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Notice of Determination

Appendix D

TO:

Office of Planning and Research

For U.S. Mail:
P.O. Box 3044
Sacramento, CA 95812-3044

Street Address:
1400 Tenth Street
Sacramento, CA 95814

FROM:

Applicant/Lead Agency: Irvine Ranch Water District

Address: 15600 Sand Canyon Avenue
Irvine, California 92618-3102

Contact: Christian Kessler

Phone: (949) 453-5441

Lead Agency (if different from above):

Address:

Contact:

Phone:

POSTED

DEC 15 2010

TOM DALY, CLERK-RECORDER

By *TW*

County Clerk

County of: Orange

Address:

24031 El Toro Road, Suite 150
12 Civic Center Plaza, Rm 101,
Santa Ana, CA 92701

Subject: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): ~~20052021120~~ 2002021120

Project Title: Addendum No. 1 to the San Diego Creek Watershed Natural Treatment System EIR

Project Location (include county): The proposed facility would be constructed within a disturbed but vacant parcel bound by Barranca Parkway to the south, Peters Canyon Wash Channel to the northwest, commercial development to the north and Creekside Education Center to the east in the County of Orange (see attached map)

Project Description: The Final EIR identified Site 67 as a subsurface natural flow wetland to be constructed over approximately 15 acres. The modified system would be an above-ground facility over approximately 2.25 acres. The proposed area for Site 67 would be in the same location as described in the Final EIR and would include the following components:

- An eight cubic feet per second (cfs) Influent Pump Station for the transfer of water from Peters Canyon Wash to the selenium treatment facility at full buildout.
- Four Advanced Biological Metal Removal (ABMet) Bioreactor Tanks (with the potential for eighteen) for capturing dissolved selenium. (three cfs would require at least four bioreactors and eight cfs would require an additional 14 reactors for a total of 18 reactors).
- Reoxygenation System and Effluent Wetwell to replenish the dissolved oxygen in the treated water prior to discharging it
- Backwash System to keep the bioreactor medium clean.
- Discharge Sewer System for the disposal of the wastewater collected from the backwash processes and restrooms.
- Nutrient Feed System to supply a food source to the microbes in the bioreactors.
- Odor Control System to reduce the odors produced during the selenium removal process.
- An ultraviolet (UV) or ozone system to reduce the concentration of all selenium species and bacteria to levels below base
- Equipment Building would house electrical and control room, equipment storage room, the nutrient and chemical storage
- Restroom Building would be a free standing building for public use.
- Discharge Structure to return treated effluent back to Peters Canyon Wash.
- Parking lot providing eight parking stalls and two access driveways

This is to advise that the Irvine Ranch Water District has approved the above described project on *Lead Agency* or *Responsible Agency*)

December 13, 2010 and has made the following determinations regarding the above described projects.
(Date)

FILED

DEC 15 2010

TOM DALY, CLERK-RECORDER

By *TW*

1. The project [will will not] have a significant effect on the environment.
2. An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
 A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [were were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [was was not] adopted for this project.
5. A statement of Overriding Considerations [was was not] adopted for this project.
6. Findings [were were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the Negative Declaration, is available to the General Public at:

rvine Ranch Water District, 15600 Sand Canyon Ave, Irvine, CA 92618, and at <http://www.irwd.com>

Signature (Public Agency) *Chate km* Title: *Engineering Tech II*
 Date: *12/15/10* Date Received filing at OPR: _____

FILED

DEC 15 2010

TOM DALY, CLERK-RECORDER

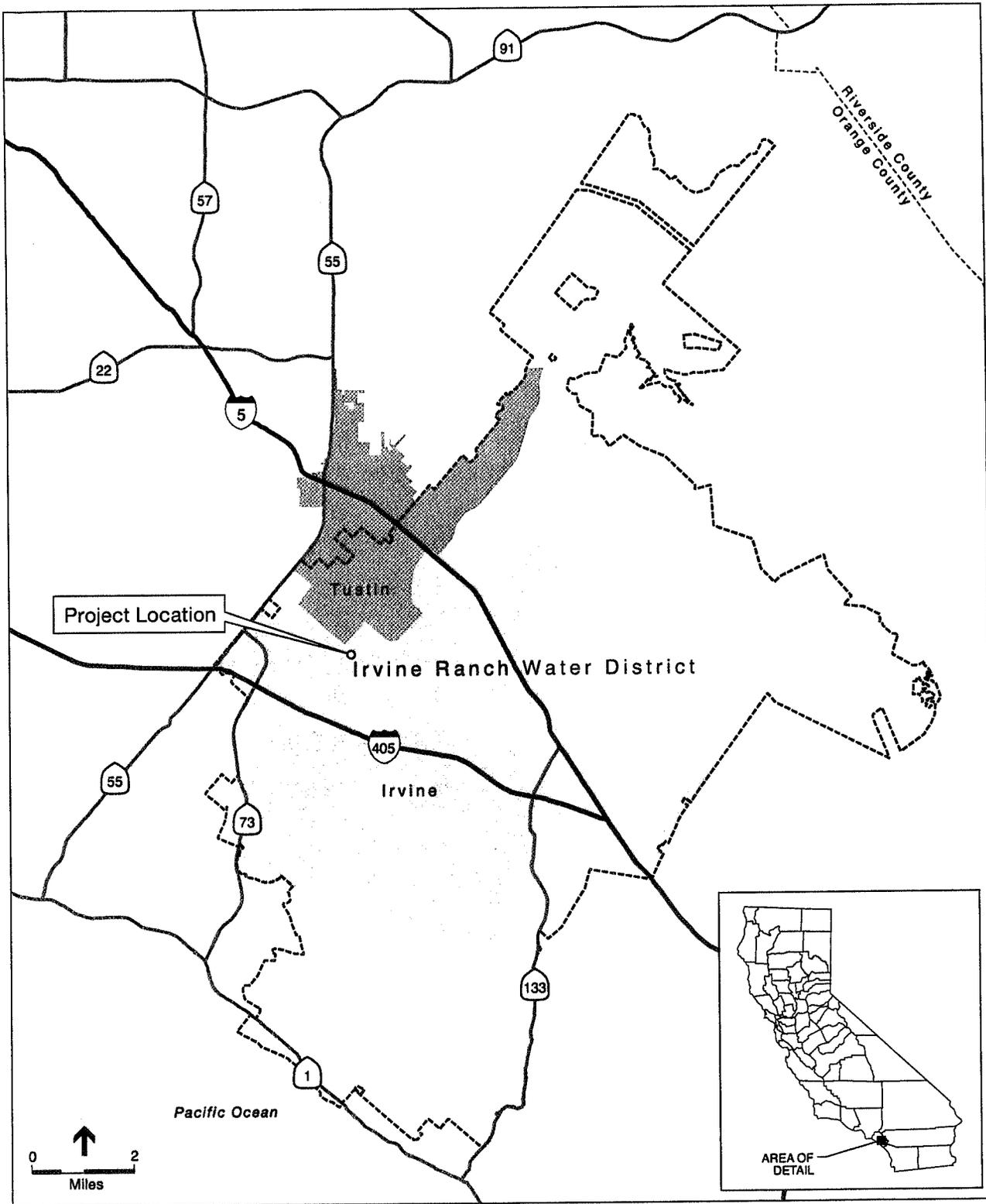
By *TW* DEPUTY

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DEC 15 2010

TOM DALY, CLERK-RECORDER

By *TW* DEPUTY



SOURCE: GlobeXplorer, 2009; RBF Consulting, 2009.

NTS Site 67 Addendum . 209247.03

Figure 1
Project Vicinity / Service Area

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TOM DALY, CLERK-RECORDER

By TW DEPUTY

By TW DEPUTY

FILED

DEC 15 2010

Recorded in Official Records, County of Orange
Tom Daly, Clerk-Recorder

Notice of Determination

To: X Office of Planning and Research
P.O. Box 3044, 1400 Tenth Street, Rm. 212
Sacramento, CA 95812-3044
X Orange County Clerk-Recorder
P.O. Box 238
Santa Ana, CA 92702

TOM DALY, CLERK-RECORDER
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POSTED

DEC 15 2010

Subject:

Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code

TOM DALY, CLERK-RECORDER

By _____ DEPUTY

POSTED

Project Title:

Irvine Ranch Water District San Diego Creek Watershed Natural Treatment System (NTS)

APR 27 2004

State Clearinghouse Number:

2002021120

Mr. Norris Brandt, P.E.
Lead Agency Contact Person

(949) 453-5300
Area Code/Telephone

TOM DALY, CLERK-RECORDER

By _____ DEPUTY

Project Location:

The approximate 122 square mile San Diego Creek Watershed located in central Orange County and tributary to Upper Newport Bay.

Project Description:

PROJECT APPLICANT:
IRVINE RANCH WATER DISTRICT
15600 SAND CANYON AVE.
IRVINE, CA 92618

The NTS Master Plan is a regional plan proposed for implementation by IRWD that would result in natural treatment of runoff from both existing and new development within the San Diego Creek Watershed. The NTS Master Plan consists of the creation and consolidated operation and management of new NTS wetlands and at least one, subsurface wetland-like feature to assist in managing the quality of surface runoff within the San Diego Creek Watershed. The goal of the NTS Master Plan is to assist in restoring the "chemical, physical, and biological integrity" of the San Diego Creek Watershed in compliance with the key objective of the Federal Clean Water Act. The NTS wetlands will enhance assimilative capacity of low value drainages resulting in natural removal of urban pollutants from dry weather flows, "first flush" storm water runoff and small storms. In addition, the NTS constructed wetlands will provide emergent marsh/wetland vegetation in upland areas and some drainages. It will assist in the Watershed's compliance with Santa Ana Regional Water Quality Control Board and U.S. Environmental Protection Agency requirements for storm water quality and pollution reduction targets. The NTS Master Plan will also assist the County and the cities within the San Diego Creek Watershed in complying with the applicable Municipal Separate Stormwater Sewer System General NPDES Permit and Waste Discharge Requirements (MS4 Permit) and Total Maximum Daily Loads (TMDLs).

This is to advise that the Irvine Ranch Water District has approved the above described project on April 26, 2004, and has made the following determinations regarding the above described project:
(Date)

1. The project (will will not) have a significant effect on the environment.
2. An Environmental Impact Report was prepared and certified for this project pursuant to the provisions of CEQA.
 A Negative Declaration/Mitigated Negative Declaration was prepared and certified for this project pursuant to the provisions of CEQA.
3. Mitigation measures (were were not) made a condition of the approval of the project.
4. A Statement of Overriding Considerations (was was not) adopted for this project.
5. Findings (were were not) made pursuant to the provisions of CEQA.

FILED

APR 27 2004

TOM DALY, CLERK-RECORDER

By _____

This is to certify that the Final EIR with comments and responses and record of project approval is available to the general public during regular business hours at:

Irvine Ranch Water District, 15600 Sand Canyon Avenue, Irvine, CA 92618

Signature (Public Agency) _____ Date 4/27/04 Title ASSISTANT TO THE GENERAL MANAGER

Date received for filing at OPR:

**ADDENDUM NO. 1 TO THE
SAN DIEGO CREEK WATERSHED NATURAL TREATMENT SYSTEM
ENVIRONMENTAL IMPACT REPORT (State Clearinghouse No. 20052021120)**

Prepared for:

**Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, California 92618-3102
Contact: Christian Kessler (949) 453-5441**

Prepared by:

**ESA
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017
Contact: Tom Barnes (213-599-4333)**

December 2010

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ADDENDUM NO 1 TO THE SAN DIEGO CREEK WATERSHED NATURAL TREATMENT SYSTEM FINAL ENVIRONMENTAL IMPACT REPORT

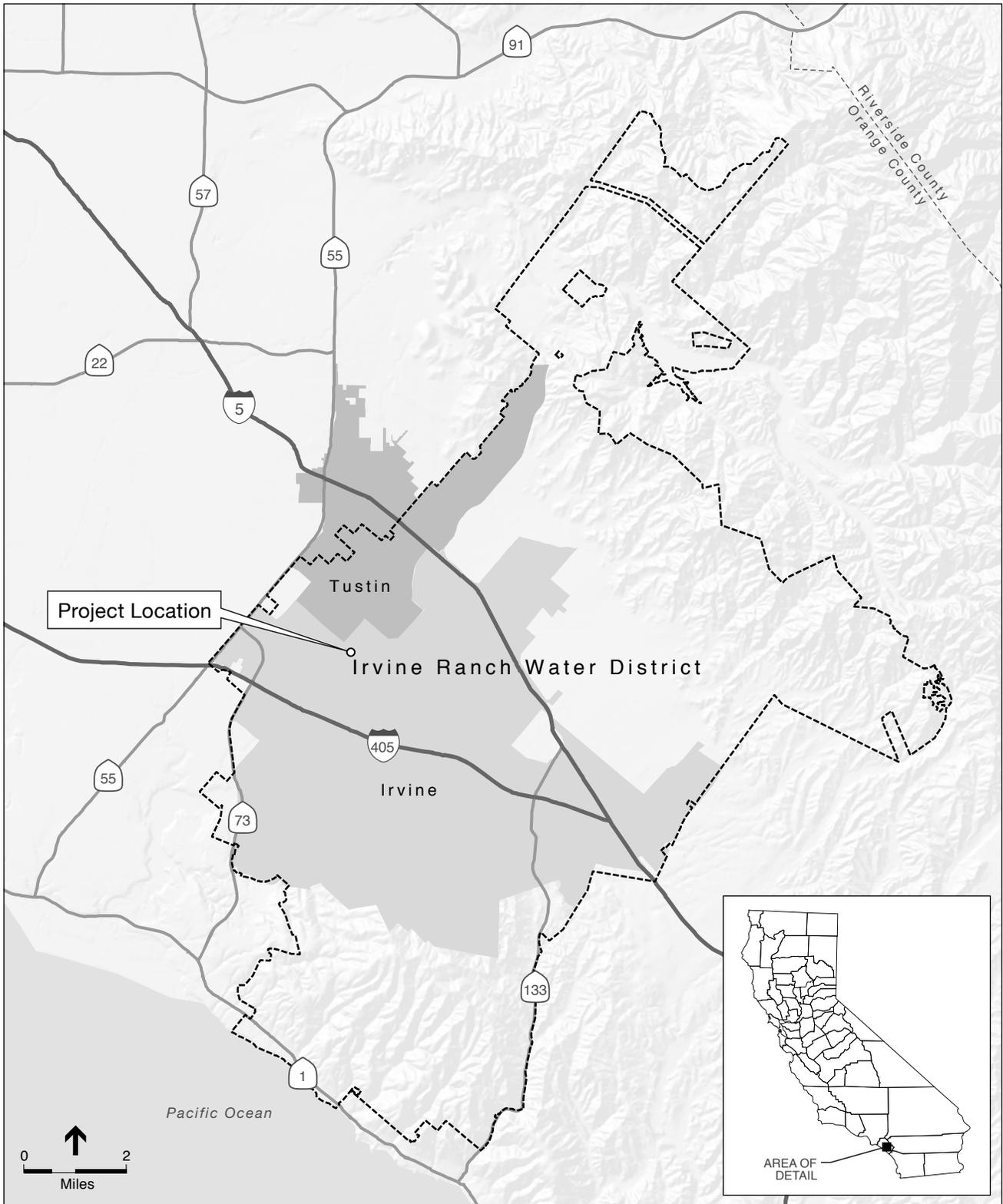
1.0 Introduction

This document is Addendum No. 1 to the Final Environmental Impact Report (EIR) prepared by Irvine Ranch Water District (IRWD) for the San Diego Creek Watershed Natural Treatment System (April 26, 2004). The Natural Treatment System (NTS) Plan consists of proposed improvements to assist in managing the quality of surface runoff within the San Diego Creek Watershed in central Orange County (**Figure 1**). The proposed NTS Plan is one of the key initiatives that would assist in meeting total maximum daily load (TMDL) requirements established for San Diego Creek. The strategy of the NTS Plan is to establish a network of created water quality treatment wetlands to be located throughout the San Diego Creek Watershed. The NTS Plan would install permanent shallow runoff detention ponds throughout the watershed that would support the growth of emergent wetland plants that would provide nutrient removal for detained runoff.

In addition to the nutrient removal wetlands, the Plan included a selenium treatment facility (Site 67). Selenium is identified as one of the toxic pollutants that exceeds the TMDL thresholds and is a target pollutant for the NTS Plan. Selenium is found naturally within the San Diego Creek Watershed as a result of groundwater seepage in areas of shallow groundwater tables, specifically within a region of lower Peters Canyon Wash and within natural flows from the upstream foothills. The proposed selenium treatment facility envisioned in the Plan was a “subsurface flow wetland,” different in design from the “surface flow wetlands.” The objective of this facility design was to pass water through organically rich and perpetually wet soils, which would trap the selenium under anoxic (oxygen-deficient) conditions.

The Final EIR evaluated environmental effects of implementing numerous projects within the watershed aimed at water quality improvement, including Site 67. The Final EIR was certified and approved on April 26, 2004.

Since the approval of the San Diego Creek Watershed NTS Plan and certification of the Final EIR, IRWD has identified modifications to the proposed design of the Site 67 Selenium Treatment Facility. The proposed facility would be installed in the same location identified in the Final EIR, but would require installation of an above-ground treatment system that would include a structure to house chemicals and treatment media needed in the treatment process. The objective of the treatment system and the location of the facility are unchanged.



SOURCE: GlobeXplorer, 2009; RBF Consulting, 2009.

NTS Site 67 Addendum . 209247.03

Figure 1
Project Vicinity / Service Area

IRWD has prepared this Addendum pursuant to the CEQA Guidelines Section 15164, to describe the modifications to the project and to evaluate whether the modifications present any new significant impacts not identified in the previously certified Final EIR that would require preparation of a subsequent EIR.

1.1 Purpose of Addendum

Under CEQA, the lead agency or a responsible agency shall prepare an addendum to a previously-certified EIR if some changes or additions are necessary to the prior EIR, but none of the conditions calling for preparation of a subsequent or supplemental EIR have occurred (*CEQA Guidelines* §15164). Once an EIR has been certified, a subsequent EIR is only required when the lead agency or responsible agency determines that one of the following conditions has been met:

- (1) Substantial changes are proposed in the project, or substantial changes occur with respect to the circumstances under which the project is undertaken, which require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects (*CEQA Guidelines* §15162(a)(1), (2));
- (2) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:
 - a. The project will have one or more significant effects not discussed in the previous EIR;
 - b. Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative (*CEQA Guidelines* §15162(a)(3)).

If one or more of the conditions described above for a subsequent EIR exist, but only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation, then the lead agency may prepare a supplement to an EIR, rather than a subsequent EIR (*CEQA Guidelines* §15163(a)).

CEQA recommends that a brief explanation of the decision to prepare an addendum rather than a subsequent or supplemental EIR be included in the record (*CEQA Guidelines* §15164(e)). This Addendum has been prepared because the proposed modifications to the San Diego Creek Watershed Natural Treatment System do not meet the conditions for a subsequent or supplemental EIR. This Addendum explains why the proposed modifications would not result in new significant environmental effects or result in a substantial increase in the severity of previously-identified significant effects. There is no new information that would show that the proposed modifications would have new effects or more severe effects on the environment. This

Addendum provides new information to show that the proposed modifications would not have any adverse environmental effects and would not change the conclusions of the previously-certified Final EIR.

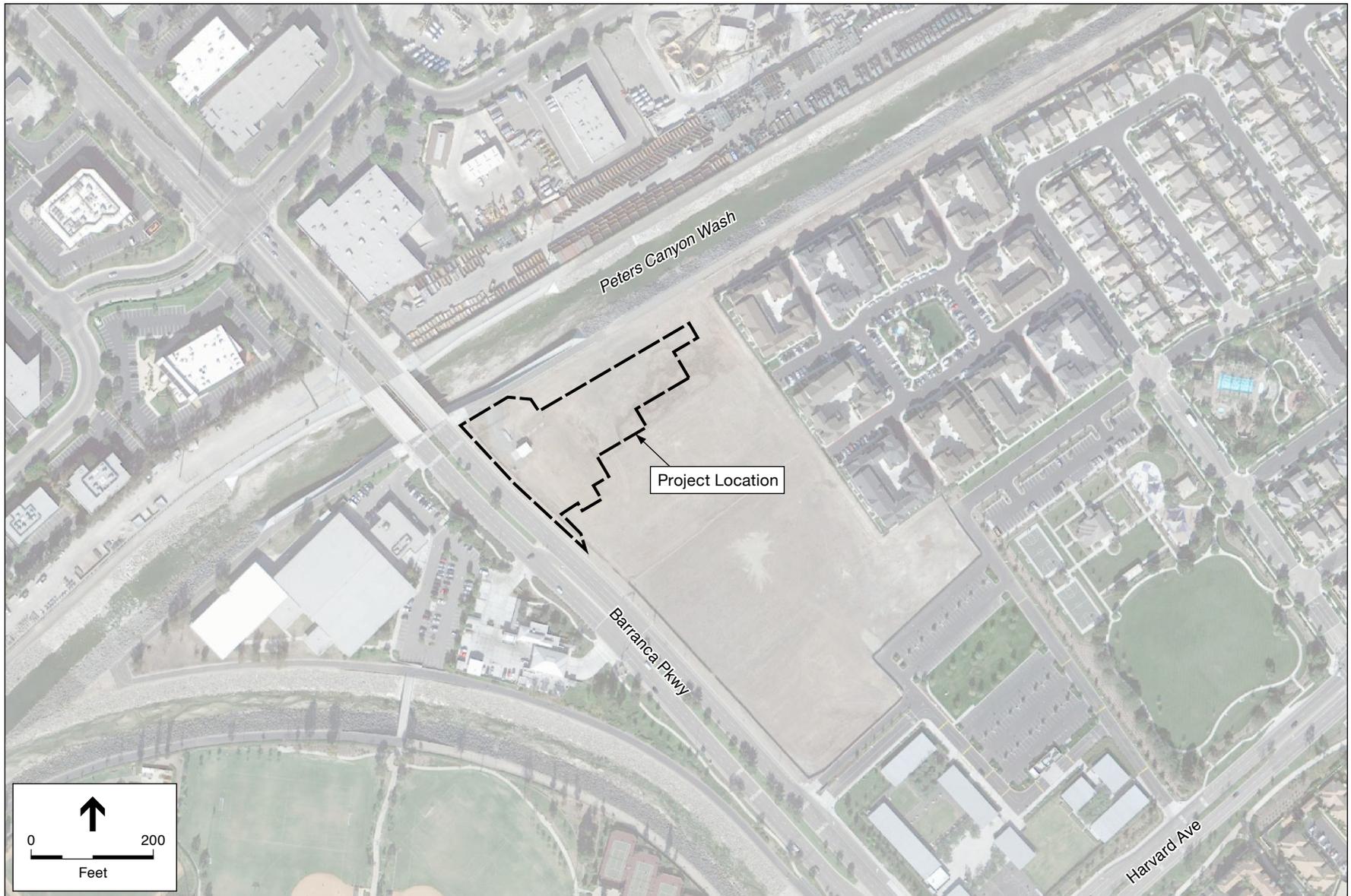
An addendum does not need to be circulated for public review, but rather can be attached to the final EIR (*CEQA Guidelines* §15164(c)). Prior to initiating the modified Project, the IRWD Board of Directors will consider this Addendum together with the Final EIR and make a decision regarding the modified Project (*CEQA Guidelines* §15164(d)).

To comply with the California Environmental Quality Act (CEQA) (Public Resources Code Sections 21000 et seq.) and *State CEQA Guidelines* (California Code of Regulations Sections 15000 et seq., hereinafter referred to as *Guidelines*), this Addendum has been prepared to evaluate the potential environmental impacts associated with the proposed minor modifications.

1.2 Modification Description

The original NTS Plan identified Site 67 as a subsurface natural flow wetland to be constructed over approximately 15 acres. The modified system described in this Addendum is an above-ground facility over approximately 2.25 acres. The proposed site for Site 67 would be in the same location as described in the Final EIR (**Figure 2**). The modified system would include the following components:

- An eight cubic feet per second (cfs) Influent Pump Station for the transfer of water from Peters Canyon Wash to the selenium treatment facility at full buildout.
- Four Advanced Biological Metal Removal (ABMet) Bioreactor Tanks (with the potential for eighteen) for capturing dissolved selenium. (three cfs would require at least four bioreactors and eight cfs would require an additional 14 reactors for a total of 18 reactors).
- Reoxygenation System and Effluent Wetwell to replenish the dissolved oxygen in the treated water prior to discharging the water back into Peters Canyon Wash.
- Backwash System to keep the bioreactor medium clean.
- Discharge Sewer System for the disposal of the wastewater collected from the backwash processes and restrooms.
- Nutrient Feed System to supply a food source to the microbes in the bioreactors.
- Odor Control System to reduce the odors produced during the selenium removal process.
- An ultraviolet (UV) or ozone system to reduce the concentration of all selenium species and bacteria to levels below baselines found in Peter Canyon Wash.
- Equipment Building would house electrical and control room, equipment storage room, the nutrient and chemical storage area, the ABMet bioreactors, and a piping gallery. and,
- Restroom Building would be a free standing building for public use.
- Discharge Structure to return treated effluent back to Peters Canyon Wash.
- Parking lot providing eight parking stalls and two access driveways.



SOURCE: HDR Engineering, Inc., 2010.

NTS Site 67 Addendum . 209247.03

Figure 2
Project Location

These components are described in more detail below. **Figure 3** shows the location of each of the components.

Infiltration Gallery

The infiltration gallery would capture water from Peters Canyon Wash and convey it to the influent pump station. The proposed size of the gallery would be approximately 36,000 square feet.

Influent Pump Station

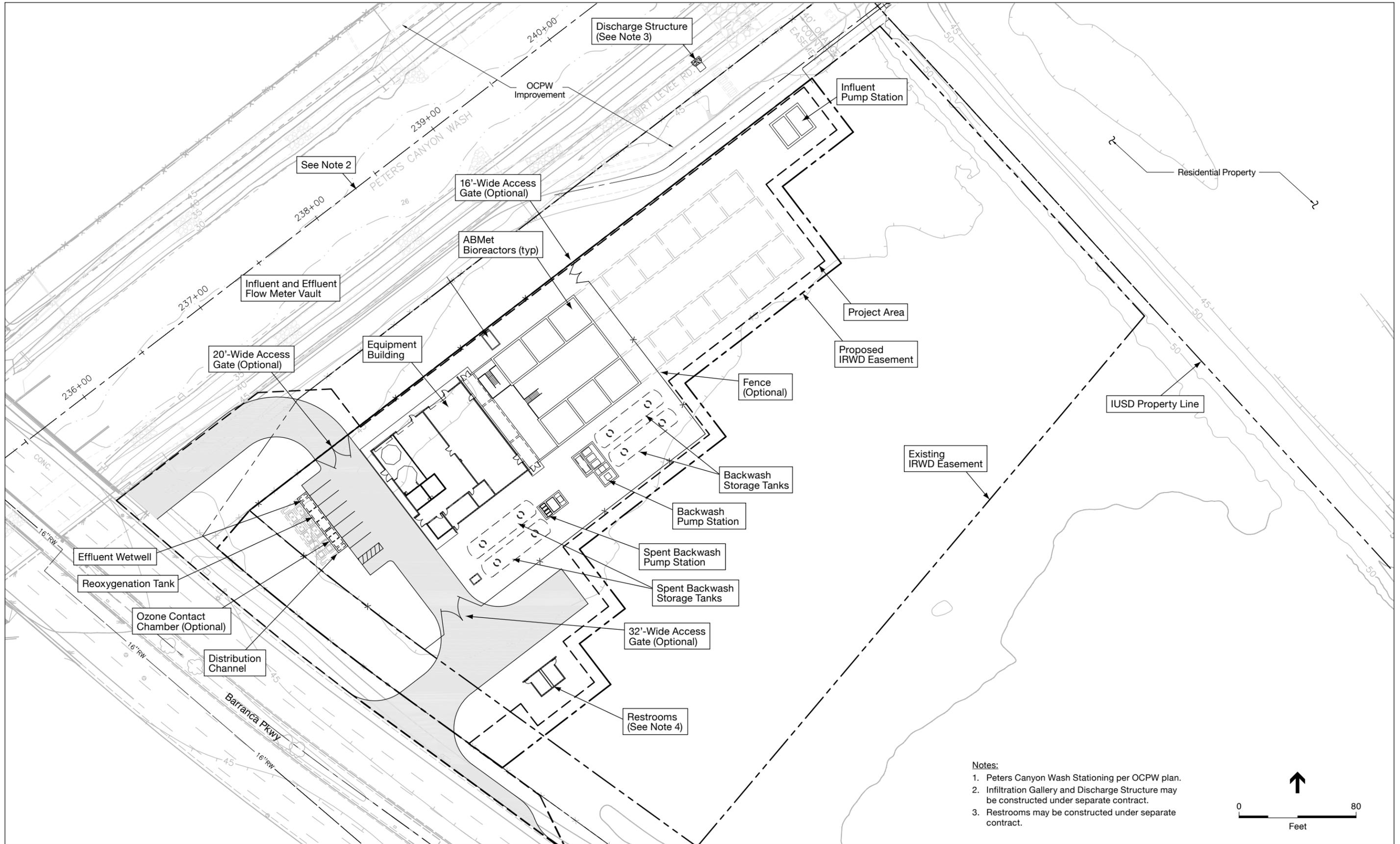
The influent pump station would transfer the water from Peters Canyon Wash to the selenium treatment facility. The pump station would be located approximately 25 feet away from the school property line. The proposed size of the influent pump station would be approximately 10 feet by 18 feet and approximately 26 feet deep. The structure would be encased in concrete and located underground.

ABMet Bioreactor Tanks

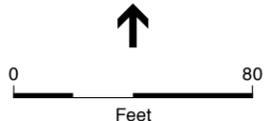
Diverted flow from the influent pump station is conveyed to the ABMet bioreactor tanks where selenium is removed. The system uses a proprietary molasses-based nutrient as the carbon source for the microbes in the bioreactors. Water enters the bioreactor tanks from the top and passes through the media, and exits at the bottom of the bioreactor. The dissolved selenium and other contaminants in the biomass are removed from the tanks as backwash. The backwash is conveyed to the sanitary sewer. The proposed project would initially require four tanks (for 3 cfs flow) with an inside dimension of 22-feet long by 21-feet wide by 19-feet deep. However, if the project is upsized to 8 cfs then an additional 14 tanks would be needed for total of 18 ABMet bioreactor tanks. The tanks would be installed six feet below grade with the top of the tanks 11 feet above grade. The top of the tanks for a 3 cfs system would be housed in a 5,500 square-foot building and for an 8 cfs system the building would be approximately 22,500 square-feet. The building would be approximately 15 feet high. However, during final design it may be determined that the entire structure may be installed underground. A fence would be constructed around the building to control access to the facility. A horseshoe shaped parking area with eight parking stalls would be included in the facility design. A decomposed granite path would be provided as an access connection between the parking lot, restroom, and proposed athletic fields.

Reoxygenation System and Effluent Wetwell

Due to the anoxic nature of the ABMet reactors, the bioreactor effluent needs to be replenished with dissolved oxygen (DO) to the natural DO level in Peters Canyon Wash before its discharge. Reoxygenation of the effluent would be accomplished by distributing air supplied by a blower through fine bubble diffusers on the reoxygenation tank floor. The reoxygenation system, effluent wetwell, and effluent dry vault would consist of a concrete structure located below grade. The blower would be located in the above-ground equipment building, and the air would be routed to the tank bottom.



- Notes:**
1. Peters Canyon Wash Stationing per OCPW plan.
 2. Infiltration Gallery and Discharge Structure may be constructed under separate contract.
 3. Restrooms may be constructed under separate contract.



back of Figure 3 (11x17)

Backwash System

The backwash system would keep the bioreactor medium clean, which allows the system to operate more efficiently. The backwash provides a flush of water upwards through the carbon media in the bioreactor tanks. This reverse flush of water is designed to remove solids trapped in the carbon medium. The backwash system requires that a large volume of water be pumped through the bioreactors over a short period of time and temporarily stored until it can be discharged to the sewer. The backwash system includes two 40,000-gallon backwash supply tanks and two 40,000-gallon spent backwash tanks. Both the two tanks would be prefabricated fiberglass tanks and located underground.

Discharge Sewer System

The wastewater would be discharged to the sanitary sewer system. The proposed project would pump the spent backwash to an existing sewer manhole located on Construction Circle north of Barranca Parkway. The discharge sewer system would include a 4-inch line and two discharge sewer pumps. One discharge sewer pump would be active, and the other would be standby in the event of pump failure.

Nutrient Feed System

The nutrient feed system would supply a food source for the microbes in the bioreactors. Nutrient storage would be designed to provide 30 days of capacity. Two 8,800-gallon vented tanks of molasses would be stored in a containment area. This containment area would be designed to capture the full nutrient storage tank volume during a spillage or leakage event. The nutrient storage area would be designed to prevent water from entering into this area.

Odor Control

The facility would be equipped with a centralized odor-scrubbing system that would capture hydrogen sulfide (H₂S) odors. The system uses 25 percent sodium hydroxide (NaOH) and 12.5 percent sodium hypochlorite (NaOCL) solution to absorb and oxidize the hydrogen sulfide odors and other odorous compounds. Each chemical would be stored in a separate 540-gallon tank sufficient for one month of operations within the equipment room.

Post Treatment Alternatives

The facility would be equipped with either a UV or ozone system to reduce the concentration of all selenium species and bacteria to levels below baselines found in Peter Canyon Wash. The type of system selected, UV or ozone, will be determined by conducting a design verification test that uses hydraulic loading rates and empty bed contact times in which the system is designed to operate. Ozone would be generated on site using ambient air as the in-put gas. If the UV system is selected it would be located in an expanded effluent wetwell housed within the equipment building. If the ozone system is selected it would be located in a separate room within the equipment building.

Equipment Building

A 6,000 square-foot equipment building would be installed that would house the nutrient storage area, chemical storage area, electrical and control room, electrical room, ozone generation room, and equipment storage room. The finished floor level of the equipment building would be approximately 6 inches above grade to prevent rain water from getting into the building.

The overall height of the building would be approximately 21-feet above grade. The building would include single, double, and roll up access doors and roof access hatches would be provided to install larger pieces of equipment such as the nutrient storage tanks and ABMet tank covers. The building would also include a chain-link fence around the perimeter of the site to prevent the public from accessing the facility. However, during final design it may be determined that the entire equipment building may be installed underground.

Discharge Structure

A discharge structure will be constructed to return treated effluent back to Peters Canyon Wash. The system will be designed to prevent scour, provide erosion protection and slope stabilization and minimize the potential for downstream erosion by reducing the velocity and energy of the facilities return flow. The system will contain a 24 inch pipe capable of discharging the facilities build out capacity of 8 cfs.

Restrooms

A separate 225 square-foot restrooms building would be constructed on site that would be made available to the school's proposed athletic fields. The restroom may be located within the project site boundary if requested by Irvine Unified School District. The structure would house two restrooms and would require an accompanying lift station below grade. The restroom building would provide restroom facilities for both genders. Natural day lighting and ventilation would be provided.

Site Access

The proposed project would have two asphalt concrete pavement access points off Barranca Parkway. The two access points would be on the southern side of the equipment building, which is where the parking stalls would be located. The parking lot design would provide eight parking stalls. There would be direct access to the equipment building from the parking lot. A decomposed granite path would be provided as an access connection between the parking lot, restroom, and proposed athletic fields.

1.3 Construction Methods

IRWD would demolish all of the existing structures associated with the Cienega demonstration project except the infiltration gallery, intake wetwell, and discharge structure. These remaining facilities would be removed by Orange County Public Works (OCPW) as part of a separate project. The site would require grading, trenching and excavation for the piping and underground tanks. The site preparation, demolition, project construction and finishing work would last for approximately 265 days.

2.0 Incorporation by Reference

Consistent with Section 15150 of the *State Guidelines*, the following documents were used in the preparation of this Addendum and are incorporated herein by reference:

San Diego Creek Watershed Natural Treatment System Final Environmental Impact Report.
April 26, 2004.

Irvine Ranch Water District 10% Design Cienega Selenium Treatment Facility Preliminary Design Report, July 2010.

Final Environmental Impact Statement (FEIS)/Environmental Impact Report (FEIR) for the Disposal and Reuse of Marine Corp Air Station (MCAS), December 1999.

The certified Final EIR is also incorporated by reference for background information purposes. This document is available for review during regular business hours at IRWD located at 15600 Sand Canyon Avenue, Irvine, California 92618-3102.

3.0 Environmental Setting and Analysis

3.1 Aesthetics

The Final EIR concluded that potential impacts to the aesthetics of the area would be less than significant. This section provides an analysis of the potential aesthetics impacts associated with the construction of the modified Site 67 Selenium Treatment Facility.

3.1.1 Setting

The project area is generally disturbed and currently includes the selenium removal demonstration project known as the Cienega Demonstration Facility. The site is surrounded with multiple land uses including the Peters Canyon Wash Channel, residential homes, business commercial uses and some undeveloped land. The proposed facility would be constructed within a disturbed but vacant parcel bound by Barranca Parkway to the south, Peters Canyon Wash Channel to the northwest, commercial development to the north and Creekside Education Center to the east.

3.1.2 Significance Threshold Criteria

The following CEQA significance thresholds were used to evaluate the aesthetic impacts associated with the proposed modifications:

- Substantially degrade the existing visual character or quality of the site and its surroundings?

3.1.3 Summary of Potential Impact

The proposed project would include the construction of an approximately 11,500 square-foot 3 cfs treatment facility building or a 28,500 square-foot 8 cfs treatment facility building if the system is upsized and a 225 square-foot restroom facility. A demonstration project is currently located at the project site and would be removed prior to the construction of the proposed project. The proposed facility would be located on the southwest corner of the Irvine Unified School District (IUSD) property adjacent to Barranca Parkway and Peters Canyon Wash. The land immediately to the east of the property is set aside for future development by IUSD. Since the facility would be constructed on IUSD property, the project would require design approval by the California Division of the State Architect, Los Angeles Basin region.

The equipment building would be designed to have minimal impact on the surrounding community and for aesthetic integration with the adjacent school. The equipment room and ABMet bioreactor tanks are two separate structures that would be located side by side to appear as one unified structure. This building would be constructed to reflect two elevations. The height of the ABMet bioreactors building would be approximately 16.5 feet above grade, and the equipment room would be approximately 20.5 feet above grade. The size of the equipment room would be approximately 6,000 square feet. The ABMet bioreactor tanks, pipe gallery and trench would be approximately 7,500 square feet for the 3 cfs system. If the system is upsized to 8 cfs then the ABMet bioreactor tanks building would be approximately 22,500 square feet.

The proposed project design of the facility would reflect the scale, color, materials, and aesthetic appearance of the nearby school and the final design would require the approval of IUSD. The

building design would include a horizontal flat roof with overhangs, a modular cementitious flat panel wall system with aluminum composite panel accents and a similar beige color palette as the school. Windows would be installed under the roof overhangs to provide natural daylight into the facility. The cast-in-place concrete bioreactor tanks and the restrooms would be designed through the use of similar detailing that reflects the scale, form, and massing of the equipment building. **Figures 4 and 5** depict the architectural renderings of the buildings from Barranca Parkway. The structures would resemble utility service buildings typically observed in public parks. The proposed structures would replace existing demonstration facilities and would improve the site character from the existing conditions. If it is decided during final design of the facility to underground the ABMet bioreactor tanks building and equipment building the only visible structure would be the restroom building. The visual character would include the parking lot, hardscape over the buildings site, perimeter fencing and the restroom building. As a result, the proposed new buildings would not substantially degrade the existing visual character or quality of the site or its surroundings.

3.1.4 Conclusion

The project would not result in a new significant impact not previously identified in the Final EIR, nor would it substantially increase the severity of an impact identified in the Final EIR. No mitigation is required beyond the existing commitments contained within the Mitigation Monitoring and Reporting Program (MMRP). Therefore, impacts to Aesthetics would be less than significant and no mitigation is required.

3.2 Air Quality

The Final EIR assessed potential impacts of the project to air quality and concluded that construction and operation of the proposed project would not have a significant impact with the implementation of mitigation measures. This section provides an analysis of the potential air quality impacts associated with the construction and operation of the proposed modified project. The proposed modified project would be subject to the same mitigation identified in the Final EIR.

3.2.1 Setting

As described in the Final EIR, the Site 67 Selenium Treatment Facility site is located in the South Coast Air Basin (SCAB). Air quality in the SCAB is regulated by the South Coast Air Quality Management District (SCAQMD), which is responsible for administering standards and developing rules and regulations governing air emissions in the SCAB. Policies and guidelines governing air quality in the state of California are developed and implemented by the California Air Resources Board (CARB). The EPA is the federal regulatory agency with authority to regulate air quality. The SCAQMD has developed an Air Quality Management Plan (AQMP) that identifies strategies to achieve attainment of the federal and state ambient air quality standards through the implementation of emission control measures and long-term strategies designed to improve air quality throughout the region.



Rendering View of Southwest Side of the Proposed CSTF from Barranca Parkway



Rendering View of West Side of the Proposed CSTF from Barranca Parkway

SOURCE: HDR Engineering, Inc., 2010.

NTS Site 67 Addendum . 209247.03

Figure 5
Rendering

3.2.2 Significance Criteria

The following CEQA thresholds were used to evaluate the air quality impacts associated with the operation and construction of the proposed project:

- Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

3.2.3 Summary of Potential Impact

Construction

Construction emissions were estimated using the URBEMIS 2007 9.2.4 model. Maximum daily construction-related regional emissions for the proposed 3cfs project and potential upsize to 8 cfs are presented in **Table 3.2-1 and 3.2-2**, respectively. As shown below, the maximum regional emissions would not exceed the SCAQMD daily significance thresholds for reactive organic compounds (ROC), nitrogen oxides (NOX), carbon monoxide (CO), Particulate Matter (PM) 2.5 and PM10. Since construction emissions would not exceed the SCAQMD thresholds, the regional construction impact would be less than significant.

**TABLE 3.2-1
EMISSIONS FROM PROJECT CONSTRUCTION FOR A 3 CFS FACILITY (pounds per day)**

Phase	Estimated Emissions (lbs/day)					
	ROG	NOX	CO	PM10	PM2.5	CO ₂ ^a
2011-2012	17	75	40	9	5	8,396
SCAQMD Thresholds	75	100	550	150	55	NA
Significant Impact (Yes or No)	No	No	No	No	No	NA

NOTE: Project operation emissions estimates for off-road equipment were made using URBEMIS2007, version 9.2.4. See AQ appendix.

^a CO₂ is discussed further in Greenhouse Gases

SOURCE: ESA, 2010.

**TABLE 3.2-2
EMISSIONS FROM PROJECT CONSTRUCTION FOR A 8 CFS FACILITY (pounds per day)**

Phase	Estimated Emissions (lbs/day)					
	ROG	NOX	CO	PM10	PM2.5	CO ₂ ^a
2011-2012	41	93	46	18	4	11,076
SCAQMD Thresholds	75	100	550	150	55	NA
Significant Impact (Yes or No)	No	No	No	No	No	NA

NOTE: Project operation emissions estimates for off-road equipment were made using URBEMIS2007, version 9.2.4. See AQ appendix.

^a CO₂ is discussed further in Greenhouse Gases

SOURCE: ESA, 2010.

Construction of the Site 67 facility was considered in the Final EIR. The proposed modified project emissions estimates would be below SCAQMD significance thresholds and would not result in a substantial increase in the severity of previously analyzed emissions identified in the Final EIR. No additional mitigation measures would be needed beyond those identified in the Final EIR MMRP.

Operational Emissions

Mobile emissions for operation of the proposed modified project would be generated primarily from vehicular traffic. An increase of less than one trip per day would be generated by the project that would include chemical deliveries and maintenance visits. This number is minimal and would not result in significant emissions.

The project would utilize energy in pumping water from the creek and through the system. Approximately 865,000 kwh/year would be used to operate the project. Energy would be provided from the grid. No new infrastructure would be needed to accommodate the project. Air emissions produced with this increase in energy use would be generated off site and subject to emissions permits for those facilities.

The project may generate ozone on site using the ambient air as the input gas. This process generates low levels of nitrogen oxides (generally <1 percent). The small quantities of ozone to be generated for the treatment process would not result in NOX emissions greater than SCAQMD thresholds of significance.

Odor

The demonstration project currently located on the proposed site has experienced some H₂S emissions from the anoxic treatment process that have created noxious odors similar to odors that emanate from mud in a creek. As a result of the demonstration project's findings, the new system design would include an odor control system. Air escaping from the treatment tanks would be conveyed through an air scrubber system to minimize odor emissions. The proposed equipment building would be located approximately 700 feet from the nearest residences and has the potential to be impacted by odors. However, with implementation of the odor control system, which would capture and treat odors, the proposed project would not emit significant odors that would create a nuisance conditions at neighboring land uses. No additional mitigation measures would be needed.

Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, similar to a greenhouse. The accumulation of GHGs has been implicated as a driving force for Global Climate Change. Definitions of climate change vary between and across regulatory authorities and the scientific community, but in general can be described as the changing of the earth's climate caused by natural fluctuations and the impact of human activities that alter the composition of the global atmosphere. Both natural processes and human activities emit GHGs. Global Climate Change is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation and temperature. Although there is disagreement as to the speed of global warming and the extent of the impacts attributable to human activities, the vast majority of

the scientific community now agrees that there is a direct link between increased emission of GHGs and long term global temperature. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. GHG impacts are considered to be exclusively cumulative impacts; there are no non-cumulative greenhouse gas emission impacts from a climate change perspective (CAPCOA, 2008). The City of Irvine is presently working on creating a Climate Action Plan, but does not currently have a plan implemented for the reduction of GHG emissions.

On April 13, 2009, Office of Planning Research (OPR) submitted to the Secretary for Natural Resources its proposed amendments to the state *CEQA Guidelines* for GHG emissions, as required by Public Resources Code section 21083.05 (Senate Bill 97) (OPR, 2009). These *CEQA Guideline* amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The Natural Resources Agency adopted the CEQA Guidelines Amendments with minor, non-substantial changes on December 31, 2009 and transmitted the Adopted Amendments and the entire rulemaking file to the Office of Administrative Law (OAL). The adopted guidelines became effective on March 18, 2010.

On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is the lead agency. The interim threshold consists of five tiers of standards that could result in a finding of less than significant impact. The tiers include CEQA exemptions, consistency with regional GHG budgets, less than significant screening levels for industrial projects (10,000 metric tons/year CO₂e) and commercial/residential projects (3,000 metric tons/year CO₂e), performance standards (i.e., 30 percent less than Business As Usual [BAU]), and carbon offsets.

The industrial screening level of 10,000 metric tons/year CO₂e was used as the quantitative threshold for the proposed project GHG emissions. For the proposed project, the worst-case annual emissions associated with construction (approximately 6 metric tons per year CO₂e after amortization over 30 years per SCAQMD methodology) and indirect operational emissions, (256 metric tons per year CO₂e) would be approximately 262 metric tons CO₂e per year for the proposed project. The proposed project would not exceed the SCAQMD draft screening threshold for industrial sources (10,000 metric tons/year CO₂e) and would be less than significant without mitigation.

3.2.4 Conclusion

In summary, the modified project would require construction similar to the original project described in the Final EIR. These temporary construction emissions would be below SCAQMD significance thresholds and would not result in a substantial increase in the severity of previously emissions. The Final EIR concluded that the overall construction, operational emissions and potential odors impacts would result in a less than significant impact to air quality with the incorporation of mitigation measures. As a result, the construction and operations of the proposed project would not result in a new impact or substantially increase the severity of the previously identified impact to air quality.

3.3 Cultural Resources

The Final EIR assessed potential impacts to the vicinity of the project site to cultural resources and concluded that construction of the proposed project would have a less than significant impact with incorporation of mitigation. The following discussion addresses potential impacts from the proposed project.

3.3.1 Setting

The project area is generally disturbed and currently includes the Cienega demonstration project. The site is surrounded with multiple land uses including the Peters Canyon Wash Channel, residential uses, business commercial uses and some undeveloped land. The proposed facility would be constructed within a disturbed but vacant parcel bound by Barranca Parkway to the south, Peters Canyon Wash Channel to the northwest, commercial development to the north and Creekside Education Center to the east.

3.3.2 Significance Criteria

The following CEQA thresholds were used to evaluate the cultural resource impacts associated with the operation and construction of the proposed project:

- Cause a substantial adverse change in the significance of an archaeological or paleontological resource?

3.3.3 Summary of Potential Impact

The proposed project site was part of the MCAS Tustin Reuse Area that was surveyed for cultural resources as part of the MCAS Tustin Reuse Final EIR/EIS. Only one cultural resource site (CA-ORA- 381) was documented on the MCAS Tustin Reuse Area; but this resource is not located near the proposed project site. However, the MCAS Tustin Final EIS/EIR indicates that the potential for unidentified buried archaeological resources may exist at the proposed project site. Currently the area around the proposed project site has been previously disturbed as part of the surrounding development and the potential for encountering cultural resources is considered low. However, as with all ground disturbing activities, there is the potential for unidentified buried cultural resources. With implementation of mitigation measures identified in the Final EIR MMRP, the potential construction impacts to cultural resources would be mitigated to less than significant.

3.3.4 Conclusion

Similar to the original project, the modified project would include excavation activities that would have the potential to unearth unknown cultural resources. However, with implementation of the mitigation measures identified in the MMRP for the Final EIR the potential impacts to cultural resources would be reduced to below a level of significance. Therefore, the proposed project would not result in a new significant impact or substantially increase the severity of a previously identified significant impact.

3.4 Human Health and Public Safety

The Final EIR assessed potential impacts of the proposed project to human health and public safety and concluded that construction and operation of the proposed project would have a less than significant impact with incorporation of mitigation. The following discussion addresses potential impacts from the proposed project.

3.4.1 Setting

The project area is generally disturbed and currently includes the Cienega demonstration project. The site is surrounded with multiple land uses including Peters Canyon Wash Channel, residential uses, business commercial uses and some undeveloped land. The proposed facility would be constructed within a disturbed but vacant parcel bound by Barranca Parkway to the south, Peters Canyon Wash Channel to the northwest, commercial development to the north and Creekside Education Center to the east.

3.4.2 Significance Criteria

The following CEQA thresholds were used to evaluate the human health and public safety impacts associated with the operation and construction of the proposed project:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- 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?

3.4.3 Summary of Potential Impact

The new treatment facility would require the use of NaOH and NaOCl. Ozone would be generated on site in quantities needed for the treatment process. None of these chemicals would pose hazards to public health and safety if spilled. All chemicals required by the proposed project would be stored in aboveground tanks with secondary containment areas to confine accidental spills and prevent exposure to the environment. Operation of the facility would require delivery of chemicals periodically. The transport of hazardous materials is regulated by Caltrans and EPA. The proposed project would conform to the hazardous materials transportation and handling regulations.

The California Hazardous Materials Release Response Plans and Inventory Program (CCR Title 19, Division 2, Chapter 4) requires facilities that store hazardous materials to prepare a Hazardous Materials Business Plan (HMBP) and an Emergency Response Plan (ERP). Compliance with hazardous materials reporting and handling regulations would minimize risk of injury to the public or environment due to hazard material transport or use.

Further, the revised Final EIR states that the proposed project vicinity was not listed on any of the government databases; as a result, no hazardous materials have been generated, used, disposed of, or transported to or from the proposed project site. With the implementation of the mitigation measures identified in the MMRP to the Final EIR, impacts would be less than significant.

3.4.4 Conclusion

The proposed project would not result in a new significant impact or substantially increase the severity of a previously identified significant impact.

3.5 Hydrology and Water Quality

The Final EIR assessed potential impacts of the project to water quality and concluded that construction of the proposed project would have a less than significant impact with incorporation of mitigation. The following discussion addresses potential impacts to water quality from the modified project.

3.5.1 Setting

The project would be located adjacent to the Peters Canyon Wash Channel. Currently, storm water runs off the site into the channel. The Final EIR assessed Site 67 as subsurface selenium vegetated treatment field. However, the design for the site has changed to a surface treatment facility rather than a subsurface treatment field. As a result, the following analysis assesses the water quality impacts associated with the implementation of a treatment facility.

3.5.2 Significance Criteria

The following CEQA thresholds were used to evaluate the hydrology and water quality impacts associated with the proposed modifications:

- Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?
- 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?
- Otherwise substantially degrade water quality?

3.5.3 Summary of Potential Impact

The proposed project would be designed to remove naturally occurring selenium from the Peters Canyon Wash. The project would result in a beneficial water quality impact consistent with the original design of the project. The water quality of the effluent re-entering the creek would be better than when diverted. As a result, the modified project would result in beneficial water quality impacts.

The proposed project would require earthwork activities such as site preparation, grading, stockpiling of soils and excavation. These construction activities would encompass an area greater than an acre; therefore project construction would be subject to the General Construction Permit under the National Pollutant Discharge Elimination System (NPDES) permit program of the federal Clean Water Act. Construction of the project would be similar to the original project. The newly designed project would slightly alter the drainage, but would not substantially increase storm water runoff. The site would be subject to surface drainage design requirements imposed by the City.

3.5.4 Conclusion

The proposed project would not result in a new significant impact or substantially increase the severity of a previously identified significant impact. The proposed project would result in a beneficial water quality impact.

3.6 Land Use

The Final EIR assessed potential impacts land use and concluded that construction and operation of the proposed project would have a less than significant impact with incorporation of mitigation. The following discussion addresses potential impacts from the proposed modified project.

3.6.1 Setting

The project area is generally disturbed and currently includes the Cienega demonstration project. The site is surrounded with multiple land uses including Peters Canyon Wash Channel, residential uses, business commercial uses and some undeveloped land. The proposed facility would be constructed within a disturbed but vacant parcel bound by Barranca Parkway to the south, Peters Canyon Wash Channel to the northwest, commercial development to the north and Creekside Education Center to the east. The sites land use designation is Military and the zoning is 1.2 Development Reserve.

3.6.2 Significance Criteria

The following CEQA thresholds were used to evaluate the land use impacts associated with the operation and construction of the proposed project:

- 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?

3.6.3 Summary of Potential Impact

The proposed modification would be a surface treatment facility rather than a subsurface treatment field as identified in the Final EIR. The purpose of the proposed project would still be to treat selenium in the Peter Canyon Wash. The proposed modification would require a smaller footprint than the treatment field; however the proposed modification would require an above ground building to house the equipment and bioreactors. As previously analyzed in the Final EIR the proposed project modification would be consistent with current zoning and land use designations and would not require an update to the General Plan. Therefore, no impacts would occur and no further analysis is warranted.

3.6.4 Conclusion

The proposed project would not result in a new significant impact or substantially increase the severity of a previously identified significant impact.

3.7 Noise

3.7.1 Setting

The project would be located adjacent to the Peters Canyon Wash Channel. The closest residences are approximately 200 feet east of the influent pump station. Currently the project site is undeveloped.

3.7.2 Significance Criteria

The following CEQA thresholds were used to evaluate the noise impacts associated with the proposed modifications:

- Would the project expose persons to, or generate noise levels, in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

3.7.3 Summary of Potential Impact

Construction

Construction activities would create a temporary increase in ambient noise levels in the immediate vicinity similar to the originally proposed project. The demolition and construction of the proposed project would generate noise due to construction equipment. The construction activities are anticipated to last for approximately 262 days. As a result, the demolition, grading, excavation and construction activity of the proposed facilities would have the potential for a short term noise impact to the surrounding land uses. Construction activities are exempted from the City of Irvine's Noise Ordinance provided they occur between 7:00 a.m. and 7:00 p.m. Mondays through Fridays, and between 9:00 a.m. and 6:00 p.m. on Saturdays. As a result, the proposed project would comply with the construction hours of the City of Irvine's noise ordinance; therefore, impacts would be less than significant.

Operation

None of the equipment would be exposed to the outside or surrounding area and would be placed in enclosed structures. The proposed pumps would be housed with reinforced concrete pump wells or pre-cast reinforced concrete box vaults. Documented noise measurements from pumps with similar designs (size, horsepower, housing, etc.) indicate that noise levels, even if the pumps run continuously for an hour, would be below the thresholds of significance (BonTerra Consulting, 2003). Furthermore, the equipment building is not in close proximity to residences that could be affected by nighttime noise. Therefore, the impact of the noise from the pump stations is not significant.

3.7.4 Conclusion

The Final EIR assessed potential impacts of construction and operation noise and concluded that construction and operation of the NTS sites would have a less than significant impact. The proposed modified project would not result in a new significant impact or substantially increase the severity of a previously identified significant impact.

4.0 Summary of Environmental Effects

As discussed above in this Addendum, the proposed modifications would not change the conclusions of the certified Final EIR. The construction and operation of the proposed modified treatment facility would meet the same objective of treating and removing selenium from Peter Canyon Wash as envisioned in the Final EIR. The proposed modification would be consistent with objectives of the Final EIR. As analyzed above in Section 3.0, no new potentially significant impacts would occur, and the project would not increase the severity of previously identified significant impacts. The proposed modifications to the previously-approved project do not meet any of the conditions that would require the preparation of a subsequent EIR or negative declaration set forth in Section 15162 of the *State Guidelines* or any of the conditions set forth in Section 15163 of the *State Guidelines*.

5.0 List of Preparers

The Irvine Ranch Water District

- Christian Kessler, Engineering Technician
- Ray Bennett PE, Water Resource and Energy Planner

ESA Consultants

- Tom Barnes, Project Director
- Kevin Smith, Project Manager

6.0 References

BonTerra Consulting, Environmental Noise Study for the Proposed San Diego Creek Watershed NTS in Orange County, February 2003

Final Environmental Impact Statement (FEIS)/Environmental Impact Report (FEIR) for the Disposal and Reuse of Marine Corp Air Station (MCAS), December 1999
<http://www.tustinlegacy.com/article.cfm?id=50>

Irvine Ranch Water District 30% Design Cienega Selenium Treatment Facility Preliminary Design Report, November 2010

San Diego Creek Watershed Natural Treatment System Final Environmental Impact Report. April 26, 2004

Southern California Air Quality Management District, CEQA Air Quality Handbook, 1993

7.0 Determination

According to Section 15164(a) of the *Guidelines*, the lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred. Section 15162 of the *Guidelines* lists the conditions that would require the preparation of a subsequent EIR rather than an addendum. These include the following:

- (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time of the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:
 - (A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
 - (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

The IRWD has evaluated the environmental impacts of the proposed modified project, which are described in Section 1.2 of this Addendum, in light of the requirements defined under CEQA and the *State Guidelines*. As noted in Section 1.1 of this Addendum, IRWD, acting as the Lead Agency, has determined that none of the above conditions apply and Addendum No. 1 to the certified Final EIR is the appropriate environmental documentation for the proposed modifications and fully complies with CEQA and the *State Guidelines*.

Irvine Ranch Water District

Signature

Date

Printed Name

Title

APPENDIX A

Air Emissions Calculations

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\cmp\Application Data\Urbemis\Version9a\Projects\OM Building.urb924

Project Name: OM Building

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2011 TOTALS (lbs/day unmitigated)	8.64	75.45	39.53	0.02	5.68	3.66	9.34	1.20	3.36	4.56	8,395.57
2012 TOTALS (lbs/day unmitigated)	16.76	8.85	6.15	0.00	0.01	0.53	0.54	0.00	0.48	0.49	1,219.66

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.25	0.83	2.23	0.00	0.01	0.01	969.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.41	0.51	4.50	0.01	0.90	0.18	536.08

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.66	1.34	6.73	0.01	0.91	0.19	1,505.33

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\cmp\Application Data\Urbemis\Version9a\Projects\OM Building.urb924

Project Name: OM Building

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2011 TOTALS (tons/year unmitigated)	0.15	1.20	0.71	0.00	0.05	0.07	0.11	0.01	0.06	0.07	145.49
2012 TOTALS (tons/year unmitigated)	0.14	0.12	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	16.65

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.04	0.15	0.40	0.00	0.00	0.00	176.89

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.07	0.10	0.81	0.00	0.16	0.03	94.73

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.11	0.25	1.21	0.00	0.16	0.03	271.62

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2011	0.15	1.20	0.71	0.00	0.05	0.07	0.11	0.01	0.06	0.07	145.49

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2012	0.14	0.12	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	16.65
Building 07/07/2011-02/07/2012	0.02	0.12	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	16.47
Building Off Road Diesel	0.01	0.11	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	12.06
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.75
Building Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.65
Coating 02/08/2012-02/28/2012	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Architectural Coating	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18

Phase Assumptions

Phase: Fine Grading 6/14/2011 - 6/21/2011 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 0.54

Maximum Daily Acreage Disturbed: 0.14

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/18/2011 - 6/21/2011 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 0.54

Maximum Daily Acreage Disturbed: 0.14

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 427.8

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Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/21/2011 - 6/28/2011 - Default Trenching Description

Off-Road Equipment:

- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 7/1/2011 - 7/7/2011 - Default Paving Description

Acres to be Paved: 0.14

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 7/7/2011 - 2/7/2012 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 2/8/2012 - 2/28/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

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Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.01	0.15	0.12	0.00	0.00	0.00	176.38
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings	0.01						
TOTALS (tons/year, unmitigated)	0.04	0.15	0.40	0.00	0.00	0.00	176.89

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Warehouse	0.07	0.10	0.81	0.00	0.16	0.03	94.73
TOTALS (tons/year, unmitigated)	0.07	0.10	0.81	0.00	0.16	0.03	94.73

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		4.96	1000 sq ft	11.73	58.18	522.06
					58.18	522.06

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\cmp\Application Data\Urbemis\Version9a\Projects\OM Building.urb924

Project Name: OM Building

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2011 TOTALS (lbs/day unmitigated)	10.03	93.18	46.35	0.05	13.37	4.37	17.74	2.81	4.02	6.83	11,075.93
2012 TOTALS (lbs/day unmitigated)	41.04	10.27	8.45	0.01	0.03	0.59	0.62	0.01	0.54	0.55	1,692.52

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.35	0.83	2.23	0.00	0.01	0.01	969.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	1.00	1.24	11.03	0.01	2.21	0.43	1,313.00

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	1.35	2.07	13.26	0.01	2.22	0.44	2,282.25

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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Time Slice 5/18/2011-6/13/2011	5.19	53.21	24.36	0.04	6.76	2.37	9.12	1.43	2.18	3.61	6,865.24
Active Days: 19											
Mass Grading 05/18/2011-06/21/2011	5.19	53.21	24.36	0.04	6.76	2.37	9.12	1.43	2.18	3.61	6,865.24
Mass Grading Dust	0.00	0.00	0.00	0.00	6.60	0.00	6.60	1.38	0.00	1.38	0.00
Mass Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Mass Grading On Road Diesel	2.33	29.71	11.43	0.04	0.15	1.19	1.34	0.05	1.10	1.15	4,493.55
Mass Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 6/14/2011-6/20/2011	8.05	76.70	37.30	0.04	13.36	3.54	16.91	2.81	3.26	6.07	9,236.92
Active Days: 5											
Fine Grading 06/14/2011-06/21/2011	2.86	23.49	12.93	0.00	6.61	1.18	7.78	1.38	1.08	2.46	2,371.69
Fine Grading Dust	0.00	0.00	0.00	0.00	6.60	0.00	6.60	1.38	0.00	1.38	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Mass Grading 05/18/2011-06/21/2011	5.19	53.21	24.36	0.04	6.76	2.37	9.12	1.43	2.18	3.61	6,865.24
Mass Grading Dust	0.00	0.00	0.00	0.00	6.60	0.00	6.60	1.38	0.00	1.38	0.00
Mass Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Mass Grading On Road Diesel	2.33	29.71	11.43	0.04	0.15	1.19	1.34	0.05	1.10	1.15	4,493.55
Mass Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

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Time Slice 6/21/2011-6/21/2011	<u>10.03</u>	<u>93.18</u>	<u>46.35</u>	<u>0.05</u>	<u>13.37</u>	<u>4.37</u>	<u>17.74</u>	<u>2.81</u>	<u>4.02</u>	<u>6.83</u>	<u>11,075.93</u>
Active Days: 1											
Fine Grading 06/14/2011-06/21/2011	2.86	23.49	12.93	0.00	6.61	1.18	7.78	1.38	1.08	2.46	2,371.69
Fine Grading Dust	0.00	0.00	0.00	0.00	6.60	0.00	6.60	1.38	0.00	1.38	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Mass Grading 05/18/2011-06/21/2011	5.19	53.21	24.36	0.04	6.76	2.37	9.12	1.43	2.18	3.61	6,865.24
Mass Grading Dust	0.00	0.00	0.00	0.00	6.60	0.00	6.60	1.38	0.00	1.38	0.00
Mass Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Mass Grading On Road Diesel	2.33	29.71	11.43	0.04	0.15	1.19	1.34	0.05	1.10	1.15	4,493.55
Mass Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Trenching 06/21/2011-06/28/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 6/22/2011-6/28/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Active Days: 5											
Trenching 06/21/2011-06/28/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

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Time Slice 7/1/2011-7/6/2011 Active Days: 4	2.10	12.02	8.87	0.00	0.01	1.01	1.02	0.00	0.93	0.93	1,297.28
Asphalt 07/01/2011-07/07/2011	2.10	12.02	8.87	0.00	0.01	1.01	1.02	0.00	0.93	0.93	1,297.28
Paving Off-Gas	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.83	11.26	6.91	0.00	0.00	0.98	0.98	0.00	0.90	0.90	979.23
Paving On Road Diesel	0.05	0.66	0.26	0.00	0.00	0.03	0.03	0.00	0.02	0.03	100.42
Paving Worker Trips	0.05	0.10	1.71	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.64
Time Slice 7/7/2011-7/7/2011 Active Days: 1	3.51	23.20	17.74	0.01	0.05	1.66	1.71	0.02	1.53	1.55	2,989.86
Asphalt 07/01/2011-07/07/2011	2.10	12.02	8.87	0.00	0.01	1.01	1.02	0.00	0.93	0.93	1,297.28
Paving Off-Gas	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.83	11.26	6.91	0.00	0.00	0.98	0.98	0.00	0.90	0.90	979.23
Paving On Road Diesel	0.05	0.66	0.26	0.00	0.00	0.03	0.03	0.00	0.02	0.03	100.42
Paving Worker Trips	0.05	0.10	1.71	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.64
Building 07/07/2011-02/07/2012	1.41	11.19	8.87	0.01	0.03	0.66	0.69	0.01	0.60	0.61	1,692.57
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.22	2.54	1.84	0.00	0.02	0.10	0.12	0.01	0.10	0.10	499.04
Building Worker Trips	0.07	0.14	2.35	0.00	0.01	0.01	0.02	0.01	0.01	0.01	300.14
Time Slice 7/8/2011-12/30/2011 Active Days: 126	1.41	11.19	8.87	0.01	0.03	0.66	0.69	0.01	0.60	0.61	1,692.57
Building 07/07/2011-02/07/2012	1.41	11.19	8.87	0.01	0.03	0.66	0.69	0.01	0.60	0.61	1,692.57
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.22	2.54	1.84	0.00	0.02	0.10	0.12	0.01	0.10	0.10	499.04
Building Worker Trips	0.07	0.14	2.35	0.00	0.01	0.01	0.02	0.01	0.01	0.01	300.14

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Time Slice 1/2/2012-2/7/2012 Active Days: 27	1.30	<u>10.27</u>	<u>8.45</u>	<u>0.01</u>	<u>0.03</u>	<u>0.59</u>	<u>0.62</u>	<u>0.01</u>	<u>0.54</u>	<u>0.55</u>	<u>1,692.52</u>
Building 07/07/2011-02/07/2012	1.30	10.27	8.45	0.01	0.03	0.59	0.62	0.01	0.54	0.55	1,692.52
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.20	2.27	1.70	0.00	0.02	0.09	0.11	0.01	0.08	0.09	499.05
Building Worker Trips	0.07	0.13	2.19	0.00	0.01	0.01	0.02	0.01	0.01	0.01	300.09
Time Slice 2/8/2012-2/28/2012 Active Days: 15	<u>41.04</u>	0.02	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.54
Coating 02/08/2012-02/28/2012	41.04	0.02	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.54
Architectural Coating	41.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.54

Phase Assumptions

Phase: Fine Grading 6/14/2011 - 6/21/2011 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 1.32

Maximum Daily Acreage Disturbed: 0.33

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/18/2011 - 6/21/2011 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 1.32

Maximum Daily Acreage Disturbed: 0.33

Fugitive Dust Level of Detail: Default

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20 lbs per acre-day

On Road Truck Travel (VMT): 1060.2

Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/21/2011 - 6/28/2011 - Default Trenching Description

Off-Road Equipment:

- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 7/1/2011 - 7/7/2011 - Default Paving Description

Acres to be Paved: 0.33

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 7/7/2011 - 2/7/2012 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 2/8/2012 - 2/28/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

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Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.06	0.81	0.68	0.00	0.00	0.00	966.44
Hearth - No Summer Emissions							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings	0.17						
TOTALS (lbs/day, unmitigated)	0.35	0.83	2.23	0.00	0.01	0.01	969.25

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Warehouse	1.00	1.24	11.03	0.01	2.21	0.43	1,313.00
TOTALS (lbs/day, unmitigated)	1.00	1.24	11.03	0.01	2.21	0.43	1,313.00

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Erfac: Version : Erfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		4.96	1000 sq ft	28.73	142.50	1,278.66
					142.50	1,278.66

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				2.0	1.0	97.0

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\cmp\Application Data\Urbemis\Version9a\Projects\OM Building.urb924

Project Name: OM Building

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2011 TOTALS (tons/year unmitigated)	0.17	1.53	0.96	0.00	0.11	0.08	0.19	0.02	0.07	0.10	209.17
2012 TOTALS (tons/year unmitigated)	0.33	0.14	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	23.30

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.06	0.15	0.40	0.00	0.00	0.00	176.89

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.18	0.24	1.99	0.00	0.40	0.08	232.02

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.24	0.39	2.39	0.00	0.40	0.08	408.91

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2011	0.17	1.53	0.96	0.00	0.11	0.08	0.19	0.02	0.07	0.10	209.17

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2012	0.33	0.14	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	23.30
Building 07/07/2011-02/07/2012	0.02	0.14	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	22.85
Building Off Road Diesel	0.01	0.11	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	12.06
Building Vendor Trips	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74
Building Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.05
Coating 02/08/2012-02/28/2012	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45
Architectural Coating	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45

Phase Assumptions

Phase: Fine Grading 6/14/2011 - 6/21/2011 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 1.32

Maximum Daily Acreage Disturbed: 0.33

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/18/2011 - 6/21/2011 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 1.32

Maximum Daily Acreage Disturbed: 0.33

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 1060.2

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Off-Road Equipment:

- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/21/2011 - 6/28/2011 - Default Trenching Description

Off-Road Equipment:

- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 7/1/2011 - 7/7/2011 - Default Paving Description

Acres to be Paved: 0.33

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 7/7/2011 - 2/7/2012 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 2/8/2012 - 2/28/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

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Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.01	0.15	0.12	0.00	0.00	0.00	176.38
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings	0.03						
TOTALS (tons/year, unmitigated)	0.06	0.15	0.40	0.00	0.00	0.00	176.89

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Warehouse	0.18	0.24	1.99	0.00	0.40	0.08	232.02
TOTALS (tons/year, unmitigated)	0.18	0.24	1.99	0.00	0.40	0.08	232.02

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Warehouse		4.96	1000 sq ft	28.73	142.50	1,278.66
					142.50	1,278.66

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.5	0.6	99.2	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	60.7	39.3	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Warehouse				2.0	1.0	97.0

Greenhouse Gas (GHG) Emissions Calculations

Project Name: IRWD NTS Addendum

Indirect Greenhouse Gas (GHG) Emissions from Project use of Electricity (Power Plant Emissions)

Estimated Project Annual Electrical Use: 865,000 kWh (kilowatt hours)/year
865 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual		CO2 Equivalent Factor	Annual
		Project Electricity mWh	GHGs metric tons		CO2 Equivalent Emissions (metric to
Carbon Dioxide (CO2)	650	865	255	1	255
Nitrous Oxide (N2O)	0.0037	865	0.0	296	0
Methane (CH4)	0.0067	865	0.0	23	0
Total Indirect GHG Emissions from Project Electricity Use=					256

Total Annual Greenhouse Gas (GHG) Emission from Project Operations -- All Sources (CO2 equivalent Metric Tons)

Electrical Use 256
Total= 256

Notes and References:

Total Emissions from Indirect Electricity Use
Formula and Emission Factor from The California Climate Action Registry Report Protocol 2006

Pg. 32 (CCARRP) gives Equations

Southern California Edison gives CO2 output emission rate (lbs/mWh)
650 lbs/mWh

Pg. 85 (CCARRP) gives CO2 equivalency factors

Pg. 87 (CCARRP) gives Methane and Nitrous Oxide electricity emission factors (lbs/mWh)
Methane - 0.0067 (lbs/mWh)
Nitrous Oxide - 0.0037 (lbs/mWh)

lbs/metric ton = 2204.62

Percentage of 25,000 1.0%
Percentage of 427 Milli 0.0001%
percentage of 10,000 3%

	Tons from URBEMIS	Metric Tons
Construction	183	166

Amortized over 30 years
6 metric tons/yr

Annual kWh Calculations for Project

Project Name: IRWD NTS addendum

Annual Electrical Use: 865,000 kwh/yr

provided by applicant