BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) for a Permit to Construct Electrical Facilities with Voltages Between 50 kV and 200 kV: Falcon Ridge Substation Project	)))))))	Application No. _____

PROPONENT'S ENVIRONMENTAL ASSESSMENT FALCON RIDGE SUBSTATION PROJECT

Volume 2 of 2

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APPENDIX A

ENVIRONMENTAL CHECKLIST FORM

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Environmental Checklist Form

1. Project Title

Falcon Ridge Substation Project

2. Lead Agency Name and Address

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, California 94102-3298

3. Contact Person and Phone Number

Thomas Diaz
Southern California Edison
Project Manager, Regulatory Policy and Affairs Department
(626) 302-1164

4. Project Location

The project is located in portions of the cities of Fontana, Rialto, and Rancho Cucamonga, as well as unincorporated San Bernardino County, California.

5. Project Sponsor's Name and Address

Southern California Edison Company (SCE)
2244 Walnut Grove Avenue
Rosemead, California 91770

6. General Plan Designation

The California Public Utilities Commission (CPUC) has primary jurisdiction over the Falcon Ridge Substation Project because it authorizes the construction, operation, and maintenance of public utility facilities. CPUC General Order No. 131-D Section IX.B states that "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However in locating such projects, the public utilities shall consult with local agencies regarding land use matters." SCE has considered local land use plans as part of the environmental review process.

The Proposed Substation site would be located on vacant land, which is owned by SCE. The City of Fontana land use designation for the Proposed Substation site is Regional Mixed Use (RMU), which includes centers for employment generating commercial and industrial uses.

The Proposed Subtransmission Source Line Routes would primarily be located in existing SCE rights-of-ways (ROW). However, portions of the routes in the cities of Fontana and Rialto would not be in existing SCE ROW. In the City of Fontana, these portions would be in areas designated by the City as General Commercial (C-G), Multi-Family Residential (R-MF), Regional Mixed Use (RMU), Residential Planned Community (R-PC), and Public Utility Corridor (P-UC). In the City of Rialto, these portions would be in areas designated by the City as General Industrial (GI), Public Facility (P), Planned Industrial Development (I-PID), General Manufacturing (GM), Open Space – Landfill (OS-L), and Regional Freeway Commercial (RFC).

7. Zoning

As described in Section 6, the CPUC has primary jurisdiction over the Falcon Ridge Substation Project. SCE has considered other State and local land use plans as part of the environmental review process, even though such projects are exempt from local land use jurisdiction, zoning regulations and permits.

The Proposed Substation site is located within the City of Fontana and is zoned as RMU, which includes centers for employment generating commercial and industrial uses. The portions of the Proposed Subtransmission Source Line Routes in the City of Fontana that would not be located within SCE's existing ROWs would be in areas zoned by the City as Specific Plan (SP), General Commercial (C-2), and Multi Family Residential (R-3). The portions of the Proposed Subtransmission Source Line Routes in the City of Rialto that would not be located within SCE's existing ROWs would be in areas zoned by the City as General Industrial (GI), Public Facility (P), Planned Industrial Development (I-PID), General Manufacturing (GM), Open Space – Landfill (OS-L), and Regional Freeway Commercial (RFC).

8. Description of Project

The Proposed Project would include the following components:

- Construction of the preferred 66/12-kilovolt (kV) distribution substation (Falcon Ridge Substation) on an approximately 7.5-acre parcel. The Falcon Ridge Substation would be an unattended, automated, 56 mega-volt ampere 66/12 kV low-profile substation located in the City of Fontana.

- Installation of two new 66 kV subtransmission source lines to connect the Falcon Ridge Substation to the existing Alder 66/12 kV Substation and Etiwanda 220/66 kV Substation.

    - One new 66 kV subtransmission source line from existing Alder 66/12 kV Substation would be approximately 3 miles in length and connect to the proposed Falcon Ridge Substation.

        - In order to accommodate the connection of the subtransmission source line, a 66 kV switchrack position at Alder Substation would

need to be equipped and the operating and transfer bus would need to be extended.

- One new 66 kV subtransmission source line from existing Etiwanda 220/66 kV Substation would be approximately 9 miles in length and connect to the proposed Falcon Ridge Substation.
    - In order to accommodate the connection of the subtransmission source line, a 66 kV switchrack position at Etiwanda Substation would need to be equipped.

- Construction of three new underground 12 kV distribution getaways.
- Installation of new telecommunications facilities at the proposed Falcon Ridge Substation, installation of telecommunications fiber optic cable on the proposed 66 kV subtransmission source lines, and the modification of the existing telecommunications facilities at Etiwanda and Alder Substations to connect the proposed substation to the SCE telecommunications network.

9. Surrounding Land Uses and Setting

The Proposed Project is located within the cities of Fontana, Rancho Cucamonga, and Rialto, as well as a small portion of unincorporated San Bernardino County. The majority of the Proposed Project lies within the City of Fontana in an existing utility corridor, including the Proposed Substation site. The 7.5-acre Proposed Substation site parcel is bounded by Sierra Avenue on the west and Mango Avenue on the east, with Mango Avenue serving as the boundary between the cities of Fontana and Rialto. The parcel is located northeast of the Sierra Lakes residential community and southeast of the 15 Freeway. SCE owns the Proposed Substation site , which currently consists of vacant land. The San Bernardino and San Gabriel Mountains are located to the north of the City of Fontana; the Jurupa Hills lie to the south.

A small portion of the Proposed Project lies within the Southeast Focus Area of the City of Rancho Cucamonga, which is bordered to the west by the 15 Freeway and to the east by unincorporated San Bernardino County and the City of Fontana. Heavy industrial uses, mainly steel and pipe manufacturing, predominate that area. Development located directly north of this focus area includes a shopping center, a Metropolitan Water District reservoir, and a multi-unit residential neighborhood. This focus area surrounds Reliant Energy's Etiwanda Power Plant on Etiwanda Avenue.

The northeast and southeast portions of the Proposed Project Area are located within the City of Rialto. The City of Rialto shares its boundaries with the cities of Fontana and Colton, and unincorporated portions of Riverside and San Bernardino Counties.

ENVIRONMENTAL RESOURCES POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this Proposed Project, involving at least one impact that is a "Potentially Significant Impact." Most of these impacts would be reduced to a less than significant level with the implementation of SCE's Applicant Proposed Measures, as described in Chapter 4. However, there are impacts related to air quality that would remain significant even after mitigation measures are applied.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Geology and Soils
☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials	☐ Hydrology and Water Quality
☐ Land Use and Planning	☐ Mineral Resources	☐ Noise
☐ Population and Housing	☐ Public Services	☐ Recreation
☐ Transportation and Traffic	☐ Utilities and Service Systems	☒ Mandatory Findings of Significance

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature _____ Date _____

Signature _____ Date _____

EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, and then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiring, program EIR, or other CEQA process, an effect has been adequately analyzed I an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a) Earlier Analysis Used. Identify and state where they are available for review.

    b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures that

were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to Information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

CEQA ENVIRONMENTAL CHECKLIST

Please note: explanatory text that accompanies these checkbox findings is provided at the end of this table.

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) 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)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
VII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐
IX. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐
X. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
XI. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XII. NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES.				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION AND TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
g) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐

ISSUES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
e) Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☒	☐	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

Applicant Proposed Measures

Table A-1 Applicant Proposed Measures for the Falcon Ridge Substation Project

Applicant Proposed Measure	Description
APM BIO-01: Migratory Bird Treaty Act (MBTA) and Nesting Raptors	In order to avoid impacts on nesting birds and raptors (common or special status), Project initiation shall be scheduled outside the breeding season (i.e., March 15–September 15 for nesting birds; February 1–June 30 for nesting raptors). If Project timing requires that work be initiated during this time period, a pre-construction survey shall be conducted by a qualified Biologist for nesting birds and/or raptors within 7 days prior to clearing of any vegetation or any work within 500 feet of construction areas. If the Biologist does not find any active nests within the impact area, the vegetation clearing/construction work shall be allowed to proceed. If the Biologist finds an active nest within the construction area and determines that the nest may be impacted or breeding activities substantially disrupted, the Biologist will delineate an appropriate buffer zone around the nest depending on the sensitivity of the species and the nature of the construction activity. The active site will be protected until nesting activity has ended to ensure compliance with the MBTA and *California Fish and Game Code*. Encroachment into the buffer area around a known nest shall only be allowed if the Biologist determines that the proposed activity would not disturb the nest occupants.
APM BIO-02: Riversidean Alluvial Fan Sage Scrub, Disturbed Riversidean Alluvial Fan Sage Scrub, Disturbed Riversidean Sage Scrub, and Annual Grassland/Disturbed Riversidean Alluvial Fan Sage Scrub	Project impacts on sage scrub vegetation types would be avoided and/or minimized to the maximum extent practicable. Permanent impacts to disturbed Riversidean alluvial fan sage scrub, disturbed Riversidean sage scrub, and annual grassland/disturbed Riversidean alluvial fan sage scrub vegetation would be mitigated at a minimum replacement ratio of 1:1. Residual temporary impacts on undisturbed/disturbed Riversidean alluvial fan sage scrub would be restored on site and/or mitigated at a minimum replacement ratio of 1:1. Permanent impacts on undisturbed Riversidean alluvial fan sage scrub would be mitigated at a replacement ratio of up to 3:1. Final compensation ratios for impacts to Riversidean alluvial fan sage scrub would be determined in consultation with USFWS and CDFG. A detailed restoration program shall be prepared for approval by SCE and the appropriate resource agencies. Restoration shall consist of seeding and planting containers of appropriate Riversidean alluvial fan sage scrub species. The program shall include, at a minimum, the following items: ▪ Responsibilities and qualifications of the personnel to implement and supervise the plan. ▪ Site selection. ▪ Site preparation and planting implementation. ▪ Schedule.

Applicant Proposed Measure	Description
	▪ Maintenance plan/guidelines. ▪ Monitoring plan. ▪ Long-term preservation. Additionally, the grading limits shall be clearly marked, and temporary fencing or other appropriate markers shall be placed around any sage scrub vegetation adjacent to work areas prior to the commencement of any ground-disturbing activity or native vegetation removal. No construction access, parking, or storage of equipment or materials shall be permitted within the marked areas. SCE shall be fully responsible for implementing the Riversidean Alluvial Fan Sage Scrub Revegetation Program until the restoration areas have met the success criteria outlined in the program. SCE and the appropriate resource agencies shall have final authority over mitigation area sign-off. The site shall be monitored and maintained for a suitable number years to ensure successful establishment of Riversidean alluvial fan sage scrub habitat within the restored and created areas, as determined by the resource agencies.
APM-PAL-01: **Develop and Implement a Paleontological Monitoring Plan**	A project paleontologist meeting the qualifications established by the Society of Vertebrate Paleontologists shall be retained by SCE to develop and implement a Paleontological Monitoring Plan prior to the start of ground disturbing activities for the Proposed Project. As part of the Paleontological Monitoring Plan, the project paleontologist shall establish a curation agreement with an accredited facility prior to the initiation of ground-disturbing activities. The Paleontological Monitoring Plan shall also include a final monitoring report. If fossils are identified, the final monitoring report shall contain an appropriate description of the fossils, treatment, and curation.
APM-PAL-02: **Paleontological Monitoring for the Proposed Project**	A paleontological monitor shall be on site to spot check ground-disturbing activities at depths greater than 5 feet during installation of the proposed project. If very few or no fossils remains are found during ground disturbing activities monitoring time can be reduced or suspended entirely as per recommendations of the paleontological field supervisor. If fossils are found during ground-disturbing activities, the paleontological monitor shall halt the ground-disturbing activities within 25 feet of the find in order to allow evaluation of the find and determination of appropriate treatment.

Sources and Explanation of Answers

This section contains a brief explanation for answers provided in the environmental checklist form.

Aesthetics

As the Proposed Project is not located near a state scenic highway, there would be no impacts to trees, rock outcroppings, or historic buildings in such an area. The Proposed Project represents an incremental change in, and a less than significant impact on, the visual character or quality of the area, as lattice towers, overhead power lines, and/or street lights are already part of current landscapes. Temporary lighting for construction of the Proposed Project is not anticipated, but may be necessary to assure construction worker safety. Lights would be oriented to minimize their effect on nearby sensitive receptors. Impacts associated with lighting that may be needed during construction would be less than significant. (See Section 4.1, Aesthetics.)

Agriculture and Forestry Resources

The Proposed Project would not be located on land that is currently zoned for agricultural use or under a Williamson Act contract, nor would it be located on land that is designated or zoned for forest land or timberland. No forest land is located within or adjacent to the Proposed Project area. The Proposed Project is required to ensure the availability of safe and reliable electric service to meet customer electrical demand in the Electrical Needs Area. The Proposed Project would therefore not induce growth that would induce or exacerbate the conversion of farmland to non-agricultural uses or forest land to non-forest uses.

The Proposed Project would cross lands designated as Unique Farmland. Surface modifications for the installation of access roads, the Proposed Etiwanda Subtransmission Source Line Route, the Proposed Telecommunication Facilities, and the new poles would permanently disturb approximately 3.39 acres of Unique Farmland, therefore, permanently converting these acres to non-agricultural use.

The area currently mapped as Unique Farmland within the Proposed Project currently contains degraded and abandoned grape vineyards surrounded by urban development. As described in Section 4.4, Biological Resources, vineyards that occur within the Proposed Project are abandoned and are only occurring in their present state due to the heavy rain season of 2009-2010. This small patch of vineyards is currently bisected by the 210 Freeway and bordered to the west and south by residential development.

While the California Resources Agency has mapped this area as Unique Farmland, the City of Fontana's General Plan designates this area as "Regional Mixed Use" and "Residential Planned Community" and as being located within the Westgate Specific Plan. According to the Westgate Specific Plan, the Proposed Etiwanda Subtransmission Source Line Route and Proposed Telecommunication Facilities would have a specific plan land use designation of "P/UC: Public Utility Corridor." The P/UC specific plan

land use designation identifies locations in the planning areas which contain rights-of-way for utilities such as SCE transmission lines and easements held by other quasi-public agencies (see Section 4.10, Land Use and Planning). Therefore, the Proposed Project within this area is compatible with the City of Fontana's General Plan and the Westgate Specific Plan.

Furthermore, the City of Fontana has previously analyzed the impact related to the conversion of Unique Farmland with the General Plan area, including that which occurs within the Proposed Project. The General Plan Update Environmental Impact Report (EIR) (State Clearinghouse Number 2003031083) prepared by the City of Fontana considered the conversion of 610 acres of Unique Farmland within the General Plan area, of which 3.39 acres would be converted as part of the Proposed Project. The General Plan Update EIR concluded that conversion of this mapped farmland would result in a significant and unavoidable impact. As a result, the City of Fontana adopted a Statement of Overriding Considerations for the loss of agricultural land.

Public Resources Code Section 21083.3 and CEQA Guidelines 15183 limits CEQA review of certain projects to environmental effects that are "peculiar" to the parcel or to the project and which were not addressed as significant effects in a prior EIR, or which new information shows will be more significant than described in the prior EIR. The Proposed Project is a qualified project pursuant to Section 21083.3(a) which provides in pertinent part:

(a) If a parcel has been zoned to accommodate a particular density of development or has been designated in a community plan to accommodate a particular density of development and an environmental impact report was certified for that zoning or planning action, the application of this division to the approval of any subdivision map or other project that is consistent with the zoning or community plan shall be limited to effects upon the environment which are peculiar to the parcel or to the project and which were not addressed as significant effects in the prior environmental impact report, or which substantial new information shows will be more significant than described in the prior environmental impact report.

(b) If a development project is consistent with the general plan of a local agency and an environmental impact report was certified with respect to that general plan, the application of this division to the approval of that development project shall be limited to effects on the environment which are peculiar to the parcel or to the project and which were not addressed as significant effects in the prior environmental impact report, or which substantial new information shows will be more significant than described in the prior environmental impact report.

As described above, the Proposed Project was zoned with the adoption of the City of Fontana General Plan and the Westgate Specific Plan and therefore accommodates the Proposed Project. An EIR was prepared for the certified General Plan, which incorporated the land use designation for the Proposed Project, integrated the concepts contained in the Westgate Specific Plan, and adequately and completely evaluated the

significance of the conversion of the 3.39 acres of Unique Farmland occurring within the Proposed Project. Accordingly, the project is a qualified project within the meaning of Section 21083.3, both under subsection (a) and (b) and CEQA Guidelines 15183. Therefore, it is concluded that the Proposed Project has no impact with respect to the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use. (See Section 4.2, Agriculture and Forestry Resources.)

Air Quality

Growth projections from local general plans adopted by cities in the jurisdiction of the South Coast Air Quality Management District (SCAQMD) and vehicle-miles-traveled projections developed by the Southern California Association of Governments are some of the inputs used to develop the Air Quality Management Plan (AQMP). Because construction and operation of the Proposed Project would not result in a population increase, the Proposed Project would not conflict with the growth projections used to develop the 2007 AQMP; therefore, there would be no impact. Construction and operation of the Proposed Project are unlikely to create objectionable odors that would affect a substantial number of people; therefore, there would be no impact. Construction of the Proposed Project would not expose receptors, including sensitive receptors, to substantial pollutant concentrations. Impacts would be less than significant. Operation of the Proposed Project would similarly result in less than significant impacts to Air Quality associated with sensitive receptors and localized exceedances of air quality standards.

The estimated peak daily emissions of nitrogen oxides (NOx) and suspended particulate matter measuring less than 10 microns (PM_{10}) during construction activities exceed corresponding SCAQMD mass daily significance thresholds, and emissions of these pollutants during construction may contribute to regional air quality violations. Construction emissions would be reduced by complying with the California Air Resources Board (CARB) Off-Road Idling Policy and California Code of Regulations Title 13, Section 2449 (d)(3) for diesel engines. Additionally, SCE will comply with California Code of Regulations Title 13, Section 2423. SCE would also develop an Air Quality Plan prior the start of construction, pursuant to Rule 403, that would include details of project-specific measures to be implemented during construction of the Proposed Project to reduce impacts to air quality. Although these measures would reduce impacts, impacts to air quality during construction of the Proposed Project are expected to remain significant.

Construction of the Proposed Project could result in a cumulatively considerable net increase of ozone precursors. In addition, peak daily PM_{10} emissions exceed the SCAQMD's mass emissions California Environmental Quality Act (CEQA) significance thresholds. Therefore, construction of the Proposed Project could also result in a cumulatively considerable net increase in PM_{10} emissions. Compliance with California Code of Regulations, Title 13, Section 2423 would reduce NOx and PM_{10} construction

emissions, but the cumulative impact from these emissions is expected to remain significant. (See Section 4.3, Air Quality.)

Biological Resources

The Proposed Project is located in a region that has been previously disturbed through habitat modifications (i.e. agriculture, wildfire brush abatement etc.) with patches of disturbed or restored alluvial fan sage scrub in a matrix of ruderal habitat. Very little native, intact habitat exists in the project survey area; impacts to intact, native habitat will be minimized or avoided when feasible.

Construction and operation of the Proposed Project would result in a less than significant impact to biological resources. The Preferred Subtransmission Source Line Route/Proposed Telecommunications Route would impact Plummer's mariposa lily and Parry's spineflower.; potential impacts to Plummer's mariposa lily and Parry's spineflower are adverse but less than significant because the loss of these individuals would not adversely affect the regional population of these species. Based on preliminary engineering, a total of 8.15 acres of disturbed and undisturbed Riversidean sage scrub, Riversidean alluvial fan sage scrub and Annual Grassland/Disturbed Riversidean alluvial fan sage scrub may be permanently impacted by the Proposed Project. A final acreage determination will be made following final engineering. A mitigation plan will reduce this to a less than significant impact. The cumulative impacts to biology would be less than significant.

APMs for Biological Resources can be found in Table A-1, APMs for the Proposed Falcon Ridge Substation Project.

Cultural Resources

The proposed Etiwanda Subtransmission Source Line Route crosses a historic period site, the Kaiser Steel Mill (P-36-004131), which is considered a California Point of Historical Interest and therefore a historical resource as defined in Section 15064.5. The plant has been dismantled and no evidence of the plant currently exists. However, a portion of the proposed Etiwanda Subtransmisison Source Line Route will require underground construction in this portion of the project area and the potential for uncovering buried resources is unknown. Therefore, based on the current information and implementation of the Worker Environmental Awareness Training, impacts to a historical resource will be less than significant.

In addition, a newly identified historic period archaeological resource, the Planter Site (P-36-021495), is located within the Proposed Project area. The site has been determined not to be a significant resource as defined in Section 15064.5. However, the potential for uncovering buried archaeological resources is unknown. Therefore, based on the current information and implementation of the Worker Environmental Awareness Training, impacts to a significant archaeological resource will be less than significant.

Regarding paleontological resources, two surface deposits were identified within the Proposed Project area, Holocene alluvium and late Pleistocene alluvium. Although these deposits have a low to moderate paleontological sensitivity, there is a potential for these deposits to be underlain by older Pleistocene alluvium. If present, the older Pleistocene alluvium may have high paleontological sensitivity. In the event that any project excavations penetrate to the depth where the older Pleistocene alluvium is found, the potential for encountering paleontological resources exists. SCE is proposing the implementation of APM-PAL-01 Develop and Implement a Paleontological Monitoring Plan and APM-PAL-02 Paleontological Monitoring to minimize potential impacts to these paleontological resources. Therefore, with implementation of APM-PAL-01 and APM-PAL-02 impacts to a unique paleontological resource or site or unique geologic feature will be less than significant.

APMs for Cultural Resources can be found in Table A-1 APMs for the Proposed Falcon Ridge Substation Project.

Geology and Soils

Construction and operation of the Proposed Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, or injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction and landslides. Impacts from liquefaction, landslides, and ground failure are considered to be less than significant. Due to its proximity to an active fault zone, the Proposed Project could experience moderate-to-high levels of earthquake-induced ground shaking. Even though the Proposed Project is located in an area susceptible to earthquake forces, the structures would not be utilized for human occupancy and would be unattended with the exception of routine maintenance activities. Structures would also be designed consistent with the IEEE 693, Recommended Practices for Seismic Design of Substations. The geotechnical investigation report for the Proposed Substation site presents seismic design parameters, which will be incorporated into the design of the Proposed Substation. Similarly, the Proposed Subtransmission Source Line Routes and the Proposed Telecommunication Facilities would be designed to be consistent with CPUC General Order 95 to withstand seismic loading. Therefore, anticipated impacts due to seismic activity during operation of the Proposed Project would be less than significant.

No septic or alternative waste water disposal systems requiring soils capable of supporting these systems would be installed at the Proposed Substation site . During construction of the Proposed Project, a Storm Water Pollution Prevention Plan (SWPPP) would be implemented, which would reduce any effects due to erosion and the loss of topsoil. In addition, during construction, water trucks and other Best Available Control Measures (BACM) would be used to minimize the quantity of fugitive dust created by construction, per the SCAQMD Rule 403-Fugitive Dust. In addition, the grading permits issued by the County of San Bernardino, the City of Fontana, the City of Rialto, and the City of Rancho Cucamonga would include surface improvements that would minimize

soil erosion and the loss of topsoil to less than significant levels. (See Section 4.6, Geology and Soils.)

Greenhouse Gas Emissions

The estimated total of amortized construction and annual operational greenhouse gas (GHG) emissions from the Proposed Project is 60 metric tons carbon-dioxide-equivalent per year. This estimate is much lower than the 10,000 metric ton SCAQMD threshold or the 7,000 metric ton draft CARB recommendation. Therefore, the Proposed Project is not expected to have a significant impact from GHG emissions. SCE is actively engaging in practices and programs to reduce GHG emissions, and SCE also complies with all Climate Action Team guidance. Further, construction and operation of the Proposed Project would not conflict with plans, policies or regulations adopted by the County of San Bernardino or the cities of Fontana, Rancho Cucamonga, or Rialto for the purpose of reducing GHG emissions. There would be no impact. (See Section 4.7, Greenhouse Gas Emissions.)

Hazards and Hazardous Materials

The Proposed Substation site is not located on a known hazardous waste site. There would be no safety hazard during construction or operation of the Proposed Project; there would be no impact from a private airstrip to people residing or working in the Proposed Project Area and there would be a less than significant impact from a public airport or public use airport to people residing or working in the Proposed Project Area. All transport of hazardous materials would be in compliance with applicable laws, rules and regulations, including the acquisition of required shipping papers, package marking, labeling, transport vehicle placarding, training, and registrations; therefore, impacts would be less than significant.

Construction of the Proposed Project would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. The Proposed Substation would also be equipped with transformer banks that contain mineral oil that could leak or spill if the transformers were damaged from a seismic event, fire, or other accident scenario. There is a possibility of a spill or release of hazardous materials during construction and operation, but the controls put in place by the SWPPP, Spill Prevention, Control and Countermeasure (SPCC) Plan, and Worker Environmental Awareness Plan (WEAP) would minimize the impacts to less than significant levels. The Proposed Project also would not interfere with an emergency response plan; that impact would be less than significant.

The Proposed Substation site and portions of the Proposed Subtransmission Source Line Routes closest to the Proposed Substation site (0.7 mile total length) are classified as very high fire hazard areas. However, the majority of the Proposed Subtransmission Source Line Routes are classified as either moderate-to-high fire hazard, non-wildland/non-urban, or urban unzoned. SCE has standard protocols that are implemented when the National Weather Service issues a Red Flag Warning. In addition, SCE participates with

the California Department of Forestry and Fire Protection, California Office of Emergency Services, U.S. Forest Service and various city and county fire agencies in the Red Flag Fire Prevention Program and complies with California Public Resources Code Sections 4292 and 4293 related to vegetation management in transmission line corridors. In addition to the protective measures, the portions of the Proposed Project located within the moderate to very high fire hazard areas, which include the Proposed Substation site parcel, the Proposed Distribution Getaways and approximately 7.5 miles of the Proposed Subtransmission Source Line Routes, would be grubbed of vegetation and graded to minimize the potential for a construction vehicle to start a fire. During grubbing and grading, SCE's standard fire-prevention protocols, including the use of spark arresters on construction equipment, would minimize the potential for these activities to ignite fires. As a result, construction and operation of the Proposed Project would have a less than significant impact to risk of loss, injury or death involving wildland fires. (See Section 4.8, Hazards and Hazardous Materials.)

Hydrology and Water Quality

As the Proposed Project would not expose people or structures to a significant risk of flooding, seiche, tsunami, or mudflow, impacts would be less than significant. The Proposed Project would not place housing in a 100-year floodplain; there would be no impact. SCE would be required to obtain coverage under the statewide Construction General Permit (Order No. 2009-0009-DWQ) from the Santa Ana Regional Water Quality Control Board (RWQCB) for construction-phase stormwater discharge, which requires preparation of a SWPPP. A SWPPP would be prepared based on final engineering design and would include all project components. Implementation of the SWPPP, Water Quality Management Plan (WQMP), and associated best management practices would minimize impacts on water quality from erosion, accidental spills, and other potential water quality impacts during construction. These measures would keep impacts to water quality to less than significant levels.

The Proposed Substation site is located outside of the 100-year flood hazard area. During construction of the Proposed Project, a portion of the Proposed Etiwanda Subtransmission Source Line Route would be located within a 100-year floodplain. However, the poles and foundations would not alter drainage patterns and do not have a large cross section that would significantly impede flood flows. In addition, a portion of the Proposed Etiwanda Subtransmission Source Line Route would be within an area protected from a 100-year flood by a levee. The Proposed Etiwanda Subtransmission Source Line Route would be designed to withstand the effects of a 100-year flood, therefore, the impacts due to flooding as a result of the failure of the levee would be less than significant.

Stormwater currently sheet-flows in a southerly direction over the Proposed Substation site parcel. Construction of the Proposed Substation would involve grading of the enclosed substation surface at a uniform slope, but this would not alter the natural flow of runoff in the general area surrounding the enclosed substation nor would it alter the course of a stream or river. The stormwater improvement portion of the grading plan

would be designed to control the discharge of stormwater runoff from the site. As a result, construction and operation of the Proposed Substation would not substantially alter the existing drainage pattern of the site or area or produce a substantial increase in the rate or amount of surface runoff in a manner which would result in flooding on-site or off-site. In addition, portions of the Proposed Subtransmission Source Line Routes would span drainages. Placing structures within drainages is not anticipated. Construction of the access roads for the Proposed Subtransmission Source Line Routes may cross ephemeral drainages or man-made drainage ditches. If this is the case, SCE may install temporary drainage structures such as wet crossings or pipe culverts to maintain the natural flow of surface stormwater runoff in the area for access during the rainy season. If SCE determines that temporary drainage structures are necessary for access road construction, an evaluation of jurisdictional waters will be conducted. If needed, SCE will seek a Section 401 certification from the Santa Ana Regional Water Quality Control Board (RWQCB) and a Section 404 permit from the U.S. Army Corps of Engineers. Impacts would be less than significant.

Because the operation of the Proposed Substation would include the use of transformer oil, SCE would be required to prepare and implement a SPCC plan for the site in compliance with Code of Federal Regulations Title 40 Parts 112.1 through 112.7. SPCC measures include the installation of secondary containment, curbs, berms, and basins designed to contain spills, should they occur. These features would be part of SCE's final engineering design for the Proposed Project and would minimize the potential for hazardous materials to migrate off site. (See Section 4.9, Hydrology and Water Quality.)

Land Use and Planning

Construction and operation of the Proposed Project would not divide an established community; therefore, there would be no impact. The Proposed Project is not located within a habitat conservation plan or natural community plan. Therefore, no impact would occur.

Although some current land uses would change, the Proposed Project is generally compatible with the land use designations and zoning of the County of San Bernardino and the cities of Fontana, Rancho Cucamonga, and Rialto. Although the Proposed Project has the potential to be inconsistent with one local policy of the City of Rancho Cucamonga (policy LU-11.2, which requires the undergrounding of utility lines and facilities wherever feasible to minimize the unsightly appearance of overhead utility lines and utility enclosures), this inconsistency with a local policy would not cause significant impacts, as CPUC General Order No. 131-D Section IX.B states that "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Impacts would be less than significant. (See Section 4.10, Land Use and Planning.)

Mineral Resources

The City of Fontana General Plan does not designate mineral resource recovery sites. The Proposed Project components located within unincorporated San Bernardino County are not located within areas classified by the California State Mining and Geology Board as Mineral Resource Zone (MRZ) 2 (areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists) or as aggregate resource sectors. The City of Rancho Cucamonga General Plan incorporates aggregate resource sectors designated by the State, but the Proposed Project components located within the City of Rancho Cucamonga are not located within these sectors. The City of Rialto General Plan presents the same MRZ and aggregate resource sector classifications and designations as the State, and portions of the Proposed Alder Subtransmission Source Line Route and Proposed Telecommunication Facilities within the City of Rialto would be in an area classified as MRZ-2. However, these components of the Proposed Project would not be located in areas designated in the City of Rialto General Plan as potential mineral resource recovery sites. The Proposed Project would have no impact associated with construction and operation of the Proposed Project, as it would not result in loss of availability of a locally important mineral resource recovery site delineated on the County or City General Plans.

None of the Proposed Project components in the cities of Rialto or Rancho Cucamonga or in unincorporated San Bernardino County are located in a mineral resource sector that has been designated as containing mineral deposits of regional or statewide significance. The Proposed Substation site, Proposed Distribution Getaways, and portions of the Proposed Subtransmission Source Line Routes and Proposed Telecommunication Facilities located within the City of Fontana are in an area identified by the State as an aggregate resource sector. However, (1) this sector has not yet been designated as having regional or statewide importance, (2) the area required for construction of the components of the Proposed Project located within this resource sector would not represent a significant area that would be unavailable for exploration and extraction of mineral resources, and (3) the conservation of mineral resources lands is not included in the Open Space and Conservation Element of the City's General Plan. As a result, construction of the Proposed Project would not result in a significant loss of availability of a known mineral resource that would be of value to the region and the State. Impacts would be less than significant. (See Section 4.11, Mineral Resources.)

Noise

The City of Fontana Municipal Code only allows noise from construction activities if they occur between 7:00 a.m. and 6:00 p.m. during weekdays and between 8:00 a.m. and 5:00 p.m. on Saturdays. Construction activities associated with the Proposed Project within the City of Fontana would occur in accordance with this restriction. If work is required outside the allowed hours, SCE would obtain a noise variance from the City. Therefore, noise during construction of the Proposed Project within the City of Fontana would comply with standards established in the City of Fontana Municipal Code. The City of Rialto's Municipal Code exempts construction of public utilities subject to the

regulatory jurisdiction of the CPUC from the noise regulations. The City of Rancho Cucamonga's Municipal Code exempts construction activities from noise standards if construction occurs between 6:30 a.m. and 8:00 p.m., Monday through Saturday. SCE would limit construction activities within the City of Rancho Cucamonga to these times of day. If work is required outside the allowed hours, SCE would obtain a noise variance from the City. The County of San Bernardino's Code of Ordinances exempts construction activities from noise standards if they occur between 7:00 a.m. and 7:00 p.m. SCE would limit construction activities within unincorporated San Bernardino County to these times of day. If work is required outside the allowed hours, SCE would obtain a noise variance from the County. Noise associated with construction activities for the Proposed Project would occur in accordance with restrictions and standards established by the municipal codes of the cities of Fontana, Rialto, and Rancho Cucamonga, as well as the County of San Bernardino Code of Ordinances, therefore, construction noise impacts would be less than significant. (See Section 4.12, Noise.)

Construction activities, such as tamping ground surfaces, drilling, and passing heavy trucks on uneven surfaces, may produce minor groundborne vibration in the immediate vicinity of the construction activity. Impacts from construction-related groundborne vibration, should they occur, would be intermittent and confined to the immediate area surrounding the activity. Vibration levels would not exceed the California Department of Transportation's recommended standards with respect to the prevention of structural building damage or the Federal Transit Administration's maximum-acceptable-vibration standard with respect to human response at nearby existing vibration-sensitive land uses. Therefore, construction of the Proposed Project would result in a less than significant impact related to the generation of groundborne vibration and groundborne noise levels.

The Proposed Project would not result in a substantial permanent increase in noise. Due to the distance to sensitive receptors (approximately 500 feet), noise associated with operation of the Proposed Substation would be negligible, and noise caused by operation of the Proposed Subtransmission Source Line Routes directly below the conductors would be inaudible. Impacts would be less than significant.

The operation of transformers at the Proposed Substation could produce groundborne vibration; however, groundborne vibrations would be perceptible only in the immediate vicinity (i.e., less than 25 feet) of the transformer pad, if at all. Therefore, impacts resulting from the generation of excessive groundborne vibration and noise during operation of the Proposed Project would be less than significant.

The Rialto Municipal Airport is located approximately 2 miles southeast of the Proposed Substation site and approximately 0.5 mile from the Alder Substation. The acceptable level of aircraft noise for persons living in the vicinity of airports specified in Title 21 of the California Code of Regulations, Section 5012 is a Community Noise Equivalent

Level (CNEL)[1] of 65 dBA. The Comprehensive Land Use Plan (CLUP) for the Rialto Municipal airport (County of San Bernardino, 1991) identifies areas in the vicinity of the airport where the CNEL exceeds 65 dBA. The Proposed Project is not located within these areas. Therefore, the Proposed Project would not expose people working during construction or operation to excessive noise levels attributable to a public airport or public use airport. There is no impact. (See Section 4.12, Noise.)

Population and Housing

Existing housing and persons would not be displaced by construction or operation of the Proposed Project; therefore, the Proposed Project would have no impact associated with the relocation of people or construction of replacement housing elsewhere.

The Proposed Project would not include any new homes, so there would be no direct impact on population growth in the area. Construction workers are expected to be drawn from the existing local labor pool. The Proposed Project may require temporary accommodations for construction workers during construction, and this need is anticipated to be met by hotels and motels in the vicinity of the Proposed Project. The Proposed Substation would be unattended and remotely operated. Therefore, no new housing would need to be built for temporary construction workers or workers during the operation period. Portions of the Proposed Subtransmission Source Line Routes would require approximately 7 miles of new access roads in order to accommodate construction and maintenance activities. After construction, the access roads would only be used for maintenance operations and would not provide new roadside development or access opportunities for local industry or commerce in the area. Therefore, the new access roads would not directly or indirectly induce population growth. The Proposed Project is being built to meet the electrical needs in the area; therefore, it would not induce substantial population growth in the area. Operation of the Proposed Project would not create new opportunities for local industry or commerce or impact population growth in the area beyond what is already planned by San Bernardino County and the cities of Fontana, Rialto, and Rancho Cucamonga. Potential impacts related to population growth in the area during construction and operation of the Proposed Project would be less than significant. (See Section 4.13, Population and Housing)

[1] CNEL is an average A-weighted sound level measured over a 24-hour time period, adjusted during the evening and nighttime hours. A CNEL noise measurement is obtained after adding 5.0 decibels to sound levels occurring during the evening from 7:00 p.m. to 10:00 p.m., and 10.0 dB to sound levels occurring during the nighttime from 10:00 p.m. to 7:00 a.m. The 5.0 and 10.0-decibel adjustments are applied to account for most people's increased noise sensitivity during the evening and nighttime hours.

Public Services

Construction and operation of the Proposed Project would not require the expansion of fire and police protection, schools, libraries, hospitals, or other public facilities. There would be a less than significant impact from construction and operation of the Proposed Project. (See Section 4.14, Public Services.)

Recreation

Construction and operation of the Proposed Project would not cause population growth that would result in the increased use of existing parks or require the construction of new recreation facilities. There would be no impact to recreation. (See Section 4.15, Recreation.)

Transportation and Traffic

The Proposed Project would not result in a change in air traffic patterns, would not affect the design features or introduce incompatible uses for transportation, or conflict with programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. There would be no impact.

Construction of the Proposed Substation site is anticipated to generate the highest amount of traffic in the vicinity of a single location during construction of the Proposed Project. All roadway segments within the Proposed Substation site area are currently operating at acceptable levels of service (LOS). The addition of 26 construction worker commuting trips during the morning and afternoon peak traffic hours[2] to the existing daily traffic volumes on these roadway segments in the vicinity of the Proposed Substation site would not change the LOS that the roadways are currently experiencing. Additionally, construction of the Proposed Subtransmission Source Line Routes and Proposed Telecommunication Facilities would take place on access roads, which are not used by the public, or along existing roads not commonly used for commuter travel. Any lane closures due to construction of the Proposed Substation site would be isolated, temporary, short in duration, and coordinated with other agencies. Construction of the Proposed Project would not result in inadequate emergency access to the area affected by the Proposed Project.

Trips to the Proposed Substation site are expected to occur three to four times a month for routine maintenance and inspection; therefore, operation of the Proposed Substation would not result in a substantial increase in traffic in relation to existing traffic load and capacity of the street system.

[2] The peak traffic periods are 6:30 a.m. to 8:30 a.m. and 3:00 p.m. to 6:00 p.m. Off-peak hours are the rest of the hours during the day.

Construction and operation of the Proposed Substation site would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation. As a result, impacts would be less than significant.

Sierra Avenue is the only designated Congestion Management Program (CMP) roadway located in the Proposed Substation site area. When added to the existing daily traffic on roadways in the area, construction traffic would not change the LOS on the roadway. Material delivery to the construction related sites, as defined in Chapter 3, Project Description, would vary throughout the progress of the project, with most occurring during off-peak hours Impacts to CMP locations would be less than significant. (See Section 4.16, Transportation and Traffic.)

Utilities and Service Systems

The Proposed Project would not exceed wastewater treatment requirements of the applicable RWQCB, or result in the construction of new or expanded water, wastewater, or stormwater drainage facilities. The Proposed Project would not affect wastewater treatment capacities. The construction of the Proposed Project would comply with federal, State, and local statutes and regulations related to solid waste, and operation of the Proposed Project is not expected to generate solid waste subject to federal, State, or local statutes or regulations.

The use of water for dust suppression, clean up, drinking, and hand washing during construction of the Proposed Project would not result in the construction of new water or wastewater facilities or expansion of wastewater facilities. The use of water for landscape irrigation during operation of the Proposed Substation site would be minimal, as drought tolerant plants would be used; therefore, irrigation water use would not be in volumes that would affect water supplies. It is anticipated that restroom facilities for the Proposed Project, both during construction and operation, would be portable and would not require connection to the local water supply system. Operation of the Proposed Project would have a less than significant impact to the water supply in the area.

Construction of the Proposed Project would result in the generation of various waste materials. Non-hazardous waste would be transported to local waste management facilities, and any hazardous waste identified for disposal (e.g., potentially the removed wood poles) would be disposed of in a Class I hazardous waste landfill or in the lined-portion of an RWQCB-certified municipal landfill. Hazardous liquid materials, such as mineral oil, would be subject to the developed SPCC Plan. Soil excavated for the Proposed Project would either be used as fill or disposed of at an appropriately licensed off-site facility. Operation of the Proposed Project would not include activities that would generate waste in an amount that would affect the permitted capacity of landfills in the area. The Proposed Project would be served by a landfill with sufficient capacity to accommodate the Proposed Project's solid waste disposal needs. Currently, the Mid-Valley landfill, which is the landfill closest to the Proposed Substation site , possesses over 66 percent of available remaining capacity. Impacts associated with solid waste

disposal and landfill capacity would be less than significant. (See Section 4.17, Utilities and Service Systems.)

Mandatory Findings of Significance

In reference to Item b): Does the project have impacts that are individually limited, but cumulatively considerable?

Air Quality

Construction of the Proposed Project could result in a cumulatively considerable net increase in NOx and PM_{10} emissions. Compliance with California Code of Regulations, Title 13, Section 2423 would reduce NOx and PM_{10} construction emissions, but the cumulative impact from these emissions is expected to remain significant. (See Section 4.3, Air Quality.)

In reference to Item c): Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Construction and operation of the Proposed Project would not cause substantial adverse effects on human beings. On the contrary, access to a reliable and sufficient source of electricity would directly enhance the lives of human beings by supporting the wide range of individual lifestyles that depend upon the predictability of electrical service, and indirectly, by providing the region with reliable and sufficient electrical service to allow local decision makers flexibility as to what types of development could occur in the region.

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APPENDIX B

LIST OF PREPARERS/AGENCY CONSULTATIONS

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APPENDIX B List of Preparers

SCE

David Barrett, Contract Planner, 15 years in telecommunications related project planning.

Robert Benton, Senior Technical Specialist, 25 years experience in civil and related engineering.

Nicole Berumen, Environmental Coordinator, BA, Social Ecology, University of California, Irvine.

Tim Best, Transmission Planner, AS, Chaffey Community College, over 38 years of experience in Transmission Line Construction, Maintenance, Design and Planning.

Jack M. Collender, Certified Engineering Geologist (CEG), BS, Earth Science, University of California, Santa Cruz; MS, Geology, California State University, Long Beach.

David De Leon, PMO-Regulatory Compliance Specialist, BA, Urban Studies and Planning, University of California, San Diego; MPA, University of La Verne.

Thomas Diaz, Project Manager- Regulatory Policy & Affairs, 26 years utility experience in engineering and regulatory policy. BS, Electrical & Electronic Engineering, California State Polytechnic University, Pomona; JD, University of La Verne, College of Law. Former administrative law judge, California State Unemployment Appeals Board. Member California State Bar.

Lisa Donnell, AICP, Planning & Strategies Siting Coordinator: BA, Sociology, Cal State University, Long Beach; MA, Education, Chapman University; MS, Organizational Behavior/Human Resource Management, Chapman University.

Daniel Duke, Attorney, BA, California State University, Fresno; JD, Golden Gate University School of Law.

Adolfo Espino, Civil Engineer, BS, Civil Engineering, Loyola Marymount University.

Edgardo Farin, Substation Engineering and Design, BS, Electrical Engineering, over 30 years experience in the design, construction and operation of transmission lines and substation facilities in the U S ,Middle East and Asia.

Laura Floyd, Administrative Assistant Land Support IV, 5 years of SCE Real Property experience.

Michael Holguin, Senior Engineer, MBA, Technology MGMT, 15 Years in telecommunications and related engineering.

Andrew C. Keller, Biologist, BS, Environmental Science, Northern Arizona University; MS, Biology, Arizona State University.

Kim Koeppen, Project Manager, Transmission Project Licensing, BA, Sociology and Community Development, Evergreen State College, Olympia, WA; Certificate, Project Management, University of California, Irvine.

Anne McAulay, Planning & Strategies Siting Coordinator, BA, Economics, Occidental College; MA, Urban Planning, UCLA.

Paul McCabe, Senior Engineer, BS, Electrical Engineering, San Diego State University; MS, Electrical Engineering, University of Southern California; State of California registered Professional Electrical Engineer, 11 years experience in Electrical System Design at SCE.

Patrick McConahay, Distribution Field Engineer, BS, Electrical Engineering, San Diego State University.

Jeffrey Miller, Project Manager- Transmission Project Delivery: Licensing & Execution, AS, Architectural Engineering, 15 years work experience in Construction and Construction Management.

Cornelis Overweg, P.E., LEED AP, INCE Bd. Cert, Senior Environmental Noise Specialist, BS, Mechanical Engineering, U.T.S. Hendrick de Keyser; MS, Mechanical Engineering (Ing.), H.T.S. Amsterdam, more than twenty years of consulting experience in environmental noise control including hearing conservation studies, complex noise impact and mitigation analyses and recommendations.

Saeed Sadeghi, Project Engineer, BS, Electrical Engineering, University of California in Los Angeles; MS Electrical Engineering, California State University, Long Beach, Registered Professional Engineer (PE) with the State of California, Certified Project Manager (PMP), 25 years experience in the design of electric facilities including Power Plants, Substations and Transmission Lines.

Tommy Savage, Planner.

Ryan Stevenson, Project Manager- Regulatory Policy & Affairs, BS, Industrial Engineering, California State Polytechnic University, Pomona.

Natasha Tabares, Archaeologist, BS, Geology, Universidad EAFIT, Medellin, Colombia; MA, Anthropology, California State University, Northridge.

Sergio Tarango, Project Manager, E&TS Department, Project Management Organization.

Richard Triggiani, Project Manager Real Property, BA, Cal State Northridge, MBA, Pepperdine University, 39 years of real estate experience specializing in utility right of way.

Paul Teensma, Senior Environmental Specialist-Water Quality Group, BS, Geological Sciences, California State University, Fullerton; JD, University of California Hastings College of the Law.

Raul Valverde, Project Manager - Substation Construction and Maintenance, BS, Electrical Engineering; State of California registered Professional Electrical Engineer, California State University, Fresno.

Shannon Widor, Corporate Representative- Public Involvement/Local Public Affairs, BA, Communications, California State University, San Bernardino, over 11 years experience in government, community and media relations.

Arnel L. Wilson, Air Quality Compliance, MSE, Environmental Engineering, University of Florida, 1971.

Zachary Wilson, RPA, Archaeologist, Cogstone Resource Management, BA, University of Minnesota-Twin Cities; MA, Washington State University.

AECOM

Steven Heisler, Senior Program Manager, Ph.D., Environmental Engineering Science, (Project Manager and Prepared PEA Section 4.3 Air Quality and PEA Section 4.7 Greenhouse Gas Emissions)

Hector Ortiz, REA, Senior Program Manager, B.S., Environmental Engineering Sciences, (Deputy Project Manager and QA/QC)

Michael Benner, Vice President, B.S., Terrestrial Ecology, California State University and M.A., Environmental Studies, (Senior QA/QC)

Carmen Caceres-Schnell, P.G., Project Geologist, M.S., Geology, (Prepared PEA Sections 4.6 Geology and Soils and 4.11 Mineral Resources)

Mike Arvidson, Department Manager, B.S., Civil Engineering Environmental and M.B.A. Finance (Prepared PEA Section 4.8 Hazards and Hazardous Materials)

Roy L. Hauger, Jr., Project Manager, B.S., Civil Engineering, (Prepared PEA Section 4.9 Hydrology and Water Quality)

Johanna Falzarano, Project Manager, B.S., Wildlife Biology and Master Degree in Public Policy, (Prepared PEA Section 4.7 Greenhouse Gas Emissions, Chapter 5.0 Comparison of Alternatives, Appendix A, and Appendix B, and Provided QA/QC)

Carl Rykaczewski, Senior Environmental Professional, B.S., Environmental Resource Management, (Senior QA/QC)

Jerry Flores, Senior Project Manager, B.S., Urban and Regional Planning, (Prepared PEA Section 4.2 Agriculture and Forestry Resources and Provided QA/QC)

Hallie Rulnick, Associate II, B.A., Environmental Analysis and Design, B.A., European Studies, and M.A., English, (Prepared PEA Section 4.10 Land Use and Planning and Contributed to PEA Section 4.1 Aesthetics)

Kim Christensen, Project Manager/Associate, M.S., Environmental Policy and Planning, (Prepared PEA Section 4.1 Aesthetics)

Sameer Shah, Senior Staff Engineer, B.S., Civil Engineering and M.S., Environmental Engineering, (Prepared Emission Calculations for PEA Section 4.3 Air Quality)

Stephanie Klock, Environmental Planner, B.A., Biology, Assistant Project Manager, (Provided QA/QC)

Bill Maddux, Acoustics and Air Quality Specialist/Associate, B.S., Urban and Regional Planning, (Prepared PEA Section 4.12 Noise)

Fareeha Kibriya, Planner, Master Degree in Urban and Regional Planning, (Prepared PEA Sections 4.13 Population and Housing, 4.14 Public Services, 4.15 Recreation, and 4.17 Utilities and Service Systems, and Chapter 6.0 Other CEQA Considerations)

Rudy Calderon, Environmental Planner, M.A., Urban Planning, UCLA (Prepared PEA Section 4.1 Aesthetics)

Jeremy Palmer, Visualization Specialist/Landscape Designer, AAS, Computer Animation, (Prepared PEA Visual Simulations)

Tim Erney, Transportation Engineering Department Manager, B.S., Mechanical Engineering, M.S., Transportation Engineering, and Master of City Planning, (Prepared PEA Section 4.16 Transportation and Traffic)

Mike Arizabal, Senior Transportation Planner, B.S., Civil Engineering, (Prepared PEA Section 4.16 Transportation and Traffic)

Peter Jonas, GISP, Associate GIS Specialist, M.S., Environmental Sciences, (GIS and Graphics)

Kim Olsen, Technical Editor, B.S., Journalism, (Compilation, Editing, and Formatting of PEA Sections)

Cogstone Resource Management, Inc.

Sherri M. Gust, M. S., Anatomy, University of Southern California, B. S. Anthropology University of California Davis (Contributing Author for Cultural Resources Report)

Amy Glover, B. S. Anthropology, University of California Riverside (Principal Author for Cultural Resources Report)

BonTerra Consulting

Ann Johnston; Principal, Biological Services; Bachelor of Arts, Biology (Prepared PEA Section 4.4 Biological Resources and Biological Technical Report; Focused Botanical Surveys)

Stacie Tennant; Senior Project Manager, Biological Services; Bachelor of Science, Environmental Biology (Prepared PEA Section 4.4 Biological Resources and Biological Technical Report; Focused Botanical Surveys)

Sandra Leatherman; Senior Project Manager/Senior Botanist; Bachelor of Arts, Biology (Prepared PEA Section 4.4 Biological Resources and Biological Technical Report; Vegetation Mapping; General and Focused Botanical Surveys)

Amber Oneal; Senior Project Manager, Biological Services; Bachelor of Science, Ecology and Evolution; Bachelor of Science, Environmental Studies; Master of Science, Biology (Prepared Biological Technical Report; Wildlife Surveys; Focused Botanical Surveys)

Jennifer Pareti; Assistant Project Manager, Biological Services; Bachelor of Science, Aquatic Biology (Prepared Biological Technical Report; Focused Botanical Surveys)

Allison Rudalevige; Biologist/Regulatory Technician; Bachelor of Science, Biology: Zoology, Master of Science, Biology (Prepared PEA Section 4.4 Biological Resources; Focused Botanical Surveys)

Gary Medeiros; Associate Principal, Regulatory Services; Bachelor of Arts, Social Ecology (Jurisdictional Delineation)

Jeff Crain; Botanist/Restoration Ecologist; Bachelor of Science, Biological Sciences, Concentration: Ecology and Environmental Biology (Focused Botanical Surveys; Jurisdictional Delineation)

Lindsay Messett; Biologist; Bachelor of Science, Ecology and Systematic Biology, Concentration: Wildlife Biology (Coastal California Gnatcatcher Surveys)

Linda Robb; Project Manager; Bachelor of Arts, Economics; Bachelor of Science, Biology (Focused Botanical Surveys)

Richard Lewis; Senior Project Manager, Restoration Services; Bachelor of Science, Biology (Focused Botanical Surveys)

Robert Allen; Subconsulting Botanist; Bachelor of Science, Biology; Teaching Credential; Master of Science, Environmental Studies (Focused Botanical Surveys)

Brian Karpman; Subconsulting Biologist; Bachelor of Science, Chemistry (Burrowing Owl Surveys)

Mike Couffer; Subconsulting Biologist; Bachelor of Arts, Biology and Journalism (Burrowing Owl Surveys)

Stephen Montgomery; Subconsulting Biologist; Bachelor of Science, Wildlife Biology; Master of Science, Biology/Ecology (San Bernardino kangaroo rat and Los Angeles pocket mouse habitat assessment and trapping surveys)

Daniel Grout; Subconsulting Biologist; Bachelor of Science, Zoology and Wildlife Ecology (San Bernardino kangaroo rat and Los Angeles pocket mouse habitat assessment and trapping surveys)

Gilbert Goodlett; Subconsulting Biologist; Bachelor of Science, Petroleum Engineering (Delhi sands flower-loving fly surveys)

Johnnie Garcia; GIS Technician; Bachelor of Arts, Geography (GIS Applications)

Agency Consultations

Duane Baker, Director of Management Services, San Bernardino Associated Governments (SANBAG) (provided information regarding anticipated release dates of the Regional Greenhouse Gas Inventory and Reduction Plan and EIR)

Paul Gonzales, City of Fontana (provided information regarding the status of the City's specific plans)

Shawnika Johnson, Laurentiu Popescu, and Monae Pirie-Pugh, City of Fontana Department of Engineering Traffic Section (provided information on City guidelines for traffic impact analysis and traffic count data)

Daniel Casey, City of Rialto (provided information regarding the Rialto Airport Specific Plan and conditional development permit plan regulations)

Adam Collier, City of Rancho Cucamonga (provided information regarding the Industrial Area Specific Plan and conditional use permit regulations)

Matthew Addington, City of Rancho Cucamonga, Land Development, Engineering Division (provided information regarding grading permit requirements in Rancho Cucamonga)

Gina Gibson, City of Rialto Planning Division (provided information regarding the adoption date of the City's General Plan and cumulative projects).

Rafael Balneg, City of Rancho Cucamonga (provided information regarding the City's cumulative projects listing)

Angel Gonzalez, City of Fontana (provided information regarding the City's cumulative projects listing)

Larry Henderson, City of Rancho Cucamonga (provided information regarding the City's cumulative projects listing)

Lalitha Srikrish, City of Rialto (provided information regarding the City's cumulative projects listing)

City of Rialto Planning Division staff (provided information regarding the status of the adoption of the Draft Rialto General Plan)

Greg Lantz, Economic Redevelopment Manager of the City of Rialto (provided information regarding the closure date of the Rialto Municipal Airport)

Richard Scanlan, Director of Aviation and Solid Waste Management for the City of Rialto (provided information regarding the closure date of the Rialto Municipal Airport)

Sandy Marquez; U.S. Fish and Wildlife Service (Notified of Coastal California Gnatcatcher Surveys)

Native American Heritage Commission (NAHC), Sacramento, CA, (Contacted for list of Native American Tribes for notification of the Proposed Project and to conduct a record search of the Sacred Lands File)

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Mr. Michael Contreras
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA 92220

January 13, 2010

SUBJECT: Native American Consultation Regarding the Proposed Devore Substation Project, San Bernardino County, California.

Dear Mr. Contreras:

Southern California Edison (SCE) proposes to construct a new 56MVA 66/12 kilovolt (kv) substation (Devore substation) in order to meet projected demand requirements and to improve reliability in the Rancho Cucamonga, Fontana and Rialto area. The project will involve the construction of additional 66 kv lines to serve the substation. The tentative locations of the substation and the potential routes for the transmission lines are located within the project boundary (Figure 1). At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential effects to cultural resources, sacred lands or other heritage sites located within the project area.

The project area is located on portions of Sections 17, 18, 19, 20, 21, 28, 29, 30 and 33, Township 1 North, Range 5 West, and on portions of Sections 3, 4, 9, 13, 16, 17, 23, 24, 25, 26, 27, 34 and 35, Township 1 North, Range 6 West, San Bernardino Base Meridian as depicted in the Devore, Fontana and Guasti USGS 7.5 Minute Series Topographic Quadrangles. The project area is crossed by the intersection of Highways 15 and 30.

SCE would appreciate any information you may have regarding Native American cultural resources located in or near the proposed project location that could be affected by the proposed project. Any information concerning the location, identity, character and traditional use of cultural places identified during consultation will be considered confidential.

We encourage you to participate in this process. The potential impacts that this project may have on cultural resources important to the Native American community cannot be evaluated unless we are aware that the resource(s) exist. If possible, for project planning purposes we would like to receive any questions or concerns regarding this project within the next two weeks. If we have not heard from you within 30 days of the receipt of this letter, we will assume that you do not wish to participate in further consultation.

If you have any questions, please feel free to call me at (626) 302-5548, or via email at natasha.tabares@sce.com. Thank you for your assistance and participation in this project.

Sincerely,

Natasha Tabares, RPA
Archaeologist
Southern California Edison
Corporate Environment, Health and Safety, GO1, QUAD 3 A.
2244 Walnut Grove Ave.
Rosemead, CA 91770

Enclosure 1: Map1

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Mr. Ernest H. Siva
Morongo Band of Mission Indians
9570 Mias Canyon Road
Banning, CA 92220

January 13, 2010

SUBJECT: Native American Consultation Regarding the Proposed Devore Substation Project, San Bernardino County, California.

Dear Mr. Siva:

Southern California Edison (SCE) proposes to construct a new 56MVA 66/12 kilovolt (kv) substation (Devore substation) in order to meet projected demand requirements and to improve reliability in the Rancho Cucamonga, Fontana and Rialto area. The project will involve the construction of additional 66 kv lines to serve the substation. The tentative locations of the substation and the potential routes for the transmission lines are located within the project boundary (Figure 1). At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential effects to cultural resources, sacred lands or other heritage sites located within the project area.

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Sincerely,

Natasha Tabares, RPA
Archaeologist
Southern California Edison
Corporate Environment, Health and Safety, GO1, QUAD 3 A.
2244 Walnut Grove Ave.
Rosemead, CA 91770

Enclosure 1: Map1

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Mr. Joseph Hamilton
Ramona Band of Cahuilla Mission Indians
P.O. Box 391670
Anza, CA 92539

January 13, 2010

SUBJECT: Native American Consultation Regarding the Proposed Devore Substation Project, San Bernardino County, California.

Dear Mr. Hamilton:

Southern California Edison (SCE) proposes to construct a new 56MVA 66/12 kilovolt (kv) substation (Devore substation) in order to meet projected demand requirements and to improve reliability in the Rancho Cucamonga, Fontana and Rialto area. The project will involve the construction of additional 66 kv lines to serve the substation. The tentative locations of the substation and the potential routes for the transmission lines are located within the project boundary (Figure 1). At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential effects to cultural resources, sacred lands or other heritage sites located within the project area.

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Sincerely,

Natasha Tabares, RPA
Archaeologist
Southern California Edison
Corporate Environment, Health and Safety, GO1, QUAD 3 A.
2244 Walnut Grove Ave.
Rosemead, CA 91770

Enclosure 1: Map1

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Mr. John Valenzuela
San Fernando Band of Mission Indians
P.O. Box 221838
Newhall, CA 91322

January 13, 2010

SUBJECT: Native American Consultation Regarding the Proposed Devore Substation Project, San Bernardino County, California.

Dear Mr. Valenzuela:

Southern California Edison (SCE) proposes to construct a new 56MVA 66/12 kilovolt (kv) substation (Devore substation) in order to meet projected demand requirements and to improve reliability in the Rancho Cucamonga, Fontana and Rialto area. The project will involve the construction of additional 66 kv lines to serve the substation. The tentative locations of the substation and the potential routes for the transmission lines are located within the project boundary (Figure 1). At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential effects to cultural resources, sacred lands or other heritage sites located within the project area.

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Sincerely,

Natasha Tabares, RPA
Archaeologist
Southern California Edison
Corporate Environment, Health and Safety, GO1, QUAD 3 A.
2244 Walnut Grove Ave.
Rosemead, CA 91770

Enclosure 1: Map1

P.O. Box 800
2244 Walnut Grove Ave.
Rosemead, CA 91770

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Ms. Ann Brierty
San Manuel Band of Mission Indians
26569 Community Center Drive
Highland, CA 92346

January 13, 2010

SUBJECT: Native American Consultation Regarding the Proposed Devore Substation Project, San Bernardino County, California.

Dear Ms. Brierty:

Southern California Edison (SCE) proposes to construct a new 56MVA 66/12 kilovolt (kv) substation (Devore substation) in order to meet projected demand requirements and to improve reliability in the Rancho Cucamonga, Fontana and Rialto area. The project will involve the construction of additional 66 kv lines to serve the substation. The tentative locations of the substation and the potential routes for the transmission lines are located within the project boundary (Figure 1). At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential effects to cultural resources, sacred lands or other heritage sites located within the project area.

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If you have any questions, please feel free to call me at (626) 302-5548, or via email at natasha.tabares@sce.com. Thank you for your assistance and participation in this project.

Sincerely,

Natasha Tabares, RPA
Archaeologist
Southern California Edison
Corporate Environment, Health and Safety, GO1, QUAD 3 A.
2244 Walnut Grove Ave.
Rosemead, CA 91770

Enclosure 1: Map1

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Mr. James Ramos
San Manuel Band of Mission Indians
26569 Community Center Drive
Highland, CA 92346

January 13, 2010

SUBJECT: Native American Consultation Regarding the Proposed Devore Substation Project, San Bernardino County, California.

Dear Mr. Ramos:

Southern California Edison (SCE) proposes to construct a new 56MVA 66/12 kilovolt (kv) substation (Devore substation) in order to meet projected demand requirements and to improve reliability in the Rancho Cucamonga, Fontana and Rialto area. The project will involve the construction of additional 66 kv lines to serve the substation. The tentative locations of the substation and the potential routes for the transmission lines are located within the project boundary (Figure 1). At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential effects to cultural resources, sacred lands or other heritage sites located within the project area.

The project area is located on portions of Sections 17, 18, 19, 20, 21, 28, 29, 30 and 33, Township 1 North, Range 5 West, and on portions of Sections 3, 4, 9, 13, 16, 17, 23, 24, 25, 26, 27, 34 and 35, Township 1 North, Range 6 West, San Bernardino Base Meridian as depicted in the Devore, Fontana and Guasti USGS 7.5 Minute Series Topographic Quadrangles. The project area is crossed by the intersection of Highways 15 and 30.

SCE would appreciate any information you may have regarding Native American cultural resources located in or near the proposed project location that could be affected by the proposed project. Any information concerning the location, identity, character and traditional use of cultural places identified during consultation will be considered confidential.

We encourage you to participate in this process. The potential impacts that this project may have on cultural resources important to the Native American community cannot be evaluated unless we are aware that the resource(s) exist. If possible, for project planning purposes we would like to receive any questions or concerns regarding this project within the next two weeks. If we have not heard from you within 30 days of the receipt of this letter, we will assume that you do not wish to participate in further consultation.

If you have any questions, please feel free to call me at (626) 302-5548, or via email at natasha.tabares@sce.com. Thank you for your assistance and participation in this project.

Sincerely,

Natasha Tabares, RPA
Archaeologist
Southern California Edison
Corporate Environment, Health and Safety, GO1, QUAD 3 A.
2244 Walnut Grove Ave.
Rosemead, CA 91770

Enclosure 1: Map1

P.O. Box 800
2244 Walnut Grove Ave.
Rosemead, CA 91770

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Ms. Goldie Walker
Serrano Nation of Indians
6588 Valaria Drive
Highland, CA 92346

January 13, 2010

SUBJECT: Native American Consultation Regarding the Proposed Devore Substation Project, San Bernardino County, California.

Dear Ms. Walker:

Southern California Edison (SCE) proposes to construct a new 56MVA 66/12 kilovolt (kv) substation (Devore substation) in order to meet projected demand requirements and to improve reliability in the Rancho Cucamonga, Fontana and Rialto area. The project will involve the construction of additional 66 kv lines to serve the substation. The tentative locations of the substation and the potential routes for the transmission lines are located within the project boundary (Figure 1). At the recommendation of the Native American Heritage Commission (NAHC), SCE requests your input regarding the identification of potential effects to cultural resources, sacred lands or other heritage sites located within the project area.

The project area is located on portions of Sections 17, 18, 19, 20, 21, 28, 29, 30 and 33, Township 1 North, Range 5 West, and on portions of Sections 3, 4, 9, 13, 16, 17, 23, 24, 25, 26, 27, 34 and 35, Township 1 North, Range 6 West, San Bernardino Base Meridian as depicted in the Devore, Fontana and Guasti USGS 7.5 Minute Series Topographic Quadrangles. The project area is crossed by the intersection of Highways 15 and 30.

SCE would appreciate any information you may have regarding Native American cultural resources located in or near the proposed project location that could be affected by the proposed project. Any information concerning the location, identity, character and traditional use of cultural places identified during consultation will be considered confidential.

We encourage you to participate in this process. The potential impacts that this project may have on cultural resources important to the Native American community cannot be evaluated unless we are aware that the resource(s) exist. If possible, for project planning purposes we would like to receive any questions or concerns regarding this project within the next two weeks. If we have not heard from you within 30 days of the receipt of this letter, we will assume that you do not wish to participate in further consultation.

If you have any questions, please feel free to call me at (626) 302-5548, or via email at natasha.tabares@sce.com. Thank you for your assistance and participation in this project.

Sincerely,

Natasha Tabares, RPA
Archaeologist
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Corporate Environment, Health and Safety, GO1, QUAD 3 A.
2244 Walnut Grove Ave.
Rosemead, CA 91770

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APPENDIX C

AIR QUALITY CALCULATIONS

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Appendix C Air Quality Calculations

Table of Contents

Tables

This appendix describes the procedures used to analyze potential air quality impacts for the Falcon Ridge Substation Project Proponent's Environmental Assessment (PEA).

1.0 ANALYSIS OVERVIEW

The following analyses of potential air quality impacts were conducted:

- Total peak daily emissions of criteria pollutants and precursors (volatile organic compounds [VOC], carbon monoxide [CO], nitrogen oxides [NOx], sulfur oxides [SOx], particulate matter smaller than 10 microns aerodynamic diameter [PM_{10}] and particulate matter smaller than 2.5 microns aerodynamic diameter [$PM_{2.5}$]) during construction (including construction of the Proposed Substation, Proposed Distribution Getaways, Proposed Subtransmission Source Line Routes, and Proposed Telecommunication Facilities, and modifications to the Alder and Etiwanda Substations) and operation of the Proposed Project were calculated and compared with California Environmental Quality Act (CEQA) significance thresholds for regional air quality impacts adopted by the South Coast Air Quality Management District (SCAQMD)

- On-site peak daily emissions of CO, NOx, PM_{10} and $PM_{2.5}$ during construction of the Proposed Project were calculated and analyzed to evaluate potential localized impacts

- Total greenhouse gas (GHG) emissions during construction and operation of the Proposed Project were calculated to evaluate potential cumulative impacts from GHG emissions

Section 2.0 of this appendix describes the emission calculation procedures for the types of activities that are anticipated to generate emissions during construction and operation of the Proposed Project. Section 3.0 describes the calculation of peak daily emissions. Section 4.0 describes the calculation of total GHG emissions, and Section 5.0 describes the analysis of potential localized impacts. References are provided in Section 6.0. The associated calculations are provided in the attached tables.

2.0 EMISSION CALCULATIONS

2.1 Emission Sources

Construction and operational emissions can be distinguished as either on site or off site. On-site emissions principally consist of exhaust emissions (CO, VOC, NOx, SOx, PM_{10}, $PM_{2.5}$ and GHG) from construction equipment and motor vehicles, entrained PM_{10} and $PM_{2.5}$ from vehicles traveling on paved and unpaved surfaces, fugitive dust (PM_{10} and $PM_{2.5}$) from grading and excavation, VOC from asphaltic paving, and GHG from leakage of equipment containing sulfur hexafluoride (SF_6). Off-site emissions during the construction and operation phases consist of exhaust emissions and entrained paved and unpaved road dust from motor vehicles.

2.2 Construction Equipment Exhaust Emission Calculations

The combustion of fuel to provide power for the operation of construction equipment results in the generation of exhaust emissions. The following equation was used to calculate daily exhaust emissions from each type of construction equipment used during each construction phase for the Proposed Project:

$$E_{i,j} = EF_{i,j} \times H_j \times N_j \quad \text{(Eq. 1)}$$

where:

$E_{i,j}$ = Emissions of pollutant i from equipment type j (pounds/day)

$EF_{i,j}$ = Emission factor for pollutant i from equipment type j (pounds/operating hour)

H_j = Daily operating time for equipment type j (hours/day)

N_j = Number of pieces of equipment of type j

The exhaust emission factors, $EF_{i,j}$, used for the calculations for diesel-fueled equipment are composite horsepower-based off-road emission factors for 2013, the year construction is anticipated to begin, developed for the SCAQMD by the California Air Resources Board (CARB) from its OFFROAD 2007 Model (SCAQMD, 2008a). The composite off-road emission factors were derived based on equipment type (e.g., tractor, dozer,), and average equipment age and horsepower rating within horsepower ranges for the year.

The emission factors developed by CARB for the SCAQMD are listed in Table 59 in the attached tables. They include emission factors for VOC, CO, NOx, SOx and PM_{10}, as well as two GHGs (carbon dioxide [CO_2] and methane [CH_4]). $PM_{2.5}$ emission factors were calculated by multiplying the PM_{10} emission factors by the $PM_{2.5}$ fraction of PM_{10} in construction equipment engine exhaust (SCAQMD, 2006).

Some aerial lifts to be used during construction of the Proposed Project are anticipated to be propane fueled. Since the emission factors available from the SCAQMD are only for diesel-fueled equipment, AECOM used the CARB OFFROAD 2007 Model to calculate total daily emissions and total daily operating hours for natural gas-fueled[1] aerial lifts during 2013 in the SCAQMD's jurisdiction. Total daily emissions by equipment horsepower range were then divided by total daily operating hours to calculate hourly emission factors. The resulting emission factors are listed in Table 59 in the attached tables.

[1] The OFFROAD 2007 Model does not calculate emissions from propane-fueled equipment. Therefore, emissions from natural gas-fueled equipment were used to estimate emissions from propane-fueled equipment.

The following equation was used to calculate total GHG emissions from each type of construction equipment during each construction phase:

$$E_{GHG,j} = (E_{CO2,j} + 21 \times E_{CH4,j}) \times D_j \times 4.536 \times 10^{-4} \quad \text{(Eq. 2)}$$

where:

$E_{GHG,j}$ = Total GHG emissions from equipment type j (metric tons [1,000 kilograms] CO_2 equivalent)

$E_{CO2,j}$ = Daily CO2 emissions from equipment type j (pounds/day)

21 = Global warming potential for CH_4 relative to CO_2

$E_{CH4,j}$ = Daily CH_4 emissions from equipment type j (pounds/day)

D_j = Days equipment of type j are used during the construction phase

4.536×10^{-4} = Metric tons per pound unit conversion

Table 3.6, Construction Equipment and Workforce Estimates, in Chapter 3, Project Description, of the PEA provided the types, number, daily operating hours and total operating days for construction equipment anticipated to be used during each construction phase for the Proposed Project. Horsepower ratings for the equipment were estimated from typical horsepower ratings for the types of equipment anticipated to be used. All construction equipment exhaust emissions were anticipated to occur on site.

Daily VOC, CO, NOx, SOx, PM_{10}, $PM_{2.5}$ and total GHG construction equipment exhaust emissions calculations for each construction phase are provided in Tables 7 through 57 in the attached tables.

2.3 Motor Vehicle Exhaust Emission Calculations

The combustion of fuel in motor vehicle engines results in the generation of exhaust emissions. The following equation was used to calculate daily exhaust emissions from each type of motor vehicle used during each construction phase and during operation of the Proposed Project:

$$E_{i,j} = EF_{i,j} \times VMT_j \times N_j \quad \text{(Eq. 3)}$$

where:

$E_{i,j}$ = Emissions of pollutant i from motor vehicle type j (pounds/day)

$EF_{i,j}$ = Emission factor for pollutant from motor vehicle type j (pounds/vehicle-mile traveled [VMT])

VMT_j = Daily (VMT by motor vehicle type j (miles/day)

N_j = Number of motor vehicles of type j

The SCAQMD (2007a) has derived motor vehicle emission factors using CARB's EMFAC 2007 (v2.3) BURDEN model. The emission factors were derived by dividing the total daily district-wide emissions by total daily VMT to obtain emission factors in pounds per mile traveled. Emission factors were derived for gasoline-fueled passenger sized, light-duty vehicles and diesel-fueled medium sized, heavy-duty vehicles by taking the weighted average of vehicle types and simplifying them into two categories – passenger sized, light-duty and medium sized, heavy-duty vehicles (e.g., delivery trucks). Emission factors were also derived for heavy sized, heavy-duty diesel-fueled trucks, which have a vehicle weight ranging between 33,001 and 60,000 pounds.

The emission factors developed by the SCAQMD (2007a) are listed in Tables 59 and 60 in the attached tables. They include emission factors for VOC, CO, NOx, SOx, PM_{10}, CO_2 and CH_4. $PM_{2.5}$ emission factors were calculated by multiplying the PM_{10} emission factors by the $PM_{2.5}$ fraction of PM_{10} in motor vehicle exhaust (SCAQMD, 2006).

The following equation was used to calculate total GHG emissions from each type of vehicle during each construction phase and during operation of the Proposed Project:

$$E_{GHG,j} = (E_{CO2,j} + 21 \times E_{CH4,j}) \times D_j \times 4.536 \times 10^{-4} \quad \text{(Eq. 2)}$$

where:

$E_{GHG,j}$ = Total GHG emissions from vehicle type j (metric tons CO_2 equivalent)

$E_{CO2,j}$ = Daily CO_2 emissions from vehicle type j (pounds/day)

21 = Global warming potential for CH_4 relative to CO_2

$E_{CH4,j}$ = Daily CH_4 emissions from vehicle type j (pounds/day)

D_j = Days vehicles of type j are used during the construction phase

4.536×10^{-4} = Metric tons per pound unit conversion

The types of vehicles, the vehicle categories used to assign emission factors, the number of vehicles used and the basis for estimating the number of vehicles during each construction phase and during operation of the Proposed Project are listed in Table C-1, Motor Vehicle Categories and Numbers. The daily on-site and off-site VMT for each type of vehicle and the basis for the VMT estimates during each construction phase and operation of the Proposed Project are listed in Table C-2, Motor Vehicle Daily Vehicle-Miles Traveled. Table C-2 also lists estimated VMT for travel on paved and unpaved roads and surfaces. Although exhaust emissions are independent of the type of surface, entrained fugitive particulate matter emission factors, as discussed in Section 2.4, Motor Vehicle Entrained Particulate Matter Calculations, are different for travel on paved and unpaved surfaces.

Daily motor vehicle exhaust emission calculations from construction and operation are provided in Tables 7 through 58 in the attached tables.

Table C-1 Motor Vehicle Categories and Numbers

Vehicle	Category[1]	Number	Basis for Number[2]
Substation Survey			
Survey Truck	Passenger	2	Table 3.6
Worker Commute	Passenger	4	Table 3.6
Substation Temporary Power Pole Installation			
Work Truck	Passenger	1	Table 3.6
Worker Commute	Passenger	2	Table 3.6
Substation Grading			
Water Truck	HHDT	1	Table 3.6
Tool Truck	Passenger	1	Table 3.6
Pickup 4x4	Passenger	1	Table 3.6
Worker Commute	Passenger	8	Table 3.6
Substation Soil Import/Export			
Dump Truck - Import	HHDT	45	Based on 5,000 CY import (Table 3.1) over 8 days and 14 CY/truck: 5,000 / 8 / 14 = 44.6
Dump Truck - Export	HHDT	18	Based on 2,000 CY export (Table 3.1) over 8 days and 14 CY/truck: 2,000 / 8 / 14 = 17.9
Substation Fencing			
Flatbed Truck	Delivery	1	Table 3.6
Crewcab Truck	Passenger	1	Table 3.6
Worker Commute	Passenger	6	Table 3.6
Substation Civil			
Dump Truck	HHDT	7	Based on 455 CY excavated (Table 3.1) over 5 days and 14 CY/truck = 455 / 5 / 14 = 6.5
Water Truck	HHDT	1	Table 3.6
Tool Truck	Passenger	1	Table 3.6
Concrete Truck	HHDT	10	Based on 455 CY concrete poured (Table 3.1) over 5 days and 10 CY/truck: 455 / 5 / 10 = 9.1
Worker Commute	Passenger	10	Table 3.6
Substation MEER			
Carry-all Truck	Delivery	1	Table 3.6
Stake Truck	Delivery	1	Table 3.6

Table C-1 Motor Vehicle Categories and Numbers

Vehicle	Category[1]	Number	Basis for Number[2]
Worker Commute	Passenger	6	Table 3.6
Substation Electrical			
Crew Truck	Passenger	2	Table 3.6
Worker Commute	Passenger	10	Table 3.6
Substation Wiring			
Worker Commute	Passenger	6	Table 3.6
Substation Transformers			
Crew Truck	Passenger	2	Table 3.6
Low Bed Truck	HHDT	1	Table 3.6
Worker Commute	Passenger	4	Table 3.6
Substation Maintenance Crew Equipment Check			
Maintenance Truck	Passenger	2	Table 3.6
Worker Commute	Passenger	4	Table 3.6
Substation Testing			
Crew Truck	Passenger	1	Table 3.6
Worker Commute	Passenger	2	Table 3.6
Substation Asphalting			
Stake Truck	HHDT	1	Table 3.6
Dump Truck	HHDT	1	Table 3.6
Crew Truck	Passenger	2	Table 3.6
Asphalt Delivery Truck	HHDT	5	Based on 465 CY (Table 3.1) over 10 days and 10 CY/truck = 465 / 10 / 10 = 4.7
Aggregate Base Delivery Truck	HHDT	6	Based on 610 CY (Table 3.1) over 10 days and 10 CY/truck = 610 / 10 / 10 = 6.1
Worker Commute	Passenger	8	Table 3.6
Substation Landscaping			
Dump Truck	HHDT	1	Table 3.6
Crushed Rock Delivery Truck	HHDT	4	Based on 1,230 CY (Table 3.1) over 30 days and 10 CY/truck = 1,230 / 30 / 10 = 4.1
Worker Commute	Passenger	8	Table 3.6
Alder Substation Modification Fencing			
Flatbed Truck	Delivery	1	Table 3.6
Crewcab Truck	Passenger	1	Table 3.6

Table C-1 Motor Vehicle Categories and Numbers

Vehicle	Category[1]	Number	Basis for Number[2]
Worker Commute	Passenger	2	Table 3.6
Alder Substation Modification Civil			
Dump Truck	HHDT	1	Table 3.6
Water Truck	HHDT	1	Table 3.6
Tool Truck	Passenger	1	Table 3.6
Concrete Truck	HHDT	1	Table 3.6
Worker Commute	Passenger	4	Table 3.6
Alder Substation Modification Electrical			
Worker Commute	Passenger	4	Table 3.6
Alder Substation Modification Wiring			
Worker Commute	Passenger	2	Table 3.6
Alder Substation Modification Maintenance Crew Equipment Check			
Maintenance Trucks	Passenger	2	Table 3.6
Worker Commute	Passenger	2	Table 3.6
Alder Substation Modification Testing			
Crew Truck	Passenger	1	Table 3.6
Worker Commute	Passenger	2	Table 3.
Alder Substation Modification Asphalting			
Stake Truck	Delivery	1	Table 3.6
Dump Truck	HHDT	1	Table 3.6
Crew Truck	Passenger	2	Table 3.6
Asphalt Delivery Truck	HHDT	1	Table 3.6
Worker Commute	Passenger	5	Table 3.6
Etiwanda Substation Modification Civil			
Dump Truck	HHDT	1	Table 3.6
Water Truck	HHDT	1	Table 3.6
Tool Truck	Passenger	1	Table 3.6
Concrete Truck	HHDT	1	Table 3.5
Worker Commute	Passenger	4	Table 3.6
Etiwanda Substation Modification Electrical			
Crew Truck	Passenger	2	Table 3.6
Worker Commute	Passenger	4	Table 3.6

Table C-1 Motor Vehicle Categories and Numbers

Vehicle	Category[1]	Number	Basis for Number[2]
Etiwanda Substation Modification: Wiring			
Worker Commute	Passenger	2	Table 3.6
Etiwanda Substation Modification Maintenance Crew Equipment Check			
Maintenance Trucks	Passenger	2	Table 3.6
Worker Commute	Passenger	2	Table 3.6
Etiwanda Substation Modification Testing			
Crew Truck	Passenger	1	Table 3.6
Worker Commute	Passenger	2	Table 3.6
Subtransmission Source Line Survey			
1-Ton Truck, 4X4	Passenger	1	Table 3.6
Worker Commute	Passenger	4	Table 3.6
Subtransmission Source Line Staging Area			
1-Ton Crew Cab, 4X4	Delivery	1	Table 3.6
Truck, Semi Tractor	HHDT	1	Table 3.6
Worker Commute	Passenger	4	Table 3.6
Subtransmission Source Line Road Work			
Water Truck	HHDT	1	Table 3.6
1-Ton Crew Cab 4X4	Delivery	1	Table 3.6
Lowboy Truck/Trailer	HHDT	1	Table 3.6
Worker Commute	Passenger	5	Table 3.6
Subtransmission Source Line Guard Structure Installations			
3/4-Ton Truck, 4X4	Passenger	1	Table 3.6
1-Ton Crew Cab, 4X4	Delivery	1	Table 3.6
Extendable Flat Bed Pole Truck	HHDT	1	Table 3.6
Auger Truck	HHDT	1	Table 3.6
Bucket Truck	HHDT	1	Table 3.6
Boom/Crane Truck	HHDT	1	Table 3.6
Worker Commute	Passenger	6	Table 3.6
Subtransmission Source Line Wood/LWS Pole Removal			
1-Ton Crew Cab, 4X4	Delivery	1	Table 3.6
Bucket Truck	HHDT	1	Table 3.6
Flat Bed Pole Truck	HHDT	1	Table 3.6

Table C-1 Motor Vehicle Categories and Numbers

Vehicle	Category[1]	Number	Basis for Number[2]
Boom/Crane Truck	HHDT	1	Table 3.6
Worker Commute	Passenger	6	Table 3.6
Subtransmission Source Line Install TSP Foundations			
Water Truck	HHDT	1	Table 3.6
1-Ton Crew Cab, 4X4	Delivery	1	Table 3.6
Dump Truck	HHDT	2	Based on 40 CY per foundation (Table. 3.2), 50 foundations total (Table 3.5) and 14 CY/truck over 90 days = 40 x 50 / 14 / 90 = 1.6
Concrete Truck	HHDT	3	Based on 40 CY per foundation (Table. 3.2), 50 foundations total (Table 3.5) and 10 CY/truck over 90 days = 40 x 50 / 10 / 90 = 2.2
Boom/Crane Truck	HHDT	1	Table 3.6
Auger Truck	HHDT	1	Table 3.6
Worker Commute	Passenger	7	Table 3.6
Subtransmission Source Line TSP Haul			
3/4–Ton Truck, 4X4	Passenger	1	Table 3.6
Boom/Crane Truck	HHDT	1	Table 3.6
Flat Bed Pole Truck	HHDT	1	Table 3.6
Worker Commute	Passenger	4	Table 3.6
Subtransmission Source Line TSP Assembly			
3/4–Ton Truck, 4X4	Passenger	2	Table 3.6
1 Ton Crew Cab, 4X4	Delivery	2	Table 3.6
Boom/Crane Truck	HHDT	1	Table 3.6
Worker Commute	Passenger	15	Table 3.6
Subtransmission Source Line TSP Erection			
3/4–Ton Truck, 4X4	Passenger	1	Table 3.6
1 Ton Crew Cab, 4X4	Delivery	1	Table 3.6
Worker Commute	Passenger	15	Table 3.6
Subtransmission Source Line Install Wood/LWS Poles			
Augur Truck	HHDT	1	Table 3.6
Bucket Truck	HHDT	1	Table 3.6
Boom/Crane Truck	HHDT	1	Table 3.6
1-Ton Crew Cab, 4x4	Delivery	1	Table 3.6

Table C-1 Motor Vehicle Categories and Numbers

Vehicle	Category[1]	Number	Basis for Number[2]
Extendable Flat Bed Pole Truck	Delivery	1	Table 3.6
Worker Commute	Passenger	15	Table 3.6
Subtransmission Source Line Install Conductor			
1-Ton Crew Cab,4X4	Delivery	3	Table 3.6
Bucket Truck	HHDT	4	Table 3.6
Boom/Crane Truck	HHDT	1	Table 3.6
Wire Truck/Trailer	HHDT	2	Table 3.6
Dump Truck	HHDT	1	Table 3.6
3 Drum Sock Line Puller	HHDT	1	Table 3.6
Bull Wheel Puller	HHDT	1	Table 3.6
Static Truck/Tensioner	HHDT	1	Table 3.6
Lowboy Truck Trailer	HHDT	2	Table 3.6
Worker Commute	Passenger	20	Table 3.6
Subtransmission Source Line Guard Structure Removal			
3/4-Ton Truck, 4X4	Passenger	1	Table 3.6
1-Ton Crew Cab, 4X4	Delivery	1	Table 3.6
Bucket Truck	HHDT	1	Table 3.6
Boom/Crane Truck	HHDT	1	Table 3.6
Extendable Flat Bed Pole Truck	HHDT	1	Table 3.6
Worker Commute	Passenger	6	Table 3.6
Subtransmission Source Line Restoration			
1-Ton Crew Cab, 4X4	Delivery	2	Table 3.6
Water Truck	HHDT	1	Table 3.6
Low-boy Truck/Trailer	HHDT	1	Table 3.6
Worker Commute	Passenger	7	Table 3.6
Subtransmission Source Line Vault Installation			
1 Ton Crew-Cab, 4X4	Delivery	2	Table 3.5
Dump Truck	HHDT	2	Based on 4 vaults (Table 3.5) 20 ft. x 10 ft. x 9.5 ft.(Section 3.2.4.4) plus 10% extra and 14 CY truck over 12 days = 4 x 20 x 14 x 9.5 x 1.1 / 27 / 14 / 12 = 1.8
Water Truck	HHDT	1	Table 3.6

Table C-1 Motor Vehicle Categories and Numbers

Vehicle	Category[1]	Number	Basis for Number[2]
165-Ton Crane Truck	HHDT	1	Table 3.6
Concrete Mixer Truck	HHDT	3	Table 3.6
Low-Boy Truck/Trailer	HHDT	1	Table 3.6
Flat Bed Truck/Trailer	Delivery	3	Table 3.6
Worker Commute	Passenger	6	Table 3.6
Subtransmission Source Line Duct Bank Installation			
1-Ton Crew-Cab, 4X4	Delivery	1	Table 3.6
Dump Truck	HHDT	6	Based on 600 CY and 14 CY/truck over 8 days = 600 / 14 / 8 = 5.4
Pipe Truck/Trailer	HHDT	1	Table 3.6
Water Truck	HHDT	1	Table 3.6
Concrete Mixer Truck	HHDT	3	Based on duct bank 21 in. x 20 in x 1,800 ft. - volume of 6, 5.563 in. OD PVC over 6 days and 10 CY/truck = (21 x 20 - 6 x π x $(5.563)^2$ / 4) / 144 x 1,800 / 27 / 10 / 6 days = 2.1
Low-Boy Truck/Trailer	HHDT	1	Table 3.6
Worker Commute	Passenger	6	Table 3.6
Telecommunications Cable Construction			
Bucket Truck	HHDT	2	Table 3.6
Pick-up Truck	Delivery	1	Table 3.6
Splicing Truck	Delivery	2	Table 3.6
Worker Commute	Passenger	5	Table 3.6
Telecommunications Vault and Duct Bank Installations			
Foreman Truck	Delivery	1	Table 3.6
Concrete Truck	HHDT	3	Based on filling bottom 1 ft. of 1 ft. wide trench (Section 3.2.6), 3,825 ft. long (Table 3.5) over 5 days and 10 CY/truck:= 1 x 1 x 3,825 / 27 / 10 / 20 = 2.8
Dump Truck	HHDT	1	Based on hauling bottom 1 ft. of 1 ft. wide trench (Section 3.2.6), 3,825 ft. long (Table 3.5) over 20 days and 14 CY/truck:= 1 x 1 x 3,825 / 27 / 14 / 20 = 0.5
Water Truck	HHDT	1	Table 3.6
Crew Cab Truck	Delivery	1	Table 3.6
Worker Commute	Passenger	6	Table 3.6
Distribution Gateways Vault Installation			

Table C-1 Motor Vehicle Categories and Numbers

Vehicle	Category[1]	Number	Basis for Number[2]
Dump Truck	HHDT	4	Based on hauling 470 CY (Table 3.1) over 10 days and 14 CY/truck = 470 / 14 / 10 = 3.4
Precaster Boom Truck	HHDT	1	Table 3.6
Concrete Truck	HHDT	4	Concrete trucks based on backfilling excavation with sand slurry mix over 3 days and 10 CY/truck. Excavated volume = 470 CY. Vault volume = 5 vaults (Table 3.5) x 10 ft. wide x 20 ft. long x 9.5 ft. deep (Section 3.2.4.4) / 27 cu. ft./CY = 352 CY. Number trucks = (470 CY - 352 CY) / 10 CY/truck / 3 days = 3.9
Crew Pickup Truck	Passenger	1	Table 3.6
Worker Commute	Passenger	5	Table 3.6
Distribution Gateways Trenching			
Dump Truck	HHDT	7	Dump trucks based on hauling 865 CY over 10 days (Table 3.1) and 14 CY/truck = 865 / 14 / 10 = 6.2
Water Truck	HHDT	1	Table 3.6
Gang Truck	HHDT	1	Table 3.6
Conduit Vendor Truck	HHDT	1	Table 3.6
Concrete Truck	HHDT	9	Assumed same as dump trucks.
Crew Pickup Truck	Delivery	1	Table 3.6
Worker Commute	Passenger	9	Table 3.6
Distribution Relocation of Existing Facilities, Location 1			
Line Truck	HHDT	1	Table 3.6
Pick-up Truck	Delivery	1	Table 3.6
Worker Commute	Passenger	4	Table 3.6
Distribution Relocation of Existing Facilities, Location 2			
Line Truck	HHDT	1	Table 3.6
Pick-up Truck	Delivery	1	Table 3.6
Worker Commute	Passenger	4	Table 3.6
Distribution Relocation of Existing Facilities, Location 3			
Line Truck	HHDT	2	Table 3.6
Pick-up Truck	Delivery	2	Table 3.6
Worker Commute	Passenger	8	Table 3.6
Distribution Relocation of Existing Facilities, Location 4			

Table C-1 Motor Vehicle Categories and Numbers

Vehicle	Category[1]	Number	Basis for Number[2]
Line Truck	HHDT	1	Table 3.6
Pick-up Truck	Delivery	1	Table 3.6
Worker Commute	Passenger	4	Table 3.6
Distribution Relocation of Existing Facilities, Location 5			
Rodder Truck	HHDT	1	Table 3.6
Reel Truck	HHDT	1	Table 3.6
Line Truck	HHDT	2	Table 3.6
Pick-up Truck	Delivery	3	Table 3.6
Worker Commute	Passenger	5	Table 3.6
Distribution Relocation of Existing Facilities, Location 6			
Rodder Truck	HHDT	1	Table 3.6
Reel Truck	HHDT	1	Table 3.6
Line Truck	HHDT	2	Table 3.6
Pick-up Truck	Delivery	2	Table 3.6
Concrete Truck	HHDT	1	Table 3.6
Dump Truck	HHDT	1	Table 3.6
Worker Commute	Passenger	7	Table 3.6
Operations			
Subtransmission Line Inspection	Passenger	1	Section 3.12
Substation Site Visit	Passenger	1	Section 3.12

Notes:
CY = cubic yards; MEER = Mechanical and Electrical Equipment Room; TSP = Tubular Steel Pole; ft. = feet; in. = inch, OD = outside diameter; PVC = polyvinyl chloride

[1] Category is used to assign emission factors. 'Passenger' is passenger vehicles in Table 58 in the attached tables, and is used for all gasoline-fueled vehicles. 'Delivery' is delivery vehicles in Table 58 in the attached tables, and is used for diesel-fueled vehicles except for heavy, heavy duty diesel-fueled trucks. 'HHDT' is heavy, heavy-duty diesel-fueled trucks in Table 59 in attached tables.

[2] Table and section numbers refer to tables and sections in PEA Chapter 3, Project Description.

Table C-2 Motor Vehicle Daily Vehicle-Miles Traveled

Vehicle	On-site Daily VMT (mi)[1]	Off-site Daily VMT (mi)			Notes
		P[2]	U[2]	T[2]	
Substation Survey					
Survey Truck	1	60	0	60	Survey company assumed to be within 30 mi of substation
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Substation Temporary Power Pole Installation					
Work Truck	0.5	0	0	0.5	Work truck stays on site
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Substation Grading					
Water Truck	2	10	0	10	Water supply within 5 mi
Tool Truck	1	0.2	0	0.2	Travel from staging area # 3
Pickup 4x4	1	0.2	0	0.2	Travel from staging area # 3
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Substation Soil Import/Export					
Dump Truck - Import	0.1	10	0	10.1	Soil supply within 10 mi
Dump Truck - Export	0.1	2	0	2	Export to Rialto Landfill
Substation Fencing					
Flatbed Truck	2	0.2	0	0.2	Travel from staging area # 3
Crewcab Truck	1	0.2	0	0.2	Travel from staging area # 3
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Substation Civil					
Dump Truck	1	60	0	60	Borrow/disposal sites within 30 mi
Water Truck	1	10	0	10	Water supply within 5 mi
Tool Truck	1	0.2	0	0.2	Travel from staging area # 3
Concrete Truck	0.1	60	0	60	Concrete supplier within 30 mi
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Substation MEER					
Carry-all Truck	0.2	0.2	0	0.2	Travel from staging area # 3
Stake Truck	0.2	0.2	0	0.2	Travel from staging area # 3
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Substation Electrical					

Table C-2 Motor Vehicle Daily Vehicle-Miles Traveled

Vehicle	On-site Daily VMT (mi)[1]	Off-site Daily VMT (mi)			Notes
		P[2]	U[2]	T[2]	
Crew Truck	0.2	0.2	0	0.2	Travel from staging area # 3
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Substation Wiring					
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Substation Transformers					
Crew Truck	0.2	0.2	0	0.2	Travel from staging area # 3
Low Bed Truck	0.2	0.2	0	0.2	Travel from staging area # 3
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Substation Maintenance Crew Equipment Check					
Maintenance Truck	0.5	0.2	0	0.2	Travel from staging area # 3
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Substation Testing					
Crew Truck	0.5	0.2	0	0.2	Travel from staging area # 3
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Substation Asphalting					
Stake Truck	0.5	0	0	0	Stake truck stays on site
Dump Truck	0.5	0	0	0	Dump truck stays on site
Crew Truck	0.5	0.2	0	0.2	Travel from staging area # 3
Asphalt Delivery Truck	0.1	60	0	60	Asphalt supplier within 30 mi
Aggregate Base Delivery Truck	0.1	60	0	60	Aggregate supplier within 30 mi
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Substation Landscaping					
Dump Truck	0.2	0	0	0	Dump truck stays on site
Crushed Rock Delivery Truck	0.2	60	0	60	Crushed rock supply within 30 mi
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Alder Substation Modification Fencing					
Flatbed Truck	0.2	12	0	12	Assumed 6 mi from staging area
Crewcab Truck	0.2	12	0	12	Assumed 6 mi from staging area
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi

Table C-2 Motor Vehicle Daily Vehicle-Miles Traveled

Vehicle	On-site Daily VMT (mi)[1]	Off-site Daily VMT (mi)			Notes
		P[2]	U[2]	T[2]	
Alder Substation Modification Civil					
Dump Truck	0.2	60	0	60	Borrow/disposal sites within 30 mi
Water Truck	0.2	10	0	10	Water supply within 5 mi
Tool Truck	0.2	12	0	12	Assumed 6 mi from staging area
Concrete Truck	0.2	60	0	60	Concrete supplier within 30 mi
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Alder Substation Modification Electrical					
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Alder Substation Modification Wiring					
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Alder Substation Modification Maintenance Crew Equipment Check					
Maintenance Trucks	0.5	12	0	12	Assumed 6 mi from staging area
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Alder Substation Modification Testing					
Crew Truck	0.1	12	0	12	Assumed 6 mi from staging area
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Alder Substation Modification Asphalting					
Stake Truck	0.1	0	0	0	Stake truck stays on site
Dump Truck	0.1	0	0	0	Dump truck stays on site
Crew Truck	0.1	12	0	12	Assumed 6 mi from staging area
Asphalt Delivery Truck	0.1	60	0	60	Asphalt supplier within 30 mi
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Etiwanda Substation Modification Civil					
Dump Truck	0.1	60	0	60	Borrow/disposal sites within 30 mi
Water Truck	0.1	10	0	10	Water supply within 5 mi
Tool Truck	0.2	4	0	4	Assumed 2 mi from staging area
Concrete Truck	0.2	60	0	60	Concrete supplier within 30 mi
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Etiwanda Substation Modification Electrical					
Crew Truck	0.2	4	0	4	Assumed 2 mi from staging area

Table C-2 Motor Vehicle Daily Vehicle-Miles Traveled

Vehicle	On-site Daily VMT (mi)[1]	Off-site Daily VMT (mi)			Notes
		P[2]	U[2]	T[2]	
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Etiwanda Substation Modification Wiring					
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Etiwanda Substation Modification Maintenance Crew Equipment Check					
Maintenance Trucks	0.5	4	0	4	Travel from staging area # 6
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Etiwanda Substation Modification Testing					
Crew Truck	0.5	4	0	4	Assumed 2 mi from staging area
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line Survey					
1-Ton Truck, 4X4	0	24	4	28	Assumed 12 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line Staging Area					
1-Ton Crewcab, 4X4	10	0	0	0	Traveling on site 25% of 4 hr/day at 10 mph
Truck, Semi Tractor	5	0	0	0	Traveling on site 25% of 2 hr/day at 10 mph
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line Road Work					
Water Truck	1	10	4	14	Assumed 5 mi from water supply; 4 mi/day in ROW
1-Ton Crewcab, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Lowboy Truck/Trailer	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line Guard Structure Installations					
3/4-Ton Truck, 4X4	0	14	1	15	Assumed 7 mi from staging area; 1 mi/day in ROW
1-Ton Crewcab, 4X4	0	14	1	15	Assumed 7 mi from staging area; 1 mi/day in ROW
Extendable Flat Bed Pole Truck	0	14	1	15	Assumed 7 mi from staging area; 1 mi/day in ROW

Table C-2 Motor Vehicle Daily Vehicle-Miles Traveled

Vehicle	On-site Daily VMT (mi)[1]	Off-site Daily VMT (mi)			Notes
		P[2]	U[2]	T[2]	
Auger Truck	0	14	1	15	Assumed 7 mi from staging area; 1 mi/day in ROW
Bucket Truck	0	14	1	15	Assumed 7 mi from staging area; 1 mi/day in ROW
Boom/Crane Truck	0	14	1	15	Assumed 7 mi from staging area; 1 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line Wood/LWS Pole Removal					
1-Ton Crewcab, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Bucket Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Flat Bed Pole Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Boom/Crane Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line Install TSP Foundations					
Water Truck	0	10	4	14	Assumed 5 mi from water supply; 4 mi/day in ROW
1-Ton Crewcab, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Dump Truck	0	60	4	64	Assumed disposal site 30 mi away; 4 mi/day in ROW
Concrete Truck	0	60	4	64	Assumed concrete supplier 30 mi away; 4 mi/day in ROW
Boom/Crane Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Auger Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line TSP Haul					
3/4–Ton Truck, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Boom/Crane Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW

Table C-2 Motor Vehicle Daily Vehicle-Miles Traveled

Vehicle	On-site Daily VMT (mi)[1]	Off-site Daily VMT (mi)			Notes
		P[2]	U[2]	T[2]	
Flat Bed Pole Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line TSP Assembly					
3/4–Ton Truck, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
1-Ton Crewcab, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Boom/Crane Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line TSP Erection					
3/4-Ton Truck, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
1-Ton Crewcab, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line Install Wood/LWS Poles					
Auger Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Bucket Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Boom/Crane Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
1-Ton Crewcab	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Extendable Flat Bed Pole Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line Install Conductor					
1-Ton Crewcab, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Bucket Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW

Table C-2 Motor Vehicle Daily Vehicle-Miles Traveled

Vehicle	On-site Daily VMT (mi)[1]	Off-site Daily VMT (mi)			Notes
		P[2]	U[2]	T[2]	
Boom/Crane Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Wire Truck Trailer	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Dump Truck	0	60	4	64	Assumed disposal site 30 mi away; 4 mi/day in ROW
3 Drum Sock Line Puller	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Bull Wheel Puller	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Static/Truck Tensioner	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Lowboy Truck/Trailer	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line Guard Structure Removal					
3/4-Ton Truck, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
1-Ton Crewcab, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Bucket Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Boom/Crane Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Extendable Flat Bed Pole Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line Restoration					
1-Ton Crewcab, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Water Truck	0	10	4	14	Assumed 5 mi from water supply; 4 mi/day in ROW
Lowboy Truck/Trailer	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line Vault Installation					

Table C-2 Motor Vehicle Daily Vehicle-Miles Traveled

Vehicle	On-site Daily VMT (mi)[1]	Off-site Daily VMT (mi)			Notes
		P[2]	U[2]	T[2]	
1-Ton Crewcab, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Dump Truck	0	60	4	64	Assumed disposal site 30 mi away; 4 mi/day in ROW
Water Truck	1	10	4	14	Assumed 5 mi from water supply; 4 mi/day in ROW
165-Ton Crane Truck	1	0	1	1	Assumed crane truck stays on site; 1 mi/day travel in ROW
Concrete Mixer Truck	0	60	4	64	Assumed concrete supplier 30 mi away; 4 mi/day in ROW
Lowboy Truck/Trailer	4	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Flatbed Truck/Trailer	4	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Subtransmission Source Line Duct Bank Installation					
1-Ton Crewcab, 4X4	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Dump Truck	0	60	4	64	Assumed disposal site 30 mi away; 4 mi/day in ROW
Pipe Truck/Trailer	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Water Truck	0	10	4	14	Assumed 5 mi from water supply; 4 mi/day in ROW
Concrete Mixer Truck	0	60	4	64	Assumed concrete supplier 30 mi away; 4 mi/day in ROW
Lowboy Truck/Trailer	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Telecommunications Cable Construction					
Bucket Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Pick-up Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Splicing Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW

Table C-2 Motor Vehicle Daily Vehicle-Miles Traveled

Vehicle	On-site Daily VMT (mi)[1]	Off-site Daily VMT (mi)			Notes
		P[2]	U[2]	T[2]	
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Telecommunications Vault and Duct Bank Installations					
Foreman Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Concrete Truck	0	60	4	64	Assumed concrete supplier 30 mi away; 4 mi/day in ROW
Dump Truck	0	60	4	64	Assumed disposal site 30 mi away; 4 mi/day in ROW
Water Truck	0	10	4	14	Assumed 5 mi from water supply; 4 mi/day in ROW
Crewcab Truck	0	14	4	18	Assumed 7 mi from staging area; 4 mi/day in ROW
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Distribution Gateways Vault Installation					
Dump Truck	0	60	1	61	Assumed disposal site 30 mi away; 0.5 mi unpaved to work area
Precaster Boom Truck	0	60	1	61	Assumed supplier 30 mi away; 0.5 mi unpaved to work area
Concrete Truck	0	60	1	61	Assumed supplier 30 mi away; 0.5 mi unpaved to work area
Crew Pickup Truck	0	14	1	14	Assumed 7 mi from staging area; 0.5 mi unpaved to work area
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Distribution Gateways Trenching					
Dump Truck	0	60	1	61	Assumed disposal site 30 mi away; 0.5 mi unpaved to work area
Water Truck	0	10	1	11	Assumed 5 mi from water supply; 0.5 mi unpaved to work area
Gang Truck	0	14	4	18	Assumed 7 mi from staging area; 0.5 mi unpaved to work area
Conduit Vendor Truck	0	14	4	18	Assumed 7 mi from staging area; 0.5 mi unpaved to work area
Concrete Truck	0	60	1	61	Assumed supplier 30 mi away; 0.5 mi unpaved to work area
Crew Pickup Truck	0	14	0	14	Assumed 7 mi from staging area; 0.5 mi unpaved to work area

Table C-2 Motor Vehicle Daily Vehicle-Miles Traveled

Vehicle	On-site Daily VMT (mi)[1]	Off-site Daily VMT (mi)			Notes
		P[2]	U[2]	T[2]	
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Distribution Relocation of Existing Facilities, Location 1					
Line Truck	0	14	0	14	Assumed 7 mi from staging area
Pick-up Truck	0	14	0	14	Assumed 7 mi from staging area
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Distribution Relocation of Existing Facilities, Location 2					
Line Truck	0	14	0	14	Assumed 7 mi from staging area
Pick-up Truck	0	14	0	14	Assumed 7 mi from staging area
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Distribution Relocation of Existing Facilities, Location 3					
Line Truck	0	14	0	14	Assumed 7 mi from staging area
Pick-up Truck	0	14	0	14	Assumed 7 mi from staging area
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Distribution Relocation of Existing Facilities, Location 4					
Line Truck	0	14	0	14	Assumed 7 mi from staging area
Pick-up Truck	0	14	0	14	Assumed 7 mi from staging area
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Distribution Relocation of Existing Facilities, Location 5					
Rodder Truck	0	14	0	14	Assumed 7 mi from staging area
Reel Truck	0	14	0	14	Assumed 7 mi from staging area
Line Truck	0	14	0	14	Assumed 7 mi from staging area
Pick-up Truck	0	14	0	14	Assumed 7 mi from staging area
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Distribution Relocation of Existing Facilities, Location 6					
Rodder Truck	0	14	0	14	Assumed 7 mi from staging area
Reel Truck	0	14	0	14	Assumed 7 mi from staging area
Line Truck	0	14	0	14	Assumed 7 mi from staging area
Pick-up Truck	0	14	0	14	Assumed 7 mi from staging area
Concrete Truck	0	60	0	60	Assumed supplier 30 mi away
Dump Truck	0	60	0	60	Assumed disposal site 30 mi away

Table C-2 Motor Vehicle Daily Vehicle-Miles Traveled

Vehicle	On-site Daily VMT (mi)[1]	Off-site Daily VMT (mi)			Notes
		P[2]	U[2]	T[2]	
Worker Commute	0	60	0	60	Workers assumed to be located within 30 mi
Operations					
Subtransmission Line Inspection	0	60	12	72	Trip origin within 30 mi; roundtrip along entire Subtransmission Source Line Routes (unpaved)
Substation Site Visit	0	60	0	60	Trip origin within 30 mi

Notes:
hr/day = hours per day; MEER = Mechanical and Electrical Equipment Room; mi = miles; mph = miles per hour; ROW = rights-of-way; TSP = Tubular Steel Poles; LWS = Light Weight Steel
[1] On-site travel estimated from site dimensions. All on-site travel is unpaved, except for Alder and Etiwanda Substations and subtransmission source line staging area
[2] P = off-site paved road/surface VMT; U = off-site unpaved road/surface VMT; T = total off-site VMT

2.4 Motor Vehicle Entrained Particulate Matter Emission Calculations

Motor vehicles entrain particulate matter from the surfaces on which they travel. The following equation was used to calculate daily entrained particulate matter emissions from each type of motor vehicle used during each construction phase and during operation for the Proposed Project:

$$E_{i,j,k} = EF_{i,j,k} \times VMT_{j,k} \times N_j \quad \text{(Eq. 4)}$$

where:

$E_{i,j,k}$ = Emissions of pollutant i (PM_{10} or $PM_{2.5}$) from motor vehicle type j traveling on surface type k (paved or unpaved) (pounds/day)

$EF_{i,j,k}$ = Emission factor for pollutant i from motor vehicle type j on surface type k (pounds/VMT)

$VMT_{j,k}$ = Daily VMT by motor vehicle type j on surface type k (miles/day)

N_j = Number of motor vehicles of type j

The following equation (EPA, 2006a) was used to calculate the emission factors for motor vehicles traveling on paved roads and surfaces:

$$EFi_{i,j,P} = k_{i,p} \times (sL / 2)^{0.65} \times (W_j/3)^{1.5} - C \quad \text{(Eq. 5)}$$

where:

$EF_{i,j,P}$ = Emission factor for pollutant i (PM_{10} or $PM_{2.5}$) from motor vehicle type j traveling on paved surfaces (pounds/VMT)

$k_{i,P}$ = Particle size multiplier for pollutant i

= 0.016 for PM_{10}

= 0.0024 for $PM_{2.5}$

sL = Surface silt loading (grams/square meter)

W_j = Average weight of vehicles traveling on the paved surface (tons)

C = Exhaust, brake wear and tire wear adjustment (pounds/VMT)

= 0.0047 for PM_{10}

= 0.00036 for $PM_{2.5}$

The paved road silt loading of 0.035 grams/square meter and the average on-road vehicle weight of 3.4 tons in San Bernardino County from CARB (1997) were used for the calculations.

The following equation (EPA, 2006b) was used to calculate the emission factors for motor vehicles traveling on unpaved roads and surfaces:

$$EF_{i,i,U} = k_{i,u} \times (s / 12)^{0.9} \times (W_j/3)^{0.45} \times (1 - CE_U / 100) \quad \text{(Eq. 6)}$$

where:

$EF_{i,j,U}$ = Emission factor for pollutant i (PM_{10} or $PM_{2.5}$) from motor vehicle type j traveling on unpaved surfaces (pounds/VMT)

$k_{i,u}$ = Particle size multiplier for pollutant i

= 1.5 for PM_{10}

= 0.15 for $PM_{2.5}$

s = Silt content of the unpaved surface (percent by weight)

W_j = Average weight of vehicles traveling on the unpaved surface (tons)

CE_U = Control efficiency for entrained particulate matter emissions from unpaved surfaces (percent)

The unpaved road silt content of 7.5 percent for overburden from the SCAQMD CEQA Handbook, (SCAQMD, 1993), Table A9-9-E-1, was used. Vehicle weights were estimated from the type of vehicle. The control efficiency of 57 percent from limiting

speeds on unpaved roads to 15 miles per hour (SCAQMD, 2007b) was used for the calculations.

Entrained particulate matter emission factors by type of vehicle and surface are provided in Table 62 in the attached tables. Estimated daily VMT on paved and unpaved surfaces by type of vehicle during each construction phase and during operation of the Proposed Project are listed in Table C-2, Motor Vehicle Daily Vehicle-Miles Traveled.

Motor vehicle entrained particulate matter emission calculations for construction and operation are provided in Tables 7 through 58 in the attached tables.

2.5 Earthwork Fugitive Particulate Matter Emission Calculations

Handling soil during excavation and grading generates fugitive particulate matter from soil dropping during transfers, wind erosion of temporary storage piles, and bulldozing, scraping and grading.

The following equation was used to calculate daily emissions from soil dropping during construction of the Proposed Project:

$$E_i = EF_i \times V_S \qquad \text{(Eq. 7)}$$

where:

E_i = Emissions of pollutant i (PM_{10} or $PM_{2.5}$) from soil dropping (pounds/day)

EF_i = Emission factor for pollutant i from soil dropping (pounds/cubic yard)

V_S = Volume of soil dropped (cubic yards/day)

The following equation (EPA, 2006c) was used to calculate the emission factor for fugitive particulate matter emissions from soil dropping:

$$EF_i = f_i \times 0.011 \times (WS / 5)^{1.3} / (M / 2)^{1.4} \times N_S \times D_S \times (1 - CE / 100) \qquad \text{(Eq. 8)}$$

where:

EF_i = Emission factor for fugitive particulate matter emissions from soil dropping

f_i = Mass fraction of pollutant i (PM_{10} or $PM_{2.5}$) in PM_{10} emissions from soil dropping

= 1 for PM_{10}

= 0.208 for $PM_{2.5}$ from SCAQMD (2006)

WS = Mean wind speed (miles/hour)

= 12 miles/hour from SCAQMD CEQA Air Quality Handbook (1993), Table 9-9-G

M = Soil moisture content (percent by weight)

= 3.7 percent average of near-surface soil samples from Proposed Substation Site geotechnical investigation

N_S = Number of times each cubic yard is dropped (number/day)

= 4 (assumption)

D_S = Soil density (tons/cubic yard)

= 1.47 tons/cubic yard average of near-surface soil samples from Proposed Substation Site preliminary geotechnical investigation

CE = Control efficiency (percent)

= 61 percent from watering three times per day from SCAQMD (2007c)

The following equation was used to calculate daily emissions from storage pile wind erosion during construction of the Proposed Project:

$$E_i = EF_i \times A_S \quad \text{(Eq. 9)}$$

where:

E_i = Emissions of pollutant i (PM_{10} or $PM_{2.5}$) from storage pile wind erosion (pounds/day)

EF_i = Emission factor for pollutant i from storage pile wind erosion (pounds/acre-day)

A_S = Exposed storage pile surface area (acres)

The following equation from the SCAQMD CEQA Air Quality Handbook (SCAQMD, 1993), Table 9-9-E, was used to calculate the emission factor for fugitive particulate matter emissions from storage pile wind erosion:

$$EF_i = f_i \times 0.85 \times (s / 1.5) \times (365 / 235) \times (P_W / 15) \times (1 - CE / 100) \quad \text{(Eq. 10)}$$

where:

EF_i = Emission factor for fugitive particulate matter emissions from storage pile wind erosion

f_i = Mass fraction of pollutant i (PM_{10} or $PM_{2.5}$) in PM_{10} emissions from storage pile wind erosion

= 1 for PM_{10}

= 0.208 for $PM_{2.5}$ from SCAQMD (2006)

s = Storage pile silt content (weight percent)

= 11.2 percent average of near-surface soil samples from Proposed Substation Site geotechnical investigation

P_W = Percent of time unobstructed wind speed exceeds 12 miles/hour

= 100 percent (conservative assumption)

CE = Control efficiency (percent)

= 90 percent from watering storage pile by hand at a rate of 1.4 gallons/hour-square yard (SCAQMD, 2007b)

The following equation was used to calculate daily emissions from bulldozing, scraping and grading during construction of the Proposed Project:

$$E_i = EF_i \times H_G \quad \text{(Eq. 11)}$$

where:

E_i = Emissions of pollutant i (PM_{10} or $PM_{2.5}$) from bulldozing, scraping and grading (pounds/day)

EF_i = Emission factor for pollutant i from bulldozing, scraping and grading [pounds/hour]

H_G = Daily bulldozing, scraping and grading duration (hours/day)

The following equation (EPA, 1998) was used to calculate the emission factor for fugitive particulate matter emissions from bulldozing, scraping and grading:

$$EF_i = f_i \times 0.75 \times s^{1.5} / M^{1.4} \times (1 - CE / 100) \quad \text{(Eq. 12)}$$

where:

EF_i = Emission factor for fugitive particulate matter emissions from bulldozing, scraping and grading

f_i = Mass fraction of pollutant i (PM_{10} or $PM_{2.5}$) in PM_{10} emissions from bulldozing, scraping and grading

= 1 for PM_{10}

= 0.208 for $PM_{2.5}$ from SCAQMD (2006)

s = Material silt content (weight percent)

= 11.2 percent average of near-surface soil samples from Proposed Substation Site geotechnical investigation

M = Material moisture content (weight percent)

= 3.7 percent average of near-surface soil samples from Proposed Substation Site geotechnical investigation

CE = Control efficiency (percent)

= 61 percent from watering three times per day from SCAQMD (2007c)

The emission factor calculations are presented in Table 63 in the attached tables.

The daily hours of bulldozing, scraping and grading were calculated from the construction equipment usage estimates provided in Table 3.6, Construction Equipment and Workforce Estimates, in Chapter 3, Project Description, of the PEA. Estimated daily volumes of soil handled and storage pile surface areas during construction phases that involve soil handling and temporary storage piles are listed in Table C-3, Estimated Soil Handling and Storage Pile Surface Areas by Construction Phase.

Earthwork fugitive particulate matter emission calculations for construction are provided in Tables 7 through 57 in the attached tables.

Table C-3 Estimated Soil Handling and Storage Pile Surface Areas by Construction Phase

Construction Phase	Type	Daily Amount	Basis[1]
Substation Grading	Soil Dropping	575 CY	23,000 CY total (Table 3.1) over 40 days
	Storage Piles	0.36 acres	250 CY in each of two cones 7.5 ft. tall x 64 ft. diameter
Substation Civil	Soil Dropping	45.5 CY	455 CY (Table 3.1) over 10 days
Subtransmission Roads	Soil Handling	4,620 CY	Excavating or backfilling and grading of 18 ft. wide x 18,480 ft. long x 1.5 ft. deep (Table 3.5) over 4 days
Subtransmission TSP Foundations Installation	Soil handling	22 CY	50 TSPs (Table 3.5) x 40 CY/TSP (Table 3.2) over 90 days
Subtransmission Wood Pole Installation	Soil Handling	13 CY	Excavate 250 poles Table 3.5), 4 ft. diameter x 10 ft. deep (Table 3.2) over 90 days
Subtransmission Vault	Soil	26 CY	4 vaults (Table 3.5), 20 ft. x 10 ft .x 9.5ft.

Table C-3 Estimated Soil Handling and Storage Pile Surface Areas by Construction Phase

Construction Phase	Type	Daily Amount	Basis[1]
Installation	Handling		(Section 3.2.4.4) plus 10 percent extra over 12 days
Subtransmission Duct Bank Installation	Soil Handling	75 CY	Excavate 600 CY over 8 days
Telecommunications Vault and Duct Bank Installation	Soil Handling	21 CY	Excavate 12 in. x 36 in. (Section 3.2.6) x 3,825 ft. (Table 3.5) over 20 days
Distribution Getaways Vault Installation	Soil Handling	94 CY	Excavate 470 CY (Table 3.1) over 5 days
Distribution Getaways Trenching	Soil Handling	43 CY	Excavate 865 CY (Table 3.1) over 20 days
Existing Facilities Relocation, Location 5	Soil Handling	111 CY	Excavate 20 in. wide x 54 in. deep x 800 ft. long (Section 3.2.7) over 2 days

Notes:
CY = cubic yards; TSP = Tubular Steel Poles; ft. = feet; in. = inches
[1] Table and section numbers refer to PEA Chapter 3, Project Description

2.6 Asphaltic Paving VOC Emission Calculations

Asphaltic paving generates VOC emissions as the asphalt cures. The following equation was used to calculate daily VOC emissions from asphaltic paving:

$$E = EF \times A_P \qquad \text{(Eq. 13)}$$

where:

E = VOC emissions from asphaltic paving (pounds/day)

EF = Emission factor for VOC from asphaltic paving (pounds/acre)

= 2.62 pounds/acre from URBEMIS 2007 User's Guide, Appendix A (URBEMIS, 2007)

A_P =Area paved (acres/day)

A total of 37,600 square feet (0.86 acres) would be paved over 10 days for the Proposed Substation and external driveway (see PEA Chapter 3, Project Description, Table 3.1, Substation Ground Improvements and Material Volumes), so the maximum area paved in a single day would be 0.086 acres. VOC emissions from asphaltic paving are calculated in Table 19 in the attached tables.

2.7 Equipment SF_6 Leakage GHG Emission Calculations

New circuit breakers installed at the Proposed Substation, the Alder Substation and the Etiwanda Substation and gas switches installed in the Proposed Distribution Getaways would be insulated with SF_6, which is a GHG. Leakage of SF_6 from the circuit breakers during operation of the Proposed Project would generate GHG emissions. The following equation was used to calculate GHG emissions from SF_6 leakage:

$$E = L / 100 \times M_{SF6} \times 23{,}200 \times 4.536 \times 10^{-4} \quad \text{(Eq. 14)}$$

where:

E = GHG emissions from SF_6 leakage (metric tons CO_2 equivalent/year)

L = SF_6 leakage rate (percent/year)

= 0.5 percent/year estimated by Southern California Edison (SCE)

M_{SF6} = SF_6 in new circuit breakers (pounds)

= 248 pounds, estimated by SCE

23,200 = SF_6 global warming potential

4.536×10^{-4} = Metric tons/pound conversion factor

GHG emissions from SF_6 leakage are calculated in Table 58 in the attached tables.

3.0 PEAK DAILY EMISSIONS CALCULATIONS

Peak daily emissions of VOC, CO, NOx, SOx, PM_{10} and $PM_{2.5}$ during construction and operation of the Proposed Project were calculated for comparison with the SCAQMD's mass emissions CEQA significance thresholds.

3.1 Peak Daily Construction Emission Calculations

The following steps were used to estimate peak daily emissions during construction of the Proposed Project:

- Daily emissions during each of the construction phases in Table 3.6, Construction Equipment and Workforce Estimates, in Chapter 3, Project Description, of the PEA were calculated using the procedures in Section 2, Emission Calculations. The calculations are provided in Tables 7 through 57 in the attached tables, and total daily emissions for each construction phase are listed in Table 1 in the attached tables.

- The maximum daily emissions that may occur during construction of each component of the Proposed Project (Proposed Substation, modifications to the

Alder and Etiwanda Substations, Proposed Subtransmission Source Line Routes, Proposed Telecommunication Facilities, Proposed Distribution Getaways and the Proposed relocation of existing facilities) were estimated as follows:

- Daily emissions during the construction phases for each component of the Proposed Project that may overlap were added together to estimate daily emissions during overlapping construction phases. Construction phases that may overlap are listed in Table C-4, Possible Overlapping Construction Phases.

- The highest daily emissions among the overlapping and non-overlapping construction phases for each component of the Proposed Project were then determined.

- Construction of the components of the Proposed Project may all occur at the same time. Therefore, peak daily emissions during simultaneous construction of the Proposed Project components were estimated by adding together the maximum daily emissions during construction of the individual components estimated in the previous step.

The peak daily construction emissions calculations are provided in Table 2 in the attached tables.

Table C-4 Possible Overlapping Construction Phases

Project Component	Overlapping Construction Phases
Substation Construction	Survey
	Temporary Power Pole Installation
	Grading, Soil Import/Export
	Fencing
	Civil
	MEER, Electrical, Wiring, Transformers
	Equipment Check, Testing
	Asphalting, Landscaping
Alder Substation Modifications	Civil
	Fencing, Electrical, Wiring, Asphalting
	Equipment Check, Testing
Etiwanda Substation Modifications	Civil
	Electrical, Wiring
	Equipment Check, Testing
Subtransmission Source Line Construction	Staging Area, Survey, Road Work, Install Wood/LWS Poles

Project Component	Overlapping Construction Phases
	Staging Area, Install TSP Foundations, TSP Haul, TSP Assembly, TSP Erection, Install Wood/LWS Poles, Vault Installation
	Staging Area, TSP Erection, Duct Bank Installation
	Staging Area, Guard Structure Installation
	Staging Area, Install Conductor
	Staging Area, Wood/LWS Pole Removal, Guard Structure Removal
	Staging Area, Restoration
Telecommunication Facilities Construction	Cable Construction, Vault and Duct Bank Installation
Distribution Getaways Construction	Vault Installation, Trenching
Distribution - Existing Facilities Relocation	Location 1, Location 2, Location 3, Location 4, Location 5, Location 6

Notes:

MEER = Mechanical and Electrical Equipment Room; LWS = Light Weight Steel;
TSP = Tubular Steel Poles

3.2 Peak Daily Operational Emission Calculations

During operation of the Proposed Project, motor vehicle exhaust and entrained paved road particulate matter emissions would be generated by motor vehicle travel for inspections of the Proposed Substation and Proposed Subtransmission Source Line Routes. Emissions from these activities were calculated using the procedures described in Section 2.2, Construction Equipment Exhaust Emission Calculations, and Section 2.3, Motor Vehicle Exhaust Emission Calculations. The calculations of peak daily emissions considered visits to inspect both the Proposed Substation and the Proposed Subtransmission Source Line Routes on the same day, to ensure that emissions were not underestimated. The peak daily operational emission calculations are provided in Table 58 in the attached tables.

4.0 TOTAL GREENHOUSE GAS EMISSION CALCULATIONS

GHG emissions during each construction phase and during operation of the Proposed Project were calculated using the procedures described in Section 2.2, Construction Equipment Exhaust Emission Calculations, Section 2.3, Motor Vehicle Exhaust Emission Calculations, and Section 2.7, Equipment SF_6 Leakage GHG Emission Calculations. The calculations are provided in Tables 7 through 58 in the attached tables. Total GHG emissions during construction and during each construction phase are listed in Table 6 in the attached Tables, and GHG emissions during project operation are in Table 58.

5.0 LOCALIZED IMPACTS ANALYSIS

The SCAQMD (2008b) has developed look-up tables that can be used to evaluate the potential for construction emissions to cause localized exceedances of the ambient air quality CEQA significance thresholds. This localized significance thresholds (LST) analysis consists of comparing maximum daily on-site CO, NOx, PM_{10}, and $PM_{2.5}$ emissions at individual locations with maximum allowable emissions obtained from the look-up tables. The maximum allowable emissions in the tables depend on the location within the South Coast Air Basin, the size (disturbed area) of the construction activities, and the distance from the construction site boundary to the nearest receptor. Receptors for the analysis include residences for PM_{10} and $PM_{2.5}$ and either residences or commercial locations for CO and NOx.

Daily on-site emissions during each construction phase were calculated using the procedures described in Section 2.0, Emission Calculations, for use in the LST analysis for impacts during construction of the Proposed Project. All construction equipment usage and fugitive particulate matter emissions from earthwork were assumed to occur on site. On-site motor vehicle travel estimates used to calculate on-site vehicle exhaust and entrained particulate matter emissions are listed in Table C-2, Motor Vehicle Daily Vehicle-Miles Traveled. Daily on-site construction emissions calculations are provided in Tables 7 through 57 in the attached tables, and total daily on-site emissions are listed by construction phase in Table 3 in the attached tables.

Maximum daily on-site emissions that could occur at a single location during construction of each of the components of the Proposed Project were used in the LST analysis. On-site emissions during construction of each of components of the Proposed Project except for construction of the Proposed Subtransmission Source Line Routes were assumed to occur at a single location each day. On-site emissions during construction of the Proposed Subtransmission Source Line Routes were divided by the number of separate locations at which construction activities for that phase of construction would occur during one day to calculate the emissions used in the analyses. The following information was used for this analysis:

- Guard Structure Installation: 5 structures per day (5 locations)
- Wood/Light Weight Steel (LWS) Pole Removal: 1 pole per day (1 location)
- Tubular Steel Pole (TSP) Foundations Installation: 1 foundation per day (1 location)
- LWS Pole Installation: 4 poles per day (4 locations)
- TSP Haul: 4 locations per day (4 locations)
- TSP Assembly: 1 pole per day (1 location)
- TSP Erection: 1 pole per day (1 location)

- Conductor Installation: 1 pull and 1 tension site per day (2 locations)
- Guard Structure Removal: 7 structures per day (7 locations)
- Vault Installation: 1 vault per day (1 location)
- Duct Bank Installation: 1 location per day

Emissions generated during Proposed Subtransmission Source Line Routes road work and restoration were not included in the analyses, since these emissions would occur over distances of approximately one mile each day, rather than at fixed locations. Daily on-site emissions at a single location for each construction phase and maximum daily on-site emissions during construction of each Proposed Project component are listed in Table 4 in the attached tables.

The SCAQMD look-up tables for the LST analysis list maximum daily allowable on-site emissions that will not cause LSTs to be exceeded for 1-, 2- and 5-acre construction sites and for receptor distances from the boundary of 25, 50, 100, 200 and 500 meters. The values for a 2-acre site were used for the analyses for the Proposed Substation construction, and the values for a 1-acre site were used for construction of the other Proposed Project components. Linear interpolation of the emissions in the look-up tables was used to calculate the maximum allowable emissions corresponding to the actual receptor distances. The analyses are shown in Table 5 in the attached tables.

Emissions during operation of the Proposed Project would be solely from motor vehicle travel to visit the Proposed Substation Site and to inspect the Proposed Subtransmission Source Lines. Since these emissions would not occur at a single location each day, they would not cause the localized significance thresholds to be exceeded.

6.0 REFERENCES

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Construction Emissions Summary

Total Daily Criteria Pollutant Emissions by Construction Phase

Phase	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Substation Construction						
Survey	0.27	2.57	0.26	0.00	1.26	0.11
Temporary Power Pole Installation	0.61	2.80	3.16	0.00	0.66	0.28
Grading	4.90	23.03	36.78	0.05	39.45	8.55
Soil Import/Export	2.45	11.76	26.15	0.04	13.13	2.68
Fencing	0.45	3.69	1.60	0.01	2.84	0.35
Civil	3.63	20.81	31.03	0.05	10.96	2.40
Substation MEER	0.27	2.56	0.27	0.00	0.73	0.06
Electrical	0.83	12.31	3.01	0.01	0.98	0.20
Wiring	0.29	2.60	0.35	0.00	0.37	0.03
Transformers	0.68	4.07	3.84	0.01	0.87	0.26
Maintenance Crew Equipment Check	0.18	1.71	0.17	0.00	0.97	0.09
Testing	0.09	0.86	0.09	0.00	0.39	0.03
Asphalting	4.57	18.09	29.88	0.05	5.38	1.76
Landscaping	1.31	7.17	9.47	0.02	2.34	0.55
Alder Substation Modifications Construction						
Fencing	0.30	2.21	1.59	0.00	0.25	0.10
Civil	2.03	12.70	15.47	0.03	1.35	0.90
Electrical	0.59	9.72	4.26	0.01	0.40	0.16
Wiring	0.09	0.85	0.09	0.00	0.12	0.01
Maintenance Crew Equipment Check	0.11	1.03	0.10	0.00	0.15	0.01
Testing	0.10	0.94	0.09	0.00	0.13	0.01
Asphalting	2.73	10.80	11.62	0.02	1.55	0.77
Etiwanda Substation Modifications Construction						
Civil	2.02	12.64	15.46	0.03	1.34	0.90
Electrical	0.36	8.85	1.20	0.00	0.32	0.08
Wiring	0.09	0.85	0.09	0.00	0.12	0.01
Maintenance Crew Equipment Check	0.10	0.91	0.09	0.00	0.13	0.01
Testing	0.09	0.88	0.09	0.00	0.13	0.01
Subtransmission Source Line Construction						
Survey	0.20	1.90	0.19	0.00	2.39	0.23
Staging Area	0.86	3.92	6.48	0.01	0.47	0.21
Road Work	3.25	13.22	27.51	0.04	42.13	8.36
Guard Structure Installation	2.70	11.98	23.49	0.04	6.02	1.32
Wood/LWS Pole Removal	2.16	9.65	18.68	0.03	14.37	2.03
Install TSP Foundations	2.86	13.52	25.28	0.05	33.53	4.17
TSP Haul	1.20	5.34	9.71	0.01	9.81	1.26
TSP Assembly	2.07	11.79	12.26	0.02	13.04	1.70
TSP Erection	1.72	11.34	7.89	0.02	9.27	1.27
Install Wood/ LWS Poles	3.21	16.76	24.78	0.05	18.85	2.62
Install Conductor	5.84	27.37	52.71	0.09	53.96	6.82
Guard Structure Removal	2.18	9.78	18.69	0.03	16.17	2.21
Restoration	2.22	9.84	18.07	0.03	25.17	4.19
Vault Installation	3.33	16.41	28.02	0.04	41.42	5.20
Duct Bank Installation	2.09	10.67	19.31	0.03	46.97	5.44
Telecommunications Construction						
Cable Construction	2.08	9.76	23.49	0.04	15.59	2.12
Vault and Duct Bank Installation	1.53	9.58	9.96	0.02	24.86	2.90
Distribution Getaways Construction						
Vault Installation	2.76	12.23	25.90	0.04	11.19	2.09
Trench	3.61	18.20	34.33	0.06	21.09	3.42

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Construction Emissions Summary

Total Daily Criteria Pollutant Emissions by Construction Phase

Phase	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Distribution - Existing Facilities Relocation						
Location 1	0.24	2.03	0.78	0.00	0.30	0.04
Location 2	0.24	2.03	0.78	0.00	0.30	0.04
Location 3	0.48	4.06	1.55	0.01	0.59	0.07
Location 4	0.24	2.03	0.78	0.00	0.30	0.04
Location 5	1.37	6.64	9.82	0.02	1.09	0.43
Location 6	1.12	6.98	6.70	0.01	1.05	0.42

Notes:
VOC = volatile organic compounds
CO = carbon monoxide
NOX = nitrogen oxides
SOX = sulfur oxides
PM10 = suspended particulate matter measuring less than 10 microns
PM2.5 = suspended particulate matter measuring less than 2.5 micron
lb/day = pounds per day
MEER = mechanical and electrical equipment room

Table 2
Construction Emissions Summary
Total Daily Criteria Pollutant Emissions for Overlapping Construction Phases

Group[a]	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Substation Construction						
Survey	0.3	2.6	0.3	0.0	1.3	0.1
Temporary Power Pole Installation	0.6	2.8	3.2	0.0	0.7	0.3
Grading, Soil Import/Export	7.3	34.8	62.9	0.1	52.6	11.2
Fencing	0.4	3.7	1.6	0.0	2.8	0.3
Civil	3.6	20.8	31.0	0.1	11.0	2.4
MEER, Electrical, Wiring, Transformers	2.1	21.6	7.5	0.0	2.9	0.5
Equipment Check, Testing	0.3	2.6	0.3	0.0	1.4	0.1
Asphalting, Landscaping	5.9	25.3	39.4	0.1	7.7	2.3
Maximum	**7.3**	**34.8**	**62.9**	**0.1**	**52.6**	**11.2**
Alder Substation Modifications Construction						
Civil	2.0	12.7	15.5	0.0	1.4	0.9
Fencing, Electrical, Wiring, Asphalting	3.7	23.6	17.6	0.0	2.3	1.0
Equipment Check, Testing	0.2	2.0	0.2	0.0	0.3	0.0
Maximum	**3.7**	**23.6**	**17.6**	**0.0**	**2.3**	**1.0**
Etiwanda Substation Modifications Construction						
Civil	2.0	12.6	15.5	0.0	1.3	0.9
Electrical, Wiring	0.4	9.7	1.3	0.0	0.4	0.1
Equipment Check, Testing	0.2	1.8	0.2	0.0	0.3	0.0
Maximum	**2.0**	**12.6**	**15.5**	**0.0**	**1.3**	**0.9**
Subtransmission Source Line Construction						
Staging Area, Survey, Road Work, Install Wood/LWS Poles	7.5	35.8	59.0	0.1	63.8	11.4
Staging Area, Install TSP Foundations, TSP Haul, TSP Assembly, TSP Erection, Install Wood/LWS Poles, Vault Installation	15.3	79.1	114.4	0.2	126.4	16.4
Staging Area, TSP Erection, Duct Bank Installation	4.7	25.9	33.7	0.1	56.7	6.9
Staging Area, Guard Structure Installation	3.6	15.9	30.0	0.1	6.5	1.5
Staging Area, Install Conductor	6.7	31.3	59.2	0.1	54.4	7.0
Staging Area, Wood/LWS Pole Removal, Guard Structure Removal	5.2	23.4	43.9	0.1	31.0	4.5
Staging Area, Restoration	3.1	13.8	24.5	0.0	25.6	4.4
Maximum	**15.3**	**79.1**	**114.4**	**0.2**	**126.4**	**16.4**
Telecommunications Construction						
Cable Construction, Vault and Duct Bank Installation	3.6	19.3	33.4	0.1	40.5	5.0
Maximum	**3.6**	**19.3**	**33.4**	**0.1**	**40.5**	**5.0**
Distribution Getaways Construction						
Vault Installation, Trenching	6.4	30.4	60.2	0.1	32.3	5.5
Maximum	**6.4**	**30.4**	**60.2**	**0.1**	**32.3**	**5.5**
Distribution - Existing Facilities Relocation						
Location 1, Location 2, Location 3, Location 4, Location 5, Location6	3.7	23.8	20.4	0.0	3.6	1.0
Maximum	**3.7**	**23.8**	**20.4**	**0.0**	**3.6**	**1.0**
PEAK DAILY[b]	**42.0**	**223.6**	**324.4**	**0.6**	**259.0**	**41.2**

[a] The construction phases within a group could all occur at the same time.

[b] Peak daily emissions are the sum of the maximum daily emissions during construction of the Substation, modifications to the Alder and Etiwanda Substations, Subtransmission Source Lines, Telecommunication Facilities, Distribution Getaways and Distribution Facilities Relocation.

Table 3
Construction Emissions Summary
Onsite Daily Criteria Pollutant Emissions by Construction Phase

Phase	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Substation Construction						
Survey	0.00	0.01	0.00	0.00	0.89	0.09
Temporary Power Pole Installation	0.52	1.95	3.07	0.00	0.54	0.28
Grading	4.52	19.53	36.17	0.04	38.95	8.51
Soil Import/Export	0.01	0.06	0.17	0.00	10.59	1.58
Fencing	0.18	1.13	1.34	0.00	2.48	0.33
Civil	1.77	10.74	13.48	0.02	8.95	1.65
Substation MEER	0.00	0.01	0.01	0.00	0.37	0.04
Electrical	0.38	8.05	2.58	0.00	0.37	0.16
Wiring	0.02	0.05	0.09	0.00	0.01	0.00
Transformers	0.50	2.37	3.67	0.00	0.62	0.25
Maintenance Crew Equipment Check	0.00	0.01	0.00	0.00	0.73	0.07
Testing	0.00	0.00	0.00	0.00	0.27	0.03
Asphalting	2.59	7.97	9.79	0.01	3.27	0.91
Landscaping	0.27	0.97	0.90	0.00	1.18	0.18
Alder Substation Modifications Construction						
Fencing	0.17	1.10	1.31	0.00	0.10	0.09
Civil	1.54	9.70	11.73	0.02	0.80	0.74
Electrical	0.41	8.02	4.09	0.01	0.16	0.14
Wiring	0.00	0.00	0.00	0.00	0.00	0.00
Maintenance Crew Equipment Check	0.00	0.01	0.00	0.00	0.00	0.00
Testing	0.00	0.00	0.00	0.00	0.00	0.00
Asphalting	2.36	7.95	9.74	0.01	1.09	0.69
Etiwanda Substation Modifications Construction						
Civil	1.54	9.69	11.72	0.02	0.80	0.74
Electrical	0.17	7.09	1.03	0.00	0.07	0.06
Wiring	0.00	0.00	0.00	0.00	0.00	0.00
Maintenance Crew Equipment Check	0.00	0.00	0.00	0.00	0.00	0.00
Testing	0.00	0.00	0.00	0.00	0.00	0.00
Subtransmission Source Line Construction						
Survey	0.00	0.00	0.00	0.00	0.00	0.00
Staging Area	0.68	2.21	6.31	0.01	0.23	0.20
Road Work	2.92	10.55	26.16	0.03	32.23	7.35
Guard Structure Installation	2.25	8.55	21.35	0.03	0.82	0.75
Wood/LWS Pole Removal	1.74	6.34	16.66	0.02	0.67	0.62
Install TSP Foundations	1.67	6.84	14.55	0.03	0.64	0.54
TSP Haul	0.93	3.18	8.54	0.01	0.31	0.29
TSP Assembly	1.26	4.48	10.53	0.01	0.49	0.45
TSP Erection	0.95	4.19	6.66	0.01	0.45	0.41
Install Wood/ LWS Poles	2.34	9.37	22.09	0.03	0.90	0.80
Install Conductor	4.24	15.65	43.82	0.06	1.48	1.36
Guard Structure Removal	1.74	6.34	16.66	0.02	0.67	0.62
Restoration	1.76	6.05	16.32	0.02	13.00	2.95
Vault Installation	2.07	9.30	16.66	0.02	1.84	0.89
Duct Bank Installation	0.47	2.37	3.07	0.00	0.45	0.27
Telecomminications Construction						
Cable Construction	1.67	6.54	21.43	0.03	0.63	0.58
Vault and Duct Bank Installation	0.63	3.17	4.12	0.01	1.31	0.41
Distribution Construction-Gateways						
Vault Installation	1.28	4.89	10.62	0.01	0.81	0.56
Trench	0.90	4.72	6.21	0.01	0.60	0.46
Distribution - Existing Facilities Relocation						
Location 1	0.00	0.00	0.00	0.00	0.00	0.00
Location 2	0.00	0.00	0.00	0.00	0.00	0.00
Location 3	0.00	0.00	0.00	0.00	0.00	0.00
Location 4	0.00	0.00	0.00	0.00	0.00	0.00

Table 3
Construction Emissions Summary
Onsite Daily Criteria Pollutant Emissions by Construction Phase

Phase	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Location 5	0.93	3.40	7.40	0.01	0.60	0.33
Location 6	0.56	2.82	3.65	0.00	0.31	0.28

Table 4
Construction Emissions Summary
Total Daily Onsite Criteria Pollutant Emissions for Overlapping Construction Phases

Group[a]	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Substation Construction						
Survey	0.00	0.01	0.00	0.00	0.89	0.09
Temporary Power Pole Installation	0.52	1.95	3.07	0.00	0.54	0.28
Grading	4.53	19.59	36.34	0.04	49.54	10.09
Fencing	0.18	1.13	1.34	0.00	2.48	0.33
Civil	1.77	10.74	13.48	0.02	8.95	1.65
MEER, Electrical, Wiring, Transformers	0.90	10.48	6.35	0.01	1.37	0.45
Equipment Check, Testing	0.00	0.01	0.00	0.00	0.99	0.10
Asphalting, Landscaping	2.86	8.94	10.69	0.01	4.45	1.08
Maximum	**4.53**	**19.59**	**36.34**	**0.04**	**49.54**	**10.09**
Alder Substation Modifications Construction						
Civil	1.54	9.70	11.73	0.02	0.80	0.74
Fencing, Electrical, Wiring, Asphalting	2.94	17.07	15.14	0.02	1.34	0.92
Equipment Check, Testing	0.00	0.01	0.00	0.00	0.00	0.00
Maximum	**2.94**	**17.07**	**15.14**	**0.02**	**1.34**	**0.92**
Etiwanda Substation Modifications Construction						
Civil	1.54	9.69	11.72	0.02	0.80	0.74
Electrical, Wiring	0.17	7.09	1.03	0.00	0.07	0.06
Equipment Check, Testing	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	**1.54**	**9.69**	**11.72**	**0.02**	**0.80**	**0.74**
Subtransmission Source Line Construction						
Survey	0.00	0.00	0.00	0.00	0.00	0.00
Staging Area	0.68	2.21	6.31	0.01	0.23	0.20
Guard Structure Installation	0.45	1.71	4.27	0.01	0.16	0.15
Wood/LWS Pole Removal	1.74	6.34	16.66	0.02	0.67	0.62
Install TSP Foundations	1.67	6.84	14.55	0.03	0.64	0.54
TSP Haul	0.23	0.79	2.13	0.00	0.08	0.07
TSP Assembly	1.26	4.48	10.53	0.01	0.49	0.45
TSP Erection	0.95	4.19	6.66	0.01	0.45	0.41
Install Wood/ LWS Poles	0.59	2.34	5.52	0.01	0.23	0.20
Install Conductor	2.12	7.83	21.91	0.03	0.74	0.68
Guard Structure Removal	0.25	0.91	2.38	0.00	0.10	0.09
Vault Installation	2.07	9.30	16.66	0.02	1.84	0.89
Duct Bank Installation	0.47	2.37	3.07	0.00	0.45	0.27
Maximum	**2.12**	**9.30**	**21.91**	**0.03**	**1.84**	**0.89**
Telecommunications Construction						
Cable Construction, Vault and Duct Bank Installation	2.30	9.71	25.56	0.04	1.94	0.98
Maximum	**2.30**	**9.71**	**25.56**	**0.04**	**1.94**	**0.98**
Distribution Getaways Construction						
Vault Installation, Trench	2.18	9.60	16.82	0.02	1.41	1.02

Table 4
Construction Emissions Summary
Total Daily Onsite Criteria Pollutant Emissions for Overlapping Construction Phases

Group[a]	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Distribution - Existing Facilities Relocation	**2.18**	**9.60**	**16.82**	**0.02**	**1.41**	**1.02**
Location 1	0.00	0.00	0.00	0.00	0.00	0.00
Location 2	0.00	0.00	0.00	0.00	0.00	0.00
Location 3	0.00	0.00	0.00	0.00	0.00	0.00
Location 4	0.00	0.00	0.00	0.00	0.00	0.00
Location 5	0.93	3.40	7.40	0.01	0.60	0.33
Location 6	0.56	2.82	3.65	0.00	0.31	0.28
Maximum	**0.93**	**3.40**	**7.40**	**0.01**	**0.60**	**0.33**

[a] The construction phases within a group could all occur at the same time at the same location.

The following Subtransmission Source Line construction activity emissions were divided by the following number of working locations per day:

Guard Structure Installation: 5 structures per day
Wood/LWS Pole Removal: 1 pole per day
TSP Foundations Installation: 1 foundation per day
LWS Pole Installation: 4 poles per day
TSP Haul: 4 locations per day
TSP Assembly: 1 pole per day
TSP Erection: 1 pole per day
Conductor Installation: 1 pull, and 1 tension site per day
Guard Structure Removal: 7 structures per day
Vault Installation: 1 vault per day
Duct Bank Installation: 1 location per day

[b] Road work and restoration were excluded from the LST analysis because these activities would occur over a distance of approximately 1 mile along the Proposed Subtransmission Source Line Route, instead of at a single location, each day.

Table 5
Construction Emissions
Localized Significance Threshold Analysis

Pollutant	Maximum Daily Onsite Emissions	Receptor Distance (m)	Allowable Emissions Interpolation[a]					
			Distance 1 (m)	Emissions 1 (lb/day)	Distance 2 (m)	Emissions 2 (lb/day)	Interpolated Emissions (lb/day)[b]	Allowable Exceeded?
Substation Construction[c]								
CO	20	38	25	972	50	1,463	1,227	No
NOx	36	38	25	170	50	200	186	No
PM10	50	152	100	42	200	83	63	No
PM2.5	10	152	100	12	200	26	19	No
Alder Substation Modification Construction[d]								
CO	17	235	200	5,356	500	21,708	7,264	No
NOx	15	235	200	334	500	652	371	No
PM10	1	500	500	196	500	196	196	No
PM2.5	1	500	500	98	500	98	98	No
Etiwanda Substation Modification Construction[d]								
CO	10	232	200	5,356	500	21,708	7,100	No
NOx	12	232	200	334	500	652	368	No
PM10	1	500	500	196	500	196	196	No
PM2.5	1	500	500	98	500	98	98	No
Subtransmission Source Line Construction[e]								
CO	9	25	25	667	25	667	667	No
NOx	22	25	25	118	25	118	118	No
PM10	2	25	25	4	25	4	4	No
PM2.5	1	25	25	3	25	3	3	No
Telecommunications Construction[e]								
CO	10	25	25	667	25	667	667	No
NOx	26	25	25	118	25	118	118	No
PM10	2	25	25	4	25	4	4	No
PM2.5	1	25	25	3	25	3	3	No
Distribution Getaways Construction[d]								
CO	10	127	100	2,141	200	5,356	3,009	No
NOx	17	127	100	211	200	334	244	No
PM10	1	206	200	74	500	196	76	No
PM2.5	1	206	200	23	500	98	25	No
Distribution - Existing Facilities Relocation[e]								
CO	3	25	25	667	25	667	667	No
NOx	7	25	25	118	25	118	118	No
PM10	1	25	25	4	25	4	4	No
PM2.5	0	25	25	3	25	3	3	No

[a] Allowable emissions are from Appendix C to Final Localized Significance Methodology, SCAQMD, revised October 2009, downloaded from http://www.aqmd.gov/ceqa/handbook/LST/LST.html

[b] Interpolated emissions = Emissions 1 + (Receptor distance - Distance 1) x (Emissions 2 - Emissions 1) / (Distance 2 - Distance 1)

[c] Closest receptor for CO and NOx is commercial. Closest receptor for PM10 and PM2.5 is a residence. Allowable emissions are for a 2 acre site

[d] Closest receptor for CO and NOx is commercial. Closest receptor for PM10 and PM2.5 is a residence. Allowable emissions are for a 1 acre site

[e] Closest receptor is a residence. Allowable emissions are for a 1 acre site

Table 6
Construction Emissions Summary
Total Greenhouse Gas Emissions by Construction Phase

Phase	CO2e (MT)
Substation Construction	
Survey	0.27
Temporary Power Pole Installation	2.88
Grading	84.28
Soil Import/Export	22.82
Fencing	3.66
Civil	73.73
Substation MEER	5.43
Electrical	35.04
Wiring	7.40
Transformers	8.86
Maintenance Crew Equipment Check	3.62
Testing	4.83
Asphalting	20.49
Landscaping	25.73
Alder Substation Modifications	
Fencing	0.48
Civil	16.14
Electrical	5.67
Wiring	0.30
Maintenance Crew Equipment Check	0.36
Testing	0.66
Asphalting	0.70
Etiwanda Substation Modifications	
Civil	23.59
Electrical	3.78
Wiring	0.60
Maintenance Crew Equipment Check	0.52
Testing	0.93
Subtransmission Source Line Construction	
Survey	1.47
Staging Area	188.35
Road Work	6.81
Guard Structure Installation	22.19
Wood/LWS Pole Removal	7.61
Install TSP Foundations	198.89
TSP Haul	8.27
TSP Assembly	50.59
TSP Erection	36.82
Install Wood/ LWS Poles	133.15
Install Conductor	204.66
Guard Structure Removal	10.22
Restoration	13.98
Vault Installation	22.91
Duct Bank Installation	11.20
Telecomminications Construction	
Cable Construction	37.72
Vault and Duct Bank Installation	12.81
Distribution Construction-Gateways	

Table 6
Construction Emissions Summary
Total Greenhouse Gas Emissions by Construction Phase

Phase	CO2e (MT)
Vault Installation	10.00
Trench	26.93
Distribution Construction- Relocation of Existing Facilities	
Location 1	0.16
Location 2	0.16
Location 3	0.99
Location 4	0.16
Location 5	1.68
Location 6	1.13
TOTAL	**1,361.66**

Table 7
Substation Construction Emissions
Survey

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.01	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.89	0.09	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.89**	**0.09**	**0.0**
Offsite Motor Vehicle Exhaust	0.27	2.55	0.26	0.00	0.03	0.02	1.1
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.33	0.00	
Offsite Total	**0.27**	**2.55**	**0.26**	**0.00**	**0.36**	**0.02**	**1.1**
Total	**0.27**	**2.57**	**0.26**	**0.00**	**1.26**	**0.11**	**1.1**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Survey Truck	2	6	N/A	1
Offsite				
Survey Truck	2	6	N/A	60
Worker Commute	4	6	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Survey Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Survey Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 7
Substation Construction Emissions
Survey

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Survey Truck	0.00	0.01	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Survey Truck	0.09	0.85	0.09	0.00	0.01	0.01
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.27**	**2.55**	**0.26**	**0.00**	**0.03**	**0.02**
Total	**0.27**	**2.57**	**0.26**	**0.00**	**0.03**	**0.02**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Survey Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Survey Truck	0.4	0.0	0.4
Worker Commute	0.7	0.0	0.7
Offsite Total	**1.1**	**0.0**	**1.1**
Total	**1.1**	**0.0**	**1.1**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Survey Truck	2	Unpaved	1	0.447	0.045	0.89	0.09
Onsite Total						**0.89**	**0.09**
Offsite							
Survey Truck	2	Paved	60	0.001	0.000	0.11	0.00
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**0.33**	**0.00**
Total						**1.23**	**0.09**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 8
Substation Construction Emissions
Temporary Power Pole Installation

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.52	1.94	3.07	0.00	0.27	0.25	0.5
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.27	0.03	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.52**	**1.95**	**3.07**	**0.00**	**0.54**	**0.28**	**0.5**
Offsite Motor Vehicle Exhaust	0.09	0.85	0.09	0.00	0.01	0.01	2.4
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.11	0.00	
Offsite Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.12**	**0.01**	**2.4**
Total	**0.61**	**2.80**	**3.16**	**0.00**	**0.66**	**0.28**	**2.9**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Auger	75	1	4	4

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Auger	75	0.129	0.486	0.769	0.001	0.068	0.062	65.811	0.012	Crawler Tractors

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Auger	0.52	1.94	3.07	0.00	0.27	0.25
Total	**0.52**	**1.94**	**3.07**	**0.00**	**0.27**	**0.25**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Auger	0.5	0.0	0.5
Total	**0.5**	**0.0**	**0.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 8
Substation Construction Emissions
Temporary Power Pole Installation

Motor Vehicle Usage

Vehicle	Number[a]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Work Truck	1	4	N/A	0.5
Offsite				
Worker Commute	2	40	N/A	60

[a] Dump trucks based on approx 5,000 CY import and 2,000 CY export over 40 days and 10 CY/truck = 7,000 / 40 / 10 = 17.5

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Work Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Work Truck	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Worker Commute	0.09	0.85	0.09	0.00	0.01	0.01
Offsite Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.01**	**0.01**
Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.01**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Work Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Worker Commute	2.4	0.0	2.4
Offsite Total	**2.4**	**0.0**	**2.4**
Total	**2.4**	**0.0**	**2.4**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 8
Substation Construction Emissions
Temporary Power Pole Installation

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Work Truck	1	Unpaved	0.5	0.532	0.053	0.27	0.03
Onsite Total						**0.27**	**0.03**
Offsite							
Worker Commute	2	Paved	60	0.001	0.000	0.11	0.00
Offsite Total						**0.11**	**0.00**
Total						**0.38**	**0.03**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 9
Substation Construction Emissions
Grading

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	4.50	19.44	35.94	0.04	1.86	1.71	73.6
Onsite Motor Vehicle Exhaust	0.02	0.09	0.23	0.00	0.01	0.01	0.3
Onsite Motor Vehicle Fugitive PM	--	--	--	--	8.55	0.85	
Earthwork Fugitive PM	--	--	--	--	28.53	5.93	
Onsite Total	**4.52**	**19.53**	**36.17**	**0.04**	**38.95**	**8.51**	**73.9**
Offsite Motor Vehicle Exhaust	0.38	3.50	0.62	0.01	0.06	0.04	10.4
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.45	0.00	
Offsite Total	**0.38**	**3.50**	**0.62**	**0.01**	**0.51**	**0.04**	**10.4**
Total	**4.90**	**23.03**	**36.78**	**0.05**	**39.45**	**8.55**	**84.3**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Dozer	305	1	40	4
Loader	147	2	40	4
Scraper	267	1	40	4
Grader	110	1	40	6
4x4 Backhoe	79	2	40	2
4x4 Tamper	174	1	40	2

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Dozer	305	0.254	0.950	2.239	0.003	0.087	0.080	259.229	0.023	Crawler Tractors
Loader	147	0.124	0.627	0.950	0.001	0.054	0.049	106.315	0.011	Rubber Tired Loaders
Scraper	267	0.319	1.211	2.829	0.003	0.110	0.101	321.429	0.029	Scrapers
Grader	110	0.125	0.531	0.773	0.001	0.068	0.062	74.965	0.011	Graders
4x4 Backhoe	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes
4x4 Tamper	174	0.094	0.587	0.801	0.001	0.042	0.039	106.516	0.008	Other Construction Equipment

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Dozer	1.02	3.80	8.96	0.01	0.35	0.32
Loader	0.99	5.02	7.60	0.01	0.43	0.39
Scraper	1.27	4.85	11.32	0.01	0.44	0.40
Grader	0.75	3.19	4.64	0.01	0.41	0.37
4x4 Backhoe	0.28	1.41	1.83	0.00	0.15	0.14
4x4 Tamper	0.19	1.17	1.60	0.00	0.08	0.08
Total	**4.50**	**19.44**	**35.94**	**0.04**	**1.86**	**1.71**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Dozer	18.8	0.0	18.8
Loader	15.4	0.0	15.5
Scraper	23.3	0.0	23.4
Grader	8.2	0.0	8.2
4x4 Backhoe	7.7	0.0	7.7
4x4 Tamper	0.0	0.0	0.0
Total	**73.5**	**0.0**	**73.6**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]

Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 9
Substation Construction Emissions
Grading

Motor Vehicle Usage

Vehicle	Number[a]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Water Truck	1	40	N/A	2
Tool Truck	1	40	N/A	1
Pickup 4x4	1	40	N/A	1
Dump Truck	63	8	N/A	0.1
Offsite				
Water Truck	1	40	N/A	10
Tool Truck	1	40	N/A	0.2
Pickup 4x4	1	40	N/A	0.2
Worker Commute	8	40	N/A	60

[a] Dump trucks based on approx 5,000 CY import and 2,000 CY export over 40 days and 10 CY/truck = 7,000 / 40 / 10 = 17.5

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Tool Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Pickup 4x4	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Offsite									
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Tool Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Water Truck	0.00	0.02	0.05	0.00	0.00	0.00
Tool Truck	0.00	0.01	0.00	0.00	0.00	0.00
Pickup 4x4	0.00	0.01	0.00	0.00	0.00	0.00
Dump Truck	0.01	0.06	0.17	0.00	0.01	0.01
Onsite Total	**0.02**	**0.09**	**0.23**	**0.00**	**0.01**	**0.01**
Offsite						
Water Truck	0.02	0.09	0.27	0.00	0.01	0.01
Tool Truck	0.00	0.00	0.00	0.00	0.00	0.00
Pickup 4x4	0.00	0.00	0.00	0.00	0.00	0.00
Worker Commute	0.36	3.40	0.34	0.01	0.04	0.03
Offsite Total	**0.38**	**3.50**	**0.62**	**0.01**	**0.06**	**0.04**
Total	**0.40**	**3.59**	**0.85**	**0.01**	**0.07**	**0.05**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Water Truck	0.2	0.0	0.2
Tool Truck	0.0	0.0	0.0
Pickup 4x4	0.0	0.0	0.0
Dump Truck	0.1	0.0	0.1
Onsite Total	**0.3**	**0.0**	**0.3**
Offsite			
Water Truck	0.8	0.0	0.8
Tool Truck	0.0	0.0	0.0
Pickup 4x4	0.0	0.0	0.0
Worker Commute	9.6	0.0	9.6
Offsite Total	**10.4**	**0.0**	**10.4**
Total	**10.6**	**0.0**	**10.7**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 9
Substation Construction Emissions
Grading

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Water Truck	1	Unpaved	2	0.922	0.092	1.84	0.18
Tool Truck	1	Unpaved	1	0.447	0.045	0.45	0.04
Pickup 4x4	1	Unpaved	1	0.447	0.045	0.45	0.04
Dump Truck	63	Unpaved	0.1	0.922	0.092	5.81	0.58
Onsite Total						**8.55**	**0.85**
Offsite							
Water Truck	1	Paved	10	0.001	0.000	0.01	0.00
Tool Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Pickup 4x4	1	Paved	0.2	0.001	0.000	0.00	0.00
Worker Commute	8	Paved	60	0.001	0.000	0.44	0.00
Offsite Total						**0.45**	**0.00**
Total						**9.00**	**0.85**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling[c]	CY/day	575	2.75E-03	5.72E-04	1.58	0.33
Bulldozing, Scraping and Grading	hr/day	14	1.756	0.365	24.58	5.11
Storage Pile Wind Erosion[d]	acres	0.36	6.6	1.37	2.37	0.49
Total					**28.53**	**5.93**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

[c] Peak daily estimated from total of 10,000 CY cut and 13,000 CY fill over 40 days

[d] Based on 250 CY in each of two cones 7.5 ft. tall x 64 ft. diameter

Table 10
Substation Construction Emissions
Soil Import/Export

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.01	0.06	0.17	0.00	0.01	0.01	0.1
Onsite Motor Vehicle Fugitive PM	--	--	--	--	5.81	0.58	
Earthwork Fugitive PM	--	--	--	--	4.77	0.99	
Onsite Total	**0.01**	**0.06**	**0.17**	**0.00**	**10.59**	**1.58**	**0.1**
Offsite Motor Vehicle Exhaust	2.43	11.70	25.97	0.04	1.29	1.10	22.7
Offsite Motor Vehicle Fugitive PM	--	--	--	--	1.25	0.00	
Offsite Total	**2.43**	**11.70**	**25.97**	**0.04**	**2.54**	**1.10**	**22.7**
Total	**2.45**	**11.76**	**26.15**	**0.04**	**13.13**	**2.68**	**22.8**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Crawler Tractors

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 10
Substation Construction Emissions
Soil Import/Export

Motor Vehicle Usage

Vehicle	Number[a]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Dump Truck	63	8	N/A	0.1
Offsite				
Dump Truck - Import	45	8	N/A	20
Dump Truck - Export	18	8	N/A	2
Worker Commute	7	40	N/A	60

[a] Import dump trucks based on approx 5,000 CY import over 8 days and 14 CY/truck = 5,000 / 8 / 14 = 44.6
Export dump trucks based on approx 2,000 CY export over 8 days and 14 CY/truck = 2,000 / 8 / 14 = 17.9

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Offsite									
Dump Truck - Import	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Dump Truck - Export	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Dump Truck	0.01	0.06	0.17	0.00	0.01	0.01
Onsite Total	**0.01**	**0.06**	**0.17**	**0.00**	**0.01**	**0.01**
Offsite						
Dump Truck - Import	2.04	8.39	24.69	0.04	1.20	1.03
Dump Truck - Export	0.08	0.34	0.99	0.00	0.05	0.04
Worker Commute	0.31	2.98	0.30	0.00	0.04	0.02
Offsite Total	**2.43**	**11.70**	**25.97**	**0.04**	**1.29**	**1.10**
Total	**2.45**	**11.76**	**26.15**	**0.04**	**1.30**	**1.10**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Dump Truck	0.1	0.0	0.1
Onsite Total	**0.1**	**0.0**	**0.1**
Offsite			
Dump Truck - Import	13.8	0.0	13.8
Dump Truck - Export	0.6	0.0	0.6
Worker Commute	8.4	0.0	8.4
Offsite Total	**22.7**	**0.0**	**22.7**
Total	**22.8**	**0.0**	**22.8**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x
days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 10
Substation Construction Emissions
Soil Import/Export

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Dump Truck	63	Unpaved	0.1	0.922	0.092	5.81	0.58
Onsite Total						**5.81**	**0.58**
Offsite							
Dump Truck - Import	45	Paved	20	0.001	0.000	0.83	0.00
Dump Truck - Export	18	Paved	2	0.001	0.000	0.03	0.00
Worker Commute	7	Paved	60	0.001	0.000	0.39	0.00
Offsite Total						**1.25**	**0.00**
Total						**7.06**	**0.58**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling[c]	CY/day	875	2.75E-03	5.72E-04	2.41	0.50
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion[d]	acres	0.36	6.6	1.37	2.37	0.49
Total					**4.77**	**0.99**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

[c] Peak daily estimated from total of 7,000 CY import/export over 8 days

[d] Based on 250 CY in each of two cones 7.5 ft. tall x 64 ft. diameter

Table 11
Substation Construction Emissions
Fencing

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.17	1.10	1.31	0.00	0.10	0.09	1.1
Onsite Motor Vehicle Exhaust	0.00	0.04	0.03	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	2.38	0.24	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.18**	**1.13**	**1.34**	**0.00**	**2.48**	**0.33**	**1.1**
Offsite Motor Vehicle Exhaust	0.27	2.56	0.26	0.00	0.03	0.02	2.5
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.33	0.00	
Offsite Total	**0.27**	**2.56**	**0.26**	**0.00**	**0.37**	**0.02**	**2.5**
Total	**0.45**	**3.69**	**1.60**	**0.01**	**2.84**	**0.35**	**3.7**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Bobcat	75	1	14	4

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Bobcat	75	0.043	0.275	0.327	0.001	0.024	0.022	42.762	0.004	Skid Steer Loaders

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Bobcat	0.17	1.10	1.31	0.00	0.10	0.09
Total	**0.17**	**1.10**	**1.31**	**0.00**	**0.10**	**0.09**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Bobcat	1.1	0.0	1.1
Total	**1.1**	**0.0**	**1.1**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Flatbed Truck	1	14	N/A	2
Crewcab Truck	1	14	N/A	1
Offsite				
Flatbed Truck	1	14	N/A	0.2
Crewcab Truck	1	14	N/A	0.2
Worker Commute	6	14	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Flatbed Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Crewcab Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Flatbed Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Crewcab Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 11
Substation Construction Emissions
Fencing

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Flatbed Truck	0.00	0.03	0.03	0.00	0.00	0.00
Crewcab Truck	0.00	0.01	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.04**	**0.03**	**0.00**	**0.00**	**0.00**
Offsite						
Flatbed Truck	0.00	0.00	0.00	0.00	0.00	0.00
Crewcab Truck	0.00	0.00	0.00	0.00	0.00	0.00
Worker Commute	0.27	2.55	0.26	0.00	0.03	0.02
Offsite Total	**0.27**	**2.56**	**0.26**	**0.00**	**0.03**	**0.02**
Total	**0.27**	**2.59**	**0.29**	**0.00**	**0.03**	**0.02**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Flatbed Truck	0.0	0.0	0.0
Crewcab Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Flatbed Truck	0.0	0.0	0.0
Crewcab Truck	0.0	0.0	0.0
Worker Commute	2.5	0.0	2.5
Offsite Total	**2.5**	**0.0**	**2.5**
Total	**2.6**	**0.0**	**2.6**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Flatbed Truck	1	Unpaved	2	0.922	0.092	1.84	0.18
Crewcab Truck	1	Unpaved	1	0.532	0.053	0.53	0.05
Onsite Total						**2.38**	**0.24**
Offsite							
Flatbed Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Crewcab Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Worker Commute	6	Paved	60	0.001	0.000	0.33	0.00
Offsite Total						**0.33**	**0.00**
Total						**2.71**	**0.24**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 12
Substation Construction Emissions
Civil

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	1.75	10.65	13.26	0.02	0.89	0.82	48.5
Onsite Motor Vehicle Exhaust	0.02	0.08	0.22	0.00	0.01	0.01	0.2
Onsite Motor Vehicle Fugitive PM	--	--	--	--	7.92	0.79	
Earthwork Fugitive PM	--	--	--	--	0.13	0.03	
Onsite Total	**1.77**	**10.74**	**13.48**	**0.02**	**8.95**	**1.65**	**48.7**
Offsite Motor Vehicle Exhaust	1.86	10.07	17.54	0.03	0.89	0.75	25.0
Offsite Motor Vehicle Fugitive PM	--	--	--	--	1.13	0.00	
Offsite Total	**1.86**	**10.07**	**17.54**	**0.03**	**2.02**	**0.75**	**25.0**
Total	**3.63**	**20.81**	**31.03**	**0.05**	**10.96**	**2.40**	**73.7**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Excavator	152	1	60	4
Foundation Auger	79	1	60	4
Backhoe	79	1	60	4
Skip Loader	75	1	60	4
Bobcat Skid Steer	75	2	60	4
Forklift	83	1	60	2
17-Ton Crane	125	1	60	2

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Excavator	152	0.121	0.667	0.893	0.001	0.051	0.047	112.222	0.011	Excavators
Foundation Auger	79	0.045	0.470	0.458	0.001	0.026	0.024	77.122	0.004	Bore/Drill Rigs
Backhoe	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes
Skip Loader	75	0.043	0.275	0.327	0.001	0.024	0.022	42.762	0.004	Skid Steer Loaders
Bobcat Skid Steer	75	0.043	0.275	0.327	0.001	0.024	0.022	42.762	0.004	Skid Steer Loaders
Forklift	83	0.044	0.218	0.279	0.000	0.024	0.022	31.225	0.004	Forklifts
17-Ton Crane	125	0.103	0.482	0.777	0.001	0.045	0.041	80.345	0.009	Cranes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Excavator	0.48	2.67	3.57	0.01	0.20	0.19
Foundation Auger	0.18	1.88	1.83	0.00	0.10	0.09
Backhoe	0.28	1.41	1.83	0.00	0.15	0.14
Skip Loader	0.17	1.10	1.31	0.00	0.10	0.09
Bobcat Skid Steer	0.34	2.20	2.61	0.00	0.20	0.18
Forklift	0.09	0.44	0.56	0.00	0.05	0.04
17-Ton Crane	0.21	0.96	1.55	0.00	0.09	0.08
Total	**1.75**	**10.65**	**13.26**	**0.02**	**0.89**	**0.82**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Excavator	12.2	0.0	12.2
Foundation Auger	8.4	0.0	8.4
Backhoe	5.6	0.0	5.6
Skip Loader	4.7	0.0	4.7
Bobcat Skid Steer	17.5	0.0	17.5
Forklift	0.0	0.0	0.0
17-Ton Crane	0.0	0.0	0.0
Total	**48.4**	**0.0**	**48.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 12
Substation Construction Emissions
Civil

Motor Vehicle Usage

Vehicle	Number[a]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Dump Truck	7	5	N/A	1
Water Truck	1	60	N/A	1
Tool Truck	1	60	N/A	1
Concrete Truck	1	5	N/A	0.1
Offsite				
Dump Truck	7	5	N/A	2
Water Truck	1	60	N/A	10
Concrete Truck	10	5	N/A	60
Tool Truck	1	60	N/A	0.2
Worker Commute	10	60	N/A	60

[a] Concrete trucks based on 455 CY over 5 days and 10 CY/truck = 455 / 5 / 10 = 9.1

[a] Dump trucks based on 455 CY over 5 days and 14 CY/truck = 451 / 5 / 14 = 6.5

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Tool Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Concrete Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Concrete Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Tool Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Dump Truck	0.02	0.07	0.19	0.00	0.01	0.01
Water Truck	0.00	0.01	0.03	0.00	0.00	0.00
Tool Truck	0.00	0.01	0.00	0.00	0.00	0.00
Concrete Truck	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.02**	**0.08**	**0.22**	**0.00**	**0.01**	**0.01**
Offsite						
Dump Truck	0.03	0.13	0.38	0.00	0.02	0.02
Water Truck	0.02	0.09	0.27	0.00	0.01	0.01
Concrete Truck	1.36	5.59	16.46	0.02	0.80	0.69
Tool Truck	0.00	0.00	0.00	0.00	0.00	0.00
Worker Commute	0.45	4.26	0.43	0.01	0.05	0.04
Offsite Total	**1.86**	**10.07**	**17.54**	**0.03**	**0.89**	**0.75**
Total	**1.88**	**10.15**	**17.76**	**0.03**	**0.90**	**0.76**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 12
Substation Construction Emissions
Civil

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Dump Truck	0.1	0.0	0.1
Water Truck	0.1	0.0	0.1
Tool Truck	0.0	0.0	0.0
Concrete Truck	0.0	0.0	0.0
Onsite Total	**0.2**	**0.0**	**0.2**
Offsite			
Dump Truck	0.1	0.0	0.1
Water Truck	1.1	0.0	1.1
Concrete Truck	5.7	0.0	5.7
Tool Truck	0.0	0.0	0.0
Worker Commute	18.0	0.0	18.0
Offsite Total	**25.0**	**0.0**	**25.0**
Total	**25.2**	**0.0**	**25.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Dump Truck	7	Unpaved	1	0.922	0.092	6.46	0.65
Water Truck	1	Unpaved	1	0.922	0.092	0.92	0.09
Tool Truck	1	Unpaved	1	0.447	0.045	0.45	0.04
Concrete Truck	1	Unpaved	0.1	0.922	0.092	0.09	0.01
Onsite Total						**7.92**	**0.79**
Offsite							
Dump Truck	7	Paved	2	0.001	0.000	0.01	0.00
Water Truck	1	Paved	10	0.001	0.000	0.01	0.00
Concrete Truck	10	Paved	60	0.001	0.000	0.55	0.00
Tool Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Worker Commute	10	Paved	60	0.001	0.000	0.55	0.00
Offsite Total						**1.13**	**0.00**
Total						**9.05**	**0.79**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling[c]	CY/day	46	2.75E-03	5.72E-04	0.13	0.03
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.13**	**0.03**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

[c] Peak daily estimated from total of 455 CY over 10 days

Table 13
Substation Construction Emissions
Substation MEER

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.01	0.01	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.37	0.04	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.37**	**0.04**	**0.0**
Offsite Motor Vehicle Exhaust	0.27	2.56	0.26	0.00	0.03	0.02	5.4
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.33	0.00	
Offsite Total	**0.27**	**2.56**	**0.26**	**0.00**	**0.37**	**0.02**	**5.4**
Total	**0.27**	**2.56**	**0.27**	**0.00**	**0.73**	**0.06**	**5.4**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Carry-all Truck	1	30	N/A	0.2
Stake Truck	1	30	N/A	0.2
Offsite				
Carry-all Truck	1	30	N/A	0.2
Stake Truck	1	30	N/A	0.2
Worker Commute	6	30	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Carry-all Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Stake Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Offsite									
Carry-all Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Stake Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 13
Substation Construction Emissions
Substation MEER

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Carry-all Truck	0.00	0.00	0.00	0.00	0.00	0.00
Stake Truck	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**
Offsite						
Carry-all Truck	0.00	0.00	0.00	0.00	0.00	0.00
Stake Truck	0.00	0.00	0.00	0.00	0.00	0.00
Worker Commute	0.27	2.55	0.26	0.00	0.03	0.02
Offsite Total	**0.27**	**2.56**	**0.26**	**0.00**	**0.03**	**0.02**
Total	**0.27**	**2.56**	**0.27**	**0.00**	**0.03**	**0.02**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Carry-all Truck	0.0	0.0	0.0
Stake Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Carry-all Truck	0.0	0.0	0.0
Stake Truck	0.0	0.0	0.0
Worker Commute	5.4	0.0	5.4
Offsite Total	**5.4**	**0.0**	**5.4**
Total	**5.4**	**0.0**	**5.4**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Carry-all Truck	1	Unpaved	0.2	0.922	0.092	0.18	0.02
Stake Truck	1	Unpaved	0.2	0.922	0.092	0.18	0.02
Onsite Total						**0.37**	**0.04**
Offsite							
Carry-all Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Stake Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Worker Commute	6	Paved	60	0.001	0.000	0.33	0.00
Offsite Total						**0.33**	**0.00**
Total						**0.70**	**0.04**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 14
Substation Construction Emissions
Electrical

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.38	8.05	2.58	0.00	0.16	0.14	11.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.21	0.02	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.38**	**8.05**	**2.58**	**0.00**	**0.37**	**0.16**	**11.0**
Offsite Motor Vehicle Exhaust	0.45	4.26	0.43	0.01	0.05	0.04	24.0
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.55	0.00	
Offsite Total	**0.45**	**4.26**	**0.43**	**0.01**	**0.61**	**0.04**	**24.0**
Total	**0.83**	**12.31**	**3.01**	**0.01**	**0.98**	**0.20**	**35.0**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Scissor Lift	25	1	80	3
Manlift	25	2	80	3
Reach Manlift	25	1	80	3
15-Ton Crane	125	1	80	2

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Scissor Lift	25	0.008	2.211	0.061	0.000	0.007	0.006	13.000	0.070	Aerial Lifts-Propane
Manlift	25	0.017	0.050	0.094	0.000	0.005	0.005	10.960	0.002	Aerial Lifts
Reach Manlift	25	0.017	0.050	0.094	0.000	0.005	0.005	10.960	0.002	Aerial Lifts
15-Ton Crane	125	0.103	0.482	0.777	0.001	0.045	0.041	80.345	0.009	Cranes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Scissor Lift	0.02	6.63	0.18	0.00	0.02	0.02
Manlift	0.10	0.30	0.56	0.00	0.03	0.03
Reach Manlift	0.05	0.15	0.28	0.00	0.02	0.01
15-Ton Crane	0.21	0.96	1.55	0.00	0.09	0.08
Total	**0.38**	**8.05**	**2.58**	**0.00**	**0.16**	**0.14**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Scissor Lift	1.4	0.0	1.6
Manlift	2.4	0.0	2.4
Reach Manlift	1.2	0.0	1.2
15-Ton Crane	5.8	0.0	5.8
Total	**10.8**	**0.0**	**11.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]

Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Crew Truck	2	80	N/A	0.2
Offsite				
Crew Truck	2	80	N/A	0.2
Worker Commute	10	80	N/A	60

Table 14
Substation Construction Emissions
Electrical

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Crew Truck	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Crew Truck	0.00	0.00	0.00	0.00	0.00	0.00
Worker Commute	0.45	4.26	0.43	0.01	0.05	0.04
Offsite Total	**0.45**	**4.26**	**0.43**	**0.01**	**0.05**	**0.04**
Total	**0.45**	**4.26**	**0.43**	**0.01**	**0.05**	**0.04**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Crew Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Crew Truck	0.0	0.0	0.0
Worker Commute	24.0	0.0	24.0
Offsite Total	**24.0**	**0.0**	**24.0**
Total	**24.0**	**0.0**	**24.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Crew Truck	2	Unpaved	0.2	0.532	0.053	0.21	0.02
Onsite Total						**0.21**	**0.02**
Offsite							
Crew Truck	2	Paved	0.2	0.001	0.000	0.00	0.00
Worker Commute	10	Paved	60	0.001	0.000	0.55	0.00
Offsite Total						**0.55**	**0.00**
Total						**0.77**	**0.02**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 15
Substation Construction Emissions
Wiring

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.02	0.05	0.09	0.00	0.01	0.00	0.2
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.02**	**0.05**	**0.09**	**0.00**	**0.01**	**0.00**	**0.2**
Offsite Motor Vehicle Exhaust	0.27	2.55	0.26	0.00	0.03	0.02	7.2
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.33	0.00	
Offsite Total	**0.27**	**2.55**	**0.26**	**0.00**	**0.36**	**0.02**	**7.2**
Total	**0.29**	**2.60**	**0.35**	**0.00**	**0.37**	**0.03**	**7.4**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Manlift	25	1	40	1

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Manlift	25	0.017	0.050	0.094	0.000	0.005	0.005	10.960	0.002	Aerial Lifts

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Manlift	0.02	0.05	0.09	0.00	0.01	0.00
Total	**0.02**	**0.05**	**0.09**	**0.00**	**0.01**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Manlift	0.2	0.0	0.2
Total	**0.2**	**0.0**	**0.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Worker Commute	6	40	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None									
Offsite									
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Worker Commute	0.27	2.55	0.26	0.00	0.03	0.02
Offsite Total	**0.27**	**2.55**	**0.26**	**0.00**	**0.03**	**0.02**
Total	**0.27**	**2.55**	**0.26**	**0.00**	**0.03**	**0.02**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 15
Substation Construction Emissions
Wiring

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Worker Commute	7.2	0.0	7.2
Offsite Total	**7.2**	**0.0**	**7.2**
Total	**7.2**	**0.0**	**7.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None							
Onsite Total						**0.00**	**0.00**
Offsite							
Worker Commute	6	Paved	60	0.001	0.000	0.33	0.00
Offsite Total						**0.33**	**0.00**
Total						**0.33**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 16
Substation Construction Emissions
Transformers

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.50	2.36	3.67	0.00	0.23	0.21	5.2
Onsite Motor Vehicle Exhaust	0.00	0.00	0.01	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.40	0.04	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.50**	**2.37**	**3.67**	**0.00**	**0.62**	**0.25**	**5.3**
Offsite Motor Vehicle Exhaust	0.18	1.70	0.17	0.00	0.02	0.01	3.6
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.22	0.00	
Offsite Total	**0.18**	**1.70**	**0.17**	**0.00**	**0.24**	**0.01**	**3.6**
Total	**0.68**	**4.07**	**3.84**	**0.01**	**0.87**	**0.26**	**8.9**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Crane	125	1	30	4
Forklift	25	1	30	2

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Crane	125	0.103	0.482	0.777	0.001	0.045	0.041	80.345	0.009	Cranes
Forklift	83	0.044	0.218	0.279	0.000	0.024	0.022	31.225	0.004	Forklifts

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Crane	0.41	1.93	3.11	0.00	0.18	0.16
Forklift	0.09	0.44	0.56	0.00	0.05	0.04
Total	**0.50**	**2.36**	**3.67**	**0.00**	**0.23**	**0.21**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Crane	4.4	0.0	4.4
Forklift	0.8	0.0	0.9
Total	**5.2**	**0.0**	**5.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Crew Truck	2	30	N/A	0.2
Low Bed Truck	1	30	N/A	0.2
Offsite				
Crew Truck	2	30	N/A	0.2
Worker Commute	4	30	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Low Bed Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Offsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 16
Substation Construction Emissions
Transformers

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Crew Truck	0.00	0.00	0.00	0.00	0.00	0.00
Low Bed Truck	0.00	0.00	0.01	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**
Offsite						
Crew Truck	0.00	0.00	0.00	0.00	0.00	0.00
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.18**	**1.70**	**0.17**	**0.00**	**0.02**	**0.01**
Total	**0.18**	**1.71**	**0.18**	**0.00**	**0.02**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Crew Truck	0.0	0.0	0.0
Low Bed Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Crew Truck	0.0	0.0	0.0
Worker Commute	3.6	0.0	3.6
Offsite Total	**3.6**	**0.0**	**3.6**
Total	**3.6**	**0.0**	**3.6**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Crew Truck	2	Unpaved	0.2	0.532	0.053	0.21	0.02
Low Bed Truck	1	Unpaved	0.2	0.922	0.092	0.18	0.02
Onsite Total						**0.40**	**0.04**
Offsite							
Crew Truck	2	Paved	0.2	0.001	0.000	0.00	0.00
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**0.22**	**0.00**
Total						**0.62**	**0.04**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 17
Substation Construction Emissions
Maintenance Crew Equipment Check

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.01	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.73	0.07	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.73**	**0.07**	**0.0**
Offsite Motor Vehicle Exhaust	0.18	1.70	0.17	0.00	0.02	0.01	3.6
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.22	0.00	
Offsite Total	**0.18**	**1.70**	**0.17**	**0.00**	**0.24**	**0.01**	**3.6**
Total	**0.18**	**1.71**	**0.17**	**0.00**	**0.97**	**0.09**	**3.6**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None										

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Maintenance Truck	2	30	N/A	0.5
Offsite				
Maintenance Truck	2	30	N/A	0.2
Worker Commute	4	30	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Maintenance Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Maintenance Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 17
Substation Construction Emissions
Maintenance Crew Equipment Check

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Maintenance Truck	0.00	0.01	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Maintenance Truck	0.00	0.00	0.00	0.00	0.00	0.00
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.18**	**1.70**	**0.17**	**0.00**	**0.02**	**0.01**
Total	**0.18**	**1.71**	**0.17**	**0.00**	**0.02**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Maintenance Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Maintenance Truck	0.0	0.0	0.0
Worker Commute	3.6	0.0	3.6
Offsite Total	**3.6**	**0.0**	**3.6**
Total	**3.6**	**0.0**	**3.6**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Maintenance Truck	2	Unpaved	0.5	0.726	0.073	0.73	0.07
Onsite Total						**0.73**	**0.07**
Offsite							
Maintenance Truck	2	Paved	0.2	0.001	0.000	0.00	0.00
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**0.22**	**0.00**
Total						**0.95**	**0.07**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 18
Substation Construction Emissions
Testing

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.27	0.03	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.27**	**0.03**	**0.0**
Offsite Motor Vehicle Exhaust	0.09	0.85	0.09	0.00	0.01	0.01	4.8
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.11	0.00	
Offsite Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.12**	**0.01**	**4.8**
Total	**0.09**	**0.86**	**0.09**	**0.00**	**0.39**	**0.03**	**4.8**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None										

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.[a]
Onsite				
Crew Truck	1	80	N/A	0.5
Offsite				
Crew Truck	1	80	N/A	0.2
Worker Commute	2	80	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 18
Substation Construction Emissions
Testing

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Crew Truck	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Crew Truck	0.00	0.00	0.00	0.00	0.00	0.00
Worker Commute	0.09	0.85	0.09	0.00	0.01	0.01
Offsite Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.01**	**0.01**
Total	**0.09**	**0.86**	**0.09**	**0.00**	**0.01**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Crew Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Crew Truck	0.0	0.0	0.0
Worker Commute	4.8	0.0	4.8
Offsite Total	**4.8**	**0.0**	**4.8**
Total	**4.8**	**0.0**	**4.8**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Crew Truck	1	Unpaved	0.5	0.532	0.053	0.27	0.03
Onsite Total						**0.27**	**0.03**
Offsite							
Crew Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Worker Commute	2	Paved	60	0.001	0.000	0.11	0.00
Offsite Total						**0.11**	**0.00**
Total						**0.38**	**0.03**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 19
Substation Construction Emissions
Asphalting

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	2.35	7.94	9.74	0.01	0.70	0.65	4.3
Onsite Motor Vehicle Exhaust	0.01	0.03	0.06	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	2.56	0.26	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Asphaltic Paving VOC	0.2	--	--	--	--	--	--
Onsite Total	**2.59**	**7.97**	**9.79**	**0.01**	**3.27**	**0.91**	**4.3**
Offsite Motor Vehicle Exhaust	1.99	10.12	20.09	0.03	1.01	0.85	16.2
Offsite Motor Vehicle Fugitive PM	--	--	--	--	1.11	0.00	
Offsite Total	**1.99**	**10.12**	**20.09**	**0.03**	**2.11**	**0.85**	**16.2**
Total	**4.57**	**18.09**	**29.88**	**0.05**	**5.38**	**1.76**	**20.5**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Paving Roller	46	2	10	4
Asphalt Paver	152	1	10	4
Tractor	45	1	10	4
Asphalt Curb Machine	35	1	10	4

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Paving Roller	46	0.102	0.291	0.258	0.000	0.024	0.023	25.983	0.009	Rollers
Asphalt Paver	152	0.178	0.778	1.377	0.001	0.077	0.071	128.285	0.016	Pavers
Tractor	45	0.089	0.320	0.289	0.000	0.024	0.022	30.347	0.008	Tractors/Loaders/Backhoes
Asphalt Curb Machine	35	0.117	0.305	0.251	0.000	0.026	0.024	23.927	0.011	Paving Equipment

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Paving Roller	0.82	2.33	2.07	0.00	0.20	0.18
Asphalt Paver	0.71	3.11	5.51	0.01	0.31	0.28
Tractor	0.36	1.28	1.16	0.00	0.10	0.09
Asphalt Curb Machine	0.47	1.22	1.01	0.00	0.11	0.10
Total	**2.35**	**7.94**	**9.74**	**0.01**	**0.70**	**0.65**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Paving Roller	0.9	0.0	0.9
Asphalt Paver	2.3	0.0	2.3
Tractor	0.6	0.0	0.6
Asphalt Curb Machine	0.4	0.0	0.4
Total	**4.3**	**0.0**	**4.3**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]

Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 19
Substation Construction Emissions
Asphalting

Motor Vehicle Usage

Vehicle	Number[b]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.[a]
Onsite				
Stake Truck	1	10	N/A	0.5
Dump Truck	1	10	N/A	0.5
Crew Truck	2	10	N/A	0.5
Asphalt Delivery Truck	5	10	N/A	0.1
Aggregate Base Delivery Truck	7	10	N/A	0.1
Offsite				
Crew Truck	2	10	N/A	0.2
Asphalt Delivery Truck	5	10	N/A	60
Aggregate Base Delivery Truck	7	10	N/A	60
Worker Commute	8	10	N/A	60

[a] Asphalt delivery trucks based on 465 CY over 10 days and 10 CY/truck = 465 / 10 / 10 = 4.7

Aggregate base delivery trucks based on 610 CY over 10 days and 10 CY/truck = 610 / 10 / 10 = 6.1

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Stake Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Asphalt Delivery Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Aggregate Base Delivery Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Offsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Asphalt Delivery Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Aggregate Base Delivery Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Stake Truck	0.00	0.01	0.01	0.00	0.00	0.00
Dump Truck	0.00	0.00	0.01	0.00	0.00	0.00
Crew Truck	0.00	0.01	0.00	0.00	0.00	0.00
Asphalt Delivery Truck	0.00	0.00	0.01	0.00	0.00	0.00
Aggregate Base Delivery Truck	0.00	0.01	0.02	0.00	0.00	0.00
Onsite Total	**0.01**	**0.03**	**0.06**	**0.00**	**0.00**	**0.00**
Offsite						
Crew Truck	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Delivery Truck	0.68	2.80	8.23	0.01	0.40	0.34
Aggregate Base Delivery Truck	0.95	3.91	11.52	0.02	0.56	0.48
Worker Commute	0.36	3.40	0.34	0.01	0.04	0.03
Offsite Total	**1.99**	**10.12**	**20.09**	**0.03**	**1.01**	**0.85**
Total	**1.99**	**10.15**	**20.15**	**0.03**	**1.01**	**0.86**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 19
Substation Construction Emissions
Asphalting

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Stake Truck	0.0	0.0	0.0
Dump Truck	0.0	0.0	0.0
Crew Truck	0.0	0.0	0.0
Asphalt Delivery Truck	0.0	0.0	0.0
Aggregate Base Delivery Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Crew Truck	0.0	0.0	0.0
Asphalt Delivery Truck	5.7	0.0	5.7
Aggregate Base Delivery Truck	8.0	0.0	8.0
Worker Commute	2.4	0.0	2.4
Offsite Total	**16.2**	**0.0**	**16.2**
Total	**16.2**	**0.0**	**16.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Stake Truck	1	Unpaved	0.5	0.922	0.092	0.46	0.05
Dump Truck	1	Unpaved	0.5	0.922	0.092	0.46	0.05
Crew Truck	2	Unpaved	0.5	0.532	0.053	0.53	0.05
Asphalt Delivery Truck	5	Unpaved	0.1	0.922	0.092	0.46	0.05
Aggregate Base Delivery Truck	7	Unpaved	0.1	0.922	0.092	0.65	0.06
Onsite Total						**2.56**	**0.26**
Offsite							
Crew Truck	2	Paved	0.2	0.001	0.000	0.00	0.00
Asphalt Delivery Truck	5	Paved	60	0.001	0.000	0.28	0.00
Aggregate Base Delivery Truck	7	Paved	60	0.001	0.000	0.39	0.00
Worker Commute	8	Paved	60	0.001	0.000	0.44	0.00
Offsite Total						**1.11**	**0.00**
Total						**3.67**	**0.26**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Asphaltic Paving VOC Emissions

Area Paved (acre/day)[a]	Emission Factor (lb/acre)[b]	VOC (lb/day)[c]
0.09	2.62	0.2

[a] Assumed 37,600 sq. ft. of area paved in 10 days

[b] From URBEMISS 2007 User's Guide, Appendix A, http://www.urbemis.com/software/download.html

[c] Emissions [lb/day] = Emission factor [lb/acre] x Area paved [acre/day]

Table 20
Substation Construction Emissions
Landscaping

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.27	0.96	0.87	0.00	0.07	0.07	1.2
Onsite Motor Vehicle Exhaust	0.00	0.01	0.03	0.00	0.00	0.00	0.1
Onsite Motor Vehicle Fugitive PM	--	--	--	--	1.11	0.11	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.27**	**0.97**	**0.90**	**0.00**	**1.18**	**0.18**	**1.3**
Offsite Motor Vehicle Exhaust	1.04	6.20	8.57	0.02	0.44	0.37	24.4
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.72	0.00	
Offsite Total	**1.04**	**6.20**	**8.57**	**0.02**	**1.16**	**0.37**	**24.4**
Total	**1.31**	**7.17**	**9.47**	**0.02**	**2.34**	**0.55**	**25.7**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Tractor	45	1	30	3

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Tractor	45	0.089	0.320	0.289	0.000	0.024	0.022	30.347	0.008	Tractors/Loaders/Backhoes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Tractor	0.27	0.96	0.87	0.00	0.07	0.07
Total	**0.27**	**0.96**	**0.87**	**0.00**	**0.07**	**0.07**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Tractor	1.2	0.0	1.2
Total	**1.2**	**0.0**	**1.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number[a]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Dump Truck	1	30	N/A	0.2
Crushed Rock Delivery Truck	5	30	N/A	0.2
Offsite				
Crushed Rock Delivery Truck	5	30	N/A	60
Worker Commute	8	30	N/A	60

[a] Crushed rock delivery trucks based on 1,230 CY over 30 days and 10 CY/truck = 1,230 / 30 / 10 = 4.1

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Crushed Rock Delivery Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Offsite									
Crushed Rock Delivery Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 20
Substation Construction Emissions
Landscaping

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Dump Truck	0.00	0.00	0.01	0.00	0.00	0.00
Crushed Rock Delivery Truck	0.00	0.01	0.03	0.00	0.00	0.00
Onsite Total	**0.00**	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**
Offsite						
Crushed Rock Delivery Truck	0.68	2.80	8.23	0.01	0.40	0.34
Worker Commute	0.36	3.40	0.34	0.01	0.04	0.03
Offsite Total	**1.04**	**6.20**	**8.57**	**0.02**	**0.44**	**0.37**
Total	**1.04**	**6.21**	**8.60**	**0.02**	**0.45**	**0.37**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Dump Truck	0.0	0.0	0.0
Crushed Rock Delivery Truck	0.1	0.0	0.1
Onsite Total	**0.1**	**0.0**	**0.1**
Offsite			
Crushed Rock Delivery Truck	17.2	0.0	17.2
Worker Commute	7.2	0.0	7.2
Offsite Total	**24.4**	**0.0**	**24.4**
Total	**24.5**	**0.0**	**24.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Dump Truck	1	Unpaved	0.2	0.922	0.092	0.18	0.02
Crushed Rock Delivery Truck	5	Unpaved	0.2	0.922	0.092	0.92	0.09
Onsite Total						**1.11**	**0.11**
Offsite							
Crushed Rock Delivery Truck	5	Paved	60	0.001	0.000	0.28	0.00
Worker Commute	8	Paved	60	0.001	0.000	0.44	0.00
Offsite Total						**0.72**	**0.00**
Total						**1.83**	**0.11**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 21
Alder Substation Modification Construction Emissions
Fencing

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.17	1.10	1.31	0.00	0.10	0.09	0.2
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.17**	**1.10**	**1.31**	**0.00**	**0.10**	**0.09**	**0.2**
Offsite Motor Vehicle Exhaust	0.12	1.11	0.28	0.00	0.02	0.01	0.2
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.13	0.00	
Offsite Total	**0.12**	**1.11**	**0.28**	**0.00**	**0.15**	**0.01**	**0.2**
Total	**0.30**	**2.21**	**1.59**	**0.00**	**0.25**	**0.10**	**0.5**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Bobcat	75	1	3	4

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Bobcat	75	0.043	0.275	0.327	0.001	0.024	0.022	42.762	0.004	Skid Steer Loaders

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Bobcat	0.17	1.10	1.31	0.00	0.10	0.09
Total	**0.17**	**1.10**	**1.31**	**0.00**	**0.10**	**0.09**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Bobcat	0.2	0.0	0.2
Total	**0.2**	**0.0**	**0.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Flatbed Truck	1	3	N/A	0.2
Crewcab Truck	1	3	N/A	0.2
Offsite				
Flatbed Truck	1	3	N/A	12
Crewcab Truck	1	3	N/A	12
Worker Commute	2	3	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Flatbed Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Crewcab Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Flatbed Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Crewcab Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 21
Alder Substation Modification Construction Emissions
Fencing

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Flatbed Truck	0.00	0.00	0.00	0.00	0.00	0.00
Crewcab Truck	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Flatbed Truck	0.02	0.17	0.19	0.00	0.01	0.01
Crewcab Truck	0.01	0.09	0.01	0.00	0.00	0.00
Worker Commute	0.09	0.85	0.09	0.00	0.01	0.01
Offsite Total	**0.12**	**1.11**	**0.28**	**0.00**	**0.02**	**0.01**
Total	**0.12**	**1.11**	**0.29**	**0.00**	**0.02**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Flatbed Truck	0.0	0.0	0.0
Crewcab Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Flatbed Truck	0.0	0.0	0.0
Crewcab Truck	0.0	0.0	0.0
Worker Commute	0.2	0.0	0.2
Offsite Total	**0.2**	**0.0**	**0.2**
Total	**0.2**	**0.0**	**0.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Flatbed Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Crewcab Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Flatbed Truck	1	Paved	12	0.001	0.000	0.01	0.00
Crewcab Truck	1	Paved	12	0.001	0.000	0.01	0.00
Worker Commute	2	Paved	60	0.001	0.000	0.11	0.00
Offsite Total						**0.13**	**0.00**
Total						**0.13**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 22
Alder Substation Modification Construction Emissions
Civil

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	1.54	9.69	11.71	0.02	0.80	0.74	10.5
Onsite Motor Vehicle Exhaust	0.00	0.01	0.02	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**1.54**	**9.70**	**11.73**	**0.02**	**0.80**	**0.74**	**10.5**
Offsite Motor Vehicle Exhaust	0.48	3.00	3.75	0.01	0.20	0.16	5.6
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.35	0.00	
Offsite Total	**0.48**	**3.00**	**3.75**	**0.01**	**0.55**	**0.16**	**5.6**
Total	**2.03**	**12.70**	**15.47**	**0.03**	**1.35**	**0.90**	**16.1**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Excavator	152	1	15	4
Foundation Auger	79	1	15	4
Backhoe	79	1	15	4
Skip Loader	75	1	15	4
Bobcat Skid Steer	75	2	15	4
Forklift	83	1	15	2

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Excavator	152	0.121	0.667	0.893	0.001	0.051	0.047	112.222	0.011	Excavators
Foundation Auger	79	0.045	0.470	0.458	0.001	0.026	0.024	77.122	0.004	Bore/Drill Rigs
Backhoe	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes
Skip Loader	75	0.043	0.275	0.327	0.001	0.024	0.022	42.762	0.004	Skid Steer Loaders
Bobcat Skid Steer	75	0.043	0.275	0.327	0.001	0.024	0.022	42.762	0.004	Skid Steer Loaders
Forklift	83	0.044	0.218	0.279	0.000	0.024	0.022	31.225	0.004	Forklifts

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Excavator	0.48	2.67	3.57	0.01	0.20	0.19
Foundation Auger	0.18	1.88	1.83	0.00	0.10	0.09
Backhoe	0.28	1.41	1.83	0.00	0.15	0.14
Skip Loader	0.17	1.10	1.31	0.00	0.10	0.09
Bobcat Skid Steer	0.34	2.20	2.61	0.00	0.20	0.18
Forklift	0.09	0.44	0.56	0.00	0.05	0.04
Total	**1.54**	**9.69**	**11.71**	**0.02**	**0.80**	**0.74**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Excavator	3.1	0.0	3.1
Foundation Auger	2.1	0.0	2.1
Backhoe	1.4	0.0	1.4
Skip Loader	1.2	0.0	1.2
Bobcat Skid Steer	2.3	0.0	2.3
Forklift	0.4	0.0	0.4
Total	**10.5**	**0.0**	**10.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 22
Alder Substation Modification Construction Emissions
Civil

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Dump Truck	1	15	N/A	0.2
Water Truck	1	15	N/A	0.2
Tool Truck	1	15	N/A	0.2
Concrete Truck	1	15	N/A	0.2
Offsite				
Dump Truck	1	15	N/A	60
Water Truck	1	15	N/A	10
Concrete Truck	1	15	N/A	60
Tool Truck	1	15	N/A	12
Worker Commute	4	15	N/A	60

[a] Concrete trucks based on 150 CY over 5 days and 10 CY/truck = 150 / 5 / 10 = 3

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Tool Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Concrete Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Offsite									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Concrete Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Tool Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Dump Truck	0.00	0.00	0.01	0.00	0.00	0.00
Water Truck	0.00	0.00	0.01	0.00	0.00	0.00
Tool Truck	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Truck	0.00	0.00	0.01	0.00	0.00	0.00
Onsite Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**
Offsite						
Dump Truck	0.14	0.56	1.65	0.00	0.08	0.07
Water Truck	0.02	0.09	0.27	0.00	0.01	0.01
Concrete Truck	0.14	0.56	1.65	0.00	0.08	0.07
Tool Truck	0.01	0.09	0.01	0.00	0.00	0.00
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.48**	**3.00**	**3.75**	**0.01**	**0.20**	**0.16**
Total	**0.48**	**3.01**	**3.76**	**0.01**	**0.20**	**0.16**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 22
Alder Substation Modification Construction Emissions
Civil

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Dump Truck	0.0	0.0	0.0
Water Truck	0.0	0.0	0.0
Tool Truck	0.0	0.0	0.0
Concrete Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Dump Truck	1.7	0.0	1.7
Water Truck	0.3	0.0	0.3
Concrete Truck	1.7	0.0	1.7
Tool Truck	0.1	0.0	0.1
Worker Commute	1.8	0.0	1.8
Offsite Total	**5.6**	**0.0**	**5.6**
Total	**5.6**	**0.0**	**5.6**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Dump Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Water Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Tool Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Concrete Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Dump Truck	1	Paved	60	0.001	0.000	0.06	0.00
Water Truck	1	Paved	10	0.001	0.000	0.01	0.00
Concrete Truck	1	Paved	60	0.001	0.000	0.06	0.00
Tool Truck	1	Paved	12	0.001	0.000	0.01	0.00
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**0.35**	**0.00**
Total						**0.35**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 23
Alder Substation Modification Construction Emissions
Electrical

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.41	8.02	4.09	0.01	0.16	0.14	3.9
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.41**	**8.02**	**4.09**	**0.01**	**0.16**	**0.14**	**3.9**
Offsite Motor Vehicle Exhaust	0.18	1.70	0.17	0.00	0.02	0.01	1.8
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.22	0.00	
Offsite Total	**0.18**	**1.70**	**0.17**	**0.00**	**0.24**	**0.01**	**1.8**
Total	**0.59**	**9.72**	**4.26**	**0.01**	**0.40**	**0.16**	**5.7**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Scissor Lift	25	1	15	3
Manlift	25	2	15	3
Reach Manlift	25	1	15	3
15-Ton Crane	125	1	15	2

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Scissor Lift	25	0.008	2.211	0.061	0.000	0.007	0.006	13.000	0.070	Aerial Lifts-Propane
Manlift	25	0.017	0.050	0.094	0.000	0.005	0.005	10.960	0.002	Aerial Lifts
Reach Manlift	25	0.017	0.050	0.094	0.000	0.005	0.005	10.960	0.002	Aerial Lifts
15-Ton Crane	125	0.119	0.467	1.531	0.002	0.045	0.041	212.856	0.011	Aerial Lifts

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Scissor Lift	0.02	6.63	0.18	0.00	0.02	0.02
Manlift	0.10	0.30	0.56	0.00	0.03	0.03
Reach Manlift	0.05	0.15	0.28	0.00	0.02	0.01
15-Ton Crane	0.24	0.93	3.06	0.00	0.09	0.08
Total	**0.41**	**8.02**	**4.09**	**0.01**	**0.16**	**0.14**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Scissor Lift	0.3	0.0	0.3
Manlift	0.4	0.0	0.4
Reach Manlift	0.2	0.0	0.2
15-Ton Crane	2.9	0.0	2.9
Total	**3.8**	**0.0**	**3.9**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Worker Commute	4	15	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None									
Offsite									
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 23
Alder Substation Modification Construction Emissions
Electrical

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.18**	**1.70**	**0.17**	**0.00**	**0.02**	**0.01**
Total	**0.18**	**1.70**	**0.17**	**0.00**	**0.02**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Worker Commute	1.8	0.0	1.8
Offsite Total	**1.8**	**0.0**	**1.8**
Total	**1.8**	**0.0**	**1.8**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**0.22**	**0.00**
Total						**0.22**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 24
Alder Substation Modification Construction Emissions
Wiring

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
Offsite Motor Vehicle Exhaust	0.09	0.85	0.09	0.00	0.01	0.01	0.3
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.11	0.00	
Offsite Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.12**	**0.01**	**0.3**
Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.12**	**0.01**	**0.3**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None	0	0.145	0.605	1.166	0.001	0.059	0.055	132.743	0.013	None

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.	
Onsite					
None					
Offsite					
Worker Commute	2	5	N/A	60	based on requirement of 6 people with an avg dist of 30 miles oneway commute

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None									
Offsite									
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Worker Commute	0.09	0.85	0.09	0.00	0.01	0.01
Offsite Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.01**	**0.01**
Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.01**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 24
Alder Substation Modification Construction Emissions
Wiring

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Worker Commute	0.3	0.0	0.3
Offsite Total	**0.3**	**0.0**	**0.3**
Total	**0.3**	**0.0**	**0.3**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Worker Commute	2	Paved	60	0.001	0.000	0.11	0.00
Offsite Total						**0.11**	**0.00**
Total						**0.11**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 25
Alder Substation Modification Construction Emissions
Maintenance Crew Equipment Check

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.01	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
Offsite Motor Vehicle Exhaust	0.11	1.02	0.10	0.00	0.01	0.01	0.4
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.13	0.00	
Offsite Total	**0.11**	**1.02**	**0.10**	**0.00**	**0.15**	**0.01**	**0.4**
Total	**0.11**	**1.03**	**0.10**	**0.00**	**0.15**	**0.01**	**0.4**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None										

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Maintenance Truck	2	5	N/A	0.5
Offsite				
Maintenance Truck	2	5	N/A	12
Worker Commute	2	5	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Maintenance Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Maintenance Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 25
Alder Substation Modification Construction Emissions
Maintenance Crew Equipment Check

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Maintenance Truck	0.00	0.01	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Maintenance Truck	0.02	0.17	0.02	0.00	0.00	0.00
Worker Commute	0.09	0.85	0.09	0.00	0.01	0.01
Offsite Total	**0.11**	**1.02**	**0.10**	**0.00**	**0.01**	**0.01**
Total	**0.11**	**1.03**	**0.10**	**0.00**	**0.01**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Maintenance Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Maintenance Truck	0.1	0.0	0.1
Worker Commute	0.3	0.0	0.3
Offsite Total	**0.4**	**0.0**	**0.4**
Total	**0.4**	**0.0**	**0.4**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Maintenance Truck	2	Paved	0.5	0.001	0.000	0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Maintenance Truck	2	Paved	12	0.001	0.000	0.02	0.00
Worker Commute	2	Paved	60	0.001	0.000	0.11	0.00
Offsite Total						**0.13**	**0.00**
Total						**0.13**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 26
Alder Substation Modification Construction Emissions
Testing

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
Offsite Motor Vehicle Exhaust	0.10	0.94	0.09	0.00	0.01	0.01	0.7
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.12	0.00	
Offsite Total	**0.10**	**0.94**	**0.09**	**0.00**	**0.13**	**0.01**	**0.7**
Total	**0.10**	**0.94**	**0.09**	**0.00**	**0.13**	**0.01**	**0.7**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None										

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Crew Truck	1	10	N/A	0.1
Offsite				
Crew Truck	1	10	N/A	12
Worker Commute	2	10	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 26
Alder Substation Modification Construction Emissions
Testing

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Crew Truck	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Crew Truck	0.01	0.09	0.01	0.00	0.00	0.00
Worker Commute	0.09	0.85	0.09	0.00	0.01	0.01
Offsite Total	**0.10**	**0.94**	**0.09**	**0.00**	**0.01**	**0.01**
Total	**0.10**	**0.94**	**0.09**	**0.00**	**0.01**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Crew Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Crew Truck	0.1	0.0	0.1
Worker Commute	0.6	0.0	0.6
Offsite Total	**0.7**	**0.0**	**0.7**
Total	**0.7**	**0.0**	**0.7**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Crew Truck	1	Paved	0.1	0.001	0.000	0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Crew Truck	1	Paved	12	0.001	0.000	0.01	0.00
Worker Commute	2	Paved	60	0.001	0.000	0.11	0.00
Offsite Total						**0.12**	**0.00**
Total						**0.12**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 27
Alder Substation Modification Construction Emissions
Asphalting

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	2.35	7.94	9.74	0.01	0.70	0.65	0.4
Onsite Motor Vehicle Exhaust	0.00	0.00	0.01	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.38	0.04	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**2.36**	**7.95**	**9.74**	**0.01**	**1.09**	**0.69**	**0.4**
Offsite Motor Vehicle Exhaust	0.38	2.86	1.88	0.01	0.11	0.09	0.3
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.35	0.00	
Offsite Total	**0.38**	**2.86**	**1.88**	**0.01**	**0.46**	**0.09**	**0.3**
Total	**2.73**	**10.80**	**11.62**	**0.02**	**1.55**	**0.77**	**0.7**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Paving Roller	46	2	1	4
Asphalt Paver	152	1	1	4
Tractor	45	1	1	4
Asphalt Curb Machine	35	1	1	4

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Paving Roller	46	0.102	0.291	0.258	0.000	0.024	0.023	25.983	0.009	Rollers
Asphalt Paver	152	0.178	0.778	1.377	0.001	0.077	0.071	128.285	0.016	Pavers
Tractor	45	0.089	0.320	0.289	0.000	0.024	0.022	30.347	0.008	Tractors/Loaders/Backhoes
Asphalt Curb Machine	35	0.117	0.305	0.251	0.000	0.026	0.024	23.927	0.011	Paving Equipment

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Paving Roller	0.82	2.33	2.07	0.00	0.20	0.18
Asphalt Paver	0.71	3.11	5.51	0.01	0.31	0.28
Tractor	0.36	1.28	1.16	0.00	0.10	0.09
Asphalt Curb Machine	0.47	1.22	1.01	0.00	0.11	0.10
Total	**2.35**	**7.94**	**9.74**	**0.01**	**0.70**	**0.65**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Paving Roller	0.1	0.0	0.1
Asphalt Paver	0.2	0.0	0.2
Tractor	0.1	0.0	0.1
Asphalt Curb Machine	0.0	0.0	0.0
Total	**0.4**	**0.0**	**0.4**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 27
Alder Substation Modification Construction Emissions
Asphalting

Motor Vehicle Usage

Vehicle	Number[b]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Stake Truck	1	1	N/A	0.1
Dump Truck	1	1	N/A	0.1
Crew Truck	2	1	N/A	0.1
Asphalt Delivery Truck	1	1	N/A	0.1
Offsite				
Crew Truck	2	1	N/A	12
Asphalt Delivery Truck	1	1	N/A	60
Worker Commute	5	1	N/A	60

[b] Asphalt delivery trucks based on 465 CY over 10 days and 10 CY/truck = 465 / 10 / 10 = 4.65~5
Aggregate base delivery trucks based on 610 CY over 10 days and 10 CY/truck = 610 / 10 / 10 = 6.1

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Stake Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Asphalt Delivery Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Offsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Asphalt Delivery Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Stake Truck	0.00	0.00	0.00	0.00	0.00	0.00
Dump Truck	0.00	0.00	0.00	0.00	0.00	0.00
Crew Truck	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Delivery Truck	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**
Offsite						
Crew Truck	0.02	0.17	0.02	0.00	0.00	0.00
Asphalt Delivery Truck	0.14	0.56	1.65	0.00	0.08	0.07
Worker Commute	0.22	2.13	0.21	0.00	0.03	0.02
Offsite Total	**0.38**	**2.86**	**1.88**	**0.01**	**0.11**	**0.09**
Total	**0.38**	**2.86**	**1.88**	**0.01**	**0.11**	**0.09**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Stake Truck	0.0	0.0	0.0
Dump Truck	0.0	0.0	0.0
Crew Truck	0.0	0.0	0.0
Asphalt Delivery Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Crew Truck	0.0	0.0	0.0
Asphalt Delivery Truck	0.1	0.0	0.1
Worker Commute	0.1	0.0	0.1
Offsite Total	**0.3**	**0.0**	**0.3**
Total	**0.3**	**0.0**	**0.3**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 27
Alder Substation Modification Construction Emissions
Asphalting

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Stake Truck	1	Unpaved	0.1	0.922	0.092	0.09	0.01
Dump Truck	1	Unpaved	0.1	0.922	0.092	0.09	0.01
Crew Truck	2	Unpaved	0.1	0.532	0.053	0.11	0.01
Asphalt Delivery Truck	1	Unpaved	0.1	0.922	0.092	0.09	0.01
Onsite Total						**0.38**	**0.04**
Offsite							
Crew Truck	2	Paved	12	0.001	0.000	0.02	0.00
Asphalt Delivery Truck	1	Paved	60	0.001	0.000	0.06	0.00
Worker Commute	5	Paved	60	0.001	0.000	0.28	0.00
Offsite Total						**0.35**	**0.00**
Total						**0.74**	**0.04**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 28
Etiwanda Substation Modification Construction Emissions
Civil

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	1.54	9.69	11.71	0.02	0.80	0.74	16.2
Onsite Motor Vehicle Exhaust	0.00	0.00	0.01	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**1.54**	**9.69**	**11.72**	**0.02**	**0.80**	**0.74**	**16.2**
Offsite Motor Vehicle Exhaust	0.48	2.94	3.74	0.01	0.20	0.16	7.4
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.34	0.00	
Offsite Total	**0.48**	**2.94**	**3.74**	**0.01**	**0.54**	**0.16**	**7.4**
Total	**2.02**	**12.64**	**15.46**	**0.03**	**1.34**	**0.90**	**23.6**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Excavator	152	1	20	4
Foundation Auger	79	1	20	4
Backhoe	79	1	20	4
Skip Loader	75	1	20	4
Bobcat Skid Steer	75	2	20	4
Forklift	83	1	20	2
17-Ton Crane	125			

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Excavator	152	0.121	0.667	0.893	0.001	0.051	0.047	112.222	0.011	Excavators
Foundation Auger	79	0.045	0.470	0.458	0.001	0.026	0.024	77.122	0.004	Bore/Drill Rigs
Backhoe	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes
Skip Loader	75	0.043	0.275	0.327	0.001	0.024	0.022	42.762	0.004	Skid Steer Loaders
Bobcat Skid Steer	75	0.043	0.275	0.327	0.001	0.024	0.022	42.762	0.004	Skid Steer Loaders
Forklift	83	0.044	0.218	0.279	0.000	0.024	0.022	31.225	0.004	Forklifts
17-Ton Crane	125	0.103	0.482	0.777	0.001	0.045	0.041	80.345	0.009	Cranes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Excavator	0.48	2.67	3.57	0.01	0.20	0.19
Foundation Auger	0.18	1.88	1.83	0.00	0.10	0.09
Backhoe	0.28	1.41	1.83	0.00	0.15	0.14
Skip Loader	0.17	1.10	1.31	0.00	0.10	0.09
Bobcat Skid Steer	0.34	2.20	2.61	0.00	0.20	0.18
Forklift	0.09	0.44	0.56	0.00	0.05	0.04
17-Ton Crane	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.54**	**9.69**	**11.71**	**0.02**	**0.80**	**0.74**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Excavator	4.1	0.0	4.1
Foundation Auger	2.8	0.0	2.8
Backhoe	1.9	0.0	1.9
Skip Loader	1.6	0.0	1.6
Bobcat Skid Steer	5.8	0.0	5.8
Forklift	0.0	0.0	0.0
17-Ton Crane	0.0	0.0	0.0
Total	**16.1**	**0.0**	**16.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 28
Etiwanda Substation Modification Construction Emissions
Civil

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Dump Truck	1	20	N/A	0.1
Water Truck	1	20	N/A	0.1
Tool Truck	1	20	N/A	0.2
Concrete Truck	1	20	N/A	0.2
Offsite				
Dump Truck	1	20	N/A	60
Water Truck	1	20	N/A	10
Concrete Truck	1	20	N/A	60
Tool Truck	1	20	N/A	4
Worker Commute	4	20	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Tool Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Concrete Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Concrete Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Tool Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Dump Truck	0.00	0.00	0.00	0.00	0.00	0.00
Water Truck	0.00	0.00	0.00	0.00	0.00	0.00
Tool Truck	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Truck	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**
Offsite						
Dump Truck	0.14	0.56	1.65	0.00	0.08	0.07
Water Truck	0.02	0.09	0.27	0.00	0.01	0.01
Concrete Truck	0.14	0.56	1.65	0.00	0.08	0.07
Tool Truck	0.00	0.03	0.00	0.00	0.00	0.00
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.48**	**2.94**	**3.74**	**0.01**	**0.20**	**0.16**
Total	**0.48**	**2.95**	**3.75**	**0.01**	**0.20**	**0.16**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 28
Etiwanda Substation Modification Construction Emissions
Civil

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Dump Truck	0.0	0.0	0.0
Water Truck	0.0	0.0	0.0
Tool Truck	0.0	0.0	0.0
Concrete Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Dump Truck	2.3	0.0	2.3
Water Truck	0.4	0.0	0.4
Concrete Truck	2.3	0.0	2.3
Tool Truck	0.0	0.0	0.0
Worker Commute	2.4	0.0	2.4
Offsite Total	**7.4**	**0.0**	**7.4**
Total	**7.4**	**0.0**	**7.4**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Dump Truck	1	Paved	0.1	0.001	0.000	0.00	0.00
Water Truck	1	Paved	0.1	0.001	0.000	0.00	0.00
Tool Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Concrete Truck	1	Paved	0.2	0.001	0.000	0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Dump Truck	1	Paved	60	0.001	0.000	0.06	0.00
Water Truck	1	Paved	10	0.001	0.000	0.01	0.00
Concrete Truck	1	Paved	60	0.001	0.000	0.06	0.00
Tool Truck	1	Paved	4	0.001	0.000	0.00	0.00
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**0.34**	**0.00**
Total						**0.35**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 29
Etiwanda Substation Modification Construction Emissions
Electrical

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.17	7.08	1.03	0.00	0.07	0.06	1.3
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.17**	**7.09**	**1.03**	**0.00**	**0.07**	**0.06**	**1.3**
Offsite Motor Vehicle Exhaust	0.18	1.76	0.18	0.00	0.02	0.01	2.5
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.23	0.00	
Offsite Total	**0.18**	**1.76**	**0.18**	**0.00**	**0.25**	**0.01**	**2.5**
Total	**0.36**	**8.85**	**1.20**	**0.00**	**0.32**	**0.08**	**3.8**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Scissor Lift	25	1	20	3
Manlift	25	2	20	3
Reach Manlift	25	1	20	3
15-Ton Crane	125			

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Scissor Lift	25	0.008	2.211	0.061	0.000	0.007	0.006	13.000	0.070	Aerial Lifts-Propane
Manlift	25	0.017	0.050	0.094	0.000	0.005	0.005	10.960	0.002	Aerial Lifts
Reach Manlift	25	0.017	0.050	0.094	0.000	0.005	0.005	10.960	0.002	Aerial Lifts
15-Ton Crane	125	0.103	0.482	0.777	0.001	0.045	0.041	80.345	0.009	Cranes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Scissor Lift	0.02	6.63	0.18	0.00	0.02	0.02
Manlift	0.10	0.30	0.56	0.00	0.03	0.03
Reach Manlift	0.05	0.15	0.28	0.00	0.02	0.01
15-Ton Crane	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.17**	**7.08**	**1.03**	**0.00**	**0.07**	**0.06**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Scissor Lift	0.4	0.0	0.4
Manlift	0.6	0.0	0.6
Reach Manlift	0.3	0.0	0.3
15-Ton Crane	0.0	0.0	0.0
Total	**1.2**	**0.0**	**1.3**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Crew Truck	2	20	N/A	0.2
Offsite				
Crew Truck	2	20	N/A	4
Worker Commute	4	20	N/A	60

Table 29
Etiwanda Substation Modification Construction Emissions
Electrical

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Crew Truck	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Crew Truck	0.01	0.06	0.01	0.00	0.00	0.00
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.18**	**1.76**	**0.18**	**0.00**	**0.02**	**0.01**
Total	**0.19**	**1.76**	**0.18**	**0.00**	**0.02**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Crew Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Crew Truck	0.1	0.0	0.1
Worker Commute	2.4	0.0	2.4
Offsite Total	**2.5**	**0.0**	**2.5**
Total	**2.5**	**0.0**	**2.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Crew Truck	2	Paved	0.2	0.001	0.000	0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Crew Truck	2	Paved	4	0.001	0.000	0.01	0.00
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**0.23**	**0.00**
Total						**0.23**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 30
Etiwanda Substation Modification Construction Emissions
Wiring

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
Offsite Motor Vehicle Exhaust	0.09	0.85	0.09	0.00	0.01	0.01	0.6
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.11	0.00	
Offsite Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.12**	**0.01**	**0.6**
Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.12**	**0.01**	**0.6**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None										

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Worker Commute	2	10	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None									
Offsite									
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Worker Commute	0.09	0.85	0.09	0.00	0.01	0.01
Offsite Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.01**	**0.01**
Total	**0.09**	**0.85**	**0.09**	**0.00**	**0.01**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 30
Etiwanda Substation Modification Construction Emissions
Wiring

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Worker Commute	0.6	0.0	0.6
Offsite Total	**0.6**	**0.0**	**0.6**
Total	**0.6**	**0.0**	**0.6**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Worker Commute	2	Paved	60	0.001	0.000	0.11	0.00
Offsite Total						**0.11**	**0.00**
Total						**0.11**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 31
Etiwanda Substation Modification Construction Emissions
Maintenance Crew Equipment Check

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.01	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
Offsite Motor Vehicle Exhaust	0.10	0.91	0.09	0.00	0.01	0.01	0.5
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.12	0.00	
Offsite Total	**0.10**	**0.91**	**0.09**	**0.00**	**0.13**	**0.01**	**0.5**
Total	**0.10**	**0.91**	**0.09**	**0.00**	**0.13**	**0.01**	**0.5**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None										

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Maintenance Truck	2	8	N/A	0.5
Offsite				
Maintenance Truck	2	8	N/A	4
Worker Commute	2	8	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Maintenance Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Maintenance Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 31
Etiwanda Substation Modification Construction Emissions
Maintenance Crew Equipment Check

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Maintenance Truck	0.00	0.01	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Maintenance Truck	0.01	0.06	0.01	0.00	0.00	0.00
Worker Commute	0.09	0.85	0.09	0.00	0.01	0.01
Offsite Total	**0.10**	**0.91**	**0.09**	**0.00**	**0.01**	**0.01**
Total	**0.10**	**0.91**	**0.09**	**0.00**	**0.01**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Maintenance Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Maintenance Truck	0.0	0.0	0.0
Worker Commute	0.5	0.0	0.5
Offsite Total	**0.5**	**0.0**	**0.5**
Total	**0.5**	**0.0**	**0.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Maintenance Truck	2	Paved	0.5	0.001	0.000	0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Maintenance Truck	2	Paved	4	0.001	0.000	0.01	0.00
Worker Commute	2	Paved	60	0.001	0.000	0.11	0.00
Offsite Total						**0.12**	**0.00**
Total						**0.12**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 32
Etiwanda Substation Modification Construction Emissions
Testing

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
Offsite Motor Vehicle Exhaust	0.09	0.88	0.09	0.00	0.01	0.01	0.9
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.11	0.00	
Offsite Total	**0.09**	**0.88**	**0.09**	**0.00**	**0.13**	**0.01**	**0.9**
Total	**0.09**	**0.88**	**0.09**	**0.00**	**0.13**	**0.01**	**0.9**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None										

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.[a]
Onsite				
Crew Truck	1	15	N/A	0.5
Offsite				
Crew Truck	1	15	N/A	4
Worker Commute	2	15	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
Crew Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 32
Etiwanda Substation Modification Construction Emissions
Testing

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Crew Truck	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Crew Truck	0.00	0.03	0.00	0.00	0.00	0.00
Worker Commute	0.09	0.85	0.09	0.00	0.01	0.01
Offsite Total	**0.09**	**0.88**	**0.09**	**0.00**	**0.01**	**0.01**
Total	**0.09**	**0.88**	**0.09**	**0.00**	**0.01**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Crew Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Crew Truck	0.0	0.0	0.0
Worker Commute	0.9	0.0	0.9
Offsite Total	**0.9**	**0.0**	**0.9**
Total	**0.9**	**0.0**	**0.9**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Crew Truck	1	Paved	0.5	0.001	0.000	0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Crew Truck	1	Paved	4	0.001	0.000	0.00	0.00
Worker Commute	2	Paved	60	0.001	0.000	0.11	0.00
Offsite Total						**0.11**	**0.00**
Total						**0.11**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 33
Subtransmission Source Line Construction Emissions Survey

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
Offsite Motor Vehicle Exhaust	0.20	1.90	0.19	0.00	0.02	0.02	1.5
Offsite Motor Vehicle Fugitive PM	--	--	--	--	2.37	0.21	
Offsite Total	**0.20**	**1.90**	**0.19**	**0.00**	**2.39**	**0.23**	**1.5**
Total	**0.20**	**1.90**	**0.19**	**0.00**	**2.39**	**0.23**	**1.5**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
1-Ton Truck, 4x4	1	11	N/A	28
Worker Commute	4	11	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Offsite									
1-Ton Truck, 4x4	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 33
Subtransmission Source Line Construction Emissions
Survey

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
1-Ton Truck, 4x4	0.02	0.20	0.02	0.00	0.00	0.00
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.20**	**1.90**	**0.19**	**0.00**	**0.02**	**0.02**
Total	**0.20**	**1.90**	**0.19**	**0.00**	**0.02**	**0.02**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
1-Ton Truck, 4x4	0.2	0.0	0.2
Worker Commute	1.3	0.0	1.3
Offsite Total	**1.5**	**0.0**	**1.5**
Total	**1.5**	**0.0**	**1.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
1-Ton Truck, 4x4	1	Paved	24	0.001	0.000	0.02	0.00
1-Ton Truck, 4x4	1	Unpaved	4	0.532	0.053	2.13	0.21
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**2.37**	**0.21**
Total						**2.37**	**0.21**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 34
Subtransmission Source Line Construction Emissions
Staging Area

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.65	2.03	6.01	0.01	0.20	0.19	136.5
Onsite Motor Vehicle Exhaust	0.03	0.19	0.29	0.00	0.01	0.01	8.1
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.01	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.68**	**2.21**	**6.31**	**0.01**	**0.23**	**0.20**	**144.6**
Offsite Motor Vehicle Exhaust	0.18	1.70	0.17	0.00	0.02	0.01	43.8
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.22	0.00	
Offsite Total	**0.18**	**1.70**	**0.17**	**0.00**	**0.24**	**0.01**	**43.8**
Total	**0.86**	**3.92**	**6.48**	**0.01**	**0.47**	**0.21**	**188.4**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Boom/Crane Truck	300	1	365	2
Rough Terrain Forklift	200	1	365	6

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Boom/Crane Truck	300	0.155	0.529	1.423	0.002	0.052	0.048	180.101	0.014	Cranes
Rough Terrain Forklift	200	0.057	0.161	0.528	0.001	0.017	0.015	77.122	0.005	Forklifts

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Boom/Crane Truck	0.31	1.06	2.85	0.00	0.10	0.10
Rough Terrain Forklift	0.34	0.97	3.17	0.01	0.10	0.09
Total	**0.65**	**2.03**	**6.01**	**0.01**	**0.20**	**0.19**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Boom/Crane Truck	59.6	0.0	59.7
Rough Terrain Forklift	76.6	0.0	76.7
Total	**136.2**	**0.0**	**136.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.[a]
Onsite				
1-Ton Crew Cab, 4x4	1	365	4	10
Truck, Semi Tractor	1	365	2	5
Offsite				
Worker Commute	4	365	N/A	60

[a] Onsite travel based on 25% use at 10 mph average speed

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Truck, Semi Tractor	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Offsite									
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 34
Subtransmission Source Line Construction Emissions
Staging Area

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
1-Ton Crew Cab, 4x4	0.02	0.14	0.16	0.00	0.01	0.01
Truck, Semi Tractor	0.01	0.05	0.14	0.00	0.01	0.01
Onsite Total	**0.03**	**0.19**	**0.29**	**0.00**	**0.01**	**0.01**
Offsite						
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.18**	**1.70**	**0.17**	**0.00**	**0.02**	**0.01**
Total	**0.21**	**1.89**	**0.47**	**0.00**	**0.03**	**0.02**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
1-Ton Crew Cab, 4x4	4.6	0.0	4.6
Truck, Semi Tractor	3.5	0.0	3.5
Onsite Total	**8.1**	**0.0**	**8.1**
Offsite			
Worker Commute	43.7	0.0	43.8
Offsite Total	**43.7**	**0.0**	**43.8**
Total	**51.8**	**0.0**	**51.9**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
1-Ton Crew Cab, 4x4	1	Paved	10	0.001	0.000	0.01	0.00
Truck, Semi Tractor	1	Paved	5	0.001	0.000	0.00	0.00
Onsite Total						**0.01**	**0.00**
Offsite							
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**0.22**	**0.00**
Total						**0.24**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 35
Subtransmission Source Line Construction Emissions
Road Work

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	2.91	10.54	26.14	0.03	1.05	0.96	5.9
Onsite Motor Vehicle Exhaust	0.00	0.01	0.03	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.92	0.09	
Earthwork Fugitive PM	--	--	--	--	30.26	6.29	
Onsite Total	**2.92**	**10.55**	**26.16**	**0.03**	**32.23**	**7.35**	**5.9**
Offsite Motor Vehicle Exhaust	0.33	2.67	1.35	0.00	0.08	0.06	0.9
Offsite Motor Vehicle Fugitive PM	--	--	--	--	9.82	0.95	
Offsite Total	**0.33**	**2.67**	**1.35**	**0.00**	**9.90**	**1.01**	**0.9**
Total	**3.25**	**13.22**	**27.51**	**0.04**	**42.13**	**8.36**	**6.8**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Road Grader	350	1	4	6
Backhoe/Front Loader	79	1	4	4
Drum Type Compactor	250	1	4	4
Track Type Dozer	350	1	4	4

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Road Grader	350	0.186	0.629	1.684	0.002	0.061	0.056	229.484	0.017	Graders
Backhoe/Front Loader	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes
Drum Type Compactor	250	0.126	0.389	1.312	0.002	0.045	0.041	153.090	0.011	Rollers
Track Type Dozer	350	0.254	0.950	2.239	0.003	0.087	0.080	259.229	0.023	Crawler Tractors

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Road Grader	1.11	3.77	10.11	0.01	0.36	0.34
Backhoe/Front Loader	0.28	1.41	1.83	0.00	0.15	0.14
Drum Type Compactor	0.50	1.55	5.25	0.01	0.18	0.17
Track Type Dozer	1.02	3.80	8.96	0.01	0.35	0.32
Total	**2.91**	**10.54**	**26.14**	**0.03**	**1.05**	**0.96**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Road Grader	2.5	0.0	2.5
Backhoe/Front Loader	0.4	0.0	0.4
Drum Type Compactor	1.1	0.0	1.1
Track Type Dozer	1.9	0.0	1.9
Total	**5.9**	**0.0**	**5.9**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number[a]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Water Truck	1	4	N/A	1
Offsite				
Water Truck	1	4	N/A	13
1-Ton Crew Cab, 4x4	1	4	N/A	18
Lowboy Truck/Trailer	1	4	N/A	18
Worker Commute	5	4	N/A	60

Table 35
Subtransmission Source Line Construction Emissions
Road Work

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Offsite									
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Lowboy Truck/Trailer	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Water Truck	0.00	0.01	0.03	0.00	0.00	0.00
Onsite Total	**0.00**	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**
Offsite						
Water Truck	0.03	0.12	0.36	0.00	0.02	0.01
1-Ton Crew Cab, 4x4	0.04	0.25	0.28	0.00	0.01	0.01
Lowboy Truck/Trailer	0.04	0.17	0.49	0.00	0.02	0.02
Worker Commute	0.22	2.13	0.21	0.00	0.03	0.02
Offsite Total	**0.33**	**2.67**	**1.35**	**0.00**	**0.08**	**0.06**
Total	**0.33**	**2.68**	**1.38**	**0.01**	**0.08**	**0.06**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Water Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Water Truck	0.1	0.0	0.1
1-Ton Crew Cab, 4x4	0.1	0.0	0.1
Lowboy Truck/Trailer	0.1	0.0	0.1
Worker Commute	0.6	0.0	0.6
Offsite Total	**0.9**	**0.0**	**0.9**
Total	**0.9**	**0.0**	**0.9**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Water Truck	1	Unpaved	1	0.922	0.092	0.92	0.09
Onsite Total						**0.92**	**0.09**
Offsite							
Water Truck	1	Paved	10	0.001	0.000	0.01	0.00
1-Ton Crew Cab, 4x4	1	Paved	14	0.001	0.000	0.01	0.00
Lowboy Truck/Trailer	1	Paved	14	0.001	0.000	0.01	0.00
Water Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
1-Ton Crew Cab, 4x4	1	Unpaved	4	0.532	0.053	2.13	0.21
Lowboy Truck/Trailer	1	Unpaved	4	0.922	0.092	3.69	0.37
Worker Commute	5	Paved	60	0.001	0.000	0.28	0.00
Offsite Total						**9.82**	**0.95**
Total						**10.74**	**1.04**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 35
Subtransmission Source Line Construction Emissions
Road Work

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling[c]	CY/day	4,620	2.75E-03	5.72E-04	12.70	2.64
Bulldozing, Scraping and Grading	hr/day	10	1.756	0.365	17.56	3.65
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**30.26**	**6.29**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

[c] Based on excavating or backfilling and grading of 18 ft. wide x 18,480 ft. long x 1.5 ft. deep = 18,480 CY over 4 days

Table 36
Subtransmission Source Line Construction Emissions
Guard Structure Installation

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	2.25	8.55	21.35	0.03	0.82	0.75	18.3
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**2.25**	**8.55**	**21.35**	**0.03**	**0.82**	**0.75**	**18.3**
Offsite Motor Vehicle Exhaust	0.45	3.43	2.15	0.01	0.12	0.10	3.9
Offsite Motor Vehicle Fugitive PM	--	--	--	--	5.08	0.47	
Offsite Total	**0.45**	**3.43**	**2.15**	**0.01**	**5.20**	**0.56**	**3.9**
Total	**2.70**	**11.98**	**23.49**	**0.04**	**6.02**	**1.32**	**22.2**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Compressor Trailer	120	1	12	4
Auger Truck	500	1	12	4
Boom/Crane Truck	300	1	12	6
Bucket Truck	350	1	12	4

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Compressor Trailer	120	0.082	0.325	0.499	0.001	0.046	0.042	46.950	0.007	Air Compressors
Auger Truck	500	0.129	0.552	1.172	0.003	0.036	0.033	311.309	0.012	Bore/Drill Rigs
Boom/Crane Truck	300	0.155	0.529	1.423	0.002	0.052	0.048	180.101	0.014	Cranes
Bucket Truck	350	0.119	0.467	1.531	0.002	0.045	0.041	212.856	0.011	Aerial Lifts

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Compressor Trailer	0.33	1.30	2.00	0.00	0.18	0.17
Auger Truck	0.52	2.21	4.69	0.01	0.14	0.13
Boom/Crane Truck	0.93	3.18	8.54	0.01	0.31	0.29
Bucket Truck	0.48	1.87	6.12	0.01	0.18	0.17
Total	**2.25**	**8.55**	**21.35**	**0.03**	**0.82**	**0.75**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Compressor Trailer	1.0	0.0	1.0
Auger Truck	6.8	0.0	6.8
Boom/Crane Truck	5.9	0.0	5.9
Bucket Truck	4.6	0.0	4.6
Total	**18.3**	**0.0**	**18.3**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
3/4-Ton Truck, 4x4	1	12	N/A	15
1-Ton Crew Cab, 4x4	1	12	N/A	15
Extendable Flat Bed Pole Truck	1	12	N/A	15
Auger Truck	1	12	N/A	15
Boom/Crane Truck	1	12	N/A	15
Bucket Truck	1	12	N/A	15
Worker Commute	6	12	N/A	60

Table 36
Subtransmission Source Line Construction Emissions
Guard Structure Installation

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
3/4-Ton Truck, 4x4	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Extendable Flat Bed Pole Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Auger Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Boom/Crane Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Bucket Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
3/4-Ton Truck, 4x4	0.01	0.11	0.01	0.00	0.00	0.00
1-Ton Crew Cab, 4x4	0.03	0.21	0.24	0.00	0.01	0.01
Extendable Flat Bed Pole Truck	0.03	0.14	0.41	0.00	0.02	0.02
Auger Truck	0.03	0.14	0.41	0.00	0.02	0.02
Boom/Crane Truck	0.03	0.14	0.41	0.00	0.02	0.02
Bucket Truck	0.03	0.14	0.41	0.00	0.02	0.02
Worker Commute	0.27	2.55	0.26	0.00	0.03	0.02
Offsite Total	**0.45**	**3.43**	**2.15**	**0.01**	**0.12**	**0.10**
Total	**0.45**	**3.43**	**2.15**	**0.01**	**0.12**	**0.10**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
3/4-Ton Truck, 4x4	0.1	0.0	0.1
1-Ton Crew Cab, 4x4	0.2	0.0	0.2
Extendable Flat Bed Pole Truck	0.3	0.0	0.3
Auger Truck	0.3	0.0	0.3
Boom/Crane Truck	0.3	0.0	0.3
Bucket Truck	0.3	0.0	0.3
Worker Commute	2.2	0.0	2.2
Offsite Total	**3.9**	**0.0**	**3.9**
Total	**3.9**	**0.0**	**3.9**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 36
Subtransmission Source Line Construction Emissions
Guard Structure Installation

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
3/4-Ton Truck, 4x4	1	Paved	14	0.001	0.000	0.01	0.00
1-Ton Crew Cab, 4x4	1	Paved	14	0.001	0.000	0.01	0.00
Extendable Flat Bed Pole Truck	1	Paved	14	0.001	0.000	0.01	0.00
Auger Truck	1	Paved	14	0.001	0.000	0.01	0.00
Boom/Crane Truck	1	Paved	14	0.001	0.000	0.01	0.00
Bucket Truck	1	Paved	14	0.001	0.000	0.01	0.00
3/4-Ton Truck, 4x4	1	Unpaved	1	0.447	0.045	0.45	0.04
1-Ton Crew Cab, 4x4	1	Unpaved	1	0.532	0.053	0.53	0.05
Extendable Flat Bed Pole Truck	1	Unpaved	1	0.922	0.092	0.92	0.09
Auger Truck	1	Unpaved	1	0.922	0.092	0.92	0.09
Boom/Crane Truck	1	Unpaved	1	0.922	0.092	0.92	0.09
Bucket Truck	1	Unpaved	1	0.922	0.092	0.92	0.09
Worker Commute	6	Paved	60	0.001	0.000	0.33	0.00
Offsite Total						**5.08**	**0.47**
Total						**5.08**	**0.47**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 37
Subtransmission Source Line Construction Emissions
Wood/LWS Pole Removal

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	1.74	6.34	16.66	0.02	0.67	0.62	5.8
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**1.74**	**6.34**	**16.66**	**0.02**	**0.67**	**0.62**	**5.8**
Offsite Motor Vehicle Exhaust	0.43	3.31	2.02	0.01	0.12	0.09	1.8
Offsite Motor Vehicle Fugitive PM	--	--	--	--	13.58	1.32	
Offsite Total	**0.43**	**3.31**	**2.02**	**0.01**	**13.69**	**1.41**	**1.8**
Total	**2.16**	**9.65**	**18.68**	**0.03**	**14.37**	**2.03**	**7.6**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Bucket Truck	300	1	6	4
Compressor Trailer	120	1	6	4
Boom/Crane Truck	350	1	6	6

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Bucket Truck	300	0.119	0.467	1.531	0.002	0.045	0.041	212.856	0.011	Aerial Lifts
Compressor Trailer	120	0.082	0.325	0.499	0.001	0.046	0.042	46.950	0.007	Air Compressors
Boom/Crane Truck	350	0.155	0.529	1.423	0.002	0.052	0.048	180.101	0.014	Cranes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Bucket Truck	0.48	1.87	6.12	0.01	0.18	0.17
Compressor Trailer	0.33	1.30	2.00	0.00	0.18	0.17
Boom/Crane Truck	0.93	3.18	8.54	0.01	0.31	0.29
Total	**1.74**	**6.34**	**16.66**	**0.02**	**0.67**	**0.62**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Bucket Truck	2.3	0.0	2.3
Compressor Trailer	0.5	0.0	0.5
Boom/Crane Truck	2.9	0.0	2.9
Total	**5.8**	**0.0**	**5.8**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
1-Ton Crew Cab, 4x4	1	6	N/A	18
Bucket Truck	1	6	N/A	18
Flat Bed Pole Truck	1	6	N/A	18
Boom/Crane Truck	1	6	N/A	18
Worker Commute	6	6	N/A	60

Table 37
Subtransmission Source Line Construction Emissions
Wood/LWS Pole Removal

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Bucket Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Flat Bed Pole Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Boom/Crane Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
1-Ton Crew Cab, 4x4	0.04	0.25	0.28	0.00	0.01	0.01
Bucket Truck	0.04	0.17	0.49	0.00	0.02	0.02
Flat Bed Pole Truck	0.04	0.17	0.49	0.00	0.02	0.02
Boom/Crane Truck	0.04	0.17	0.49	0.00	0.02	0.02
Worker Commute	0.27	2.55	0.26	0.00	0.03	0.02
Offsite Total	**0.43**	**3.31**	**2.02**	**0.01**	**0.12**	**0.09**
Total	**0.43**	**3.31**	**2.02**	**0.01**	**0.12**	**0.09**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
1-Ton Crew Cab, 4x4	0.1	0.0	0.1
Bucket Truck	0.2	0.0	0.2
Flat Bed Pole Truck	0.2	0.0	0.2
Boom/Crane Truck	0.2	0.0	0.2
Worker Commute	1.1	0.0	1.1
Offsite Total	**1.8**	**0.0**	**1.8**
Total	**1.8**	**0.0**	**1.8**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
1-Ton Crew Cab, 4x4	1	Paved	14	0.001	0.000	0.01	0.00
Bucket Truck	1	Paved	14	0.001	0.000	0.01	0.00
Flat Bed Pole Truck	1	Paved	14	0.001	0.000	0.01	0.00
Boom/Crane Truck	1	Paved	14	0.001	0.000	0.01	0.00
1-Ton Crew Cab, 4x4	1	Unpaved	4	0.532	0.053	2.13	0.21
Bucket Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Flat Bed Pole Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Boom/Crane Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Worker Commute	6	Paved	60	0.001	0.000	0.33	0.00
Offsite Total						**13.58**	**1.32**
Total						**13.58**	**1.32**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 37
Subtransmission Source Line Construction Emissions
Wood/LWS Pole Removal

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 38
Subtransmission Source Line Construction Emissions
Install TSP Foundations

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	1.67	6.84	14.55	0.03	0.58	0.53	114.2
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.06	0.01	
Onsite Total	**1.67**	**6.84**	**14.55**	**0.03**	**0.64**	**0.54**	**114.2**
Offsite Motor Vehicle Exhaust	1.19	6.68	10.73	0.02	0.54	0.46	84.6
Offsite Motor Vehicle Fugitive PM	--	--	--	--	32.35	3.16	
Offsite Total	**1.19**	**6.68**	**10.73**	**0.02**	**32.89**	**3.62**	**84.6**
Total	**2.86**	**13.52**	**25.28**	**0.05**	**33.53**	**4.17**	**198.9**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Boom/Crane Truck	300	1	90	4
Backhoe/Front Loader	79	1	90	4
Auger Truck	500	1	90	6

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Boom/Crane Truck	300	0.155	0.529	1.423	0.002	0.052	0.048	180.101	0.014	Cranes
Backhoe/Front Loader	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes
Auger Truck	500	0.129	0.552	1.172	0.003	0.036	0.033	311.309	0.012	Bore/Drill Rigs

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Boom/Crane Truck	0.62	2.12	5.69	0.01	0.21	0.19
Backhoe/Front Loader	0.28	1.41	1.83	0.00	0.15	0.14
Auger Truck	0.78	3.31	7.03	0.02	0.22	0.20
Total	**1.67**	**6.84**	**14.55**	**0.03**	**0.58**	**0.53**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Boom/Crane Truck	29.4	0.0	29.5
Backhoe/Front Loader	8.4	0.0	8.5
Auger Truck	76.3	0.0	76.3
Total	**114.1**	**0.0**	**114.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number[a]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Water Truck	1	90	N/A	14
1-Ton Crew Cab, 4x4	1	90	N/A	18
Dump Truck	2	90	N/A	64
Concrete Truck	3	90	N/A	64
Boom/Crane Truck	1	90	N/A	18
Auger Truck	1	90	N/A	18
Worker Commute	7	90	N/A	60

[a] Concrete trucks based on 40 CY per foundation, 50 foundations total and 10 CY/truck over 90 days
= 40 x 50 / 10 / 90 = 2.2 truck/day
Dump trucks based on 40 CY per foundation, 50 foundations total and 14 CY/truck over 90 days
= 40 x 50 / 14 / 90 = 1.6 truck/day

Table 38
Subtransmission Source Line Construction Emissions
Install TSP Foundations

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Concrete Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Boom/Crane Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Auger Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Water Truck	0.03	0.13	0.38	0.00	0.02	0.02
1-Ton Crew Cab, 4x4	0.04	0.25	0.28	0.00	0.01	0.01
Dump Truck	0.29	1.19	3.51	0.01	0.17	0.15
Concrete Truck	0.43	1.79	5.27	0.01	0.26	0.22
Boom/Crane Truck	0.04	0.17	0.49	0.00	0.02	0.02
Auger Truck	0.04	0.17	0.49	0.00	0.02	0.02
Worker Commute	0.31	2.98	0.30	0.00	0.04	0.02
Offsite Total	**1.19**	**6.68**	**10.73**	**0.02**	**0.54**	**0.46**
Total	**1.19**	**6.68**	**10.73**	**0.02**	**0.54**	**0.46**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Water Truck	2.4	0.0	2.4
1-Ton Crew Cab, 4x4	2.0	0.0	2.0
Dump Truck	22.0	0.0	22.0
Concrete Truck	33.0	0.0	33.1
Boom/Crane Truck	3.1	0.0	3.1
Auger Truck	3.1	0.0	3.1
Worker Commute	18.9	0.0	18.9
Offsite Total	**84.6**	**0.0**	**84.6**
Total	**84.6**	**0.0**	**84.6**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 38
Subtransmission Source Line Construction Emissions
Install TSP Foundations

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None							
Onsite Total						**0.00**	**0.00**
Offsite							
Water Truck	1	Paved	10	0.001	0.000	0.01	0.00
1-Ton Crew Cab, 4x4	1	Paved	14	0.001	0.000	0.01	0.00
Dump Truck	2	Paved	60	0.001	0.000	0.11	0.00
Concrete Truck	3	Paved	60	0.001	0.000	0.17	0.00
Boom/Crane Truck	1	Paved	14	0.001	0.000	0.01	0.00
Auger Truck	1	Paved	14	0.001	0.000	0.01	0.00
Water Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
1-Ton Crew Cab, 4x4	1	Unpaved	4	0.532	0.053	2.13	0.21
Dump Truck	2	Unpaved	4	0.922	0.092	7.38	0.74
Concrete Truck	3	Unpaved	4	0.922	0.092	11.07	1.11
Boom/Crane Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Auger Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Worker Commute	7	Paved	60	0.001	0.000	0.39	0.00
Offsite Total						**32.35**	**3.16**
Total						**32.35**	**3.16**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling[c]	CY/day	22	2.75E-03	5.72E-04	0.06	0.01
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.06**	**0.01**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

[c] Based on 50 TSPs x 40 CY/TSP = 2,000 CY over 90 days

Table 39
Subtransmission Source Line Construction Emissions
TSP Haul

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.93	3.18	8.54	0.01	0.31	0.29	5.9
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.93**	**3.18**	**8.54**	**0.01**	**0.31**	**0.29**	**5.9**
Offsite Motor Vehicle Exhaust	0.27	2.17	1.17	0.00	0.07	0.06	2.4
Offsite Motor Vehicle Fugitive PM	--	--	--	--	9.43	0.92	
Offsite Total	**0.27**	**2.17**	**1.17**	**0.00**	**9.50**	**0.97**	**2.4**
Total	**1.20**	**5.34**	**9.71**	**0.01**	**9.81**	**1.26**	**8.3**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Boom/Crane Truck	300	1	12	6

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Boom/Crane Truck	300	0.155	0.529	1.423	0.002	0.052	0.048	180.101	0.014	Cranes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Boom/Crane Truck	0.93	3.18	8.54	0.01	0.31	0.29
Total	**0.93**	**3.18**	**8.54**	**0.01**	**0.31**	**0.29**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Boom/Crane Truck	5.9	0.0	5.9
Total	**5.9**	**0.0**	**5.9**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
3/4-Ton Truck, 4x4	1	12	N/A	18
Boom/Crane Truck	1	12	N/A	18
Flat Bed Pole Truck	1	12	N/A	18
Worker Commute	4	12	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None									
Offsite									
3/4-Ton Truck, 4x4	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Boom/Crane Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Flat Bed Pole Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 39
Subtransmission Source Line Construction Emissions
TSP Haul

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
3/4-Ton Truck, 4x4	0.01	0.13	0.01	0.00	0.00	0.00
Boom/Crane Truck	0.04	0.17	0.49	0.00	0.02	0.02
Flat Bed Pole Truck	0.04	0.17	0.49	0.00	0.02	0.02
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.27**	**2.17**	**1.17**	**0.00**	**0.07**	**0.06**
Total	**0.27**	**2.17**	**1.17**	**0.00**	**0.07**	**0.06**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
3/4-Ton Truck, 4x4	0.1	0.0	0.1
Boom/Crane Truck	0.4	0.0	0.4
Flat Bed Pole Truck	0.4	0.0	0.4
Worker Commute	1.4	0.0	1.4
Offsite Total	**2.4**	**0.0**	**2.4**
Total	**2.4**	**0.0**	**2.4**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None	0					0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
3/4-Ton Truck, 4x4	1	Paved	14	0.001	0.000	0.01	0.00
Boom/Crane Truck	1	Paved	14	0.001	0.000	0.01	0.00
Flat Bed Pole Truck	1	Paved	14	0.001	0.000	0.01	0.00
3/4-Ton Truck, 4x4	1	Unpaved	4	0.447	0.045	1.79	0.18
Boom/Crane Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Flat Bed Pole Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**9.43**	**0.92**
Total						**9.43**	**0.92**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 40
Subtransmission Source Line Construction Emissions
TSP Assembly

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	1.26	4.48	10.53	0.01	0.49	0.45	25.9
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**1.26**	**4.48**	**10.53**	**0.01**	**0.49**	**0.45**	**25.9**
Offsite Motor Vehicle Exhaust	0.81	7.31	1.73	0.01	0.13	0.09	24.7
Offsite Motor Vehicle Fugitive PM	--	--	--	--	12.41	1.15	
Offsite Total	**0.81**	**7.31**	**1.73**	**0.01**	**12.54**	**1.25**	**24.7**
Total	**2.07**	**11.79**	**12.26**	**0.02**	**13.04**	**1.70**	**50.6**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Compressor Trailer	120	1	45	4
Boom/Crane Truck	350	1	45	6

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Compressor Trailer	120	0.082	0.325	0.499	0.001	0.046	0.042	46.950	0.007	Air Compressors
Boom/Crane Truck	350	0.155	0.529	1.423	0.002	0.052	0.048	180.101	0.014	Cranes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Compressor Trailer	0.33	1.30	2.00	0.00	0.18	0.17
Boom/Crane Truck	0.93	3.18	8.54	0.01	0.31	0.29
Total	**1.26**	**4.48**	**10.53**	**0.01**	**0.49**	**0.45**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Compressor Trailer	3.8	0.0	3.8
Boom/Crane Truck	22.1	0.0	22.1
Total	**25.9**	**0.0**	**25.9**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
3/4-Ton Pick-up Truck, 4x4	2	45	N/A	18
Boom/Crane Truck	1	45	N/A	18
1-Ton Crew Cab, 4x4	2	45	N/A	18
Worker Commute	15	45	N/A	60

Boom/crane truck not added as emissions might be covered under

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
3/4-Ton Pick-up Truck, 4x4	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Boom/Crane Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 40
Subtransmission Source Line Construction Emissions
TSP Assembly

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
3/4-Ton Pick-up Truck, 4x4	0.03	0.26	0.03	0.00	0.00	0.00
Boom/Crane Truck	0.04	0.17	0.49	0.00	0.02	0.02
1-Ton Crew Cab, 4x4	0.07	0.51	0.57	0.00	0.02	0.02
Worker Commute	0.67	6.38	0.64	0.01	0.08	0.05
Offsite Total	**0.81**	**7.31**	**1.73**	**0.01**	**0.13**	**0.09**
Total	**0.81**	**7.31**	**1.73**	**0.01**	**0.13**	**0.09**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
3/4-Ton Pick-up Truck, 4x4	0.8	0.0	0.8
Boom/Crane Truck	1.5	0.0	1.5
1-Ton Crew Cab, 4x4	2.0	0.0	2.0
Worker Commute	20.2	0.0	20.2
Offsite Total	**24.6**	**0.0**	**24.7**
Total	**24.6**	**0.0**	**24.7**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None	0					0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
3/4-Ton Pick-up Truck, 4x4	2	Paved	14	0.001	0.000	0.03	0.00
Boom/Crane Truck	1	Paved	14	0.001	0.000	0.01	0.00
1-Ton Crew Cab, 4x4	2	Paved	14	0.001	0.000	0.03	0.00
3/4-Ton Pick-up Truck, 4x4	2	Unpaved	4	0.447	0.045	3.58	0.36
Boom/Crane Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
1-Ton Crew Cab, 4x4	2	Unpaved	4	0.532	0.053	4.25	0.43
Worker Commute	15	Paved	60	0.001	0.000	0.83	0.00
Offsite Total						**12.41**	**1.15**
Total						**12.41**	**1.15**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 41
Subtransmission Source Line Construction Emissions
TSP Erection

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.95	4.19	6.66	0.01	0.45	0.41	13.7
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.95**	**4.19**	**6.66**	**0.01**	**0.45**	**0.41**	**13.7**
Offsite Motor Vehicle Exhaust	0.77	7.15	1.23	0.01	0.11	0.07	23.1
Offsite Motor Vehicle Fugitive PM	--	--	--	--	8.71	0.78	
Offsite Total	**0.77**	**7.15**	**1.23**	**0.01**	**8.82**	**0.86**	**23.1**
Total	**1.72**	**11.34**	**7.89**	**0.02**	**9.27**	**1.27**	**36.8**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Compressor Trailer	120	1	45	4
30-Ton Rough Terrain Crane	150	1	45	6

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Compressor Trailer	120	0.082	0.325	0.499	0.001	0.046	0.042	46.950	0.007	Air Compressors
30-Ton Rough Terrain Crane	150	0.103	0.482	0.777	0.001	0.045	0.041	80.345	0.009	Cranes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Compressor Trailer	0.33	1.30	2.00	0.00	0.18	0.17
30-Ton Rough Terrain Crane	0.62	2.89	4.66	0.01	0.27	0.25
Total	**0.95**	**4.19**	**6.66**	**0.01**	**0.45**	**0.41**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Compressor Trailer	3.8	0.0	3.8
30-Ton Rough Terrain Crane	9.8	0.0	9.9
Total	**13.7**	**0.0**	**13.7**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
3/4-Ton Pick-up Truck, 4x4	2	45	N/A	18
1-Ton Crew Cab, 4x4	2	45	N/A	18
Worker Commute	15	45	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
3/4-Ton Pick-up Truck, 4x4	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 41
Subtransmission Source Line Construction Emissions
TSP Erection

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
3/4-Ton Pick-up Truck, 4x4	0.03	0.26	0.03	0.00	0.00	0.00
1-Ton Crew Cab, 4x4	0.07	0.51	0.57	0.00	0.02	0.02
Worker Commute	0.67	6.38	0.64	0.01	0.08	0.05
Offsite Total	**0.77**	**7.15**	**1.23**	**0.01**	**0.11**	**0.07**
Total	**0.77**	**7.15**	**1.23**	**0.01**	**0.11**	**0.07**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
3/4-Ton Pick-up Truck, 4x4	0.8	0.0	0.8
1-Ton Crew Cab, 4x4	2.0	0.0	2.0
Worker Commute	20.2	0.0	20.2
Offsite Total	**23.1**	**0.0**	**23.1**
Total	**23.1**	**0.0**	**23.1**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None	0					0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
3/4-Ton Pick-up Truck, 4x4	2	Paved	14	0.001	0.000	0.03	0.00
1-Ton Crew Cab, 4x4	2	Paved	14	0.001	0.000	0.03	0.00
3/4-Ton Pick-up Truck, 4x4	2	Unpaved	4	0.447	0.045	3.58	0.36
1-Ton Crew Cab, 4x4	2	Unpaved	4	0.532	0.053	4.25	0.43
Worker Commute	15	Paved	60	0.001	0.000	0.83	0.00
Offsite Total						**8.71**	**0.78**
Total						**8.71**	**0.78**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 42
Subtransmission Source Line Construction Emissions
Install Wood/ LWS Poles

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	2.34	9.37	22.09	0.03	0.86	0.80	96.6
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.04	0.01	
Onsite Total	**2.34**	**9.37**	**22.09**	**0.03**	**0.90**	**0.80**	**96.6**
Offsite Motor Vehicle Exhaust	0.87	7.39	2.69	0.01	0.18	0.13	36.5
Offsite Motor Vehicle Fugitive PM	--	--	--	--	17.78	1.69	
Offsite Total	**0.87**	**7.39**	**2.69**	**0.01**	**17.95**	**1.82**	**36.5**
Total	**3.21**	**16.76**	**24.78**	**0.05**	**18.85**	**2.62**	**133.1**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Auger Truck	500	1	61	4
Bucket Truck	350	1	61	4
Boom/Crane Truck	350	1	61	6
Backhoe/Front Loader	79	1	61	6

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Auger Truck	500	0.129	0.552	1.172	0.003	0.036	0.033	311.309	0.012	Bore/Drill Rigs
Bucket Truck	350	0.119	0.467	1.531	0.002	0.045	0.041	212.856	0.011	Aerial Lifts
Boom/Crane Truck	350	0.155	0.529	1.423	0.002	0.052	0.048	180.101	0.014	Cranes
Backhoe/Front Loader	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Auger Truck	0.52	2.21	4.69	0.01	0.14	0.13
Bucket Truck	0.48	1.87	6.12	0.01	0.18	0.17
Boom/Crane Truck	0.93	3.18	8.54	0.01	0.31	0.29
Backhoe/Front Loader	0.42	2.12	2.74	0.00	0.23	0.21
Total	**2.34**	**9.37**	**22.09**	**0.03**	**0.86**	**0.80**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Auger Truck	34.5	0.0	34.5
Bucket Truck	23.6	0.0	23.6
Boom/Crane Truck	29.9	0.0	29.9
Backhoe/Front Loader	8.6	0.0	8.6
Total	**96.5**	**0.0**	**96.6**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Auger Truck	1	61	N/A	18
Bucket Truck	1	61	N/A	18
Boom/Crane Truck	1	61	N/A	18
1-Ton Crew Cab, 4x4	1	61	N/A	18
Extendable Flat Bed Pole Truck	1	61	N/A	18
Worker Commute	15	61	N/A	60

Table 42
Subtransmission Source Line Construction Emissions
Install Wood/ LWS Poles

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
Auger Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Bucket Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Boom/Crane Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Extendable Flat Bed Pole Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Auger Truck	0.04	0.17	0.49	0.00	0.02	0.02
Bucket Truck	0.04	0.17	0.49	0.00	0.02	0.02
Boom/Crane Truck	0.04	0.17	0.49	0.00	0.02	0.02
1-Ton Crew Cab, 4x4	0.04	0.25	0.28	0.00	0.01	0.01
Extendable Flat Bed Pole Truck	0.04	0.25	0.28	0.00	0.01	0.01
Worker Commute	0.67	6.38	0.64	0.01	0.08	0.05
Offsite Total	**0.87**	**7.39**	**2.69**	**0.01**	**0.18**	**0.13**
Total	**0.87**	**7.39**	**2.69**	**0.01**	**0.18**	**0.13**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Auger Truck	2.1	0.0	2.1
Bucket Truck	2.1	0.0	2.1
Boom/Crane Truck	2.1	0.0	2.1
1-Ton Crew Cab, 4x4	1.4	0.0	1.4
Extendable Flat Bed Pole Truck	1.4	0.0	1.4
Worker Commute	27.4	0.0	27.4
Offsite Total	**36.5**	**0.0**	**36.5**
Total	**36.5**	**0.0**	**36.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None	0					0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Auger Truck	1	Paved	14	0.001	0.000	0.01	0.00
Bucket Truck	1	Paved	14	0.001	0.000	0.01	0.00
Boom/Crane Truck	1	Paved	14	0.001	0.000	0.01	0.00
1-Ton Crew Cab, 4x4	1	Paved	14	0.001	0.000	0.01	0.00
Extendable Flat Bed Pole Truck	1	Paved	14	0.001	0.000	0.01	0.00
Auger Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Bucket Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Boom/Crane Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
1-Ton Crew Cab, 4x4	1	Unpaved	4	0.532	0.053	2.13	0.21
Extendable Flat Bed Pole Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Worker Commute	15	Paved	60	0.001	0.000	0.83	0.00
Offsite Total						**17.78**	**1.69**
Total						**17.78**	**1.69**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 42
Subtransmission Source Line Construction Emissions
Install Wood/ LWS Poles

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling[c]	CY/day	13	2.75E-03	5.72E-04	0.04	0.01
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.04**	**0.01**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

[c] Based on excavating 4 ft. diameter x 10 ft. deep per pole x 250 poles = 1,164 CY over 90 days

Table 43
Subtransmission Source Line Construction Emissions
Install Conductor

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	4.24	15.65	43.82	0.06	1.48	1.36	146.2
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**4.24**	**15.65**	**43.82**	**0.06**	**1.48**	**1.36**	**146.2**
Offsite Motor Vehicle Exhaust	1.60	11.71	8.89	0.03	0.49	0.40	58.5
Offsite Motor Vehicle Fugitive PM	--	--	--	--	51.99	5.06	
Offsite Total	**1.60**	**11.71**	**8.89**	**0.03**	**52.48**	**5.46**	**58.5**
Total	**5.84**	**27.37**	**52.71**	**0.09**	**53.96**	**6.82**	**204.7**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Bucket Truck	350	1	50	8
Boom/ Crane Truck	350	1	50	8
Wire Truck/Trailer	10	1	50	6
Bull Wheel Puller	16	1	50	6
3 Drum Sock Line Puller	300	1	50	6
Backhoe/Front Loader	79	1	50	2
Static Truck/Tensioner	350	1	50	6

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Bucket Truck	350	0.119	0.467	1.531	0.002	0.045	0.041	212.856	0.011	Aerial Lifts
Boom/ Crane Truck	350	0.155	0.529	1.423	0.002	0.052	0.048	180.101	0.014	Cranes
Wire Truck/Trailer	10	0.012	0.062	0.074	0.000	0.003	0.003	10.107	0.001	Other Construction Equipment
Bull Wheel Puller	16	0.016	0.054	0.101	0.000	0.004	0.004	13.217	0.001	Other Construction Equipment
3 Drum Sock Line Puller	300	0.145	0.523	1.519	0.002	0.049	0.045	254.239	0.013	Other Construction Equipment
Backhoe/Front Loader	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes
Static Truck/Tensioner	350	0.145	0.523	1.519	0.002	0.049	0.045	254.239	0.013	Other Construction Equipment

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5
and PM 2.5 Significance Thresholds, SCAQMD, October 2006,
http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Bucket Truck	0.95	3.74	12.25	0.02	0.36	0.33
Boom/ Crane Truck	1.24	4.23	11.38	0.01	0.41	0.38
Wire Truck/Trailer	0.07	0.37	0.44	0.00	0.02	0.02
Bull Wheel Puller	0.10	0.33	0.61	0.00	0.02	0.02
3 Drum Sock Line Puller	0.87	3.14	9.11	0.01	0.29	0.27
Backhoe/Front Loader	0.14	0.71	0.91	0.00	0.08	0.07
Static Truck/Tensioner	0.87	3.14	9.11	0.01	0.29	0.27
Total	**4.24**	**15.65**	**43.82**	**0.06**	**1.48**	**1.36**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Bucket Truck	38.6	0.0	38.7
Boom/ Crane Truck	32.7	0.0	32.7
Wire Truck/Trailer	1.4	0.0	1.4
Bull Wheel Puller	1.8	0.0	1.8
3 Drum Sock Line Puller	34.6	0.0	34.6
Backhoe/Front Loader	2.3	0.0	2.4
Static Truck/Tensioner	34.6	0.0	34.6
Total	**146.0**	**0.0**	**146.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x
days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 43
Subtransmission Source Line Construction Emissions
Install Conductor

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
1-Ton Crew Cab, 4x4	3	50	N/A	18
Wire Truck/Trailer	2	50	N/A	18
Dump Truck	1	50	N/A	64
Boom/Crane Truck	1	50	N/A	18
Bucket Truck	4	50	N/A	18
Lowboy Truck/Trailer	2	50	N/A	18
3 Drum Sock Line Puller	1	50	N/A	18
Static Truck/Tensioner	1	50	N/A	18
Worker Commute	20	50	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Wire Truck/Trailer	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Boom/Crane Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Bucket Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Lowboy Truck/Trailer	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
3 Drum Sock Line Puller	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Static Truck/Tensioner	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
1-Ton Crew Cab, 4x4	0.11	0.76	0.85	0.00	0.03	0.03
Wire Truck/Trailer	0.08	0.34	0.99	0.00	0.05	0.04
Dump Truck	0.14	0.60	1.76	0.00	0.09	0.07
Boom/Crane Truck	0.04	0.17	0.49	0.00	0.02	0.02
Bucket Truck	0.16	0.67	1.97	0.00	0.10	0.08
Lowboy Truck/Trailer	0.08	0.34	0.99	0.00	0.05	0.04
3 Drum Sock Line Puller	0.04	0.17	0.49	0.00	0.02	0.02
Static Truck/Tensioner	0.04	0.17	0.49	0.00	0.02	0.02
Worker Commute	0.89	8.51	0.85	0.01	0.11	0.07
Offsite Total	**1.60**	**11.71**	**8.89**	**0.03**	**0.49**	**0.40**
Total	**1.60**	**11.71**	**8.89**	**0.03**	**0.49**	**0.40**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
1-Ton Crew Cab, 4x4	3.4	0.0	3.4
Wire Truck/Trailer	3.4	0.0	3.4
Dump Truck	6.1	0.0	6.1
Boom/Crane Truck	1.7	0.0	1.7
Bucket Truck	6.9	0.0	6.9
Lowboy Truck/Trailer	3.4	0.0	3.4
3 Drum Sock Line Puller	1.7	0.0	1.7
Static Truck/Tensioner	1.7	0.0	1.7
Worker Commute	30.0	0.0	30.0
Offsite Total	**58.4**	**0.0**	**58.5**
Total	**58.4**	**0.0**	**58.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 43
Subtransmission Source Line Construction Emissions
Install Conductor

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None	0						
Onsite Total						**0.00**	**0.00**
Offsite							
1-Ton Crew Cab, 4x4	3	Paved	14	0.001	0.000	0.04	0.00
Wire Truck/Trailer	2	Paved	14	0.001	0.000	0.03	0.00
Dump Truck	1	Paved	60	0.001	0.000	0.06	0.00
Boom/Crane Truck	1	Paved	14	0.001	0.000	0.01	0.00
Bucket Truck	4	Paved	14	0.001	0.000	0.05	0.00
Lowboy Truck/Trailer	2	Paved	14	0.001	0.000	0.03	0.00
3 Drum Sock Line Puller	1	Paved	14	0.001	0.000	0.01	0.00
Static Truck/Tensioner	1	Paved	14	0.001	0.000	0.01	0.00
1-Ton Crew Cab, 4x4	3	Unpaved	4	0.532	0.053	6.38	0.64
Wire Truck/Trailer	2	Unpaved	4	0.922	0.092	7.38	0.74
Dump Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Boom/Crane Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Bucket Truck	4	Unpaved	4	0.922	0.092	14.76	1.48
Lowboy Truck/Trailer	2	Unpaved	4	0.922	0.092	7.38	0.74
3 Drum Sock Line Puller	1	Unpaved	4	0.922	0.092	3.69	0.37
Static Truck/Tensioner	1	Unpaved	4	0.922	0.092	3.69	0.37
Worker Commute	20	Paved	60	0.001	0.000	1.11	0.00
Offsite Total						**51.99**	**5.06**
Total						**51.99**	**5.06**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 44
Subtransmission Source Line Construction Emissions
Guard Structure Removal

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	1.74	6.34	16.66	0.02	0.67	0.62	7.7
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**1.74**	**6.34**	**16.66**	**0.02**	**0.67**	**0.62**	**7.7**
Offsite Motor Vehicle Exhaust	0.44	3.44	2.03	0.01	0.12	0.09	2.5
Offsite Motor Vehicle Fugitive PM	--	--	--	--	15.38	1.50	
Offsite Total	**0.44**	**3.44**	**2.03**	**0.01**	**15.50**	**1.59**	**2.5**
Total	**2.18**	**9.78**	**18.69**	**0.03**	**16.17**	**2.21**	**10.2**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Compressor Trailer	120	1	8	4
Boom/Crane Crane Truck	300	1	8	6
Bucket Truck	350	1	8	4

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Compressor Trailer	120	0.082	0.325	0.499	0.001	0.046	0.042	46.950	0.007	Air Compressors
Boom/Crane Crane Truck	300	0.155	0.529	1.423	0.002	0.052	0.048	180.101	0.014	Cranes
Bucket Truck	350	0.119	0.467	1.531	0.002	0.045	0.041	212.856	0.011	Aerial Lifts

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Compressor Trailer	0.33	1.30	2.00	0.00	0.18	0.17
Boom/Crane Crane Truck	0.93	3.18	8.54	0.01	0.31	0.29
Bucket Truck	0.48	1.87	6.12	0.01	0.18	0.17
Total	**1.74**	**6.34**	**16.66**	**0.02**	**0.67**	**0.62**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Compressor Trailer	0.7	0.0	0.7
Boom/Crane Crane Truck	3.9	0.0	3.9
Bucket Truck	3.1	0.0	3.1
Total	**7.7**	**0.0**	**7.7**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
3/4-Ton Pick-up Truck, 4x4	1	8	N/A	18
1-Ton Crew Cab, 4x4	1	8	N/A	18
Extendable Flat Bed Pole Truck	1	8	N/A	18
Boom/Crane Truck	1	8	N/A	18
Bucket Truck	1	8	N/A	18
Worker Commute	6	8	N/A	60

Table 44
Subtransmission Source Line Construction Emissions
Guard Structure Removal

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
3/4-Ton Pick-up Truck, 4x4	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Extendable Flat Bed Pole Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Boom/Crane Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Bucket Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
3/4-Ton Pick-up Truck, 4x4	0.01	0.13	0.01	0.00	0.00	0.00
1-Ton Crew Cab, 4x4	0.04	0.25	0.28	0.00	0.01	0.01
Extendable Flat Bed Pole Truck	0.04	0.17	0.49	0.00	0.02	0.02
Boom/Crane Truck	0.04	0.17	0.49	0.00	0.02	0.02
Bucket Truck	0.04	0.17	0.49	0.00	0.02	0.02
Worker Commute	0.27	2.55	0.26	0.00	0.03	0.02
Offsite Total	**0.44**	**3.44**	**2.03**	**0.01**	**0.12**	**0.09**
Total	**0.44**	**3.44**	**2.03**	**0.01**	**0.12**	**0.09**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
3/4-Ton Pick-up Truck, 4x4	0.1	0.0	0.1
1-Ton Crew Cab, 4x4	0.2	0.0	0.2
Extendable Flat Bed Pole Truck	0.3	0.0	0.3
Boom/Crane Truck	0.3	0.0	0.3
Bucket Truck	0.3	0.0	0.3
Worker Commute	1.4	0.0	1.4
Offsite Total	**2.5**	**0.0**	**2.5**
Total	**2.5**	**0.0**	**2.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None	0					0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
3/4-Ton Pick-up Truck, 4x4	1	Paved	14	0.001	0.000	0.01	0.00
1-Ton Crew Cab, 4x4	1	Paved	14	0.001	0.000	0.01	0.00
Extendable Flat Bed Pole Truck	1	Paved	14	0.001	0.000	0.01	0.00
Boom/Crane Truck	1	Paved	14	0.001	0.000	0.01	0.00
Bucket Truck	1	Paved	14	0.001	0.000	0.01	0.00
3/4-Ton Pick-up Truck, 4x4	1	Unpaved	4	0.447	0.045	1.79	0.18
1-Ton Crew Cab, 4x4	1	Unpaved	4	0.532	0.053	2.13	0.21
Extendable Flat Bed Pole Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Boom/Crane Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Bucket Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Worker Commute	6	Paved	60	0.001	0.000	0.33	0.00
Offsite Total						**15.38**	**1.50**
Total						**15.38**	**1.50**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 44
Subtransmission Source Line Construction Emissions
Guard Structure Removal

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 45
Subtransmission Source Line Construction Emissions
Restoration

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	1.76	6.03	16.27	0.02	0.62	0.57	10.5
Onsite Motor Vehicle Exhaust	0.00	0.02	0.05	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	1.84	0.18	
Earthwork Fugitive PM	--	--	--	--	10.53	2.19	
Onsite Total	**1.76**	**6.05**	**16.32**	**0.02**	**13.00**	**2.95**	**10.5**
Offsite Motor Vehicle Exhaust	0.46	3.78	1.74	0.01	0.10	0.08	3.5
Offsite Motor Vehicle Fugitive PM	--	--	--	--	12.07	1.16	
Offsite Total	**0.46**	**3.78**	**1.74**	**0.01**	**12.17**	**1.24**	**3.5**
Total	**2.22**	**9.84**	**18.07**	**0.03**	**25.17**	**4.19**	**14.0**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Road Grader	350	1	11	6
Backhoe/Front Loader	79	1	11	2
Drum Type Compactor	250	1	11	4

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Road Grader	350	0.186	0.629	1.684	0.002	0.061	0.056	229.484	0.017	Graders
Backhoe/Front Loader	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes
Drum Type Compactor	250	0.126	0.389	1.312	0.002	0.045	0.041	153.090	0.011	Rollers

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Road Grader	1.11	3.77	10.11	0.01	0.36	0.34
Backhoe/Front Loader	0.14	0.71	0.91	0.00	0.08	0.07
Drum Type Compactor	0.50	1.55	5.25	0.01	0.18	0.17
Total	**1.76**	**6.03**	**16.27**	**0.02**	**0.62**	**0.57**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Road Grader	6.9	0.0	6.9
Backhoe/Front Loader	0.5	0.0	0.5
Drum Type Compactor	3.1	0.0	3.1
Total	**10.4**	**0.0**	**10.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Water Truck	1	11	N/A	2
Offsite				
Water Truck	1	11	N/A	14
1-Ton Crew Cab, 4x4	2	11	N/A	18
Lowboy Truck/Trailer	1	11	N/A	18
Worker Commute	7	11	N/A	60

Table 45
Subtransmission Source Line Construction Emissions
Restoration

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Offsite									
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Lowboy Truck/Trailer	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Water Truck	0.00	0.02	0.05	0.00	0.00	0.00
Onsite Total	**0.00**	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**
Offsite						
Water Truck	0.03	0.13	0.38	0.00	0.02	0.02
1-Ton Crew Cab, 4x4	0.07	0.51	0.57	0.00	0.02	0.02
Lowboy Truck/Trailer	0.04	0.17	0.49	0.00	0.02	0.02
Worker Commute	0.31	2.98	0.30	0.00	0.04	0.02
Offsite Total	**0.46**	**3.78**	**1.74**	**0.01**	**0.10**	**0.08**
Total	**0.46**	**3.80**	**1.80**	**0.01**	**0.11**	**0.08**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Water Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Water Truck	0.3	0.0	0.3
1-Ton Crew Cab, 4x4	0.5	0.0	0.5
Lowboy Truck/Trailer	0.4	0.0	0.4
Worker Commute	2.3	0.0	2.3
Offsite Total	**3.5**	**0.0**	**3.5**
Total	**3.5**	**0.0**	**3.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Water Truck	1	Unpaved	2	0.922	0.092	1.84	0.18
Onsite Total						**1.84**	**0.18**
Offsite							
Water Truck	1	Paved	10	0.001	0.000	0.01	0.00
1-Ton Crew Cab, 4x4	2	Paved	14	0.001	0.000	0.03	0.00
Lowboy Truck/Trailer	1	Paved	14	0.001	0.000	0.01	0.00
Water Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
1-Ton Crew Cab, 4x4	2	Unpaved	4	0.532	0.053	4.25	0.43
Lowboy Truck/Trailer	1	Unpaved	4	0.922	0.092	3.69	0.37
Worker Commute	7	Paved	60	0.001	0.000	0.39	0.00
Offsite Total						**12.07**	**1.16**
Total						**13.91**	**1.35**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day	6	1.756	0.365	10.53	2.19
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**10.53**	**2.19**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 46
Subtransmission Source Line Construction Emissions
Vault Installation

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	2.07	9.29	16.64	0.02	0.85	0.78	11.3
Onsite Motor Vehicle Exhaust	0.00	0.01	0.03	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.92	0.09	
Earthwork Fugitive PM	--	--	--	--	0.07	0.01	
Onsite Total	**2.07**	**9.30**	**16.66**	**0.02**	**1.84**	**0.89**	**11.3**
Offsite Motor Vehicle Exhaust	1.25	7.11	11.36	0.02	0.56	0.47	11.6
Offsite Motor Vehicle Fugitive PM	--	--	--	--	39.02	3.84	
Offsite Total	**1.25**	**7.11**	**11.36**	**0.02**	**39.58**	**4.31**	**11.6**
Total	**3.33**	**16.41**	**28.02**	**0.04**	**41.42**	**5.20**	**22.9**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
165-Ton Crane Truck	500	1	12	6
Backhoe/Front Loader	79	1	12	6
Excavator	152	1	12	6

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
165-Ton Crane Truck	500	0.155	0.529	1.423	0.002	0.052	0.048	180.101	0.014	Cranes
Backhoe/Front Loader	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes
Excavator	152	0.121	0.667	0.893	0.001	0.051	0.047	112.222	0.011	Excavators

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
165-Ton Crane Truck	0.93	3.18	8.54	0.01	0.31	0.29
Backhoe/Front Loader	0.42	2.12	2.74	0.00	0.23	0.21
Excavator	0.72	4.00	5.36	0.01	0.31	0.28
Total	**2.07**	**9.29**	**16.64**	**0.02**	**0.85**	**0.78**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
165-Ton Crane Truck	5.9	0.0	5.9
Backhoe/Front Loader	1.7	0.0	1.7
Excavator	3.7	0.0	3.7
Total	**11.2**	**0.0**	**11.3**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number[a]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Water Truck	1	12	N/A	1
Offsite				
Dump Truck	2	12	N/A	64
Water Truck	1	12	N/A	14
1-Ton Crew Cab, 4x4	2	12	N/A	18
Concrete Truck	3	12	N/A	64
165-Ton Crane Truck	1	12	N/A	1
Lowboy Truck/Trailer	1	12	N/A	18
Flat Bed Truck/Trailer	3	12	N/A	18
Worker Commute	6	12	N/A	60

[a] Dump trucks based on 4 vaults 20 ft. x 10 ft.x 9.5 ft. plus 10 percent extra = 310 CY and 14 CY/truck over 12 days = 310 CY / 14 CY/truck / 12 days = 1.8

Table 46
Subtransmission Source Line Construction Emissions
Vault Installation

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Offsite									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Concrete Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
165-Ton Crane Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Lowboy Truck/Trailer	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Flat Bed Truck/Trailer	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Water Truck	0.00	0.01	0.03	0.00	0.00	0.00
Onsite Total	**0.00**	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**
Offsite						
Dump Truck	0.29	1.19	3.51	0.01	0.17	0.15
Water Truck	0.03	0.13	0.38	0.00	0.02	0.02
1-Ton Crew Cab, 4x4	0.07	0.51	0.57	0.00	0.02	0.02
Concrete Truck	0.43	1.79	5.27	0.01	0.26	0.22
165-Ton Crane Truck	0.00	0.01	0.03	0.00	0.00	0.00
Lowboy Truck/Trailer	0.04	0.17	0.49	0.00	0.02	0.02
Flat Bed Truck/Trailer	0.11	0.76	0.85	0.00	0.03	0.03
Worker Commute	0.27	2.55	0.26	0.00	0.03	0.02
Offsite Total	**1.25**	**7.11**	**11.36**	**0.02**	**0.56**	**0.47**
Total	**1.26**	**7.12**	**11.39**	**0.02**	**0.56**	**0.47**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Water Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Dump Truck	2.9	0.0	2.9
Water Truck	0.3	0.0	0.3
1-Ton Crew Cab, 4x4	0.5	0.0	0.5
Concrete Truck	4.4	0.0	4.4
165-Ton Crane Truck	0.0	0.0	0.0
Lowboy Truck/Trailer	0.4	0.0	0.4
Flat Bed Truck/Trailer	0.8	0.0	0.8
Worker Commute	2.2	0.0	2.2
Offsite Total	**11.6**	**0.0**	**11.6**
Total	**11.6**	**0.0**	**11.7**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 46
Subtransmission Source Line Construction Emissions
Vault Installation

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Water Truck	1	Unpaved	1	0.922	0.092	0.92	0.09
Onsite Total						**0.92**	**0.09**
Offsite							
Dump Truck	1	Paved	60	0.001	0.000	0.06	0.00
Water Truck	1	Paved	10	0.001	0.000	0.01	0.00
1-Ton Crew Cab, 4x4	2	Paved	14	0.001	0.000	0.03	0.00
Concrete Truck	3	Paved	60	0.001	0.000	0.17	0.00
Lowboy Truck/Trailer	1	Paved	14	0.001	0.000	0.01	0.00
Flat Bed Truck/Trailer	3	Paved	14	0.001	0.000	0.04	0.00
Dump Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Water Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
1-Ton Crew Cab, 4x4	2	Unpaved	4	0.532	0.053	4.25	0.43
Concrete Truck	3	Unpaved	4	0.922	0.092	11.07	1.11
Lowboy Truck/Trailer	1	Unpaved	4	0.922	0.092	3.69	0.37
Flat Bed Truck/Trailer	3	Unpaved	4	0.922	0.092	11.07	1.11
165-Ton Crane Truck	1	Unpaved	1	0.922	0.092	0.92	0.09
Worker Commute	6	Paved	60	0.001	0.000	0.33	0.00
Offsite Total						**39.02**	**3.84**
Total						**39.94**	**3.93**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling[c]	CY/day	26	2.75E-03	5.72E-04	0.07	0.01
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.07**	**0.01**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

[c] Based on 310 CY in 12 days

Table 47
Subtransmission Source Line Construction Emissions
Duct Bank Installation

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.47	2.37	3.07	0.00	0.25	0.23	1.3
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.21	0.04	
Onsite Total	**0.47**	**2.37**	**3.07**	**0.00**	**0.45**	**0.27**	**1.3**
Offsite Motor Vehicle Exhaust	1.61	8.30	16.24	0.03	0.81	0.68	9.9
Offsite Motor Vehicle Fugitive PM	--	--	--	--	45.71	4.48	
Offsite Total	**1.61**	**8.30**	**16.24**	**0.03**	**46.52**	**5.17**	**9.9**
Total	**2.09**	**10.67**	**19.31**	**0.03**	**46.97**	**5.44**	**11.2**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Compressor Trailer	120	1	8	6
Backhoe/Front Loader	79	1	8	6

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Compressor Trailer	120	0.009	0.042	0.056	0.000	0.003	0.002	7.248	0.001	Compressors
Backhoe/Front Loader	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Compressor Trailer	0.05	0.25	0.33	0.00	0.02	0.01
Backhoe/Front Loader	0.42	2.12	2.74	0.00	0.23	0.21
Total	**0.47**	**2.37**	**3.07**	**0.00**	**0.25**	**0.23**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Compressor Trailer	0.2	0.0	0.2
Backhoe/Front Loader	1.1	0.0	1.1
Total	**1.3**	**0.0**	**1.3**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number[a]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Dump Truck	6	8	N/A	64
Pipe Truck/Trailer	1	8	N/A	18
Water Truck	1	8	N/A	14
1-Ton Crew Cab, 4x4	2	8	N/A	18
Concrete Truck	2	6	N/A	64
Lowboy Truck/Trailer	1	8	N/A	18
Worker Commute	6	8	N/A	60

[a] Dump trucks based on 600 CY over 8 days and 14 CY/truck = 600 CY / 14 CY/truck / 8 days = 5.4 trucks/day
Concrete trucks based on duct bank 21 in. x 20 in x 1,800 ft. - volume of 6, 5.563 in. OD PVC over 6 days and 10 CY/truck = (21 in. x 20 in. - 6 x pi x (5.563 in.)^2 / 4) / 144 sq. in./sq. ft. x 1,800 ft. / 27 CY/cu. ft. / 10 CY/truck / 6 days = 2.1 trucks/day

Table 47
Subtransmission Source Line Construction Emissions
Duct Bank Installation

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Pipe Truck/Trailer	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
1-Ton Crew Cab, 4x4	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Concrete Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Lowboy Truck/Trailer	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Dump Truck	0.87	3.58	10.53	0.02	0.51	0.44
Pipe Truck/Trailer	0.04	0.17	0.49	0.00	0.02	0.02
Water Truck	0.03	0.13	0.38	0.00	0.02	0.02
1-Ton Crew Cab, 4x4	0.07	0.51	0.57	0.00	0.02	0.02
Concrete Truck	0.29	1.19	3.51	0.01	0.17	0.15
Lowboy Truck/Trailer	0.04	0.17	0.49	0.00	0.02	0.02
Worker Commute	0.27	2.55	0.26	0.00	0.03	0.02
Offsite Total	**1.61**	**8.30**	**16.24**	**0.03**	**0.81**	**0.68**
Total	**1.61**	**8.30**	**16.24**	**0.03**	**0.81**	**0.68**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Dump Truck	5.9	0.0	5.9
Pipe Truck/Trailer	0.3	0.0	0.3
Water Truck	0.2	0.0	0.2
1-Ton Crew Cab, 4x4	0.4	0.0	0.4
Concrete Truck	1.5	0.0	1.5
Lowboy Truck/Trailer	0.3	0.0	0.3
Worker Commute	1.4	0.0	1.4
Offsite Total	**9.9**	**0.0**	**9.9**
Total	**9.9**	**0.0**	**9.9**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 47
Subtransmission Source Line Construction Emissions
Duct Bank Installation

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Dump Truck	6	Paved	60	0.001	0.000	0.33	0.00
Pipe Truck/Trailer	1	Paved	14	0.001	0.000	0.01	0.00
Water Truck	1	Paved	10	0.001	0.000	0.01	0.00
1-Ton Crew Cab, 4x4	2	Paved	14	0.001	0.000	0.03	0.00
Concrete Truck	2	Paved	60	0.001	0.000	0.11	0.00
Lowboy Truck/Trailer	1	Paved	60	0.001	0.000	0.06	0.00
Dump Truck	6	Unpaved	4	0.922	0.092	22.13	2.21
Pipe Truck/Trailer	1	Unpaved	4	0.922	0.092	3.69	0.37
Water Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
1-Ton Crew Cab, 4x4	2	Unpaved	4	0.532	0.053	4.25	0.43
Concrete Truck	2	Unpaved	4	0.922	0.092	7.38	0.74
Lowboy Truck/Trailer	1	Unpaved	4	0.922	0.092	3.69	0.37
Worker Commute	6	Paved	60	0.001	0.000	0.33	0.00
Offsite Total						**45.71**	**4.48**
Total						**45.71**	**4.48**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling[c]	CY/day	75	2.75E-03	5.72E-04	0.21	0.04
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.21**	**0.04**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

[c] Based on 600 CY over 8 days

Table 48
Telecommunications Construction
Cable Construction

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	1.67	6.54	21.43	0.03	0.63	0.58	31.1
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**1.67**	**6.54**	**21.43**	**0.03**	**0.63**	**0.58**	**31.1**
Offsite Motor Vehicle Exhaust	0.42	3.22	2.05	0.01	0.11	0.09	6.6
Offsite Motor Vehicle Fugitive PM	--	--	--	--	14.85	1.45	
Offsite Total	**0.42**	**3.22**	**2.05**	**0.01**	**14.96**	**1.54**	**6.6**
Total	**2.08**	**9.76**	**23.49**	**0.04**	**15.59**	**2.12**	**37.7**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Bucket Truck	350	2	23	7

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Bucket Truck	350	0.119	0.467	1.531	0.002	0.045	0.041	212.856	0.011	Aerial Lifts

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Bucket Truck	1.67	6.54	21.43	0.03	0.63	0.58
Total	**1.67**	**6.54**	**21.43**	**0.03**	**0.63**	**0.58**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Bucket Truck	31.1	0.0	31.1
Total	**31.1**	**0.0**	**31.1**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Plck-up Truck	1	23	N/A	18
Splicing Truck	2	23	N/A	18
Bucket Truck	2	23	N/A	18
Worker Commute	5	23	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
Plck-up Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Splicing Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Bucket Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 48
Telecommunications Construction
Cable Construction

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
PIck-up Truck	0.04	0.25	0.28	0.00	0.01	0.01
Splicing Truck	0.07	0.51	0.57	0.00	0.02	0.02
Bucket Truck	0.08	0.34	0.99	0.00	0.05	0.04
Worker Commute	0.22	2.13	0.21	0.00	0.03	0.02
Offsite Total	**0.42**	**3.22**	**2.05**	**0.01**	**0.11**	**0.09**
Total	**0.42**	**3.22**	**2.05**	**0.01**	**0.11**	**0.09**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
PIck-up Truck	0.5	0.0	0.5
Splicing Truck	1.0	0.0	1.0
Bucket Truck	1.6	0.0	1.6
Worker Commute	3.4	0.0	3.4
Offsite Total	**6.6**	**0.0**	**6.6**
Total	**6.6**	**0.0**	**6.6**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None	0					0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
PIck-up Truck	1	Paved	14	0.001	0.000	0.01	0.00
Bucket Truck	2	Paved	14	0.001	0.000	0.03	0.00
PIck-up Truck	1	Unpaved	4	0.726	0.073	2.91	0.29
Splicing Truck	2	Unpaved	4	0.532	0.053	4.25	0.43
Bucket Truck	2	Unpaved	4	0.922	0.092	7.38	0.74
Worker Commute	5	Paved	60	0.001	0.000	0.28	0.00
Offsite Total						**14.85**	**1.45**
Total						**14.85**	**1.45**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 49
Telecommunications Construction
Vault and Duct Bank Installation

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.63	3.16	4.10	0.01	0.33	0.30	4.3
Onsite Motor Vehicle Exhaust	0.00	0.01	0.03	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.92	0.09	
Earthwork Fugitive PM	--	--	--	--	0.06	0.01	
Onsite Total	**0.63**	**3.17**	**4.12**	**0.01**	**1.31**	**0.41**	**4.3**
Offsite Motor Vehicle Exhaust	0.90	6.41	5.83	0.01	0.27	0.22	8.5
Offsite Motor Vehicle Fugitive PM	--	--	--	--	23.29	2.27	
Offsite Total	**0.90**	**6.41**	**5.83**	**0.01**	**23.55**	**2.49**	**8.5**
Total	**1.53**	**9.58**	**9.96**	**0.02**	**24.86**	**2.90**	**12.8**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Backhoe/Front Loader	79	1	20	8
Compressor Trailer	120	1	20	8

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Backhoe/Front Loader	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes
Compressor Trailer	120	0.009	0.042	0.056	0.000	0.003	0.002	7.248	0.001	Compressors

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Backhoe/Front Loader	0.56	2.82	3.65	0.00	0.31	0.28
Compressor Trailer	0.07	0.34	0.44	0.00	0.02	0.02
Total	**0.63**	**3.16**	**4.10**	**0.01**	**0.33**	**0.30**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Backhoe/Front Loader	3.8	0.0	3.8
Compressor Trailer	0.5	0.0	0.5
Total	**4.3**	**0.0**	**4.3**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number[a]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
Water Truck	1	20	N/A	1
Offsite				
Foreman Truck	1	20	N/A	18
Concrete Truck	3	5	N/A	64
Dump Truck	1	20	N/A	64
Water Truck	1	20	N/A	10
Crewcab Truck	1	20	N/A	15
Worker Commute	6	20	N/A	60

[a] Dump trucks based on hauling bottom 1 ft. of 1 ft. wide trench, 3,825 ft. long over 20 days and 14 CY/truck:
1 ft. deep x 1 ft. wide x 3,825 ft. long / 27 CY/cu. ft. / 14 CY/truck / 20 days = 0.5 trucks/day
Concrete trucks based on filling bottom 1 ft. of 1 ft. wide trench, 3,825 ft. long over 5 day and 10 CY/truck:
1 ft. deep x 1 ft. wide x 3,825 ft. long / 27 CY/cu. ft. / 10 CY/truck / 5 days = 2.8 trucks/day

Table 49
Telecommunications Construction
Vault and Duct Bank Installation

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Offsite									
Foreman Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Concrete Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Crewcab Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
Water Truck	0.00	0.01	0.03	0.00	0.00	0.00
Onsite Total	**0.00**	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**
Offsite						
Foreman Truck	0.04	0.25	0.28	0.00	0.01	0.01
Concrete Truck	0.40	2.70	3.03	0.01	0.12	0.10
Dump Truck	0.14	0.60	1.76	0.00	0.09	0.07
Water Truck	0.02	0.09	0.27	0.00	0.01	0.01
Crewcab Truck	0.03	0.21	0.24	0.00	0.01	0.01
Worker Commute	0.27	2.55	0.26	0.00	0.03	0.02
Offsite Total	**0.90**	**6.41**	**5.83**	**0.01**	**0.27**	**0.22**
Total	**0.90**	**6.42**	**5.86**	**0.01**	**0.27**	**0.22**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
Water Truck	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Foreman Truck	0.5	0.0	0.5
Concrete Truck	1.2	0.0	1.2
Dump Truck	2.4	0.0	2.4
Water Truck	0.4	0.0	0.4
Crewcab Truck	0.4	0.0	0.4
Worker Commute	3.6	0.0	3.6
Offsite Total	**8.5**	**0.0**	**8.5**
Total	**8.5**	**0.0**	**8.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
Water Truck	1	Unpaved	1	0.922	0.092	0.92	0.09
Onsite Total						**0.92**	**0.09**
Offsite							
Foreman Truck	1	Paved	14	0.001	0.000	0.01	0.00
Concrete Truck	3	Paved	60	0.001	0.000	0.17	0.00
Dump Truck	1	Paved	60	0.001	0.000	0.06	0.00
Water Truck	1	Paved	10	0.001	0.000	0.01	0.00
Crewcab Truck	1	Paved	14	0.001	0.000	0.01	0.00
Foreman Truck	1	Unpaved	4	0.532	0.053	2.13	0.21
Concrete Truck	3	Unpaved	4	0.922	0.092	11.07	1.11
Dump Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Water Truck	1	Unpaved	4	0.922	0.092	3.69	0.37
Crewcab Truck	1	Unpaved	4	0.532	0.053	2.13	0.21
Worker Commute	6	Paved	60	0.001	0.000	0.33	0.00
Offsite Total						**23.29**	**2.27**
Total						**24.21**	**2.36**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 49
Telecommunications Construction
Vault and Duct Bank Installation

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day	21	2.75E-03	5.72E-04	0.06	0.01
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.06**	**0.01**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

[c] Based on excavating 12 in. x 36 in. x 3,825 ft. = 425 CY over 20 days

Table 50
Distribution Getaways Construction Emissions
Vault Installation

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	1.28	4.89	10.62	0.01	0.55	0.51	2.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.26	0.05	
Onsite Total	**1.28**	**4.89**	**10.62**	**0.01**	**0.81**	**0.56**	**2.0**
Offsite Motor Vehicle Exhaust	1.48	7.34	15.28	0.03	0.76	0.65	8.0
Offsite Motor Vehicle Fugitive PM	--	--	--	--	9.62	0.88	
Offsite Total	**1.48**	**7.34**	**15.28**	**0.03**	**10.38**	**1.53**	**8.0**
Total	**2.76**	**12.23**	**25.90**	**0.04**	**11.19**	**2.09**	**10.0**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Backhoe	79	1	5	8
Precaster Boom Truck	250	1	3	7

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Backhoe	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes
Precaster Boom Truck	250	0.104	0.295	0.995	0.001	0.035	0.032	112.159	0.009	Cranes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Backhoe	0.56	2.82	3.65	0.00	0.31	0.28
Precaster Boom Truck	0.73	2.06	6.96	0.01	0.25	0.23
Total	**1.28**	**4.89**	**10.62**	**0.01**	**0.55**	**0.51**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Backhoe	0.9	0.0	0.9
Precaster Boom Truck	1.1	0.0	1.1
Total	**2.0**	**0.0**	**2.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number[a]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Dump Truck	4	10	N/A	61
Precaster Boom Truck	1	3	N/A	61
Crew Pickup Truck	1	10	N/A	14
Concrete Truck	4	3	N/A	61
Worker Commute	5	10	N/A	60

[a] Dump trucks based on hauling 470 CY over 10 days and 14 CY/truck: 470 CY / 14 CY/truck / 10 days = 3.4
Concrete trucks based on backfilling excavation with sand slurry mix over 3 days and 10 CY/truck.
Excavated volume = 470 CY. Vault volume = 5 vaults x 10 ft. wide x 20 ft. long x 9.5 ft. deep / 27 cu. ft./CY = 352 CY.
Number trucks = (470 CY - 352 CY) / 10 CY/truck / 3 days = 3.9

Table 50
Distribution Getaways Construction Emissions
Vault Installation

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Precaster Boom Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Crew Pickup Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Concrete Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Dump Truck	0.55	2.27	6.69	0.01	0.33	0.28
Precaster Boom Truck	0.14	0.57	1.67	0.00	0.08	0.07
Crew Pickup Truck	0.01	0.10	0.01	0.00	0.00	0.00
Concrete Truck	0.55	2.27	6.69	0.01	0.33	0.28
Worker Commute	0.22	2.13	0.21	0.00	0.03	0.02
Offsite Total	**1.48**	**7.34**	**15.28**	**0.03**	**0.76**	**0.65**
Total	**1.48**	**7.34**	**15.28**	**0.03**	**0.76**	**0.65**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Dump Truck	4.7	0.0	4.7
Precaster Boom Truck	0.3	0.0	0.4
Crew Pickup Truck	0.1	0.0	0.1
Concrete Truck	1.4	0.0	1.4
Worker Commute	1.5	0.0	1.5
Offsite Total	**8.0**	**0.0**	**8.0**
Total	**8.0**	**0.0**	**8.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Dump Truck	4	Paved	60	0.001	0.000	0.22	0.00
Precaster Boom Truck	1	Paved	60	0.001	0.000	0.06	0.00
Crew Pickup Truck	1	Paved	14	0.001	0.000	0.01	0.00
Dump Truck	4	Unpaved	1	0.922	0.092	3.69	0.37
Precaster Boom Truck	1	Unpaved	1	0.922	0.092	0.92	0.09
Crew Pickup Truck	1	Unpaved	1	0.532	0.053	0.53	0.05
Concrete Truck	4	Unpaved	1	0.922	0.092	3.69	0.37
Concrete Truck	4	Paved	60	0.001	0.000	0.22	0.00
Worker Commute	5	Paved	60	0.001	0.000	0.28	0.00
Offsite Total						**9.62**	**0.88**
Total						**9.62**	**0.88**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 50
Distribution Getaways Construction Emissions
Vault Installation

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling[c]	CY/day	94	2.75E-03	5.72E-04	0.26	0.05
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.26**	**0.05**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

[c] Based on 470 CY over 5 days

Table 51
Distribution Getaways Construction Emissions
Trench

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.90	4.72	6.21	0.01	0.48	0.44	6.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.12	0.02	
Onsite Total	**0.90**	**4.72**	**6.21**	**0.01**	**0.60**	**0.46**	**6.0**
Offsite Motor Vehicle Exhaust	2.71	13.48	28.12	0.05	1.40	1.19	20.9
Offsite Motor Vehicle Fugitive PM	--	--	--	--	19.09	1.77	
Offsite Total	**2.71**	**13.48**	**28.12**	**0.05**	**20.49**	**2.95**	**20.9**
Total	**3.61**	**18.20**	**34.33**	**0.06**	**21.09**	**3.42**	**26.9**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Backhoe	79	1	20	8
Stomper	4	1	3	8

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Backhoe	79	0.101	0.528	0.703	0.001	0.057	0.052	80.859	0.009	Other Construction Equipment
Stomper	4	0.012	0.062	0.074	0.000	0.003	0.003	10.107	0.001	Other Construction Equipment

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Backhoe	0.80	4.22	5.62	0.01	0.45	0.42
Stomper	0.09	0.49	0.59	0.00	0.02	0.02
Total	**0.90**	**4.72**	**6.21**	**0.01**	**0.48**	**0.44**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Backhoe	5.9	0.0	5.9
Stomper	0.1	0.0	0.1
Total	**6.0**	**0.0**	**6.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number[a]	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Dump Truck	7	10	N/A	61
Water Truck	1	20	N/A	11
Gang Truck	1	20	N/A	15
Conduit Vendor Truck	1	4	N/A	15
Concrete Truck	9	6	N/A	61
Crew Pickup Truck	1	20	N/A	15
Worker Commute	9	20	N/A	60

[a] Dump trucks based on hauling 865 CY over 10 days and 14 CY/truck: 865 CY / 14 CY/truck / 10 days = 6.2
Number of concrete trucks assumed the same as dump trucks.

Table 51
Distribution Getaways Construction Emissions
Trench

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Water Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Gang Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Conduit Vendor Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Concrete Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Crew Pickup Truck	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Dump Truck	0.97	3.98	11.71	0.02	0.57	0.49
Water Truck	0.02	0.10	0.30	0.00	0.01	0.01
Gang Truck	0.03	0.21	0.24	0.00	0.01	0.01
Conduit Vendor Truck	0.03	0.14	0.41	0.00	0.02	0.02
Concrete Truck	1.24	5.12	15.06	0.02	0.73	0.63
Crew Pickup Truck	0.01	0.11	0.01	0.00	0.00	0.00
Worker Commute	0.40	3.83	0.38	0.01	0.05	0.03
Offsite Total	**2.71**	**13.48**	**28.12**	**0.05**	**1.40**	**1.19**
Total	**2.71**	**13.48**	**28.12**	**0.05**	**1.40**	**1.19**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Dump Truck	8.2	0.0	8.2
Water Truck	0.4	0.0	0.4
Gang Truck	0.4	0.0	0.4
Conduit Vendor Truck	0.1	0.0	0.1
Concrete Truck	6.3	0.0	6.3
Crew Pickup Truck	0.1	0.0	0.1
Worker Commute	5.4	0.0	5.4
Offsite Total	**20.9**	**0.0**	**20.9**
Total	**20.9**	**0.0**	**20.9**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Table 51
Distribution Getaways Construction Emissions
Trench

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Dump Truck	7	Unpaved	1	0.922	0.092	6.46	0.65
Dump Truck	7	Paved	60	0.001	0.000	0.39	0.00
Water Truck	1	Unpaved	1	0.922	0.092	0.92	0.09
Water Truck	1	Paved	10	0.001	0.000	0.01	0.00
Gang Truck	1	Unpaved	1	0.532	0.053	0.53	0.05
Gang Truck	1	Paved	14	0.001	0.000	0.01	0.00
Conduit Vendor Truck	1	Unpaved	1	0.922	0.092	0.92	0.09
Conduit Vendor Truck	1	Paved	14	0.001	0.000	0.01	0.00
Concrete Truck	9	Unpaved	1	0.922	0.092	8.30	0.83
Concrete Truck	9	Paved	60	0.001	0.000	0.50	0.00
Crew Pickup Truck	1	Unpaved	1	0.532	0.053	0.53	0.05
Crew Pickup Truck	1	Paved	14	0.001	0.000	0.01	0.00
Worker Commute	9	Paved	60	0.001	0.000	0.50	0.00
Offsite Total						**19.09**	**1.77**
Total						**19.09**	**1.77**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day	43	2.75E-03	5.72E-04	0.12	0.02
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.12**	**0.02**

Soil Hadling based on : excavation volumes: 20 inch*54 inch*2000ft = 16200 cuft= 600 cubic yards = 60 cubic yards/day for 10 days

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

[c] Based on 865 CY over 20 days

Table 52
Distribution - Existing Facilities Relocation Emissions
Location 1

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
Offsite Motor Vehicle Exhaust	0.24	2.03	0.78	0.00	0.05	0.04	0.2
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.25	0.00	
Offsite Total	**0.24**	**2.03**	**0.78**	**0.00**	**0.30**	**0.04**	**0.2**
Total	**0.24**	**2.03**	**0.78**	**0.00**	**0.30**	**0.04**	**0.2**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Line Truck	1	1	N/A	14
Pick-up Truck	1	1	N/A	14
Worker Commute	4	1	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
Line Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Pick-up Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 52
Distribution - Existing Facilities Relocation Emissions
Location 1

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Line Truck	0.03	0.13	0.38	0.00	0.02	0.02
Pick-up Truck	0.03	0.20	0.22	0.00	0.01	0.01
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.24**	**2.03**	**0.78**	**0.00**	**0.05**	**0.04**
Total	**0.24**	**2.03**	**0.78**	**0.00**	**0.05**	**0.04**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Line Truck	0.0	0.0	0.0
Pick-up Truck	0.0	0.0	0.0
Worker Commute	0.1	0.0	0.1
Offsite Total	**0.2**	**0.0**	**0.2**
Total	**0.2**	**0.0**	**0.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Line Truck	1	Paved	14	0.001	0.000	0.01	0.00
Pick-up Truck	1	Paved	14	0.001	0.000	0.01	0.00
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**0.25**	**0.00**
Total						**0.25**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 53
Distribution - Existing Facilities Relocation Emissions
Location 2

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
Offsite Motor Vehicle Exhaust	0.24	2.03	0.78	0.00	0.05	0.04	0.2
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.25	0.00	
Offsite Total	**0.24**	**2.03**	**0.78**	**0.00**	**0.30**	**0.04**	**0.2**
Total	**0.24**	**2.03**	**0.78**	**0.00**	**0.30**	**0.04**	**0.2**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Line Truck	1	1	N/A	14
Pick-up Truck	1	1	N/A	14
Worker Commute	4	1	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
Line Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Pick-up Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 53
Distribution - Existing Facilities Relocation Emissions
Location 2

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Line Truck	0.03	0.13	0.38	0.00	0.02	0.02
Pick-up Truck	0.03	0.20	0.22	0.00	0.01	0.01
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.24**	**2.03**	**0.78**	**0.00**	**0.05**	**0.04**
Total	**0.24**	**2.03**	**0.78**	**0.00**	**0.05**	**0.04**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Line Truck	0.0	0.0	0.0
Pick-up Truck	0.0	0.0	0.0
Worker Commute	0.1	0.0	0.1
Offsite Total	**0.2**	**0.0**	**0.2**
Total	**0.2**	**0.0**	**0.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Line Truck	1	Paved	14	0.001	0.000	0.01	0.00
Pick-up Truck	1	Paved	14	0.001	0.000	0.01	0.00
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**0.25**	**0.00**
Total						**0.25**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 54
Distribution - Existing Facilities Relocation Emissions
Location 3

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
Offsite Motor Vehicle Exhaust	0.48	4.06	1.55	0.01	0.10	0.07	1.0
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.49	0.00	
Offsite Total	**0.48**	**4.06**	**1.55**	**0.01**	**0.59**	**0.07**	**1.0**
Total	**0.48**	**4.06**	**1.55**	**0.01**	**0.59**	**0.07**	**1.0**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Line Truck	2	3	N/A	14
Pick-up Truck	2	3	N/A	14
Worker Commute	8	3	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
Line Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Pick-up Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 54
Distribution - Existing Facilities Relocation Emissions
Location 3

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Line Truck	0.06	0.26	0.77	0.00	0.04	0.03
Pick-up Truck	0.06	0.39	0.44	0.00	0.02	0.01
Worker Commute	0.36	3.40	0.34	0.01	0.04	0.03
Offsite Total	**0.48**	**4.06**	**1.55**	**0.01**	**0.10**	**0.07**
Total	**0.48**	**4.06**	**1.55**	**0.01**	**0.10**	**0.07**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Line Truck	0.2	0.0	0.2
Pick-up Truck	0.1	0.0	0.1
Worker Commute	0.7	0.0	0.7
Offsite Total	**1.0**	**0.0**	**1.0**
Total	**1.0**	**0.0**	**1.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Line Truck	2	Paved	14	0.001	0.000	0.03	0.00
Pick-up Truck	2	Paved	14	0.001	0.000	0.03	0.00
Worker Commute	8	Paved	60	0.001	0.000	0.44	0.00
Offsite Total						**0.49**	**0.00**
Total						**0.49**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 55
Distribution - Existing Facilities Relocation Emissions
Location 4

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
Offsite Motor Vehicle Exhaust	0.24	2.03	0.78	0.00	0.05	0.04	0.2
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.25	0.00	
Offsite Total	**0.24**	**2.03**	**0.78**	**0.00**	**0.30**	**0.04**	**0.2**
Total	**0.24**	**2.03**	**0.78**	**0.00**	**0.30**	**0.04**	**0.2**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
None				

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
None		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
None	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
None	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Line Truck	1	1	N/A	14
Pick-up Truck	1	1	N/A	14
Worker Commute	4	1	N/A	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
Line Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Pick-up Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Table 55
Distribution - Existing Facilities Relocation Emissions
Location 4

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Line Truck	0.03	0.13	0.38	0.00	0.02	0.02
Pick-up Truck	0.03	0.20	0.22	0.00	0.01	0.01
Worker Commute	0.18	1.70	0.17	0.00	0.02	0.01
Offsite Total	**0.24**	**2.03**	**0.78**	**0.00**	**0.05**	**0.04**
Total	**0.24**	**2.03**	**0.78**	**0.00**	**0.05**	**0.04**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Line Truck	0.0	0.0	0.0
Pick-up Truck	0.0	0.0	0.0
Worker Commute	0.1	0.0	0.1
Offsite Total	**0.2**	**0.0**	**0.2**
Total	**0.2**	**0.0**	**0.2**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Line Truck	1	Paved	14	0.001	0.000	0.01	0.00
Pick-up Truck	1	Paved	14	0.001	0.000	0.01	0.00
Worker Commute	4	Paved	60	0.001	0.000	0.22	0.00
Offsite Total						**0.25**	**0.00**
Total						**0.25**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 56
Distribution - Existing Facilities Relocation Emissions
Location 5

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.93	3.40	7.40	0.01	0.29	0.27	1.1
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.31	0.06	
Onsite Total	**0.93**	**3.40**	**7.40**	**0.01**	**0.60**	**0.33**	**1.1**
Offsite Motor Vehicle Exhaust	0.44	3.24	2.41	0.01	0.13	0.10	0.6
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.37	0.00	
Offsite Total	**0.44**	**3.24**	**2.41**	**0.01**	**0.49**	**0.10**	**0.6**
Total	**1.37**	**6.64**	**9.82**	**0.02**	**1.09**	**0.43**	**1.7**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Rodder Truck	35	1	2	4
Cable Dolley	9	1	2	4
Reel Truck	210	1	2	4

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Rodder Truck	35	0.075	0.265	0.259	0.000	0.020	0.019	27.990	0.007	Other Construction Equipment
Cable Dolley	9	0.012	0.062	0.074	0.000	0.003	0.003	10.107	0.001	Other Construction Equipment
Reel Truck	210	0.145	0.523	1.519	0.002	0.049	0.045	254.239	0.013	Other Construction Equipment

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Rodder Truck	0.30	1.06	1.03	0.00	0.08	0.08
Cable Dolley	0.05	0.25	0.29	0.00	0.01	0.01
Reel Truck	0.58	2.09	6.07	0.01	0.20	0.18
Total	**0.93**	**3.40**	**7.40**	**0.01**	**0.29**	**0.27**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Rodder Truck	0.1	0.0	0.1
Cable Dolley	0.0	0.0	0.0
Reel Truck	0.9	0.0	0.9
Total	**1.1**	**0.0**	**1.1**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Line Truck	2	2	N/A	14
Rodder Truck	1	2	N/A	14
Reel Truck	1	2	N/A	14
Pick-up Truck	3	2	N/A	14
Worker Commute	5	2	N/A	60

Table 56
Distribution - Existing Facilities Relocation Emissions
Location 5

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
Line Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Rodder Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Reel Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Pick-up Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Line Truck	0.06	0.26	0.77	0.00	0.04	0.03
Rodder Truck	0.03	0.13	0.38	0.00	0.02	0.02
Reel Truck	0.03	0.13	0.38	0.00	0.02	0.02
Pick-up Truck	0.09	0.59	0.66	0.00	0.03	0.02
Worker Commute	0.22	2.13	0.21	0.00	0.03	0.02
Offsite Total	**0.44**	**3.24**	**2.41**	**0.01**	**0.13**	**0.10**
Total	**0.44**	**3.24**	**2.41**	**0.01**	**0.13**	**0.10**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Line Truck	0.1	0.0	0.1
Rodder Truck	0.1	0.0	0.1
Reel Truck	0.1	0.0	0.1
Pick-up Truck	0.1	0.0	0.1
Worker Commute	0.3	0.0	0.3
Offsite Total	**0.6**	**0.0**	**0.6**
Total	**0.6**	**0.0**	**0.6**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Line Truck	2	Paved	14	0.001	0.000	0.03	0.00
Rodder Truck	1	Paved	14	0.001	0.000	0.01	0.00
Reel Truck	1	Paved	14	0.001	0.000	0.01	0.00
Pick-up Truck	3	Paved	14	0.001	0.000	0.04	0.00
Worker Commute	5	Paved	60	0.001	0.000	0.28	0.00
Offsite Total						**0.37**	**0.00**
Total						**0.37**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 56
Distribution - Existing Facilities Relocation Emissions
Location 5

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day	111	2.75E-03	5.72E-04	0.31	0.06
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.31**	**0.06**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

[c] Based on excavating 20 in. wide x 54 in. deep x 800 ft. = 222 CY over 2 days

Table 57
Distribution - Existing Facilities Relocation Emissions
Location 6

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT)
Construction Equipment Exhaust	0.56	2.82	3.65	0.00	0.31	0.28	0.4
Onsite Motor Vehicle Exhaust	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Onsite Motor Vehicle Fugitive PM	--	--	--	--	0.00	0.00	
Earthwork Fugitive PM	--	--	--	--	0.00	0.00	
Onsite Total	**0.56**	**2.82**	**3.65**	**0.00**	**0.31**	**0.28**	**0.4**
Offsite Motor Vehicle Exhaust	0.56	4.16	3.04	0.01	0.17	0.13	0.8
Offsite Motor Vehicle Fugitive PM	--	--	--	--	0.58	0.00	
Offsite Total	**0.56**	**4.16**	**3.04**	**0.01**	**0.74**	**0.13**	**0.8**
Total	**1.12**	**6.98**	**6.70**	**0.01**	**1.05**	**0.42**	**1.1**

Construction Equipment Summary

Equipment	Horse-power	Number	Days Used	Hours Used/ Day
Rodder Truck	35	1	1	6
Cable Dolley	9	1	1	6
Reel Truck	210	1	1	6
Backhoe	79	1	2	8

Construction Equipment Exhaust Emission Factors

Equipment	Horse-power	VOC (lb/hr)[a]	CO (lb/hr)[a]	NOX (lb/hr)[a]	SOX (lb/hr)[a]	PM10 (lb/hr)[a]	PM2.5 (lb/hr)[b]	CO2 (lb/hr)[a]	CH4 (lb/hr)[a]	Category
Rodder Truck	35	0.075	0.265	0.259	0.000	0.020	0.019	27.990	0.007	Other Construction Equipment
Cable Dolley	9	0.012	0.062	0.074	0.000	0.003	0.003	10.107	0.001	Other Construction Equipment
Reel Truck	210	0.145	0.523	1.519	0.002	0.049	0.045	254.239	0.013	Other Construction Equipment
Backhoe	79	0.069	0.353	0.456	0.001	0.038	0.035	51.728	0.006	Tractors/Loaders/Backhoes

a From Table 59

[b] Diesel PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction= 0.920

From Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006, http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

Construction Equipment Daily Criteria Pollutant Exhaust Emissions

Equipment	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Backhoe	0.56	2.82	3.65	0.00	0.31	0.28
Total	**0.56**	**2.82**	**3.65**	**0.00**	**0.31**	**0.28**

[a] Emissions [lb/day] = number x hours/day x emission factor [lb/hr]

Construction Equipment Total Greenhouse Gas Emissions

Equipment	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Backhoe	0.4	0.0	0.4
Total	**0.4**	**0.0**	**0.4**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 59

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Usage

Vehicle	Number	Days Used	Hours Used/ Day	Miles/ Day/ Veh.
Onsite				
None				
Offsite				
Line Truck	2	2	N/A	14
Rodder Truck	1	1	N/A	14
Reel Truck	1	1	N/A	14
Pick-up Truck	2	2	N/A	14
Concrete Truck	1	2	N/A	14
Dump Truck	1	2	N/A	14
Worker Commute	7	2	N/A	60

Table 57
Distribution - Existing Facilities Relocation Emissions
Location 6

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Onsite									
None		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Offsite									
Line Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Rodder Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Reel Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Pick-up Truck	Delivery	2.06E-03	1.41E-02	1.58E-02	2.68E-05	6.00E-04	5.02E-04	2.78E+00	9.70E-05
Concrete Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	1.34E-03	1.15E-03	4.22E+00	1.04E-04
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Onsite						
None	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Offsite						
Line Truck	0.06	0.26	0.77	0.00	0.04	0.03
Rodder Truck	0.03	0.13	0.38	0.00	0.02	0.02
Reel Truck	0.03	0.13	0.38	0.00	0.02	0.02
Pick-up Truck	0.06	0.39	0.44	0.00	0.02	0.01
Concrete Truck	0.03	0.13	0.38	0.00	0.02	0.02
Dump Truck	0.03	0.13	0.38	0.00	0.02	0.02
Worker Commute	0.31	2.98	0.30	0.00	0.04	0.02
Offsite Total	**0.56**	**4.16**	**3.04**	**0.01**	**0.17**	**0.13**
Total	**0.56**	**4.16**	**3.04**	**0.01**	**0.17**	**0.13**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Total Greenhouse Gas Emissions

Vehicle	CO2 (MT)[a]	CH4 (MT)[a]	CO2e (MT)[b]
Onsite			
None	0.0	0.0	0.0
Onsite Total	**0.0**	**0.0**	**0.0**
Offsite			
Line Truck	0.1	0.0	0.1
Rodder Truck	0.0	0.0	0.0
Reel Truck	0.0	0.0	0.0
Pick-up Truck	0.1	0.0	0.1
Concrete Truck	0.1	0.0	0.1
Dump Truck	0.1	0.0	0.1
Worker Commute	0.4	0.0	0.4
Offsite Total	**0.8**	**0.0**	**0.8**
Total	**0.8**	**0.0**	**0.8**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Onsite							
None						0.00	0.00
Onsite Total						**0.00**	**0.00**
Offsite							
Line Truck	2	Paved	14	0.001	0.000	0.03	0.00
Rodder Truck	1	Paved	14	0.001	0.000	0.01	0.00
Reel Truck	1	Paved	14	0.001	0.000	0.01	0.00
Pick-up Truck	2	Paved	14	0.001	0.000	0.03	0.00
Concrete Truck	1	Paved	60	0.001	0.000	0.06	0.00
Dump Truck	1	Paved	60	0.001	0.000	0.06	0.00
Worker Commute	7	Paved	60	0.001	0.000	0.39	0.00
Offsite Total						**0.58**	**0.00**
Total						**0.58**	**0.00**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 57
Distribution - Existing Facilities Relocation Emissions
Location 6

Earthwork Fugitive Particulate Matter Emissions

Activity	Activity Units	Activity Level	PM10 Emission Factor[a]	PM2.5 Emission Factor[a]	PM10 (lb/day)[b]	PM2.5 (lb/day)[b]
Soil Handling	CY/day		2.75E-03	5.72E-04	0.00	0.00
Bulldozing, Scraping and Grading	hr/day		1.756	0.365	0.00	0.00
Storage Pile Wind Erosion	acres		6.6	1.37	0.00	0.00
Total					**0.00**	**0.00**

a From Table 63

[b] Emissions [lb/day] = Emission factor [lb/activity unit] x Activity unit [units/day]

Table 58
Operational Emissions

Emissions Summary

Source	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2e (MT/yr)
Motor Vehicle Exhaust	0.10	0.94	0.09	0.00	0.01	0.01	1
Motor Vehicle Fugitive PM	--	--	--	--	5.47	0.54	--
SF6 Leakage	--	--	--	--	--	--	13
Total	**0.10**	**0.94**	**0.09**	**0.00**	**5.49**	**0.54**	**15**

Motor Vehicle Usage

Vehicle	Number	Days Used/ Year	Miles/ Day/ Veh.
Subtransmission Line Inspection	1	1	72
Substation Site Visit	1	48	60

Motor Vehicle Exhaust Emission Factors

Vehicle	Category	VOC (lb/mi)[a]	CO (lb/mi)[a]	NOX (lb/mi)[a]	SOX (lb/mi)[a]	PM10 (lb/mi)[a]	PM2.5 (lb/mi)[b]	CO2 (lb/mi)[a]	CH4 (lb/mi)[a]
Subtransmission Line Inspection	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05
Substation Site Visit	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	9.07E-05	5.83E-05	1.10E+00	6.71E-05

a From Table 60 or Table 61

Motor Vehicle Daily Criteria Pollutant Exhaust Emissions

Vehicle	VOC (lb/day)[a]	CO (lb/day)[a]	NOX (lb/day)[a]	SOX (lb/day)[a]	PM10 (lb/day)[a]	PM2.5 (lb/day)[a]
Subtransmission Line Inspection	0.05	0.51	0.05	0.00	0.01	0.00
Substation Site Visit	0.04	0.43	0.04	0.00	0.01	0.00
Total	**0.10**	**0.94**	**0.09**	**0.00**	**0.01**	**0.01**

[a] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Motor Vehicle Annual Greenhouse Gas Emissions

Vehicle	CO2 (MT/yr)[a]	CH4 (MT/yr)[a]	CO2e (MT/yr)[b]
Subtransmission Line Inspection	0.0	0.0	0.0
Substation Site Visit	1.4	0.0	1.4
Total	**1.5**	**0.0**	**1.5**

[a] Emissions [metric tons, MT] = emission factor [lb/hr] x miles/day x Number x days used x 453.6 [g/lb] / 1,000,000 [g/MT]
Emission factors are in Table 60 and Table 61

[b] CO_2-equivalent (CO_2e) emission factors are CO_2 emissions plus 21 x CH_4 emissions, based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008, http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

Motor Vehicle Fugitive Particulate Matter Emissions

Vehicle	Number	Road Type	Miles/ Day/ Vehicle	PM10 Emission Factor (lb/mi)[a]	PM2.5 Emission Factor (lb/mi)[a]	PM10 Emissions (lb/day)[b]	PM2.5 Emissions (lb/day)[b]
Subtransmission Line Inspection	1	Paved	60	0.001	0.000	0.06	0.00
Subtransmission Line Inspection	1	Unpaved	12	0.447	0.045	5.36	0.54
Substation Site Visit	1	Paved	60	0.001	0.000	0.06	0.00
Total						**5.47**	**0.54**

a From Table 62

[b] Emissions [lb/day] = number x miles/day x emission factor [lb/mi]

Table 58
Operational Emissions

SF6 Leakage Greenhouse Gas Emissions

Item	Value	Units
Total SF6	248	pounds
SF6 Leakage Rate	0.5	%/year
SF6 Emissions	1.24	pounds
SF6 Global Warming Potential[a]	23,200	
CO2e Emissions[b]	**13**	**MT/yr**

[a] Based on Table C.1 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008. http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf

[b] CO_2e emissions [metric tons] = SF_6 emissions [lb] x Global warming potential [lb CO_2e/lb SF_6] x 453.6 [g/lb] / 1,000,000 [g/MT]

Table 59
SCAB Fleet Average Emission Factors (Diesel)

2013

Air Basin	SC

Equipment	MaxHP	(lb/hr) ROG	(lb/hr) CO	(lb/hr) NOX	(lb/hr) SOX	(lb/hr) PM	(lb/hr) CO2	(lb/hr) CH4
Aerial Lifts	15	0.0101	0.0528	0.0637	0.0001	0.0027	8.7	0.0009
	25	0.0166	0.0503	0.0937	0.0001	0.0051	11.0	0.0015
	50	0.0592	0.1757	0.1840	0.0003	0.0156	19.6	0.0053
	120	0.0558	0.2425	0.3758	0.0004	0.0299	38.1	0.0050
	500	0.1191	0.4671	1.5310	0.0021	0.0448	213	0.0107
	750	0.2221	0.8443	2.8534	0.0039	0.0825	385	0.0200
Aerial Lifts Composite		0.0529	0.1925	0.3059	0.0004	0.0202	34.7	0.0048
Aerial Lifts-Propane	15	0.0037	1.4362	0.0393	0.0000	0.0041	8.9	0.0311
	25	0.0083	2.2105	0.0608	0.0000	0.0067	13.0	0.0698
Aerial Lifts-Propane Composite								
Air Compressors	15	0.0122	0.0484	0.0732	0.0001	0.0048	7.2	0.0011
	25	0.0266	0.0744	0.1306	0.0002	0.0081	14.4	0.0024
	50	0.0921	0.2546	0.2221	0.0003	0.0220	22.3	0.0083
	120	0.0825	0.3251	0.4991	0.0006	0.0456	47.0	0.0074
	175	0.1059	0.5054	0.8385	0.0010	0.0472	88.5	0.0096
	250	0.1007	0.2955	1.1320	0.0015	0.0347	131	0.0091
	500	0.1626	0.5399	1.7639	0.0023	0.0570	232	0.0147
	750	0.2547	0.8344	2.8139	0.0036	0.0898	358	0.0230
	1000	0.4190	1.4213	5.0841	0.0049	0.1474	486	0.0378
Air Compressors Composite		0.0913	0.3376	0.6065	0.0007	0.0434	63.6	0.0082
Bore/Drill Rigs	15	0.0120	0.0632	0.0754	0.0002	0.0029	10.3	0.0011
	25	0.0193	0.0658	0.1226	0.0002	0.0049	16.0	0.0017
	50	0.0289	0.2282	0.2568	0.0004	0.0120	31.0	0.0026
	120	0.0447	0.4698	0.4583	0.0009	0.0257	77.1	0.0040
	175	0.0704	0.7538	0.6931	0.0016	0.0302	141	0.0063
	250	0.0795	0.3429	0.7632	0.0021	0.0221	188	0.0072
	500	0.1295	0.5517	1.1717	0.0031	0.0361	311	0.0117
	750	0.2565	1.0899	2.3376	0.0062	0.0715	615	0.0231
	1000	0.4163	1.6675	5.9553	0.0093	0.1544	928	0.0376
Bore/Drill Rigs Composite		0.0786	0.5044	0.8125	0.0017	0.0302	165	0.0071
Cement and Mortar Mixers	15	0.0074	0.0386	0.0470	0.0001	0.0021	6.3	0.0007
	25	0.0270	0.0813	0.1510	0.0002	0.0083	17.6	0.0024
Cement and Mortar Mixers Composite		0.0091	0.0421	0.0556	0.0001	0.0026	7.2	0.0008
Concrete/Industrial Saws	25	0.0199	0.0678	0.1257	0.0002	0.0049	16.5	0.0018
	50	0.0955	0.2918	0.2858	0.0004	0.0247	30.2	0.0086
	120	0.1065	0.4836	0.7154	0.0009	0.0589	74.1	0.0096
	175	0.1569	0.8701	1.3612	0.0018	0.0706	160	0.0142
Concrete/Industrial Saws Composite		0.1002	0.4088	0.5572	0.0007	0.0452	58.5	0.0090
Cranes	50	0.1015	0.2892	0.2394	0.0003	0.0239	23.2	0.0092
	120	0.0919	0.3618	0.5508	0.0006	0.0493	50.1	0.0083
	175	0.1031	0.4821	0.7769	0.0009	0.0445	80.3	0.0093
	250	0.1040	0.2948	0.9948	0.0013	0.0351	112	0.0094
	500	0.1551	0.5292	1.4230	0.0018	0.0518	180	0.0140
	750	0.2625	0.8887	2.4614	0.0030	0.0885	303	0.0237
	9999	0.9491	3.3249	10.3665	0.0098	0.3189	971	0.0856
Cranes Composite		0.1348	0.4737	1.1934	0.0014	0.0508	129	0.0122
Crawler Tractors	50	0.1176	0.3246	0.2627	0.0003	0.0270	24.9	0.0106
	120	0.1293	0.4858	0.7686	0.0008	0.0677	65.8	0.0117
	175	0.1674	0.7448	1.2529	0.0014	0.0713	121	0.0151
	250	0.1764	0.5000	1.5945	0.0019	0.0613	166	0.0159
	500	0.2542	0.9504	2.2389	0.0025	0.0868	259	0.0229
	750	0.4574	1.6983	4.1042	0.0047	0.1573	465	0.0413
	1000	0.6901	2.6950	7.3731	0.0066	0.2361	658	0.0623
Crawler Tractors Composite		0.1584	0.5900	1.1593	0.0013	0.0697	114	0.0143
Crushing/Proc. Equipment	50	0.1741	0.5009	0.4359	0.0006	0.0422	44.0	0.0157
	120	0.1402	0.5764	0.8552	0.0010	0.0779	83.1	0.0127
	175	0.1942	0.9615	1.5237	0.0019	0.0864	167	0.0175
	250	0.1848	0.5425	2.0202	0.0028	0.0620	245	0.0167
	500	0.2608	0.8480	2.7097	0.0037	0.0884	374	0.0235
	750	0.4147	1.3191	4.4498	0.0059	0.1418	589	0.0374
	9999	1.1270	3.6752	13.3218	0.0131	0.3880	1,308	0.1017
Crushing/Proc. Equipment Composite		0.1733	0.6773	1.1752	0.0015	0.0748	132	0.0156

Table 59
SCAB Fleet Average Emission Factors (Diesel)

2013

Air Basin	SC

Equipment	MaxHP	(lb/hr) ROG	(lb/hr) CO	(lb/hr) NOX	(lb/hr) SOX	(lb/hr) PM	(lb/hr) CO2	(lb/hr) CH4
Dumpers/Tenders	25	0.0097	0.0320	0.0601	0.0001	0.0029	7.6	0.0009
Dumpers/Tenders Composite		0.0097	0.0320	0.0601	0.0001	0.0029	7.6	0.0009
Excavators	25	0.0198	0.0677	0.1253	0.0002	0.0047	16.4	0.0018
	50	0.0816	0.2841	0.2458	0.0003	0.0212	25.0	0.0074
	120	0.1086	0.5177	0.6791	0.0009	0.0586	73.6	0.0098
	175	0.1208	0.6668	0.8932	0.0013	0.0512	112	0.0109
	250	0.1242	0.3541	1.1360	0.0018	0.0372	159	0.0112
	500	0.1735	0.5271	1.4763	0.0023	0.0516	234	0.0157
	750	0.2895	0.8731	2.5290	0.0039	0.0871	387	0.0261
Excavators Composite		0.1220	0.5338	0.9071	0.0013	0.0481	120	0.0110
Forklifts	50	0.0445	0.1623	0.1431	0.0002	0.0121	14.7	0.0040
	120	0.0438	0.2176	0.2788	0.0004	0.0241	31.2	0.0040
	175	0.0572	0.3307	0.4261	0.0006	0.0246	56.1	0.0052
	250	0.0570	0.1614	0.5281	0.0009	0.0168	77.1	0.0051
	500	0.0781	0.2208	0.6592	0.0011	0.0228	111	0.0070
Forklifts Composite		0.0541	0.2235	0.3950	0.0006	0.0204	54.4	0.0049
Generator Sets	15	0.0149	0.0684	0.1016	0.0002	0.0058	10.2	0.0013
	25	0.0266	0.0908	0.1594	0.0002	0.0091	17.6	0.0024
	50	0.0872	0.2639	0.2847	0.0004	0.0234	30.6	0.0079
	120	0.1106	0.4905	0.7587	0.0009	0.0590	77.9	0.0100
	175	0.1347	0.7388	1.2314	0.0016	0.0592	142	0.0122
	250	0.1277	0.4365	1.6763	0.0024	0.0464	213	0.0115
	500	0.1818	0.7230	2.3955	0.0033	0.0690	337	0.0164
	750	0.3035	1.1671	3.9863	0.0055	0.1134	544	0.0274
	9999	0.7957	2.8065	10.2314	0.0105	0.2844	1,049	0.0718
Generator Sets Composite		0.0767	0.3045	0.5430	0.0007	0.0324	61.0	0.0069
Graders	50	0.1080	0.3263	0.2772	0.0004	0.0262	27.5	0.0097
	120	0.1254	0.5310	0.7729	0.0009	0.0676	75.0	0.0113
	175	0.1467	0.7345	1.1193	0.0014	0.0631	124	0.0132
	250	0.1492	0.4331	1.4184	0.0019	0.0494	172	0.0135
	500	0.1855	0.6289	1.6842	0.0023	0.0608	229	0.0167
	750	0.3952	1.3289	3.6674	0.0049	0.1306	486	0.0357
Graders Composite		0.1446	0.6053	1.1663	0.0015	0.0593	133	0.0130
Off-Highway Tractors	120	0.2113	0.7191	1.2368	0.0011	0.1078	93.7	0.0191
	175	0.2045	0.8335	1.5337	0.0015	0.0871	130	0.0185
	250	0.1641	0.4691	1.4453	0.0015	0.0601	130	0.0148
	750	0.6538	2.8815	5.8130	0.0057	0.2353	568	0.0590
	1000	0.9818	4.4978	10.0554	0.0082	0.3436	814	0.0886
Off-Highway Tractors Composite		0.2077	0.7649	1.7062	0.0017	0.0818	151	0.0187
Off-Highway Trucks	175	0.1441	0.7580	1.0305	0.0014	0.0602	125	0.0130
	250	0.1400	0.3837	1.2373	0.0019	0.0412	167	0.0126
	500	0.2170	0.6362	1.7865	0.0027	0.0634	272	0.0196
	750	0.3542	1.0311	2.9938	0.0044	0.1046	442	0.0320
	1000	0.5484	1.6691	5.9808	0.0063	0.1796	625	0.0495
Off-Highway Trucks Composite		0.2141	0.6361	1.8543	0.0027	0.0644	260	0.0193
Other Construction Equipment	15	0.0118	0.0617	0.0737	0.0002	0.0029	10.1	0.0011
	25	0.0160	0.0544	0.1013	0.0002	0.0041	13.2	0.0014
	50	0.0753	0.2653	0.2585	0.0004	0.0205	28.0	0.0068
	120	0.1006	0.5277	0.7025	0.0009	0.0567	80.9	0.0091
	175	0.0935	0.5873	0.8011	0.0012	0.0420	107	0.0084
	500	0.1452	0.5234	1.5187	0.0025	0.0491	254	0.0131
Other Construction Equipment Composite		0.0872	0.3765	0.7938	0.0013	0.0330	123	0.0079
Other General Industrial Equipment	15	0.0066	0.0391	0.0466	0.0001	0.0018	6.4	0.0006
	25	0.0185	0.0632	0.1170	0.0002	0.0044	15.3	0.0017
	50	0.0980	0.2738	0.2243	0.0003	0.0232	21.7	0.0088
	120	0.1177	0.4487	0.6789	0.0007	0.0644	62.0	0.0106
	175	0.1261	0.5728	0.9333	0.0011	0.0549	95.9	0.0114
	250	0.1174	0.3177	1.2013	0.0015	0.0380	136	0.0106
	500	0.2135	0.6384	2.0642	0.0026	0.0693	265	0.0193
	750	0.3546	1.0522	3.5146	0.0044	0.1165	437	0.0320
	1000	0.5246	1.6793	6.0067	0.0056	0.1805	560	0.0473
Other General Industrial Equipment Composite		0.1542	0.5159	1.3484	0.0016	0.0580	152	0.0139

Table 59
SCAB Fleet Average Emission Factors (Diesel)

2013

Air Basin	SC

Equipment	MaxHP	(lb/hr) ROG	(lb/hr) CO	(lb/hr) NOX	(lb/hr) SOX	(lb/hr) PM	(lb/hr) CO2	(lb/hr) CH4
Other Material Handling Equipment	50	0.1361	0.3789	0.3119	0.0004	0.0323	30.3	0.0123
	120	0.1144	0.4370	0.6628	0.0007	0.0628	60.7	0.0103
	175	0.1591	0.7257	1.1860	0.0014	0.0696	122	0.0144
	250	0.1241	0.3385	1.2829	0.0016	0.0405	145	0.0112
	500	0.1521	0.4596	1.4883	0.0019	0.0498	192	0.0137
	9999	0.7021	2.2197	7.9424	0.0073	0.2379	741	0.0634
Other Material Handling Equipment Composite		0.1473	0.4951	1.3132	0.0015	0.0562	141	0.0133
Pavers	25	0.0247	0.0799	0.1500	0.0002	0.0075	18.7	0.0022
	50	0.1366	0.3592	0.2948	0.0004	0.0308	28.0	0.0123
	120	0.1387	0.5057	0.8357	0.0008	0.0729	69.2	0.0125
	175	0.1777	0.7784	1.3769	0.0014	0.0769	128	0.0160
	250	0.2072	0.6081	1.9469	0.0022	0.0756	194	0.0187
	500	0.2275	0.9254	2.1080	0.0023	0.0818	233	0.0205
Pavers Composite		0.1511	0.5357	0.8542	0.0009	0.0603	77.9	0.0136
Paving Equipment	25	0.0153	0.0520	0.0968	0.0002	0.0039	12.6	0.0014
	50	0.1166	0.3049	0.2514	0.0003	0.0263	23.9	0.0105
	120	0.1087	0.3958	0.6561	0.0006	0.0574	54.5	0.0098
	175	0.1387	0.6079	1.0816	0.0011	0.0602	101	0.0125
	250	0.1277	0.3763	1.2206	0.0014	0.0467	122	0.0115
Paving Equipment Composite		0.1142	0.4316	0.7709	0.0008	0.0536	68.9	0.0103
Plate Compactors	15	0.0050	0.0263	0.0314	0.0001	0.0012	4.3	0.0005
Plate Compactors Composite		0.0050	0.0263	0.0314	0.0001	0.0012	4.3	0.0005
Pressure Washers	15	0.0071	0.0328	0.0487	0.0001	0.0028	4.9	0.0006
	25	0.0108	0.0368	0.0646	0.0001	0.0037	7.1	0.0010
	50	0.0315	0.1037	0.1284	0.0002	0.0094	14.3	0.0028
	120	0.0302	0.1443	0.2235	0.0003	0.0157	24.1	0.0027
Pressure Washers Composite		0.0159	0.0619	0.0878	0.0001	0.0058	9.4	0.0014
Pumps	15	0.0125	0.0497	0.0752	0.0001	0.0049	7.4	0.0011
	25	0.0359	0.1004	0.1761	0.0002	0.0109	19.5	0.0032
	50	0.1052	0.3116	0.3228	0.0004	0.0275	34.3	0.0095
	120	0.1149	0.4984	0.7706	0.0009	0.0617	77.9	0.0104
	175	0.1385	0.7405	1.2344	0.0016	0.0611	140	0.0125
	250	0.1266	0.4210	1.6140	0.0023	0.0457	201	0.0114
	500	0.1952	0.7595	2.4849	0.0034	0.0734	345	0.0176
	750	0.3326	1.2556	4.2353	0.0057	0.1235	571	0.0300
	9999	1.0536	3.7127	13.3750	0.0136	0.3744	1,355	0.0951
Pumps Composite		0.0748	0.2926	0.4705	0.0006	0.0323	49.6	0.0067
Rollers	15	0.0074	0.0386	0.0461	0.0001	0.0018	6.3	0.0007
	25	0.0161	0.0549	0.1023	0.0002	0.0041	13.3	0.0015
	50	0.1025	0.2911	0.2583	0.0003	0.0245	26.0	0.0092
	120	0.0986	0.4063	0.6253	0.0007	0.0534	59.0	0.0089
	175	0.1247	0.6199	1.0114	0.0012	0.0550	108	0.0113
	250	0.1262	0.3887	1.3124	0.0017	0.0451	153	0.0114
	500	0.1654	0.6313	1.6820	0.0022	0.0593	219	0.0149
Rollers Composite		0.0973	0.4060	0.6546	0.0008	0.0453	67.1	0.0088
Rough Terrain Forklifts	50	0.1181	0.3778	0.3316	0.0004	0.0300	33.9	0.0107
	120	0.0955	0.4327	0.5995	0.0007	0.0529	62.4	0.0086
	175	0.1352	0.7256	1.0448	0.0014	0.0592	125	0.0122
	250	0.1294	0.3798	1.2955	0.0019	0.0416	171	0.0117
	500	0.1824	0.5717	1.7096	0.0025	0.0584	257	0.0165
Rough Terrain Forklifts Composite		0.1009	0.4642	0.6526	0.0008	0.0532	70.3	0.0091
Rubber Tired Dozers	175	0.2119	0.8457	1.5561	0.0015	0.0893	129	0.0191
	250	0.2435	0.6833	2.0817	0.0021	0.0881	183	0.0220
	500	0.3211	1.4228	2.7305	0.0026	0.1133	265	0.0290
	750	0.4843	2.1329	4.1797	0.0040	0.1716	399	0.0437
	1000	0.7496	3.4322	7.4509	0.0060	0.2591	592	0.0676
Rubber Tired Dozers Composite		0.2986	1.1749	2.5452	0.0025	0.1064	239	0.0269
Rubber Tired Loaders	25	0.0204	0.0697	0.1292	0.0002	0.0050	16.9	0.0018
	50	0.1200	0.3641	0.3118	0.0004	0.0292	31.1	0.0108
	120	0.0971	0.4152	0.6015	0.0007	0.0525	58.9	0.0088
	175	0.1238	0.6274	0.9501	0.0012	0.0535	106	0.0112
	250	0.1259	0.3685	1.2125	0.0017	0.0417	149	0.0114

Table 59
SCAB Fleet Average Emission Factors (Diesel)

2013

Air Basin	SC

Equipment	MaxHP	(lb/hr) ROG	(lb/hr) CO	(lb/hr) NOX	(lb/hr) SOX	(lb/hr) PM	(lb/hr) CO2	(lb/hr) CH4
	500	0.1867	0.6397	1.7158	0.0023	0.0613	237	0.0168
	750	0.3850	1.3084	3.6184	0.0049	0.1276	486	0.0347
	1000	0.5190	1.8389	5.9660	0.0060	0.1795	594	0.0468
Rubber Tired Loaders Composite		0.1195	0.4763	0.9346	0.0012	0.0508	109	0.0108
Scrapers	120	0.1877	0.6943	1.1141	0.0011	0.0983	93.9	0.0169
	175	0.2070	0.9107	1.5564	0.0017	0.0884	148	0.0187
	250	0.2252	0.6408	2.0481	0.0024	0.0791	209	0.0203
	500	0.3186	1.2113	2.8288	0.0032	0.1099	321	0.0287
	750	0.5525	2.0861	4.9949	0.0056	0.1918	555	0.0499
Scrapers Composite		0.2783	1.0395	2.4118	0.0027	0.1005	262	0.0251
Signal Boards	15	0.0072	0.0377	0.0450	0.0001	0.0018	6.2	0.0006
	50	0.1151	0.3456	0.3415	0.0005	0.0296	36.2	0.0104
	120	0.1176	0.5214	0.7807	0.0009	0.0644	80.2	0.0106
	175	0.1535	0.8341	1.3333	0.0017	0.0685	155	0.0139
	250	0.1632	0.5350	1.9963	0.0029	0.0580	255	0.0147
Signal Boards Composite		0.0192	0.0934	0.1399	0.0002	0.0077	16.7	0.0017
Skid Steer Loaders	25	0.0202	0.0620	0.1166	0.0002	0.0063	13.8	0.0018
	50	0.0517	0.2263	0.2279	0.0003	0.0157	25.5	0.0047
	120	0.0429	0.2748	0.3267	0.0005	0.0245	42.8	0.0039
Skid Steer Loaders Composite		0.0468	0.2309	0.2522	0.0004	0.0179	30.3	0.0042
Surfacing Equipment	50	0.0477	0.1403	0.1359	0.0002	0.0119	14.1	0.0043
	120	0.0970	0.4215	0.6523	0.0007	0.0517	63.8	0.0088
	175	0.0894	0.4730	0.7742	0.0010	0.0392	85.8	0.0081
	250	0.1025	0.3374	1.1177	0.0015	0.0376	135	0.0092
	500	0.1532	0.6418	1.6597	0.0022	0.0567	221	0.0138
	750	0.2443	1.0046	2.6697	0.0035	0.0900	347	0.0220
Surfacing Equipment Composite		0.1277	0.5182	1.2760	0.0017	0.0468	166	0.0115
Sweepers/Scrubbers	15	0.0124	0.0729	0.0870	0.0002	0.0034	11.9	0.0011
	25	0.0237	0.0808	0.1496	0.0002	0.0058	19.6	0.0021
	50	0.1048	0.3425	0.3055	0.0004	0.0271	31.6	0.0095
	120	0.1107	0.5147	0.6989	0.0009	0.0622	75.0	0.0100
	175	0.1439	0.7997	1.1204	0.0016	0.0637	139	0.0130
	250	0.1146	0.3382	1.1784	0.0018	0.0362	162	0.0103
Sweepers/Scrubbers Composite		0.1148	0.5145	0.6862	0.0009	0.0510	78.5	0.0104
Tractors/Loaders/Backhoes	25	0.0195	0.0657	0.1237	0.0002	0.0056	15.9	0.0018
	50	0.0893	0.3199	0.2893	0.0004	0.0238	30.3	0.0081
	120	0.0694	0.3529	0.4565	0.0006	0.0383	51.7	0.0063
	175	0.0988	0.5861	0.7696	0.0011	0.0428	101	0.0089
	250	0.1204	0.3666	1.1658	0.0019	0.0370	172	0.0109
	500	0.2290	0.7443	2.0659	0.0039	0.0701	345	0.0207
	750	0.3462	1.1159	3.2041	0.0058	0.1072	517	0.0312
Tractors/Loaders/Backhoes Composite		0.0792	0.3782	0.5392	0.0008	0.0387	66.8	0.0071
Trenchers	15	0.0099	0.0517	0.0617	0.0001	0.0024	8.5	0.0009
	25	0.0397	0.1355	0.2511	0.0004	0.0097	32.9	0.0036
	50	0.1566	0.4082	0.3432	0.0004	0.0353	32.9	0.0141
	120	0.1281	0.4684	0.7862	0.0008	0.0669	64.9	0.0116
	175	0.1955	0.8632	1.5520	0.0016	0.0849	144	0.0176
	250	0.2354	0.7089	2.2485	0.0025	0.0880	223	0.0212
	500	0.2985	1.3011	2.8470	0.0031	0.1105	311	0.0269
	750	0.5663	2.4440	5.4715	0.0059	0.2099	587	0.0511
Trenchers Composite		0.1427	0.4675	0.6684	0.0007	0.0549	58.7	0.0129
Welders	15	0.0104	0.0416	0.0629	0.0001	0.0041	6.2	0.0009
	25	0.0208	0.0581	0.1020	0.0001	0.0063	11.3	0.0019
	50	0.0979	0.2753	0.2535	0.0003	0.0240	26.0	0.0088
	120	0.0654	0.2659	0.4099	0.0005	0.0358	39.5	0.0059
	175	0.1101	0.5455	0.9083	0.0011	0.0490	98.2	0.0099
	250	0.0855	0.2618	1.0026	0.0013	0.0301	119	0.0077
	500	0.1092	0.3838	1.2526	0.0016	0.0394	168	0.0098
Welders Composite		0.0646	0.2096	0.2564	0.0003	0.0225	25.6	0.0058

Source: File offroadEF07_25.xls, downloaded from http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html

Table 60

Highest (Most Conservative) EMFAC2007 (version 2.3) Emission Factors for On-Road Passenger Vehicles & Delivery Trucks

Projects in the SCAQMD (Scenario Years 2007 - 2026)

Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:

Passenger Vehicles (<8500 pounds) & Delivery Trucks (>8500 pounds)

The following emission factors were compiled by running the California Air Resources Board's EMFAC2007 (version 2.3) Burden Model, taking the weighted average of vehicle types and simplifying into two categories:

Passenger Vehicles & Delivery Trucks.

These emission factors can be used to calculate on-road mobile source emissions for the vehicle categories listed in the tables below, by use of the following equation:

Emissions (pounds per day) = N x TL x EF

where N = number of trips, TL = trip length (miles/day), and EF = emission factor (pounds per mile)

This methodology replaces the old EMFAC emission factors in Tables A-9-5-J-1 through A-9-5-L in Appendix A9 of the current SCAQMD CEQA Handbook. All the emission factors account for the emissions from start, running and idling exhaust. In addition, the ROG emission factors include diurnal, hot soak, running and resting emissions, and the PM10 & PM2.5 emission factors include tire and brake wear.

Scenario Year: **2013**

All model years in the range 1969 to 2013

Passenger Vehicles (pounds/mile)	
CO	0.00709228
NOx	0.00071158
ROG	0.00074567
SOx	0.00001072
PM10	0.00009067
PM2.5	0.00005834
CO2	1.10087435
CH4	0.00006707

Delivery Trucks (pounds/mile)	
CO	0.01407778
NOx	0.01577311
ROG	0.00206295
SOx	0.00002682
PM10	0.00059956
PM2.5	0.00050174
CO2	2.78163459
CH4	0.00009703

Source: File onroadEF07_26.xls, downloaded from http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html

Table 61
Highest (Most Conservative) EMFAC2007 (version 2.3)
Emission Factors for On-Road Heavy-Heavy-Duty Diesel Trucks
Projects in the SCAQMD (Scenario Years 2007 - 2026)
Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:
Heavy-Heavy-Duty Diesel Trucks (33,001 to 60,000 pounds)

The following emission factors were compiled by running the California Air Resources Board's EMFAC2007 (version 2.3) Burden Model and extracting the **Heavy-Heavy-Duty Diesel Truck (HHDT)** Emission Factors.

These emission factors can be used to calculate on-road mobile source emissions for the vehicle/emission categories listed in the tables below, by use of the following equation:

Emissions (pounds per day) = N x TL x EF

where N = number of trips, TL = trip length (miles/day), and EF = emission factor (pounds per mile)

The **HHDT-DSL** vehicle/emission category accounts for all emissions from heavy-heavy-duty diesel trucks, including start, running and idling exhaust. In addition, ROG emission factors account for diurnal, hot soak, running and resting emissions, and the PM10 & PM2.5 emission factors account for tire and brake wear.

The **HHDT-DSL, Exh** vehicle/emission category includes only the exhaust portion of PM10 & PM2.5 emissions from heavy-heavy-duty diesel trucks.

Scenario Year: **2013**

All model years in the range 1969 to 2013

HHDT-DSL (pounds/mile)	
CO	**0.00931790**
NOx	**0.02742935**
ROG	**0.00226308**
SOx	**0.00004086**
PM10	**0.00133697**
PM2.5	**0.00114629**
CO2	**4.21518556**
CH4	**0.00010441**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00119623**
PM2.5	**0.00109863**

Source: File onroadEFHHDT07_26.xls, downloaded from http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html

Table 62
Motor Vehicle Entrained Road Dust Emission Factors

Vehicle Type	Surface	Silt Loading (sL, g/m2) or Silt Content (s, %)[a]	Average Weight (W) (tons)[b]	Un-controlled PM10 Emission Factor (lb/VMT)[c]	Un-controlled PM2.5 Emission Factor (lb/VMT)[c]	Control Efficiency (%)[d]	Controlled PM10 Emission Factor (lb/VMT)[e]	Controlled PM2.5 Emission Factor (lb/VMT)[e]
Tool Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Tool Truck	Unpaved	7.5	3.4	1.04E+00	1.04E-01	57%	4.47E-01	4.47E-02
Pickup 4x4	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Pickup 4x4	Unpaved	7.5	3.4	1.04E+00	1.04E-01	57%	4.47E-01	4.47E-02
Survey Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Survey Truck	Unpaved	7.5	3.4	1.04E+00	1.04E-01	57%	4.47E-01	4.47E-02
1-Ton Crew Cab, 4x4	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
1-Ton Crew Cab, 4x4	Unpaved	7.5	5	1.24E+00	1.24E-01	57%	5.32E-01	5.32E-02
1-Ton Truck, 4x4	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
1-Ton Truck, 4x4	Unpaved	7.5	5	1.24E+00	1.24E-01	57%	5.32E-01	5.32E-02
165-Ton Crane Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
165-Ton Crane Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
3/4-Ton Pick-up Truck, 4x4	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
3/4-Ton Pick-up Truck, 4x4	Unpaved	7.5	3.4	1.04E+00	1.04E-01	57%	4.47E-01	4.47E-02
3/4-Ton Truck, 4x4	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
3/4-Ton Truck, 4x4	Unpaved	7.5	3.4	1.04E+00	1.04E-01	57%	4.47E-01	4.47E-02
3 Drum Sock Line Puller	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
3 Drum Sock Line Puller	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Aggregate Base Delivery Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Aggregate Base Delivery Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Asphalt Delivery Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Asphalt Delivery Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Auger Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Auger Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Boom/Crane Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Boom/Crane Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Bucket Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Bucket Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Carry-all Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Carry-all Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Concrete Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Concrete Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Conduit Vendor Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Conduit Vendor Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Crew Pickup Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Crew Pickup Truck	Unpaved	7.5	5	1.24E+00	1.24E-01	57%	5.32E-01	5.32E-02
Crew Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Crew Truck	Unpaved	7.5	5	1.24E+00	1.24E-01	57%	5.32E-01	5.32E-02
Crewcab Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Crewcab Truck	Unpaved	7.5	5	1.24E+00	1.24E-01	57%	5.32E-01	5.32E-02
Crushed Rock Delivery Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Crushed Rock Delivery Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Dump Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Dump Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Dump Truck - Import	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Dump Truck - Import	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Dump Truck - Export	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Dump Truck - Export	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Extendable Flat Bed Pole Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Extendable Flat Bed Pole Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Flat Bed Truck/Trailer	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Flat Bed Truck/Trailer	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Flat Bed Pole Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Flat Bed Pole Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Flatbed Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Flatbed Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02

Table 62
Motor Vehicle Entrained Road Dust Emission Factors

Vehicle Type	Surface	Silt Loading (sL, g/m2) or Silt Content (s, %)[a]	Average Weight (W) (tons)[b]	Un-controlled PM10 Emission Factor (lb/VMT)[c]	Un-controlled PM2.5 Emission Factor (lb/VMT)[c]	Control Efficiency (%)[d]	Controlled PM10 Emission Factor (lb/VMT)[e]	Controlled PM2.5 Emission Factor (lb/VMT)[e]
Foreman Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Foreman Truck	Unpaved	7.5	5	1.24E+00	1.24E-01	57%	5.32E-01	5.32E-02
Gang Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Gang Truck	Unpaved	7.5	5	1.24E+00	1.24E-01	57%	5.32E-01	5.32E-02
Line Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Line Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Low Bed Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Low Bed Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Lowboy Truck/Trailer	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Lowboy Truck/Trailer	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Maintenance Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Maintenance Truck	Unpaved	7.5	10	1.69E+00	1.69E-01	57%	7.26E-01	7.26E-02
Pick-up Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Pick-up Truck	Unpaved	7.5	10	1.69E+00	1.69E-01	57%	7.26E-01	7.26E-02
Pipe Truck/Trailer	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Pipe Truck/Trailer	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Precaster Boom Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Precaster Boom Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Reel Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Reel Truck	Unpaved	7.5	10	1.69E+00	1.69E-01	57%	7.26E-01	7.26E-02
Rodder Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Rodder Truck	Unpaved	7.5	10	1.69E+00	1.69E-01	57%	7.26E-01	7.26E-02
Stake Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Stake Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Static Truck/Tensioner	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Static Truck/Tensioner	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Splicing Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Splicing Truck	Unpaved	7.5	5	1.24E+00	1.24E-01	57%	5.32E-01	5.32E-02
Truck, Semi Tractor	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Truck, Semi Tractor	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Water Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Water Truck	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Wire Truck/Trailer	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Wire Truck/Trailer	Unpaved	7.5	17	2.14E+00	2.14E-01	57%	9.22E-01	9.22E-02
Work Truck	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Work Truck	Unpaved	7.5	5	1.24E+00	1.24E-01	57%	5.32E-01	5.32E-02
Worker Commute	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Worker Commute	Unpaved	7.5	3.4	1.04E+00	1.04E-01	57%	4.47E-01	4.47E-02

Table 62
Motor Vehicle Entrained Road Dust Emission Factors

Vehicle Type	Surface	Silt Loading (sL, g/m2) or Silt Content (s, %)[a]	Average Weight (W) (tons)[b]	Un-controlled PM10 Emission Factor (lb/VMT)[c]	Un-controlled PM2.5 Emission Factor (lb/VMT)[c]	Control Efficiency (%)[d]	Controlled PM10 Emission Factor (lb/VMT)[e]	Controlled PM2.5 Emission Factor (lb/VMT)[e]
Subtransmission Line Inspection	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Subtransmission Line Inspection	Unpaved	7.5	3.4	1.04E+00	1.04E-01	57%	4.47E-01	4.47E-02
Substation Site Visit	Paved	0.035	3.4	9.22E-04	0.00E+00	0%	9.22E-04	0.00E+00
Substation Site Visit	Unpaved	7.5	3.4	1.04E+00	1.04E-01	57%	4.47E-01	4.47E-02

[a] Paved road silt loading from ARB Emission Inventory Methodology 7.9, Entrained Paved Road Dust (1997) for collector roads,
http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9.pdf
Unpaved road silt content from SCAQMD CEQA Handbook, (1993) Table A9-9-E-1 for overburden

[b] Average paved on-road vehicle weight in San Bernardino County from ARB Emission Inventory Methodology 7.9, Entrained Paved Road Dust (1997)
Unpaved worker commuting weight on access road assumed to be same as paved road weight
Unpaved weight for other trucks is based on upper limit of 33,000 lbs for medium heavy-duty trucks.

[c] Equations:

$EF(paved) = k_p (sL/2)^{0.65} (W/3)^{1.5} - C$ Ref: AP-42, Section 13.2.1, "Paved Rods," November 2006

$EF (unpaved) = k_u (s/12)^a (W/3)^b$ Ref: AP-42, Section 13.2.2, "Unpaved Rods," November 2006

Constants:

k_p =	0.016	(Particle size multiplier for PM10)
	0.0024	(Particle size multiplier for PM2.5)
C =	0.00047	(Exhaust, brake wear and tire wear adjustment, PM10)
	0.00036	(Exhaust, brake wear and tire wear adjustment, PM2.5)
k_u =	1.5	(Particle size multiplier for PM)
	0.15	(Particle size multiplier for PM2.5)
a =	0.9	for PM10
	0.9	for PM2.5
b =	0.45	for PM10
	0.45	for PM2.5

[d] Control efficiency from limiting speeds on unpaved roads to 15 mph, from Table XI-A, Mitigation Measure Examples,
Fugitive Dust from Construction & Demolition, http://www.aqmd.gov/ceqa/handbook/mitigation/fugitive/MM_fugitive.html

[e] Controlled emission factor [lb/mi] = Uncontrolled emission factor [lb/mi] x (1 - Control efficiency [%] / 100)

Table 63
Fugitive Dust Emission Factors
Soil Dropping During Excavation

Emission Factor [lb/cu. yd] = 0.0011 x (mean wind speed [mi/hr] / 5)$^{1.3}$ / (moisture [%] / 2)$^{1.4}$ x (number drops per ton) x (density [ton/cu. yd])
Reference: AP-42, Equation (1), Section 13.2.4, November 2006

Parameter	Value	Basis
Mean Wind Speed	12	SCAQMD CEQA Air Quality Handbook (1993), Table 9-9-G, default
Moisture	3.7	Geotechnical investigation of substation site
Number Drops	4	Assumption
Soil Density	1.215	Table 2.46, Handbook of Solid Waste Management

PM10 Emission Factor (Uncontrolled)	7.05E-03	lb/cu. yd
Reduction from Watering Twice/Day	61%	Control efficiency from watering three times per day, Table XI-A, Mitigation Measure Examples, Fugitive Dust from Construction & Demolition, http://www.aqmd.gov/ceqa/handbook/mitigation/fugitive/MM_fugitive.html
Controlled PM10 Emission Factor	2.75E-03	lb/cu. yd
Controlled PM2.5 Emission Factor[a]	5.72E-04	lb/cu. yd

[a] PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction of PM10 in Construction Dust = 0.208 from Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006

Emissions [pounds per day] = Controlled emission factor [pounds per cubic yard] x Volume soil handled [cubic yards per day]

Storage Pile Wind Erosion

Emission Factor [lb/day-acre] = 0.85 x (silt content [%] / 1.5) x (365 / 235) x (percentage of time unobstructed wind exceeds 12 mph / 15)
Reference: SCAQMD CEQA Air Quality Handbook (1993), Table 9-9-E

Parameter	Value	Basis
Silt Content	11.2	Geotechnical investigation of substation site
Pct. time wind > 12 mph	100	Worst-case assumption

PM10 Emission Factor (Uncontrolled)	65.7	lb/day-acre
Reduction from Watering Twice/Day	90%	Control efficiency from watering storage pile by hand at a rate of 1.4 gallons/hour-yard^2, Table XI-B, Mitigation Measure Examples, Fugitive Dust from Materials Handling, http://www.aqmd.gov/ceqa/handbook/mitigation/fugitive/MM_fugitive.html
Controlled PM10 Emission Factor	6.6	lb/day-acre
Controlled PM2.5 Emission Factor[a]	1.4	lb/day-acre

[a] PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction of PM10 in Construction Dust = 0.208 from Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006

Emissions [pounds per day] = Controlled emission factor [pounds per acre-day] x Storage pile surface area [acres]

Bulldozing, Scraping and Grading

Emission Factor [lb/hr] = 0.75 x (silt content [%])$^{1.5}$ / (moisture)$^{1.4}$
Reference: AP-42, Table 11.9-1, July 1998

Parameter	Value	Basis
Silt Content	11.2	Geotechnical investigation of substation site
Moisture	3.7	Geotechnical investigation of substation site

PM10 Emission Factor (Uncontrolled)	4.502	lb/hr
Reduction from Watering Twice/Day	61%	Control efficiency from watering three times per day, Table XI-A, Mitigation Measure Examples, Fugitive Dust from Construction & Demolition, http://www.aqmd.gov/ceqa/handbook/mitigation/fugitive/MM_fugitive.html
Controlled PM10 Emission Factor	1.756	lb/hr
Controlled PM2.5 Emission Factor[a]	0.365	lb/hr

[a] PM2.5 emission factor [lb/hr] = PM10 emission factor [lb/hr] x PM2.5 fraction of PM10

PM2.5 Fraction of PM10 in Construction Dust = 0.208 from Appendix A, Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, SCAQMD, October 2006

Emissions [pounds per day] = Controlled emission factor [pounds per hour] x Bulldozing, scraping or grading time [hours/day]