed surface area from causing dust emissions that extend beyond the facility's fence line or prohibits dust emission that exceeds 20 percent opacity if it is the result of movement of a motorized vehicle. The rule also prohibits any active construction activity or operation without utilizing the applicable best available control measures, such as watering, installation of a trackout system, or wheel washing, that reduce potential fugitive dust impacts during earthmoving activities.

Rule 1113 – Architectural Coatings

This rule is applicable to coatings applied to stationary sources or their appurtenances (i.e. hand railings, fences, rain-gutters and down-spouts, heating and air conditioning equipment, other mechanical equipment, and concrete forms) and limits the VOC content by coating type (i.e. waterproofing sealer, industrial maintenance coating, finish, etc.). The limit ranges from 50 grams per liter (g/L) to 200 g/L.

Rule 1401 - New Source Review of Toxic Air Contaminants

This rule specifies limits for MICR, cancer burden, and noncancer acute and chronic hazard index (HI) for new, modified or relocated equipments emitting TACs. The rule establishes allowable risks for permit units requiring new permits pursuant to Rules 201 (Permit to Construct) or 203 (Permit to Operate). Rule 1401 specifies that the MICR shall not exceed one-in-one million (1×10^{-6}) for permit units without Best Available Control Technology for air toxics (T-BACT) or exceed 10-in-one million (1×10^{-5}) for permit units with T-BACT. The non-cancer chronic and acute HI should not exceed 1 at any receptor location.

Per subpart (g)(1)(F), emergency IC engines are exempt from the permitting requirements described above. For this analysis, health risks have been evaluated to provide full disclosure of potential health risk impacts associated with generator operations.

Rule 1470 - Requirements for Stationary Diesel - Fueled Internal Combustion (IC) and Other Compression Ignition (CI) Engines

This rule applies to any CI engine greater than 50 BHP operated within the SCAQMD and provides the requirements for the operation of such engines. Rule 1470(c)(2)(C) provides a diesel particulate matter (DPM) emissions standard and operating hour requirement for new emergency engines; per this standard such engines are required to limit (1) DPM emission rate to less than or equal to 0.15 grams per BHP-hour (g/bhp-hr), and (2) limit operating hours to less than or equal to 50 hours per year for non-emergency maintenance and testing purposes. Rule 1470 (c)(2)(iii) provides a DPM emission standard and operating hour requirements for engines located 100 meters (328 feet) or less of a school. Per this standard such engines located within 100 meters of a school are required to limit (1) DPM emission rate

to less than or equal to 0.01 g/bhp-hr, and (2) limit operating hours to less than or equal to 100 hours per year for non-emergency maintenance and testing purposes.

The emergency equipment proposed for operation at the project site will be required to achieve the emission standards referenced in above, per Rule 1470.

Rule 1472 - Requirements for Facilities with Multiple Stationary Emergency Standby Diesel-fueled Internal Combustion Engines)

This rule applies to any facility that operates three or more CI engines over 50 BHP. The rule requires subject facilities to calculate a facility-wide Engine Group Index, develop a Compliance Plan, and meet a Final Compliance Date, according to a rule-specified implementation schedule. Facilities may qualify for an exemption per 1472 (d)(1) if all engines are greater than 150 meters (492 feet) from one another, or all engines are greater than 150 meters (492 feet) from the nearest receptor, or all engines emit less than or equal to 0.15 g/bhp-hr. If the engines qualify for an exemption, an Initial Notification of Exemption from Filing a Compliance Plan should be developed and submitted to the SCAQMD.

Because the emergency equipment proposed for operation at the project site will meet the exemption per Rule 1472 (d)(1), an Initial Notification of Exemption from Filing a Compliance Plan should be submitted to the SCAQMD during the permitting process.

2.1.3.2 City of Torrance

The City of Torrance's 2009 General Plan Community Resources (CR) Element states that the City will "contribute to the improvement of local and regional ambient air quality to benefit the health of all." This objective is supported by the following policies:

> Policy CR.13.1: Continue to participate in the efforts of the CARB and the SCAQMD to meet State and federal air quality standards.
>
> Policy CR.13.2: Work with neighboring cities to implement local and regional projects that improve mobility on freeways and railways, reduce emissions, and improve air quality.
>
> Policy CR.13.3: Support regional air quality goals through conscientious land use and transportation planning and the implementation of resource conservation measures.
>
> Policy CR.13.8: Promote energy-efficiency building construction and operation practices that reduce emissions and improve air quality.

2.1.3.3 County of Los Angeles

The County of Los Angeles released a draft 2035 General Plan in 2011, providing an update to the existing General Plan, adopted in 1980. The draft 2035 General Plan presents recommendations, including but not limited to the following:

> Policy Air Quality (AQ) 1.1: Encourage new residential, commercial, and industrial development to reduce impacts from air pollution sources.

Policy AQ 1.2: Minimize the health risks to people from industrial toxic or hazardous air pollutant emissions.

Policy AQ 1.3: Encourage the use of low or no VOC emitting materials.

Policy AQ 1.4: Reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible.

2.2 Odors

Sulfur based odors can be common near water treatment facilities. Sulfur compounds such as sulfides, mercaptons, and H_2S are known odorous contaminants. Of the compounds listed, H_2S is a contaminant of concern based on health risk impacts and is therefore further described in this assessment. H_2S is a colorless gas with an odor similar to that of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances and can be present in sewer gas, some natural gas, and geothermal hot springs. The odor threshold in air ranges between 0.008 and 0.13 ppm. At 0.01 ppm H_2S, it is estimated that at least half of the exposed population will experience a distinct odor, and about 10 percent will experience a strong odor.

2.2.1 Federal Authority

The USEPA's National Advisory Committee for the Development of Acute Exposure Guideline Levels for Hazardous Substances (AEGL) develops guidelines and threshold exposure limits for the general public, which are applicable to emergency exposure periods ranging from 10 minutes to 8 hours. The AEGL Committee has established AEGLs based on three levels of severity, related to the toxic effects of exposure. AEGL-1 represents exposure levels that can produce mild and progressively increasing but transient and non-disabling odor, taste, and sensory irritation or certain asymptomatic, non-sensory effects. AEGL-2 represents the airborne concentration of a substance above which the general public could experience irreversible or serious health-effects; and, AEGL-3 represents that airborne concentration of a substance above which the general public could experience life-threatening effects (USEPA 2010). AEGL-1 (non-disabling) for H_2S is 330 parts per billion (ppb) for an 8-hr averaging period.

2.2.2 State Authority

The State of California has established a CAAQS for H_2S at a level of 0.03 ppm for a 1-hr averaging period. The state H_2S standard is based on odor and is set at a level to substantially reduce odor annoyance.

2.2.3 Local Authority

The SCAQMD Rule 402 Nuisance, applicable to projects that could result in odor or air contaminant impacts, limits impacts that could result in injury, detriment, or annoyance to the public.

2.3 Greenhouse Gas Emissions and Climate Change

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG's such as carbon dioxide (CO_2) occur naturally and are emitted to the atmosphere through natural processes and

human activities while other GHG's are created and emitted solely through human activities. The principal GHG's that enter the atmosphere because of human activities are CO_2, methane (CH_4), nitrous oxide (N_2O), and fluorinated gases. Within the past decade, increasing awareness of the potential devastating effects GHG's may have on public health and welfare through a process known as global warming has led to more policy and increasing regulation of these pollutants.

2.3.1 International Authority

The Intergovernmental Panel on Climate Change: The IPCC is the leading body for the assessment of climate change. The IPCC is a scientific body that reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change. The scientific evidence brought up by the first IPCC Assessment Report of 1990 unveiled the importance of climate change as a topic deserving a political platform among countries to tackle its consequences. It therefore played a decisive role in leading to the creation of the United Nations Framework Convention on Climate Change, the key international treaty to reduce global warming and cope with the consequences of climate change.

United Nations Framework Convention on Climate Change (UNFCCC): On March 21, 1994, the US joined a number of countries around the world in signing the UNFCCC. Under the Convention, governments gather and share information on GHG's, national policies, and best practices; launch national strategies for addressing GHG's and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change (UNFCCC 1998).

2.3.2 Federal Authority

Clean Air Act: The CAA defines the USEPA's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer. Until recently, GHG emissions have not been regulated under the CAA; however, a 2007 Supreme Court case, Massachusetts v. EPA (Supreme Court Case 05-1120), found that GHG's from motor vehicles were air pollutants covered by the CAA. In response, the USEPA and the US Department of Transportation's National Highway Traffic Safety Administration announced a joint final rule establishing a National Program to decrease GHG's and improve fuel economy through implementation of CO_2 emission standards for motor vehicles. Since then, over the past three years, successive legal findings and regulatory proposals by the USEPA have begun to form a future program that will regulate GHG's. Most recently, in January 2010, the final rule by EPA that finds that the six key GHG's — CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) — mixed in the atmosphere threaten the public health and welfare of current and future generations became effective.

In addition, the USEPA issued Part 98 of the Code of Federal Regulations (CFR), Title 40, which became effective December 29, 2009, requiring large sources and suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 100,000 tons or more per year of GHG emissions to submit annual reports to the USEPA. However, because emissions generated from the project are primarily a result of construction activities and emissions from operations are considerably lower than 25,000 metric tons, this mandatory GHG reporting law would not apply to the proposed project or this environmental impact analysis.

***Climate Change Action Plan**:* In October 1993, former President Clinton announced implementation of the Climate Change Action Plan, which established various sector-based strategies and innovative policy options geared towards reducing GHG's to 1990 levels by the year 2000. The implementation of the Climate Change Action Plan initiated the development of state and local GHG programs and policy initiatives that are currently being implemented.

2.3.3 State Authority

California Global Warming Solutions Act (Act) of 2006: established under Assembly Bill No. 32 (Chapter 488, Statutes of 2006) (AB 32), caps California's GHG emissions at 1990 levels by 2020. This legislation represents the first enforceable state-wide program in the US to cap all GHG emissions from major industries and include penalties for non-compliance. The AB 32 Scoping Plan contains the main strategies California will use to reduce GHG emissions. These reduction actions include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. These measures have been introduced through various workshops and continue to be developed.

The Climate Change Scoping Plan (CCSP), established December 11, 2008 pursuant to AB 32, outlines emission reduction strategies based on regulations, market mechanisms, and other actions. Six key elements include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewable energy mix of 33 percent;
- Developing a state cap-and-trade program related to CO_2 emissions that links with partner programs by the Western Climate Initiative (a collaboration of four Canadian provinces and seven North American states, including California) to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and,
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation.

Title 24, Part 6, of the California Code of Regulations, establishes California Building Energy Efficiency Standards for residential and nonresidential buildings, which include, but are not limited to, roofing, lighting and insulation standards designed to improve energy efficiency and reduce overall GHG's. Operational components associated with proposed buildings and structures will be required to comply with the efficiency standards.

2.3.4 Local Authority

Local jurisdictions including the SCAQMD, the City of Torrance, and the County of Los Angeles have proposed or adopted guidance, policies, and goals geared towards reducing and controlling GHG's and climate change impacts. These guidance documents, policies and goals are briefly described below.

2.3.4.1 SCAQMD

The SCAQMD has prepared a Draft Guidance Document entitled *Interim CEQA Greenhouse Gas Significance Thresholds* (October 2008) for evaluating operational and construction impacts of proposed industrial projects, and has adopted an interim threshold of 10,000 $MTCO_2e$ per year, which includes emissions from stationary and transportation-related sources. Per SCAQMD guidance, construction emissions should be amortized over the economic life of the project, which is proposed at 30 years.

2.3.4.2 The City of Torrance

In 2010, the City of Torrance adopted the 2009 General Plan which includes various policies and objectives that will both directly and indirectly reduce GHG's and climate change impacts through sustainable land use practices, decreased emissions from motor vehicles through improved transportation access and natural resource conservation. Policies addressing climate change are integrated throughout the Torrance General Plan. Policies that will directly reduce GHG emissions and climate change impacts include:

> Policy CR.14.1: Support the CARB in its ongoing plans to implement AB 32, and fully follow any new AB 32-related regulations.
>
> Policy CR.14.2: Develop and implement GHG reduction measures, including discrete, early-action GHG-reducing measures that are technologically feasible and cost-effective.
>
> Policy CR.14.3: Pursue actions recommended in the U.S. Mayors Climate Protection Agreement to meet AB 32 requirements.
>
> Policy CR.14.4: Act as a leader and example in sustainability and reduction in GHG's by conducting City business in the most GHG sensitive way.

A representative sample of policies that will indirectly reduce GHG's include:

> Policy Land Use (L.U).2.7: Protect natural resources by promoting supreme sustainable development.
>
> Policy (Circulation and Infrastructure) CI.7.3: Support and encourage the use of public transit for local trips, trips to major employment and commercial centers, and connections to regional transportation transfer points.
>
> Policy CI.7.4: Establish a transit center in the City.
>
> Policy CR.4.3: Encourage planting of new trees, and preserve existing street trees in residential neighborhoods.
>
> Policy CR.13.3: Support regional air quality goals through conscientious land use and transportation planning and the implementation of resource conservation measures.
>
> Policy CR.13.5: Support air quality and energy and resource conservation by encouraging alternative modes of transportation such as walking, bicycling, transit and carpooling.

> Policy CR.13.8: Promote energy-efficient building construction and operation practices that reduce emissions and improve air quality.

In 2008, the City of Torrance adopted the "Strategic Plan" which identified environmental stewardship, including climate change, as a strategic priority for the City. The City is currently working on an Action Plan that would provide a framework for implementing measurable goals, programs, and policies designed to protect the environment and reduce the impacts of climate change.

2.3.4.3 County of Los Angeles

The County of Los Angeles released a draft 2035 General Plan in 2011, providing an update to the existing General Plan, adopted in 1980. The draft 2035 General Plan presents recommendations for evaluating climate change impacts including the development of a GHG inventory and reduction plan.

In 2007, the County of Los Angeles approved and adopted the Countywide Energy and Environmental Policy which establishes goals and targets for County departmental achievements in energy efficiency, environmental stewardship, public outreach and building sustainability (Los Angeles County, 2007). The County of Los Angeles is also a member of the California Climate Action Registry, which is a non-profit organization that provides support in developing measurable goals and reporting protocols for accurate tracking of achievements towards attaining the GHG reduction targets set forth in AB 32.

3.0 Existing Conditions

3.1 Environmental Setting

The project site is within the jurisdiction of the SCAQMD, which encompasses 10,473 square miles, consisting of the four-county SCAB and the Riverside County portions of the Salton Sea Air Basin and the Mojave Desert Air Basin. The SCAB, which is a subarea of the SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The 6,745 square-mile SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties.

There are sensitive receptors located within 100 meters (equal to 328 feet) of the project footprint. Sensitive receptor locations are defined as areas where the individuals are considered to be more sensitive to pollutants than average locations; these include schools, day care facilities, convalescent homes and hospitals (SCAQMD 2005).

3.1.1 Regional Climate

3.1.1.1 Climate

The climate in the SCAB is characterized by sparse winter rainfall and hot summers tempered by cool ocean breezes. During summer, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms an "inversion" over the cool marine layer and inhibits pollutants from dispersing upward. Light winds during summer further limit dispersion. In addition, sunlight triggers the photochemical reactions which produce ozone, and this region experiences more days of sunlight than many other major urban areas in the nation.

3.1.1.2 Temperature and Rainfall

Temperature affects regional air quality in several ways. Local winds are the result of temperature differences between the relatively stable ocean air and the uneven heating and cooling that takes place in the SCAB due to a wide variation in topography. The mean wind speed in the SCAB is 7.5 miles per hour (WRCC 2008). Temperature also has a major effect on vertical mixing height and affects chemical and photochemical reaction times. Annual average temperatures vary throughout the SCAB from the low 40s to the high 90s (WRCC 2008). The coastal areas show little variation in temperature on a year-round basis, due to the marine influence's moderating effect. On average, September is the warmest month, while December and January are the coolest. Annual rainfall is five to 19 inches (WRCC 2008).

3.1.1.3 Wind Flow Patterns

Wind flow patterns play an important role in air pollution transport in the SCAB. Winds flow from offshore and blow eastward during the day. In summer, the sea breeze starts in mid-morning, peaks at 10 to 15 miles per hour, and subsides after sundown, when there is a calm period until about midnight. At that time, the land breeze begins from the northwest, typically becoming calm again about sunrise. In winter, wind flow follows the same general pattern, except that average wind speeds are slightly lower, allowing pollutants to accumulate. However, it should be noted that normal winter wind patterns are occasionally interrupted by unstable air from passing storms and from strong northeasterly Santa Ana wind flows from the mountains and deserts north of the SCAB.

3.1.2 Existing Air Quality

3.1.2.1 Criteria Air Pollutants

Air quality is determined primarily by the type and amount of contaminants emitted into the atmosphere, the size and topography of the air basin, and meteorological conditions. The SCAB has low mixing heights and light winds, which are conducive to the accumulation of air pollutants. Pollutants that impact air quality are generally divided into two categories: criteria pollutants (those for which health standards have been set) and TAC's (those that cause cancer or have adverse human health effects other than cancer).

It is the responsibility of the SCAQMD to ensure that state and federal ambient air quality standards are achieved and maintained in the SCAB. Health-based air quality standards have been established by California and the federal government for all criteria air pollutants. These standards were established to protect sensitive receptors from adverse health impacts due to exposure to air pollution. The California CAAQS are more stringent than the federal standards, and in the case of PM_{10}, $PM_{2.5}$, and SO_2, much more stringent. California has also established standards for sulfate, visibility, hydrogen sulfide, and vinyl chloride. Hydrogen sulfide and vinyl chloride are currently not monitored in the SCAB because these contaminants are not seen as a significant air quality problem.

Air basins (i.e., distinct geographic regions) are designated as either "attainment" or "non-attainment" for each criteria pollutant, based on whether or not the NAAQS have been achieved. Areas designated as in non-attainment for the ozone NAAQS are further designated as to their degree (or severity) of the non-attainment, which directly affects the control measures required in their AQAP or AQMP, as well as the timeline for achieving attainment of the NAAQS. Some air basins have not received sufficient analysis for certain criteria air pollutants and are designated as "unclassified" for those pollutants. The SCAB is currently designated as "extreme" nonattainment for the eight-hour ozone NAAQS, "serious"

nonattainment for the PM_{10} NAAQS, and nonattainment for the $PM_{2.5}$ NAAQS. The SCAB is in attainment for NO_2, SO_2, Pb, and CO.

The SCAQMD monitors and tracks concentration levels of criteria pollutants at 34 monitoring stations throughout the SCAB. The SCAQMD's Southwest Coastal LA County (District Code 820) monitoring station is located approximately eight miles northwest of the proposed project site at 7201 West Westchester Parkway, Los Angeles, CA 90049. Peak ambient air quality concentrations and the number of monitored days above the designated standard for the latest 3 years for which data are available, 2007–2009, are presented in Table 3.1-1.

Table 3.1-1 Summary of Peak Ambient Air Quality Concentrations (2007 – 2009)

Criteria Pollutant (unit)	Peak Concentrations		
	2007	**2008**	**2009**
Ozone			
1-hour (ppm)	0.087	0.086	0.077
Days above the Federal Standard	0	--[1]	--[1]
Days above the State Standard	0	0	0
8-hour (ppm)	0.074	0.075	0.070
Days above the Federal Standard	0	0	0
Days above the State Standard	1	1	0
Carbon Monoxide			
1-hour (ppm)	3	4	2
8-hour (ppm)	2.4	2.5	1.9
Nitrogen Dioxide			
1-hour (ppm)	0.08	0.09	0.08
1-hr 98th Percentile (ppm)	--[1]	--[1]	0.07
Annual (ppm)	0.014	0.014	0.0159
Sulfur Dioxide			
1-hour (ppm)	0.02	0.02	0.02
24-hour (ppm)	0.009	0.005	0.006
Annual (ppm)	0.0028	0.0014	--[1]
PM_{10}			
24-hour (µg/m^3)	96	50	52
Days above the Federal Standard	0	0	0
Days above the State Standard	2	0	1
Annual Arithmetic Mean (µg/m^3)	27.7	25.6	25.4

Table 3.1-1 Summary of Peak Ambient Air Quality Concentrations (2007 – 2009)

Criteria Pollutant (unit)	Peak Concentrations		
	2007	2008	2009
$PM_{2.5}$			
24-hour (µg/m^3)	--	--	--
Days above the Federal Standard	--	--	--
Annual Arithmetic Mean (µg/m^3)	--	--	--

Acronyms: ppm = parts per million; µg/m^3 = microgram per cubic meter
Notes:
1. No applicable federal standard is in place.

"—" Indicates insufficient (or no) data available to be considered valid.

Source: SCAQMD. 2011

3.1.2.2 Existing CO Hotspots

The ultimate objective in a CO hotspots analysis is to identify sensitive receptors (e.g., residences, schools, hospitals, etc.) that are located in close proximity to the project to ensure that public health, safety and welfare are protected through compliance with ambient air quality standards. Projects must demonstrate that sensitive receptors do not experience a significant impact due to combustion emissions from vehicle traffic congestion associated with roadways, intersections and on- and off-ramps.

To evaluate the impact of traffic on CO levels in public areas, which may include children and the elderly, a CO hotspots analysis should be performed for roadway intersections that are currently operating at, or are expected to operate at, Level of Service (LOS) D, E or F. The primary roadway/intersection within the project study area is located at Yukon Avenue and 182nd Street, which currently operates at an LOS A and B for peak AM and PM conditions, respectively. Therefore, current conditions would not result in a CO hotspot.

3.1.3 Existing Toxic Air Contaminants

In 1998 the SCAQMD initiated an urban toxic air pollution study, called the Multiple Air Toxics Exposure Study (MATES), which recently completed its third phase of development. The MATES III program is a monitoring and evaluation study conducted in the SCAB by the SCAQMD, which included a monitoring program, an updated emissions inventory of TACs, and a modeling effort to characterize carcinogenic risk from exposure to air toxics across the SCAB.

The MATES III study found that carcinogenic risk from exposure to air toxics across the SCAB is about 1,200 excess cancer cases per million with DPM emissions contributing more than 70 percent of the risk. This risk refers to the expected number of additional cancers in a population of one million individuals who are exposed over a 70-year lifetime, and was calculated based on average concentrations at fixed monitoring sites. For comparison purposes, the SCAQMD considers the risk of a project to be significant if the carcinogenic risk exceeds 10 excess cancer cases per million.

Cancer risk at the fixed monitoring sites ranged from 870 to 1,400 per million. The estimated existing cancer risk at the proposed project site is 834 cases-per-million individuals. As described in Section 1.1, the proposed project site is adjacent to the I-405, an arterial roadway, which contributes significantly to the existing background cancer risk due to mobile source combustion. Thus, the baseline carcinogenic risk resulting from routine exposure to air toxics within the SCAB is substantial.

3.1.4 Existing Odors

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person may be perfectly acceptable to another. Unfamiliar odors are more easily detected than familiar odors and are more likely to cause complaints.

Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the intensity of the odor weakens and eventually becomes so low that detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of an odorant reaches a detection threshold; an odorant concentration below the detection threshold indicates the concentration in the air is not detectable by the average human.

The proposed project site and existing offsite facilities are not odor-producing and, to date, have not resulted in any nuisance impacts. Groundwater within the area is not expected to contain increased levels of sulfides or other odor-producing compounds. To date, odor impacts experienced within the proposed project area, both onsite and offsite, have been minimal and have not resulted in any odor complaints or public nuisance issues.

3.1.5 Existing Greenhouse Gas Emissions

Climate change, often referred to as “global warming” is a global environmental issue that refers to any significant change in measures of climate including temperature, precipitation, or wind which extends for a period (decades or longer) of time. Climate change is a result of both natural factors, such as volcanic eruptions, and anthropogenic, or man-made, factors including changes in land-use and burning of fossil fuels (EPA 2010). Anthropogenic activities such as deforestation and fossil fuel combustion emit heat-trapping GHG’s, which are defined as any gas that absorbs infrared radiation within the atmosphere. The heat absorption potential of a GHG is referred to as the “Global Warming Potential” (GWP). Each GHG has a GWP value based on the heat-absorbing ability of the GHG relative to CO_2, commonly referred to as “carbon dioxide equivalent” (CO_2e).

GHG’s, both naturally occurring and anthropogenic, prevent heat from escaping the atmosphere and thereby regulate the Earth’s temperature. Anthropogenic sources of GHGs have elevated GHG concentrations within the atmosphere which has led to an increase in the Earth’s average surface temperature. According to National Oceanic and Atmospheric Administration and National Aeronautics and Space Administration data, the Earth's average surface temperature has increased by about 1.2 to 1.4 degrees Fahrenheit (ºF) in the last century. The eight warmest years on record (since 1850) have all occurred since 1998, with the warmest year being 2005. Based on available data, the rise in temperature is most likely due to anthropogenic sources (USEPA 2010).

Unlike criteria air pollutants and TAC's, which are of regional and local concern, GHGs are global pollutants and climate change is a global issue. Six recognized GHGs are described below.

Carbon Dioxide (CO_2) is a colorless, odorless GHG. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic degassing. Anthropogenic sources of CO_2 include burning fuels such as coal, oil, natural gas, and wood. Concentrations are currently around 379 parts per million, which may rise to 1,130 CO_2 CO_2e parts per million by the year 2100 as a direct result of anthropogenic sources (IPCC 2007).

Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. CFCs are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at the earth's surface); however, because they destroy stratospheric ozone, their production was halted by the Montreal Protocol.

Methane is a gas that is the main component of the natural gas used in homes. Methane forms naturally from the decay of organic matter. Natural sources include wetlands, permafrost, oceans and wildfires. Anthropogenic sources include fossil fuel production, rice cultivation, biomass burning, animal husbandry (fermentation during manure management), and landfills.

Nitrous Oxide (N_2O), also known as laughing gas, is a colorless gas. N_2O is produced by microbial processes in soil and water, including those reactions which occur in nitrogen-rich fertilizers. In addition to agricultural sources, some industrial processes (nylon production, nitric acid production) also emit N_2O. It is used in rocket engines, as an aerosol spray propellant, and in race cars. During combustion, nitrogen oxide (NO_x, which is not the same as N_20), is produced as a criteria pollutant. Very small quantities of N_2O may be formed during fuel combustion through the reaction of nitrogen and oxygen.

Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere (the lowest portion of the earth's atmosphere) is relatively short-lived and, therefore, is not global in nature. According to the CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NO_x and VOC) to global warming.

Water Vapor is the most abundant and variable GHG in the atmosphere. It is not considered a pollutant, and maintains a climate necessary for life. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from ice and snow, and transpiration from plant leaves.

4.0 Thresholds of Significance

4.1 Significance Criteria for Air Quality

4.1.1 CEQA Guidelines

Thresholds of significance, as contained in Appendix G of the CEQA Guidelines, state that project implementation will result in a significant adverse impact on the environment related to air quality if the project will:

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)
- Create objectionable odors affecting a substantial number of people; or
- Expose sensitive receptors to substantial pollutant concentrations.

4.1.2 SCAQMD - Mass Emission CEQA Thresholds

The SCAQMD has developed significance thresholds to address the first four items in the bulleted list above and are provide below in Table 4.1-1. Significance determinations are based on the maximum daily emissions during a construction period, which provides a "worst-case" analysis of the construction emissions. Similarly, significance determinations for operational emissions are based on the maximum daily emissions during the operational phase.

Table 4.1-1 SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
NO_x	100 lb/day	55 lb/day
VOC	75 lb/day	55 lb/day
PM_{10}	150 lb/day	150 lb/day
$PM_{2.5}$	55 lb/day	55 lb/day
SO_x	150 lb/day	150 lb/day
CO	550 lb/day	550 lb/day
Lead	3 lb/day	3 lb/day
Odor Thresholds		
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402.	
Source: SCAQMD, *Air Quality Significance Thresholds, rev March* 2009.		

4.1.3 SCAQMD - Localized Significance CEQA Thresholds

The SCAQMD has also developed localized significant thresholds (LSTs) for CO, NOx, PM_{10} and $PM_{2.5}$ in order to evaluate the potential localized impacts from construction and operations for projects that are five acres or less (SCAQMD, Mass Rate Localized Significance Thresholds 2009). LSTs apply to projects that must undergo environmental analysis pursuant to CEQA. The LSTs are based on the size of the project area and distance to the nearest sensitive receptor. The SCAQMD has developed localized significant thresholds "lookup tables" specific to a source receptor area (SRA) within the SCAB. These tables are used to determine the emission limit above which a proposed project would have a significant air quality impact.

The proposed project is within SRA 3 (Torrance); the nearest sensitive receptor is located within 25 meters from the project site. The project site is less than 2-acres (at 1.5-acres). Therefore, the localized impact evaluation has been conducted based on a 2-acre site and a receptor distance of 25 meters to determine if the project would exceed the applicable LST emission limits. Construction and operational limits for SRA 3 are presented in Table 4.1-2.

Table 4.1-2 SCAQMD Air Quality Localized Significance Thresholds (lb/day)

Source/Receptor Area	Allowable Emissions as a function of receptor distance (meters)				
	25	50	100	200	500
2-acre site					
NO_x Construction/Operation	131	128	139	165	233
CO Construction/Operation	967	1,158	1,597	2,738	7,950
$PM_{10}/PM_{2.5}$ Operations	2/1	6/2	9/3	16/6	36/20
$PM_{10}/PM_{2.5}$ for Construction	8/5	23/7	37/12	65/25	148/81

4.2 Significance Criteria for Greenhouse Gas Emissions and Climate Change

4.2.1 CEQA Thresholds

Thresholds of significance, as contained in Appendix G of the CEQA Guidelines, state that project implementation will result in a significant adverse impact on the environment related to GHG's if the project will:

- Generate GHG's, either directly or indirectly, that may have a significant impact on the environment;
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG's.

Section 15064.4 of the CEQA Guidelines states that a lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:

- The extent to which the project may increase or reduce GHG's as compared to the existing environmental setting;

- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

- The extent to which the project complies with regulations or requirements adopted to implement statewide, regional, or local plans for the reduction or mitigation of GHG's.

4.2.2 State and Local Thresholds

The County of Los Angeles has not established standards or significance thresholds for evaluation of project-level or cumulative impacts under CEQA. Jurisdictional and lead agencies such as the SCAQMD, the CARB, the CAPCOA, and the Bay Area Air Quality Management District (BAAQMD) have developed both quantitative and qualitative interim significance thresholds for project-level GHG's. Proposed and adopted significance thresholds which are currently available are briefly described below.

On December 5 2008, the SCAQMD adopted an interim numerical GHG significance threshold of 10,000 metric tons of carbon dioxide equivalent ($MTCO_2e$) for stationary source, industrial projects such as a manufacturing facility or refinery. The interim threshold accounts for emissions generated during both construction and operation, and recommends that construction emissions be amortized over a 30-year projected project lifetime. In 2009, the SCAQMD recommended options for evaluating non-industrial projects including thresholds for residential, commercial, and mixed use projects of 3,500, 1,400, and 3,000 $MTCO_2e$/yr, respectively; however these thresholds were never adopted. An additional option has been recommended for establishing a single numerical threshold of 3,000 $MTCO_2e$/yr for all non-industrial projects. These options do not account for construction emissions and have not yet been adopted.

In 2008, the CARB released a Preliminary Draft Staff Proposal, *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under CEQA*, which recommended a tiered approach for both the industrial and residential/commercial sectors. The proposed interim threshold for the industrial sector is 7,000 $MTCO_2e$/yr for stationary, non-transportation (or operational) emissions; construction and transportation-related GHG's are recommended to be evaluated based on performance standards, which have yet to be developed. The proposed interim threshold for residential/commercial projects is based on performance standards, which have yet to be developed.

In 2008, the CAPCOA published a white paper entitled *CEQA and Climate Change, Evaluating and Addressing GHG Emissions from Projects Subject to the CEQA*. Although a 900 $MTCO_2e$/yr threshold is presented as an option for evaluation of project-level impacts from non-industrial and industrial projects, it does not account for emissions generated during construction and has not been adopted by a lead agency.

In 2010, the BAAQMD adopted numerical GHG significance thresholds established at 1,100 $MTCO_2e$/yr for projects other than stationary sources, and 10,000 $MTCO_2e$/yr for stationary sources. Projects other than stationary sources can also be evaluated based on compliance with a qualified GHG reduction strategy. These threshold options are specific to operational impacts and are not intended to evaluate construction impacts.

Currently the SCAQMD interim threshold for industrial projects is the only available numerical threshold that accounts for both construction and operational emissions. Therefore, because the proposed project

includes a considerable amount of construction-related activities, the SCAQMD interim threshold of 10,000 $MTCO_2e$/yr has been used for this project for significance determination.

The analysis quantifies the annual GHG's that will result from project-related mobile and stationary sources for construction and operation, and compares them to SCAQMD's Interim CEQA GHG Significance Threshold for Stationary Sources (SCAQMD 2008). In addition, an evaluation of existing plans and policies has been completed to demonstrate consistency in meeting local and regional GHG reduction targets and goals.

5.0 Methodology

The analytical methodology used in this analysis to quantify and evaluate criteria pollutant, air toxics, and GHG's during construction and operations are described in the following sections. Potential impacts from project implementation are predominately in the form of construction emissions with minimal impacts resulting from operations.

5.1 Methodology for Quantifying Criteria Pollutant Emissions

Potential adverse air quality impacts occur due to emissions generated from direct and indirect sources. "Direct" sources refer to on-site mobile and stationary equipment typically used during construction and operation; "indirect" sources refer to those that generate or attract vehicular trips, such as residential or commercial projects. The methodology used to estimate emissions from direct and indirect sources are described below.

5.1.1 Construction

5.1.1.1 Off-Road Mobile Sources

Construction emissions from the operation of diesel-fueled off-road equipment were estimated using the SCAQMD recommended Urban Emissions (URBEMIS [version 9.2.4]) model for estimating land use emissions. For this analysis, emission factors utilized represent the fleet average during the proposed initial year of construction, or 2012. Schedule assumptions, hours of operation, equipment type, and detailed emission calculations are provided in Appendix A-1.

5.1.1.2 On-Road Mobile Sources

Construction emissions from the operation of gasoline-fueled on-road light and heavy duty trucks (i.e. worker commuter trips and haul trucks) were estimated using CARB's On-Road EMFAC 2007 v2.3 mobile source emission factors, obtained from the SCAQMD's website (SCAQMD, 2010), representative of the fleet average during the proposed initial year of construction, or 2012. It is estimated that worker commute trips would result in 60 daily roundtrips, and haul truck trips would result in 14 daily roundtrips, or 74 daily trips. The average round trip distance was assumed to be 50 and 30 miles for worker commute and haul truck trips, respectively.

5.1.1.3 Fugitive Dust

Fugitive dust emissions from demolition of the existing pump house and pump station were calculated using the SCAQMD recommended URBEMIS [version 9.2.4] land use emissions model. Emissions were based on the approximate dimensions of the structures proposed for demolition.

As described in Section 2.1.3, implementation of BMP's during construction are required per the SCAQMD Rule 403, Fugitive Dust. BMP's such as site watering and street sweeping will be implemented during construction to reduce and control fugitive dust emissions to a level below significance.

5.1.2 Operations

The proposed 3-million gallon water storage reservoir will be a closed-system and would not result in any emissions such as particulates. Direct emission sources include onsite equipment including the three proposed standby generators, and the 4,000-gallon diesel fuel tank. Indirect emission sources include vehicle miles travelled (VMT) generated as a result of worker and maintenance trips to and from the proposed project location.

5.1.2.1 On-Road Mobile Sources

Emissions from the operation of gasoline-fueled on-road light and heavy duty trucks (i.e. worker/maintenance commute trips) were estimated using CARB's On-Road EMFAC 2007 v2.3 mobile source emission factors, obtained from the SCAQMD's website (SCAQMD, 2010), representative of the fleet average during the proposed initial year of operation, or 2014. It is estimated that worker/maintenance trips would result in up to 2 trips per day, and would not exceed 389 trips per year. The average round trip distance was assumed to be 50 miles.

5.1.2.2 Standby Generators and Diesel Fuel Storage Tank

Three diesel-fired generators are proposed for emergency operation of the pumps. Operations would result in criteria pollutant and TAC emissions; the methodology for evaluating TAC emissions impacts is described in Section 5.2.2 below. Criteria pollutant emissions were estimated based on factors for Tier level 4 and interim Tier level 4 engines (0.01 g/bhp-hr), as required per SCAQMD Rule 1470, and were quantified based on BHP and maintenance and testing operating schedule (i.e. 15 minutes per week, or 13 hours per year), described in Section 1.2.

A diesel fuel storage tank with 4,000-gallon capacity will be used at the proposed project site for storing diesel fuel for the three emergency generators, which would result in evaporative emissions of VOCs as well as TAC emissions from diesel fuel. Emissions of VOCs and TACs were estimated using the USEPA TANKS program (Version 4.0.9d), assuming use of approximately 20,000 gallons per year (or 5 turnovers).

5.2 Methodology for Quantifying TAC Emissions and Evaluating Health Risk Impacts

5.2.1 Construction TAC Emissions

Construction activities would include operation of diesel-fueled non-road equipment resulting in emissions of DPM, a recognized TAC. However, construction activities associated with the proposed project would occur over a finite period of time (18 months), which is considerably less time than the 70-year exposure period for cancer risk. Construction-related DPM emissions would result in short-term, temporary impacts, and would not result in a long-term cancer risk to sensitive receptors located in close proximity to the project. Moreover, as noted in Section 2.1.2.2, the existing CAPCOA Health Risk Assessment guidance for land use projects focuses on impacts from operational sources and does not provide methodology for the evaluation of short-term, temporary construction impacts (CAPCOA 2009). Additional analysis has not been presented.

5.2.2 Operational TAC Emissions

The established CAPCOA guidance recommends evaluating impacts from toxic emissions based on potential exposure due to a new source as well as potential exposure due to a new receptor. The proposed project is located adjacent to the I-405, which is a roadway source of mobile source air toxics. However, the proposed project will not allow for public access or use and therefore would not result in significant exposure to a new receptor.

Potential new TAC emission sources include a 500-gallon ammonia storage tank, three diesel-fired standby generators, and a 5,000-gallon diesel fuel storage tank. The ammonia storage tank is assumed to be a static pressure vessel (horizontal cylinder) equipped with a scrubber tank for capture and control of fugitive, odorous vapors. The annual tank throughput is estimated at 12,000 gallons per year, based on 24 turnovers. The capture and control efficiency of the scrubber will remove any TAC emissions generated during operation (including storage and transfer) of the chemical treatment system. Therefore, ammonia emissions have not been quantified and additional analysis is not required.

As described in Section 2.1.1.3.1, all standby generators will be required to achieve an emissions limit of 0.01 and 0.15 g/bhp-hr for DPM, which meets SCAQMD best available control technology (BACT) requirements for IC engines. Emissions of DPM were calculated using the emission factors referenced above, and the anticipated maintenance and testing schedule described in Section 1.2. The TAC emissions present in the VOC emissions from the diesel fuel storage tank were calculated using the weight specific percentage of specific TACs in diesel fuel vapor (IERA, 1999) and the total VOC emissions estimated from the TANKS 4.09d.

For this analysis, the potential project health risks resulting from the proposed standby generators and diesel fuel storage tank were evaluated using a screening level health risk assessment (HRA), in accordance with the SCAQMD Risk Assessment Procedures for Rule 1401 and 212 (SCAQMD, July 2005). Estimated TAC emissions from the diesel fuel storage tank and emergency generators are presented in Table 6.1-4.

5.3 Methodology for Quantifying Greenhouse Gas Emissions and Evaluating Climate Change Impacts

The methodology used to quantify and analyze the project's contribution to global climate change includes quantification of GHG's from direct and indirect combustion sources during both construction activities and operations. The impact assessment includes a discussion of significance based on Section 15064.4 and the CEQA Checklist, Appendix G, of the CEQA Guidelines. In contrast to evaluation of criteria pollutants, "direct" sources of GHG emissions are generally located on-site and can be controlled by the facility; "indirect" sources are located off-site and are typically owned or controlled by another entity, such as off-site electricity generation.

5.3.1 Construction

Direct Emission Sources

Construction emissions from the operation of mobile sources, including both diesel- and gasoline-fueled equipment, would result in CO_2 emissions as a direct result of fuel combustion. Emissions of CO_2 from off-road equipment have been estimated using the SCAQMD recommended URBEMIS [version 9.2.4]

model. Emissions of CO_2 from on-road mobile sources were estimated using emissions factors derived from CARB's EMFAC 2007 v.2.3 model, representative of the 2012 and 2014 fleet averages, for construction and operations, respectively.

Indirect Emissions

For the proposed project, construction activities requiring electricity including temporary trailers, sign boards, or site lighting would be powered by onsite diesel-fueled generators. Electric-driven components are assumed to be minimal and would result in negligible emissions. Additional analysis has not been conducted.

5.3.2 Operation

Operations would result in direct and indirect releases of GHG's. Electric driven components of the booster pump station, and onsite/offsite project features include VFD motors, chemical pumps, transformers, lighting panels, conduit, and conductors. These components provide for primary pump operation, site lighting and security gate operation. Electrical equipment and components will be sized based on conditions and loads of the existing water pumping/storage facilities and booster pump station; therefore, indirect GHG emissions generated from offsite electricity generation of the proposed project would not result in a change in GHG emissions compared to existing conditions. Indirect operational emissions have not been further evaluated.

Direct emission sources include three standby generators, and mobile source emissions from maintenance/worker trips to the site. Combustion related emissions resulting from operation of the standby generators were calculated using CO_2 emission factors (lb/hr) for generators, obtained the CARB's OFFROAD mobile source model. Annual operational emissions were based on limited maintenance and testing hours, as described in Section 1.2.

6.0 Environmental Impacts

6.1 Air Quality Impacts

Air quality impacts resulting from construction activities and facility operations are presented in the following section. On- and off-site construction activities include clearing and grubbing; demolition of existing onsite facilities; trenching and pipeline construction; utility building construction; wellhead treatment system installation; and well, reservoir and access road construction. Combustion emissions related to operations will result from the standby generators and landscaping activities; indirect emissions will result from daily/monthly worker and maintenance trips.

6.1.1 Construction Impacts

6.1.1.1 Criteria Pollutant Emissions Impact

Construction has been estimated to include up to 13 activities that, in their entirety, are estimated to require approximately 18 months to complete. Construction activities, anticipated activity duration, and equipment are presented in Table 6.1-1 below.

Table 6.1-1 Construction Equipment and Schedule Description

Construction Activities[1]	Equipment Description[1]	Duration
Onsite Construction Activities		
Clearing and Grubbing	Bulldozer Backhoe/front end loader End dump Water truck	2 weeks
Demolition of Existing Onsite Facilities	Backhoe/front end loader Hydraulic jackhammer Concrete saw End dump Water truck	2 weeks
Trenching	Excavator Backhoe/front end loader Concrete saw End dump Water truck	4 months
Pipeline Construction	Backhoe/front end loader Concrete saw Crane Sheepsfoot compactor Asphalt paving equipment Steam roller Concrete truck	4 months
Utility Building Construction	Backhoe/front end loader Excavator Concrete saw Crane Sheepsfoot compactor End dump Concrete truck Water truck	4 months
Wellhead Treatment System Installation and Construction	Backhoe/front end loader Excavator Concrete saw Crane Sheepsfoot compactor End dumps Concrete truck Water truck	6 months
Well Construction (2 waterwells)	Drill rig Support truck Crane End dump Backhoe/front end loader Pump	3 months
Reservoir Construction	Backhoe/front end loader Excavator Concrete saw Crane	10 months

Table 6.1-1 Construction Equipment and Schedule Description

Construction Activities[1]	Equipment Description[1]	Duration
	Sheepsfoot compactor End dumps Concrete truck Water truck	
Access Road Construction	Scraper Grader Backhoe/front end loader End dump Water truck Concrete truck	1 month
Offsite Construction Activities		
Demolition, Grading and Repair	Scraper Grader Backhoe/front end loader End dump Water truck	2 months
Trenching	Excavator Backhoe/front end loader Concrete saw End dump Water truck	4 months
Pipeline Construction/Piping Installation	Backhoe/front end loader Concrete saw Crane Sheepsfoot compactor Asphalt paving equipment Steam roller Concrete truck	4 months
Well Construction	Drill rig Support truck Crane End dump Backhoe/front end loader	3 months

Notes:

1. One piece of equipment per type would be required for each activity type. Equipment operations have been estimated at 4-6 hours per day.

Peak daily emissions are based on concurrent operations of twenty-four pieces of off-road construction equipment operating for four to six hours per day; 9 haul trucks travelling 30 miles per day; and 30 worker trips at a roundtrip distance of 50 miles. Operation of off-road equipment was based on equipment presented in Table 6.1-1 and the anticipated schedule, as calculated using the URBEMIS [version 9.2.4] land use model. Table 6.1-2 presents peak daily construction emissions compared to the SCAQMD's regional thresholds and LSTs.

Table 6.1-2 Peak Daily Construction Emissions Summary, lb/day

Source	NO_x	CO	VOC	PM_{10}	$PM_{2.5}$	SO_x

Source	NO_x	CO	VOC	PM_{10}	$PM_{2.5}$	SO_x
Mobile Sources						
On-Road Vehicles[1]	5.8	15.7	1.8	0.3	0.2	0.0
Off-Road Equipment[2]	83.4	36.7	9.7	3.6	3.2	0.0
Fugitive Dust						
Material Handing [2]	---	---	---	0.9	0.2	---
Peak Daily Construction Emissions	89.2	52.4	11.5	4.8	3.6	0.0
SCAQMD Thresholds (lb/day)	**100**	**550**	**75**	**150**	**55**	**150**
Project Exceed Threshold? (Yes/No)	*No*	*No*	*No*	*No*	*No*	*No*
SCAQMD Localized Threshold (lb/day)	**131**	**967**	**--**	**8**	**5**	**--**
Project Exceed Threshold? (Yes/No)	*No*	*No*	--	*No*	*No*	--

Source:

1. Modeled using emission factors obtained from EMFAC2007 and populating worksheets developed by AECOM. Detailed emission calculations are presented in Appendix A, Tables 1a and 1b.
2. Modeled using URBEMIS, Version 9.2.4. Detailed modeling outputs are presented in Appendix B.

In order to minimize fugitive dust, the proponent will develop and implement a Fugitive Dust Control Plan in compliance with SCAQMD Rule 403, which could include BMPs such as using tarps on haul trucks and site watering to stabilize soils, prevent dust plumes, and minimize track-out on vehicle wheels (SCAQMD, *Rule 403* 2005). In addition, to minimize excess DPM emissions from non-road equipment operations, the proponent will implement a 5-minute diesel idling limit for non-essential use, per the CARB's In-Use Off-road Diesel Idling rule (Title 13 of California Code of Regulations). As presented in Table 6.1-2, emissions will not exceed the SCAQMD regional or localized threshold for any criteria pollutant. Therefore, air quality impacts will be less than significant during construction-related activities.

6.1.2 Operational Impacts

6.1.2.1 Criteria Pollutant Emissions Impact

Sources of direct emissions resulting from operation of the proposed project include three standby generators and miscellaneous outdoor equipment (such as lawnmowers); sources of indirect emissions include VMT from worker and maintenance trips to the site. The estimated project criteria emissions from operations are shown in Table 6.1-3.

Table 6.1-3 Daily Operations Emissions Summary, lb/day

Emission Source	NO_x	CO	VOC	PM_{10}	$PM_{2.5}$	SO_x
Direct Emissions						
Standby Generators (three IC engines)[1]	8.2	19.1	1.7	0.1	0.1	0.0
Diesel Fuel Storage Tank	--	--	0.1	--	--	--

Table 6.1-3 Daily Operations Emissions Summary, lb/day

Emission Source	NO_x	CO	VOC	PM_{10}	$PM_{2.5}$	SO_x
Indirect (Mobile) Emissions						
Mobile Sources[2]	0.1	0.7	0.1	0.0	0.0	0.0
Peak Daily Operation Emissions	8.3	19.8	1.9	0.1	0.1	0.0
SCAQMD Thresholds (lb/day)	**55**	**550**	**55**	**150**	**55**	**150**
Project Exceed Threshold? (Yes/No)	No	No	No	No	No	No
SCAQMD Localized Threshold (lb/day)	131	967	-	2	1	-
Project Exceed Threshold? (Yes/No)	No	No	-	No	No	-

Notes:
1. Detailed emission calculations and assumptions provided in Appendix A.
2. Emissions estimated using URBEMIS (version 9.2.4) model. Detailed outputs provided in Appendix A.

Source: AECOM, 2011.

As shown in Table 6.1-3, emissions will not exceed the SCAQMD mass-daily threshold or LST for operations. Therefore, operation-related emissions will result in a less-than-significant impact to ambient air quality.

6.1.2.2 CO Hotspots

Based on the results presented in the Traffic and Transportation Study, existing roadway conditions with the proposed project would not degrade the LOS below a B rating. Therefore, a CO hotspots would not be generated and additional analysis has not been presented in this Technical Report. The impact would be less than significant.

6.1.2.3 Toxic Emissions Impact

Maximum annual and hourly TAC emissions generated from operation of the standby generators and diesel fuel storage tank are presented in Table 6.1-4.

Table 6.1-4 Operational TAC Emissions – Standby Generators and Fuel Tank

Source	Toxic Air Contaminant	CAS Number	Emissions Data		Residential MICR	Worker MICR
			Hourly (lb/hr)	Annual (lbs/yr)		
Tank	Benzene	71432	1.16E-05	1.02E-01	2.49E-08	3.15E-08
Emergency Generator(s)	Diesel Particulate Matter	9901	1.00E-01	6.84E-01	2.13E-06	2.70E-06
Tank	Ethyl Benzene	100414	1.13E-06	9.90E-03	2.11E-10	2.67E-10
Tank	n-hexane	110543	3.71E-06	3.42E-02	--	--
Tank	Napthalene	91203	1.60E-07	1.40E-03	4.12E-10	5.21E-10

Table 6.1-4 Operational TAC Emissions – Standby Generators and Fuel Tank

Source	Toxic Air Contaminant	CAS Number	Emissions Data		Residential MICR	Worker MICR
			Hourly (lb/hr)	Annual (lbs/yr)		
Tank	Toluene	108883	6.62E-06	5.78E-02	--	--
Tank	Xylenes	1330207	4.04E-06	3.53E-02	--	--
Health Risk Value =					2.16E-06	2.74E-06
SCAQMD Maximum Allowable Incremental Cancer Risk					1.0E-05	
Would the project exceed the 10 in-a-million threshold?					No	No

Acronyms: CAS = chemical abstract number; MICR = maximum individual cancer risk; SCAQMD = South Coast Air Quality Management District

Detailed calculations are presented in Appendix A.

Source: EPA's TANKS 4.09d; AECOM 2011

As presented in Table 6.1-4, TAC emissions would not exceed the SCAQMD Tier 2 SLA for residential or worker MICR. Detailed calculations are presented in Appendix A, Table 7.

6.1.2.4 Nuisance Odor Impacts

The project does not propose land uses typically associated with emitting objectionable odors (i.e. wastewater treatment plants, chemical plants, composting operations, refineries, landfills, and dairies). Aeration nozzles within the reservoir will be used to volatilize sulfide compounds that may potentially be present in the groundwater. This will be conducted to mitigate potential odor issues associated with the water. Should noticeable odors be created as a result, they will be controlled by an air scrubber that would be installed to capture the vapors. Therefore, the impact would be less-than-significant.

6.2 Potential GHG Emissions and Climate Change Impacts

Estimated GHG emissions, from both operations and construction, and climate change impacts are summarized below.

6.2.1 Construction Impacts

As noted earlier, project construction is estimated to occur over approximately 18 months. The primary source of GHG emissions, specifically CO_2 emissions, will result from the operation of off-road construction equipment. The SCAQMD's interim GHG threshold applies to operational and construction emissions. Total GHG emissions from On-Road Vehicles was estimated to be 392 $MTCO_2$ and total GHG emissions from Off-Road Vehicles was estimated to be 1,445 $MTCO_2$, as shown in Table 6.2-1.

To annualize construction emissions, the SCAQMD recommends that construction emissions be amortized over the project lifetime, or on average a 30-year period. Total GHG emissions during construction are estimated at 1,836 $MTCO_2$, or 61 $MTCO_2$/Yr when amortized over a 30-year project lifetime, as shown in Table 6.2-1.

Table 6.2-1 Construction GHG Emissions Summary

Emission Source	GHG Emissions Summary	
	$MTCO_2$	**Units**
On-Road Vehicles	392	$MTCO_2$/Project
Off-Road Vehicles	1,445	$MTCO_2$/Project
Total Construction GHG Emission	1,836	$MTCO_2$/Project
Annual Construction Emissions[1]	61	$MTCO_2$/Yr

Notes:

[1] Amortized over a 30-year project lifetime, per SCAQMD recommendation for evaluation of GHG impacts during construction.

All emission estimates are rounded to the nearest ten metric tons. See Appendix A for detailed air quality calculations.

Based on this analysis, the estimated annual GHG (CO_2) emissions from combustion activities associated with construction equipment would be 70 $MTCO_2$, or less than 1% of the SCAQMD threshold for identifying a significant impact. Construction impacts would therefore be **less than significant.**

6.2.2 Operation Impacts

Operational GHG emissions will come from diesel-fueled standby generators, gasoline-powered landscaping equipment, and mobile sources such as vehicle trips for worker/maintenance employees. The results are shown below in Table 6.2-2.

Table 6.2-2 Operational GHG Emissions Summary

Source	Emissions $MTCO_2e$/year
Three Diesel-Generators[1]	9
Mobile sources	12
Annual Total =	**21**

Note: Emissions have been rounded to the nearest ten.

[1]Includes maintenance and testing operations for a: 313 BHP, 408 BHP, and 1,701 BHP standby generators.

See Appendix A and B for detailed emission calculations.

Cumulative emissions from operations and construction are compared to the SCAQMD's interim GHG threshold in Section 6.2.3.

6.2.3 GHG Emissions Summary

While any increase in GHG emissions would contribute to global climate change, it is important for the purpose of evaluating impacts from construction activities to consider that construction-related emissions will occur only over a finite period of time (18 months). Theses emissions are accounted for through SCAQMD's allowance of short-term construction-related GHG emissions to be amortized over the expected (long-term) operational life of a project, which is assumed to be 30 years based on SCAQMD guidance (SCAQMD, *Interim CEQA GHG Significance Threshold* 2008).

Table 6.2-3 summarizes the GHG emissions (in metric tons of CO_2e) and compares them to the SCAQMD interim significance threshold of 10,000 $MTCO_2e$ per year. Construction and operational emissions are combined by amortizing the construction emissions over a conservative, assumed 30-year project life, as recommended by the SCAQMD (SCAQMD, *Interim CEQA GHG Significance Threshold* 2008).

Table 6.2-3 Estimated Total Project CO_2e Emissions

Source	CO_2e Emissions Summary ($MTCO_2e$/Yr)
Amortized CO_2 Emissions During Construction	61
Net CO_2 Emissions During Operation	21
Total Project GHG (Amortized Construction Total + Net Operations Total)	**82**
SCAQMD Interim GHG Threshold for Industrial Projects	10,000
Does the project exceed the SCAQMD interim threshold?	No

Notes:
1. Emissions summary represents project emissions amortized over 30-years.

Source: Modeled by AECOM, 2011.

As shown in Table 6.2-3, the proposed project is below the SCAQMD interim threshold. Therefore, the proposed project will not generate a significant amount of GHG emissions or have a significant environmental impact related to climate change. The project impact on GHG emissions and climate change will be less than significant.

6.3 CEQA Determination

6.3.1 Air Quality

Determination of significance for air quality impacts is based on the CEQA Environmental Checklist, as presented in Section 4.1.1

<u>Would the proposed project conflict with or obstruct implementation of the applicable air quality plan?</u>

S*CAQMD*

The project proponent will comply with all applicable state and federal rules presented in Section 2.1.1.3.1 and Section 2.1.2.3. Off-road equipment operated during construction will also limit non-essential idling to 5-minutes or less, per CARB's In-Use Off-Road Diesel Idling Rule, effective June 15, 2008 (CARB 2008).

City of Torrance and County of Los Angeles

The City of Torrance 2009 General Plan Air Quality Element include goals and measures for the achievement of air quality standards, increased mixed use development, and increased energy efficiency and conservation (City of Torrance 2009). The proposed project demonstrates consistency with the General Plan goals to achieve air quality attainment goals during both construction and operation through emission estimates that are below both SCAQMD's local and regional mass daily thresholds.

Similarly, the County of Los Angeles' draft 2035 General Plan contains goals and policies aimed to reduce PM emissions during construction, reduce emissions from usage of VOC-containing materials, and minimize health risks from TAC exposure (County of Los Angeles 2011). Because the proposed project will maintain compliance with SCAQMD Rule 403 Fugitive Dust, Rule 1113 Architectural Coatings, and Rule 1401 New Source Review of TACs, conformance with County goals will be achieved.

<u>Would the proposed project violated any air quality standard or contribute substantially to an existing or projected air quality violation?</u>

The CAA required 8-hour ozone non-attainment areas to prepare SIP revisions by June 2007, and required $PM_{2.5}$ non-attainment areas to submit by April 2008. As a result, the most recent AQMP for the SCAB, as approved by USEPA and incorporated into the SIP, focuses on ozone and $PM_{2.5}$ emissions and demonstrates that the NAAQS can be attained even in the face of substantial future growth within the Basin (AQMP 2007). As demonstrated in Tables 6.1-2 and 6.1-3, emissions from the proposed project will not exceed the threshold for any criteria pollutant, including ozone and $PM_{2.5}$. Therefore, the proposed project will not conflict with the 2007 AQMP's goal of ensuring regional compliance with the NAAQS.

<u>Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors?</u>

The proposed project would not exceed any available threshold for construction or operation and would therefore not result in a cumulatively considerable net increase of any criteria pollutant for which the SCAB is currently designated non-attainment. Therefore, the impact would be less than significant.

<u>Would the proposed project create objectionable odors affecting a substantial number of people?</u>

The proposed project is not anticipated to create objectionable odors due to design features of the water storage reservoir including water aeration and mechanical ventilation. Moreover, there are no residences immediately adjacent to the proposed facility, with the nearest receptor located approximately 300 feet east of the proposed facility and 150 north of the facility. Therefore, the impact would be less than significant.

<u>Would the proposed project expose sensitive receptors to substantial pollutant concentrations?</u>

The proposed project would not exceed any available threshold for criteria pollutants or TAC emissions and therefore would not result in exposure of a sensitive receptor to substantial pollutant concentrations. Therefore, the impact would be less than significant.

6.3.2 Greenhouse Gas Emissions and Climate Change

Would the proposed project generate GHG's, either directly or indirectly, that may have a significant impact on the environment?

The proposed project would not generate GHG emissions, both direct and indirect, which would result in a significant environmental impact. As presented in Table 6.2-3, total project emissions are significantly below the SCAQMD's GHG threshold. Therefore, the contribution to regional and global climate change would be minimal. The impact would be less than significant.

Would the proposed project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG's?

Statewide Plans and Policies

The AB 32 CCSP included 39 recommended measures developed to reduce GHG emissions from key sources and activities while improving public health, promoting a cleaner environment, preserving natural resources, and ensuring that the impacts of the reductions are equitable and do not disproportionately impact low-income and minority communities. These measures put the state on a path to meet the 2050 goal of reducing California's GHG emissions to 80 percent below 1990 levels. Many of the recommended measures, such as high speed rail and the Renewable Portfolio Standard, are beyond the scope of this project. Others, such as measures to reduce emissions from oil and gas extraction and control methane from landfills and dairies, are not relevant. However, the construction and operation of the project will not conflict with the CCSP's overall emissions reduction goal.

Because the project is a small local project, its lifetime GHG emissions will be insignificant compared to those of the state as a whole, or relative to major facilities that are required to report GHG's (i.e. those that produce more than 25,000 metric tons of CO_2e per year). Moreover, because the project's GHG emissions are below all available thresholds, it will not produce a significant climate change impact.

Local Goals

The City of Torrance and the County of Los Angeles have established goals related to energy efficient and sustainable building standards as well as policies aimed towards achieving consistency with AB32 goals and regional GHG reductions. Because the proposed project results in GHG emissions primarily generated during construction, many of the local goals and policies would not apply. However, new structures and facilities will be constructed with sustainable materials, to the extent feasible. Therefore, the proposed project would demonstrate consistency with local climate change goals, plans and policies.

Would the proposed project significantly increase or reduce GHG's as compared to the existing environmental setting?

The proposed project would increase GHG's compared to existing conditions. As presented in Table 6.2-3, total project emissions are significantly below the SCAQMD's GHG threshold. Therefore, the impact

to existing conditions and the annual contribution to regional and global climate change would be minimal. The impact would be less than significant.

Would the proposed project emissions exceed a threshold of significance that the lead agency determines applies to the project?

As presented in Table 6.2-3, the proposed project would not exceed the applicable threshold of significance for which the SCAQMD has recommended for stationary sources. Therefore, the impact would be less than significant.

Would the proposed project comply with regulations or requirements adopted to implement statewide, regional, or local plans for the reduction or mitigation of GHG's?

The proposed project would comply with all applicable regulations and requirements described in this analysis including compliance with Title 24 Building Standards, and all state and local rules and regulations. Compliance with Title 24 will ensure sustainable and energy efficient building materials are utilized during construction. Therefore, the impact would be less than significant.

7.0 Mitigation Measures

7.1 Air Quality

Mitigation measures are not required to reduce air quality impacts below a level of significance; additional measures are not recommended.

7.2 Climate Change and GHG Emissions

Mitigation measures are not required to reduce climate impacts below a level of significance; additional measures are not recommended.

8.0 List of References

California Air Pollution Control Officers Association (CAPCOA). 2008. *CEQA & Climate Change.* http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf

---. 2009. *Health Risk Assessments for Proposed Land Use Projects.* http://www.capcoa.org/wpcontent/uploads/downloads/2010/05/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf

California Air Resources Board (CARB). 2010. *Ambient Air Quality Standards.* http://www.arb.ca.gov/research/aaqs/aaqs2.pdf

---. 2008. *Assembly Bill 32 Scoping Plan*. http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm

---. 2010. *California Greenhouse Gas Emission Inventory*. http://www.arb.ca.gov/cc/inventory/inventory.htm

---. 2008. *Climate Change Scoping Plan Appendices: Volume I: Supporting Documents and Measure Detail.* http://www.arb.ca.gov/cc/scopingplan/document/appendices_volume1.pdf

---. 2008. *Climate Change Scoping Report: A Framework for Change.* http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm

California Natural Resources Agency (CNRA). 2009. *CEQA Guidelines.* http://ceres.ca.gov/ceqa/guidelines/.

California Stormwater Quality Association (CASQA). 2009. *Construction Best Management Practices Handbook.* https://www.casqa.org/store/products/tabid/154/p-167-construction-handbookportal-initial-subscription.aspx

City of Torrance. 2009. *General Plan (Adopted 4/06/10).* https://www.torranceca.gov/13530.htm.

County of Los Angeles. 2007. *Countywide Energy and Environmental Policy.* http://green.lacounty.gov/wps/portal/green

---. 2011. Los Angeles County Draft 2035 General Plan. http://planning.lacounty.gov/generalplan.

Institute for Environment, Safety and Occupational Health Risk Analysis (IERA), 1999. Air emissions inventory guidance document for stationary source at Air Force Installation, prepared by United States Air.Force.

Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007: The Physical Science Basis, Summary for Policy Makers (Working Group 1 Fourth Assessment Report).* http://www.ipcc-wg1.unibe.ch/publications/wg1-ar4/wg1-ar4.html>

South Coast Air Quality Management District (SCAQMD). 1993. *Air Quality Analysis Guidance Handbook.* http://www.aqmd.gov/ceqa/hdbk.html

---. 2009. *Air Quality Significance Thresholds.* http:// www.aqmd.gov/ceqa/handbook/signthres.pdf

---. 2007. *Final 2007 Air Quality Management Plan.* http://www.aqmd.gov/aqmp/07aqmp/index.html

---. 2005. *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning.* http://www.aqmd.gov/prdas/aqguide/index.html

---. 2003. *Health Risk Assessment Guidelines for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis.* www.aqmd.gov/ceqa/handbook/mobile_toxic/diesel_analysis.doc

---. 2008. *Historical Data by Year.* http://www.aqmd.gov/smog/historicaldata.htm

---. 2008. *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans.* http://www.aqmd.gov/hb/2008/December/081231a.htm

---. 2009. *Mass Rate Localized Significance Thresholds Look-up Tables*. http://www.aqmd.gov/ ceqa/handbook/LST/appC.pdf

---. 2008. *MATES III: Multiple Air Toxics Exposure Study*. http://www.aqmd.gov//prdas/matesIII/matesIII.html

---. 2005. *Rule 403.* http://www.aqmd.gov/rules/reg/reg04/r403.pdf

United Nations (UN). 1998. *United Nations Framework Convention on Climate Change.* http://unfccc.int/2860.php

United States Environmental Protection Agency (USEPA). 2010. *Acute Exposure Guideline Levels (AEGLs).* http://www.epa.gov/opptintr/aegl/pubs/define.htm

---. 2010. *Greenhouse Gas Emissions*. http://www.epa.gov/climatechange/emissions/index.html

---. 2007. *Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2005. USEPA #430-R-07-002.* http://www.epa.gov/climatechange/emissions/downloads06/99CR.pdf

Western Regional Climate Center (WRCC). 2008. Western U.S. Climate Historical Summaries. http://www.wrcc.dri.edu.

World Resources Institute (WRI). 2009. *Climate Analysis Indicators Tool (CAIT) version 7.0.* http://cait.wri.org.