DOCKETED

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Document Title:	Petition to Remove Obsolete Facilities to Support Construction of the Carlsbad Energy Center Project
Description:	removing certain aging, aboveground, fuel oil tanks in advance of construction.
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April 29, 2014

VIA E-FILING & HAND-DELIVERY

Carlsbad Energy Center Project (07-AFC-6C)
Joe Douglas – Compliance Project Manager
Siting, Transmission and Environmental Protection Division
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814-5512

Re: Carlsbad Energy Center Project (07-AFC-6C)
Project Owner's Petition to Remove Obsolete Facilities to Support Construction of the Carlsbad Energy Center Project

Dear Mr. Douglas:

On or about May 31, 2012, the California Energy Commission issued its decision (the "**Final Decision**") approving Carlsbad Energy Center, LLC's ("**Project Owner**") Application for Certification of the Carlsbad Energy Center Project (07-AFC-06) ("**CECP**"). Since then, Project Owner has begun preparing for the construction and operation of CECP, and the timely compliance of these project phases with the Final Decision's Conditions of Certification. During this process, Project Owner has determined that its construction of CECP would be simplified by removing certain aging, aboveground, fuel oil tanks in advance of construction. Removal of these tanks will have the added benefit of visually enhancing the project site. Accordingly, Project Owner submits the enclosed Petition to Remove Obsolete Facilities to Support Construction of the Carlsbad Energy Center Project ("**Petition**"), including 4 compact disks containing air quality modeling data related to Section 3.1 thereof. The analysis in the attached Petition concludes that the proposed tank removal will not have a significant environmental impact, will comply with all LORS identified in the Final Decision, and will not require revisions to the Final Decision's Conditions of Certification.

We look forward to working with you on this project. Please contact me or my colleague Allison Harris if you have questions about the enclosures.

Locke Lord LLP

By: _____
John A. McKinsey
Attorneys for Carlsbad Energy Center LLC

JAM:awph

Enclosures (the 4 compact disks will be hand-delivered)

Petition to Remove Obsolete Facilities to Support Construction of the Carlsbad Energy Center Project

CEC License for the

Carlsbad Energy Center Project

Carlsbad, California

(07-AFC-06C)

Submitted to

California Energy Commission

Submitted by

Carlsbad Energy Center LLC

With Technical Assistance by

CH2MHILL.

April 2014

Contents

Figures

Acronyms and Abbreviations

AFC	Application for Certification
APCD	San Diego Air Pollution Control District
AST	aboveground fuel oil storage tank
BMP	best management practice
CCR	California Code of Regulations
CEC	California Energy Commission
CECP	Carlsbad Energy Center Project (07-AFC-06)
COCs	Conditions of Certification
DTSC	Department of Toxic Substance Control
EPS	Encina Power Station
Final Decision	California Energy Commission Final Commission Decision
HBM	hazardous building materials
I-5	Interstate 5
LORS	laws, ordinances, regulations, and standards
NPDES	National Pollutant Discharge Elimination System
PCE	passenger car equivalent units
PEAR	Project Enhancement and Refinement Document
Petition	Petition to Remove Obsolete Facilities Necessary to Facilitate Construction of the CECP
PM_{10}	particulate matter less than 10 microns in equivalent diameter
Project Owner	Carlsbad Energy Center LLC
RUSLE2	Revised Universal Soil Loss Equation
SCAQMD	South Coast Air Quality Management District
SDG&E	San Diego Gas and Electric Company
SWPPP	Stormwater Pollution Prevention Plan
TSP	total suspended particulates

Executive Summary

Carlsbad Energy Center LLC (the Project Owner), an indirect, wholly owned subsidiary of NRG Energy Inc., hereby petitions the California Energy Commission (CEC) to permit the Project Owner to demolish three obsolete, aboveground fuel oil tanks (ASTs) to facilitate the construction of the Carlsbad Energy Center Project (07-AFC-06) (CECP). The CEC's Final Commission Decision, dated May 31, 2012 (the "Final Decision"), approved and granted the Project Owner a certificate to construct and operate the project. The Application for Certification (AFC) for this project was filed on September 14, 2007, followed by the submission of the supplemental Project Enhancement and Refinement Document (PEAR) on July 25, 2008.

The CECP and the adjacent Encina Power Station (EPS) facility are situated on a 95-acre parcel of land owned by Cabrillo Power I LLC, another indirect, wholly owned subsidiary of NRG Energy Inc. (Cabrillo Parcel). The Cabrillo Parcel is bounded by San Diego Gas and Electric Company (SDG&E) property and Cannon Road to the south, Interstate 5 (I-5) to the east, Carlsbad Boulevard to the west, and the Agua Hedionda Lagoon to the north. The north-to-south Atchison, Topeka and Santa Fe / North County Transit District rail corridor bisects the Cabrillo Parcel. Approximately 65 acres lie to the west of the railroad and contain the EPS generating equipment.

This Petition to Remove Obsolete Facilities Necessary to Facilitate Construction of the CECP (Petition) proposes to incorporate into the CECP the demolition of three additional ASTs and associated piping and equipment, specifically ASTs 1, 2, and 4 in the vicinity of the CECP, remove a berm between ASTs 4 and 5, and remove oily sands from under ASTs 1, 2, and 4 (collectively, the "Development Support Activities").

The CECP will be constructed and operated in the northeast portion of the Cabrillo Parcel. The CECP footprint is currently occupied by the EPS east tank farm, including ASTs 5, 6, and 7. Prior to construction of the CECP, the Project Owner must remove ASTs 5, 6 and 7. AST 4 is situated immediately south of ASTs 5 through 7, and ASTs 1 and 2 are situated west of the railroad tracks and northwest of the other ASTs.

Since the issuance of the CECP license, the Project Owner has determined that removal of ASTs 1, 2, and 4 would greatly facilitate development of the Cabrillo Parcel as contemplated in the Final Decision. The Development Support Activities would benefit CECP construction by providing additional equipment laydown, construction parking, and staging areas, and direct access to the construction site from one of the main construction access roads. In addition, removal of these tanks would visually enhance the project by removing unsightly, obsolete facilities from the Cabrillo Parcel.

The demolition of ASTs 1, 2, and 4 would take place in conjunction with the demolition of ASTs 5, 6, and 7, which was approved in the Final Decision. This Petition, therefore, reviews and analyzes potential environmental impacts related to the incremental removal of these three additional ASTs. The associated analysis is included in Section 3.0 of this Petition. This Petition does not anticipate the need for any changes to the CECP Final Decision's Conditions of Certification (COCs) for the respective environmental impact areas analyzed. A summary of the impact analysis by technical discipline is provided in Table ES-1.

TABLE ES-1
Impact Analysis by Technical Discipline

Discipline	Development Support Activities	Comments
Air Quality	No Additional Impacts	No additional air quality impacts are anticipated beyond those discussed in the Final Decision. A review and analysis of the emissions associated with the additional demolition determined that no additional air quality impacts would result. Air Quality is discussed in more detail in Section 3.1.
Biological Resources	No Additional Impacts	No additional biological resources impacts are anticipated beyond those discussed in the Final Decision. The areas affected by the additional tank demolition are located within areas that were previously surveyed and analyzed during the licensing process.
Cultural Resources	No Additional Impacts	No additional cultural resources impacts are anticipated beyond those discussed in the Final Decision. The areas affected by the additional tank demolition are located within areas that were previously surveyed and analyzed during the licensing process.
Geologic Hazards and Resources	No Additional Impacts	No additional geologic hazards impacts are anticipated as a result of the additional tank demolition beyond those discussed in the Final Decision. Regional and local geology as well as geologic hazards were analyzed during the licensing process, and would remain unchanged.
Hazardous Materials	No Additional Impacts	No additional hazardous material impacts are anticipated as a result of the additional tank demolition beyond those discussed in the Final Decision.
Land Use	No Additional Impacts	No additional land use impacts are anticipated as a result of the additional tank demolition beyond those discussed in the Final Decision. Removal of out-of-service ASTs will improve the long-term land use options for the entire Cabrillo Parcel and is, hence, a project benefit.
Noise	No Additional Impacts	No additional noise impacts are anticipated as a result of the additional tank demolition beyond those discussed in the Final Decision.
Paleontological Resources	No Additional Impacts	No additional paleontological resources impacts are anticipated beyond those discussed in the Final Decision. The areas affected by the additional tank demolition are located within areas that were previously surveyed and analyzed during the licensing process.
Public Health	No Additional Impacts	No additional public health impacts are anticipated as a result of the additional tank demolition beyond those discussed in the Final Decision. Public Health is discussed in more detail in Section 3.2.
Socioeconomics	No Additional Impacts	No additional socioeconomic impacts are anticipated as a result of the additional tank demolition beyond those discussed in the Final Decision.
Soils	No Additional Impacts	No additional soils impacts are anticipated as a result of the additional tank demolition beyond those discussed in the Final Decision. Soils within the demolition areas were analyzed during the licensing process. Soils are discussed in more detail in Section 3.3.
Traffic and Transportation	No Additional Impacts	No additional traffic impacts are anticipated beyond those discussed in the Final Decision. A review and analysis of the traffic associated with workers conducting the additional tank demolition determined that no additional significant impacts would result. Traffic and Transportation is discussed in more detail in Section 3.4.

TABLE ES-1
Impact Analysis by Technical Discipline

Discipline	Development Support Activities	Comments
Visual Resources	No Additional Impacts	No additional visual resource impacts are anticipated as a result of the additional tank demolition beyond those discussed in the Final Decision. Removal of out-of-service ASTs is anticipated to be a visual improvement and hence a project benefit. Visual Resources are discussed in more detail in Section 3.5.
Waste Management	No Additional Impacts	No additional hazardous waste impacts are anticipated as a result of the additional tank demolition beyond those discussed in the Final Decision. The additional waste generated as a result of this additional demolition sequence is discussed in more detail in Section 3.6.
Water Resources	No Additional Impacts	No additional water resource impacts are anticipated as a result of the additional tank demolition beyond those discussed in the Final Decision. Additional water will be used for dust suppression for this incremental demolition; however, this would not result in additional impacts.
Worker Health and Safety	No Additional Impacts	No additional worker health and safety impacts are anticipated as a result of the additional tank demolition beyond those discussed in the Final Decision

SECTION 1.0

Introduction

1.1 Overview of Modifications

This Petition addresses the demolition of additional ASTs on the Cabrillo Parcel that are situated adjacent to the CECP. The CECP includes demolition of three large ASTs (ASTs 5, 6 and 7) to accommodate the development of the Cabrillo Parcel and construction of the CECP (see Figure 1-1). Since the CEC issued its Final Decision, and as the Project Owner has begun preparing for construction of the CECP and future development of the western portion of the Cabrillo Parcel, the Project Owner has determined the removal of the walls and roofs of the three additional tanks (ASTs 1, 2, and 4), and the removal of the associated piping and equipment for these tanks within the bermed area of each tank (the piping will be cut/removed and capped at the soil berm) would promote the objectives of the Final Decision. Post-certification discussions with the City of Carlsbad regarding making the Cabrillo Parcel more usable for beach-friendly activities would be promoted by this adjustment to the project. Construction of the project would benefit from additional equipment laydown, construction worker parking and construction staging areas that could be placed in the former footprint of ASTs 1, 2, and 4. To accomplish this goal, the Project Owner proposes to demolish ASTs 1, 2, and 4 in addition to ASTs 5, 6, and 7 (see Figure 1-1). In conjunction with this removal, the Project Owner proposes to remove a berm adjacent to AST 4, and oily sands from underneath all three ASTs.

ASTs 1, 2, and 4 would be demolished concurrently with ASTs 5, 6, and 7 to prepare the CECP portion of the Cabrillo Parcel for construction of the CECP. Section 3.0 of this Petition contains data and analysis of the potential environmental impact of the Development Support Activities. The Project Owner's environmental impact analysis concludes that the CECP Final Decision's COCs do not need to be changed to accommodate the Development Support Activities. A summary of this impact analysis separated by technical discipline is provided in Table 1-1.

This Petition does not propose any new equipment or modifications to the CECP facility. Neither does it propose any changes to the COCs included in the Final Decision.

1.1.1 Demolition Workforce

Table 1-1 provides the demolition workforce anticipated during these activities. It is anticipated that a peak workforce of 20 will be needed in month 6 of the 6-month schedule for the Development Support Activities.

TABLE 1-1
Anticipated Workforce for the Development Support Activities

	1	2	3	4	5	6	Total
Laborers	10	11	10	6	6	16	59
Operating Engineers	2	2	1	1	1	1	8
Craft Staff Subtotal	**12**	**13**	**11**	**7**	**7**	**17**	**67**
Contractor Staff							
Construction Manager	2	2	1	1	1	1	8
Engineering Supervisor	1	2	1	1	1	1	7
Health and Safety Engineer	2	1	1	1	1	1	7
Contractor Staff Subtotal	**5**	**5**	**3**	**3**	**3**	**3**	**22**
Total	**17**	**18**	**14**	**10**	**10**	**20**	**89**

1.1.2 Equipment Modifications

No equipment modifications are proposed as part of this Petition.

1.1.3 Schedule of Development Support Activities

The proposed Development Support Activities are approximately 242 days in duration, due to some overlap of the tasks listed below. Each individual sequence and corresponding estimated duration are outlined below:

- Site Mobilization for Tank Demolition and Remediation - 5 days
- Tanks 5, 6, and 7 Demolition and Remediation - 91 days
- Tanks 1, 2, and 4 Demolition and Remediation - 100 days
- Berm Removal and Site Preparation - 92 days
- Berm Removal between Tanks 4 and 5 - 30 days

1.2 Information Requirements for the Post-certification Amendment

This Petition contains the information required under the CEC's Siting Regulations for post-certification project modifications (California Code of Regulations [CCR] Title 20, Section 1769). Sections 1.0 through 6.0, as summarized in Table 1-2 below, contain the information necessary for staff to determine that there is no possibility that the Development Support Activities will (a) significantly affect the environment, (b) cause a change or deletion of a COC, or (c) cause the project not to comply with applicable laws, ordinances, regulations, and standards (LORS).

TABLE 1-2
Informational Requirements for Post-Certification Modifications

Section 1769 Requirement	Section of Petition Fulfilling Requirement
(A) A complete description of the proposed modifications, including new language for any conditions that will be affected	Section 2.0—Proposed modifications Sections 3.1 to 3.6—Discussions of whether changes to Conditions of Certification are necessary are located at the end of the technical section
(B) A discussion of the necessity for the proposed modifications	Section 1.3
(C) If the modification is based on information that was known by the petitioner during the certification proceeding, an explanation why the issue was not raised at that time	Section 1.3
(D) If the modification is based on new information that changes or undermines the assumptions, rationale, findings, or other bases of the final decision, an explanation of why the change should be permitted	Sections 1.4, 3.0
(E) An analysis of the impacts the modification may have on the environment and proposed measures to mitigate any significant adverse impacts	Section 3.0
(F) A discussion of the impact of the modification on the facility's ability to comply with applicable laws, ordinances, regulations, and standards;	Section 3.7
(G) A discussion of how the modification affects the public	Section 4.0
(H) A list of property owners potentially affected by the modification	Section 5.0
(I) A discussion of the potential effect on nearby property owners, the public and the parties in the application proceedings.	Section 6.0

1.3 Ownership of the Facility Property

Carlsbad Energy Center LLC will own and operate the CECP, which is located on land owned by Cabrillo Power I LLC.

1.4 Necessity of Proposed Changes

The Siting Regulations require a discussion of the necessity for any revision to a CEC certification and of whether the modification is based on information that was known by the petitioner during the certification proceeding (Title 20, CCR, Sections 1769 [a][1][B] and [C]). This Petition proposes to incorporate the demolition of three additional onsite ASTs, tanks 1, 2, and 4, into the Final Decision to facilitate construction of the CECP. Subsequent to the issuance of the CECP license in 2012, it has become apparent that development of the overall Cabrillo Parcel will benefit visually and otherwise from the demolition of these three ASTs, and additional equipment laydown, construction parking, and construction staging areas will be necessary during the construction phase of the project. Furthermore, the removal of these ASTs will improve visual resources by eliminating large, out-of-service ASTs that are visible from Key Observation Point-1.

1.5 Consistency of Changes with Certification

The CEC Siting Regulations require a discussion of the consistency of a proposed project revision with the LORS and whether the modifications are based on new information that changes or undermines the assumptions, rationale, findings, or other bases for the final decision (Title 20, CCR Section 1769 [a][1][D]). If any such modification would cause a project to be inconsistent with the certification, the Petition must provide an explanation of why the modification should be permitted.

The Development Support Activities are consistent with the purpose of the CECP as licensed, with applicable LORS and with the COCs for CECP as described in the Final Decision. This Petition is not based on new information that changes or undermines any basis for the CECP Final Decision. The findings and conclusions contained in the Final Decision are applicable to the project with the addition of the Development Support Activities.

1.6 Summary of Environmental Impacts

The CEC Siting Regulations require the Project Owner to analyze potential environmental impacts of the proposed modifications, and propose measures to mitigate any potentially significant adverse impacts of the revised project (Title 20, CCR, Section 1769 [a][1][E]). The regulations also require a discussion of the impact of the modification on the facility's ability to comply with applicable LORS (Section 1769 [1][a][F]). Section 3.0 of this Petition includes a discussion of the potential environmental impacts associated with the Development Support Activities, as well as a discussion of the consistency of the modification with LORS. Section 3.0 also includes updated environmental baseline information where changes have occurred since the AFC that would have a bearing on the environmental analysis. Section 3.0 concludes that there will be no significant environmental impacts associated with implementing the actions specified in this Petition, and that CECP with the Development Support Activities will continue to comply with all applicable LORS.

1.7 Conditions of Certification

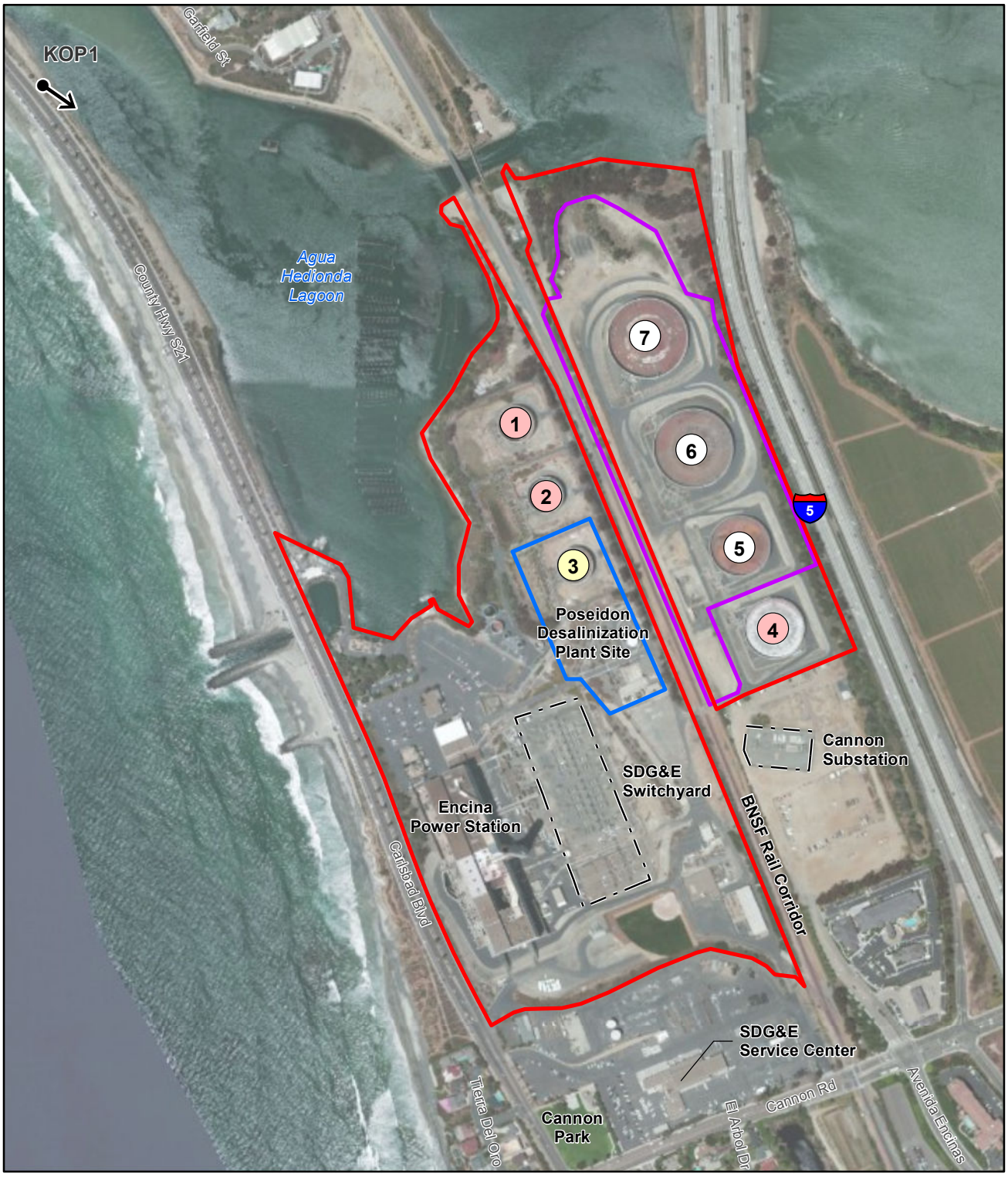
The only resource areas potentially affected by the Development Support Activities are Air Quality, Public Health, Traffic and Transportation, Visual Resources, and Waste Management. This Petition does not have the potential to affect any other resource areas. The Project Owner's analysis has determined that incorporating the Development Support Activities into the CECP will not require revisions to the project's COCs, and the Project Owner requests no changes to the COCs set forth in the Final Decision.

1.8 References

California Energy Commission. 2012. *Carlsbad Energy Center Project Commission Decision.* June. Available online at: http://www.energy.ca.gov/2011publications/CEC-800-2011-004/CEC-800-2011-004-CMF.pdf

Carlsbad Energy Center LLC. 2007. *Carlsbad Energy Center Project Application for Certification.* November. Available online at: http://www.energy.ca.gov/sitingcases/carlsbad/documents/applicant/afc/

CH2M HILL and Shaw, Stone & Webster. 2008. *Carlsbad Energy Center Project (07-AFC-6) Project Enhancement and Refinement Document. Submitted by Carlsbad Energy Center LLC.* July. Available online at: http://www.energy.ca.gov/sitingcases/carlsbad/documents/applicant/2008-08-27_PROJECT_ENHANCEMENT_AND_REFINEMENT.PDF



LEGEND

- Encina Power Station Site
- Licensed CECP
- Poseidon Desalinization Site
- KOP
- Tanks to be Removed Under the Proposed Amendment
- Tanks to be Removed as a Part of the Licensed CECP
- Tank Removed As Part of the Development of the Poseidon Desalinization Plant

0 300 600
Feet

N

Figure 1-1
Project Context and Layout
Carlsbad Energy Center Project
Carlsbad, California (07-AFC-06)
Petition to Amend – Amendment No. 1

SECTION 2.0

Description of Development Support Activities

This section includes a description of the Development Support Activities, consistent with CEC Siting Regulations (Title 20, CCR, Section 1769 [a][1][A]). These refinements to the CECP will not alter the equipment or interconnection for the project. They will assist in preparing the site for construction and beach-focused development, and in removing visual blight and hazardous materials from the Cabrillo Parcel.

2.1 Schedule of Demolition

The proposed demolition work is approximately 242 days in duration, due to some overlap of the tasks listed below. Each individual sequence and corresponding estimated duration are outlined below:

- Site Mobilization for Tank Demolition and Remediation - 5 days
- Tanks 5, 6, and 7 Demolition and Remediation - 91 days
- Tanks 1, 2, and 4 Demolition and Remediation - 100 days
- Berm Removal and Site Preparation - 92 days
- Berm Removal between Tanks 4 and 5 - 30 days

SECTION 3.0

Environmental Analysis of Development Support Activities

As previously discussed, this Petition proposes to incorporate into the CECP the demolition of three additional ASTs—specifically, ASTs 1, 2, and 4—in the vicinity of the CECP, remove a berm near AST 4, and remove oily sands from underneath the three ASTs (collectively, the "Development Support Activities"). No changes in equipment or the COCs are proposed as part of this Petition. A discussion of issues related to Air Quality, Public Health, Traffic and Transportation, Visual Resources, and Waste Management are included in Sections 3.1 through 3.6. These six environmental resource areas, out of the usual 16 evaluated in applications for certification, are the only ones potentially affected by the Development Support Activities. However, as each such subsection concludes, the impact of the Development Support Activities on those resource areas would be less than significant.

The environmental analysis for the remaining environmental disciplines listed below does not differ significantly from that described in the AFC, the PEAR, and the Final Decision, and the impacts of the Development Support Activities on these resource areas also would be less than significant.

- Biological Resources
- Cultural Resources
- Geology and Paleontology
- Hazardous Materials Management
- Land Use
- Noise and Vibration
- Socioeconomics
- Soil and Water
- Worker Safety and Fire Protection

3.1 Air Quality

3.1.1 Environmental Baseline Information

The proposed Development Support Activities will include the operation of equipment/vehicles powered by gasoline and/or diesel engines over approximately a 6-month period (5 months for demolition of existing ASTs 1, 2, and 4 and 1 month for removal of the berm separating ASTs 4 and 5). Because these equipment/vehicles will be powered by gasoline and/or diesel engines, combustion emissions are associated with the use of this equipment. However, these activities are not scheduled to overlap the project construction phase. In addition, the number of equipment/vehicles necessary for the demolition of existing ASTs 1, 2, and 4 and the removal of the soil berm between ASTs 4 and 5 will be less than the number of equipment/vehicles included in worse-case construction phase scenarios previously analyzed for the CECP. Therefore, this project modification is not expected to affect the peak daily emission levels and associated ambient impacts previously analyzed for the demolition/construction phase of the CECP. While the demolition of existing ASTs 1, 2, and 4 and the removal of the soil berm between ATSs 4 and 5 may increase the overall demolition/construction period of 25 months previously analyzed for the CECP, this change will not increase the peak 12-month emission levels (which will occur during the power plant construction phase) previously reviewed for the project. Therefore, this project modification is not expected to affect the peak emission levels or air quality impacts previously analyzed for the demolition/construction phase of the CECP. The detailed emission calculations for the demolition of ASTs 1, 2, and 4 and the removal of the soil berm between ASTs 4 and 5 are provided in Appendix 3.1.

3.1.2 Environmental Consequences

As discussed in Section 3.1.1, this project modification is not expected to have an impact on the air quality analyses previously performed for the CECP. Accordingly, no further air quality evaluations were performed for the Development Support Activities.

It is anticipated that the environmental consequences identified in the original AFC/PEAR and Final Decision for the CECP will remain the same. No additional project impacts beyond those described in the AFC/PEAR and Final Decision for the CECP would result from this Petition, and the COCs identified in the Final Decision will remain the same.

3.1.3 Mitigation Measures (Conditions of Certification)

No additional or modified mitigation measures or COCs will be required for the Development Support Activities.

3.1.4 Consistency with LORS

The CECP will continue to conform with all applicable LORS related to Air Quality following incorporation of the Development Support Activities.

3.1.5 References Cited

California Energy Commission. 2012. *Carlsbad Energy Center Project Commission Decision.* June. Available online at: http://www.energy.ca.gov/2011publications/CEC-800-2011-004/CEC-800-2011-004-CMF.pdf

Carlsbad Energy Center LLC. 2007. *Carlsbad Energy Center Project Application for Certification.* November. Available online at: http://www.energy.ca.gov/sitingcases/carlsbad/documents/applicant/afc/

CH2M HILL and Shaw, Stone & Webster. 2008. *Carlsbad Energy Center Project (07-AFC-6) Project Enhancement and Refinement Document. Submitted by Carlsbad Energy Center LLC.* July. Available online at: http://www.energy.ca.gov/sitingcases/carlsbad/documents/applicant/2008-08-27_PROJECT_ENHANCEMENT_AND_REFINEMENT.PDF

3.1.6 Conditions of Certification

No changes are requested to the Air Quality COCs included in the Final Decision.

3.2 Public Health

3.2.1 Environmental Baseline Information

As discussed in Section 3.1, the Development Support Activities are not expected to affect the peak emission levels or air quality impacts previously analyzed for the demolition/construction phase of the CECP. This includes no expected increase in the peak non-criteria pollutant (also referred to as toxic air contaminants) emission levels previously analyzed for this phase of the CECP. The detailed emission calculations (including non-criteria pollutant emissions) for the demolition of ASTs 1, 2, and 4 and the removal of the soil berm between ASTs 4 and 5 are provided in Appendix 3.1.

3.2.2 Environmental Consequences

As discussed in Section 3.2.1, the Development Support Activities are not expected to have an impact on the peak non-criteria pollutant emission levels or public health analyses previously performed for the CECP. Accordingly, no further public health evaluations were performed for this project modification.

It is anticipated that the environmental consequences identified in the original AFC/PEAR and Final Decision will remain the same. No additional project impacts beyond those described in the AFC/PEAR and Final Decision for the CECP would result from these Activities, and the COCs identified in the Final Decision will remain the same.

3.2.3 Mitigation Measures (Conditions of Certification)

No additional or modified mitigation measures or COCs will be required for the Development Support Activities.

3.2.4 Consistency with LORS

The CECP will continue to conform with all applicable LORS related to public health following incorporation of the Development Support Activities.

3.2.5 References Cited

N/A

3.2.6 Conditions of Certification

No changes are requested to the Public Health COCs included in the Final Decision.

3.3 Soils

3.3.1 Environmental Baseline Information

3.3.1.1 Development Support Activities

The proposed Development Support Activities will result in similar excavation activities as were required for the demolition of ASTs 5, 6, and 7 (as described in the approved AFC). Additional impacts from the demolition in these areas will be minor considering the previously disturbed nature of the site and the fact that they were constructed below-grade within containment berms. These containment berms will effectively prevent water erosion and greatly minimize the chance for wind erosion during demolition activities. Despite the low potential for soil erosion during the demolition of ASTs 1, 2, and 4, estimates of erosion by water and wind are provided in Tables 3.3-1 and 3.3-2, respectively.

3.3.1.2 Soil Erosion during Demolition Activities

Because the conditions that could lead to excessive soil erosion are not present at the project site, very little soil erosion is expected during demolition and remediation activities. Estimates of erosion of water and wind due to demolition activities are provided below.

3.3.1.2.1 Water Erosion

An estimate of soil loss due to water erosion during the proposed demolition activities is provided in Table 3.3-1. These estimates were developed using the Revised Universal Soil Loss Equation (RUSLE2).

With the implementation of the Construction Stormwater Pollution Prevention Plan (SWPPP) and its best management practices (BMPs), as required by the National Pollutant Discharge Elimination System (NPDES) permit, the total estimated project soil loss from water is 1.1 tons for Development Support Activities. This estimated amount does not constitute a significant adverse impact. It should also be recognized that these estimates are very conservative (i.e., overestimate soil loss), because they only assume a single BMP, whereas, the project's SWPPP includes multiple soil erosion control measures. More importantly, the demolition areas are all within existing below grade containment structures, which would effectively eliminate the potential for soil loss by water erosion from the site.

TABLE 3.3-1
Estimated Soil Loss from Water

			Estimates Using Revised Universal Soil Loss Equation*		
Feature (acreage)	**Activity**	**Duration (months)**	**Soil Loss (tons) without BMPs**	**Soil Loss (tons) with BMPs**	**Soil Loss (tons/yr) No Project**
ASTs 1, 2, and 4	Demolition	3	23.9	0.67	0.22

*Soil losses (tons/acre/year) are estimated using RUSLE2 software available online at: http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm.

- The soil characteristics were estimated using RUSLE2 soil profiles corresponding to the mapped soil unit.
- Soil loss (R-factors) were estimated using 2-year, 6-hour point precipitation frequency amount for the site coordinates using the online tools at: http://www.nws.noaa.gov/ohd/hdsc/noaaatlas2.htm
- Estimates of actual soil losses use the RUSLE2 soil loss times the duration and the affected area. The No Project Alternative estimate does not have a specific duration so loss is given as tons/year.

Project Assumptions:

- It is assumed that the demolition of the fuel oil tanks and excavation of the cushion soils beneath the tanks will take 3 months.

RUSLE2 Assumptions:

100-foot slope length. Estimated soil unit slope is the lower end of the unit slope class due to the fact that the project area was previously developed.

Construction soil losses assume the following inputs: Management - Bare ground; Contouring - None, rows up and down hill; Diversion/terracing - None; Strips and Barriers - None.

Soil losses assume the following inputs: Management - Bare ground/rough surface; Contouring - None, rows up and down hill; Diversion/terracing - None; Strips and Barriers - None.

Construction with BMP soil losses assume the following inputs: Management - Silt fence; Contouring - Perfect, no row grade; Diversion/terracing - None; Strips and Barriers - 2 fences, 1 at end of RUSLE slope.

No Project soil losses assume the following inputs: Management - Dense grass, not harvested; Contouring - None, rows up and down hill; Diversion/terracing - None; Strips and Barriers - None.

3.3.1.2.2 Wind Erosion

The potential for wind erosion of surface material during the Development Support Activities was estimated by calculating the total suspended particulates (TSP) that could be emitted as a result of wind erosion of exposed soil. The total site area was multiplied by emission factors to estimate the TSP matter emitted from the site. Fugitive dust from the area was calculated using the default particulate matter less than 10 microns in equivalent diameter (PM_{10}) emission factor used in URBEMIS2002 (Jones and Stokes Associates, 2003) and the ratio of 0.5 fugitive TSP to PM_{10} published by the South Coast Air Quality Management District (SCAQMD, 1993). Fugitive dust resulting from the wind erosion of exposed soil was calculated using the emission factor in AP-42 (U.S. Environmental Protection Agency, 1995).

Table 3.3-2 summarizes the TSP emission estimates for the project site from wind erosion of exposed soil during the Development Support Activities. Without mitigation, the maximum predicted wind erosion from the project site is estimated at 0.4 ton over the course of demolition and remediation. This estimate is reduced to 0.14 ton by implementing basic mitigation measures such as water application. These estimates are conservative because they make use of emission rates for a generalized soil rather than for site-specific soil properties. With full implementation of BMPs and mitigation measures described in the Construction SWPPP for the project site, the amount of wind erosion should be significantly less than estimated amounts; therefore, the expected impacts of soil erosion from wind are considered to be less than significant.

TABLE 3.3-2
Estimated Soil Loss from Wind

Emission Source	Acreage	Duration (months)	Unmitigated TSP (tons)	Mitigated TSP (tons)
Berm Removal	8.4	1	0.289	0.101
Demolition-related Wind-blown Dust	4.2	3	0.100	0.035
Estimated Total			**0.4**	**0.14**

Project Assumptions:

Demolition of the fuel oil tanks and excavation of the cushion soil will take 3 months followed by 1 month of berm removal.

Data Sources:

PM10 Emission Factor Source: Midwest Research Institute, South Coast AQMD Project No. 95040, Level 2 Analysis Procedure, March 1996

PM10 to TSP Conversion Factor Source: Bay Area Air Quality Management District CEQA Guidelines, Assessing the Air Quality Impacts of Projects, December 1999.

SCAQMD CEQA Handbook (1993) Table 11-4 for mitigation efficiency rates (estimated at 65% for watering three times daily).

3.3.2 Environmental Consequences

It is anticipated that the environmental consequences identified in the original AFC/PEAR and Final Decision will remain the same. No additional project impacts beyond those described in the AFC/PEAR and Final Decision for the CECP would result from the Development Support Activities, and the COCs identified in the Final Decision will remain the same.

3.3.3 Mitigation Measures (Conditions of Certification)

No additional or modified mitigation measures or COCs will be required.

3.3.4 Consistency with LORS

The CECP will continue to conform with all applicable LORS related to soils following incorporation of the Development Support Activities.

3.3.5 References Cited

Jones and Stokes Associates. 2003. *Software User's Guide: URBEMIS-2002 for Windows with Enhanced Construction Module, Version 7.4*.

South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*. Diamond Bar, California.

U.S. Environmental Protection Agency (EPA). 1995. *Compilation of Air Pollutant Emission Factors AP 42. Volume I: Stationary Point and Area Sources*, 5th edition (Online). Available online at http://www.epa.gov/ttn/chief/ap42/index.html.

3.3.6 Conditions of Certification

No changes are requested to the Soils COCs included in the Final Decision.

3.4 Traffic and Transportation

3.4.1 Environmental Baseline Information

The project site is located north of the intersection of Carlsbad Boulevard and Cannon Road within the EPS site. The site is surrounded to the north by the Agua Hedionda Lagoon, to the east by I-5, to the south by Cannon Road and the SDG&E Cannon Substation, and to the west by the Atchison, Topeka and Santa Fe Railway/North County Transit District rail corridor and Carlsbad Boulevard. Primary site access will continue to be through the EPS main gate at Carlsbad Boulevard. No major changes to the existing transportation infrastructure have occurred since preparation of the AFC. The surrounding regional and local roadway networks are shown in Figure 3.4-1 and are described below.

3.4.1.1 Surrounding Road Network

The following key roadways are located adjacent to the project area:

Interstate 5 is a major north-south freeway that extends from the Mexican Border to the Canadian border. In the site vicinity, I-5 has four lanes in each direction and carries 198,000 average daily trips (ADT) (Caltrans, 2012). Truck traffic accounts for approximately 4.8 percent of all trips on I-5 near Cannon Road (Caltrans, 2012). Access to the site from I-5 is provided via the Cannon Road exit.

Cannon Road is an east-west divided arterial with two lanes in each direction. An interchange is provided at I-5 and Cannon Road. Cannon Road carries 23,284 ADT, east of I-5. The San Diego Northern Railway tracks run north/south at a signalized crossing on Cannon Road just west of Avenida Encinas.

Carlsbad Boulevard (Coast Highway 101) is a north-south divided arterial that varies from two to four lanes in the project study area. The road is called Carlsbad Boulevard within the city of Carlsbad, however, it is also part of the longer regional Coast Highway 101 or “Historic Route 101” that begins in San Diego to the south and ends in Oceanside to north. Carlsbad Boulevard carries 17,319 ADT between Cannon Road and Tamarack Avenue.

3.4.1.2 Existing Roadway and Intersections Operations

The AFC for the CECP evaluated roadway and intersection operations based on level of service (LOS) for existing (2007) and existing plus CECP construction conditions. LOS is identified by a letter designation from A to F, with A as the optimum operating LOS and F designating service as very poor. The City of Carlsbad considers LOS C or better acceptable for mid-block roadway operations during the AM and PM peak hours and LOS D or better acceptable for intersection operations during the AM and PM peak hours. The AFC analyzed the potential project impacts for the following road segments and intersections:

Roadway Segments

- Cannon Road (between I-5 Southbound Ramps and Avenida Encinas)
- Cannon Road (between Avenida Encinas and Carlsbad Boulevard)
- Carlsbad Boulevard (between Cannon Road and CECP)

Intersections

- Cannon Road/I-5 Northbound Ramps
- Cannon Road/I-5 Southbound Ramps
- Cannon Road/Avenida Encinas
- Cannon Road/Carlsbad Boulevard

The roadway and intersection LOS from the analyzed in the AFC were compared against traffic data contained in the City of Carlsbad 2013 Traffic Monitoring Program (City of Carlsbad and RBF Consulting, 2013) to assess whether traffic conditions in the study area have changed significantly since the preparation of the AFC.

Every year, as part of its Growth Management Plan, the City of Carlsbad conducts a Traffic Monitoring Program, which includes the collection and analysis of data on critical mid-block roadway segments and at major intersections throughout the city. The Traffic Monitoring Program includes data for generally the same area as analyzed in the AFC. However, the specific roadway segments and intersections vary slightly from the AFC. A comparison of the roadway and intersection LOS (for locations where data is available) is presented in Tables 3.4-1 and 3.4-2. Three additional roadway segments and one additional intersection is included for comparison purposes.

TABLE 3.4-1
2007 and 2013 Roadway Operations

		2007 Conditions		2013 Conditions	
Roadway	**Segment**	**ADT**	**LOS**	**ADT**	**LOS**
Carlsbad Boulevard	Tamarack Avenue to Tierra del Orzo	—	—	17,319	A
	Cannon Road to Cerezo Drive	—	—	16,755	A
	CECP driveway to Cannon Road	23,600	C	—	—
Cannon Road	Paseo Del Norte to Car County Drive	—	—	26,399	A
	I-5 Southbound ramps to Avenida Encinas	13,600	A	—	—
	Avenida Encinas to Carlsbad Boulevard	7,950	A	—	—

Note: 2007 data obtained from the AFC. 2013 data obtained from the City of Carlsbad 2013 Traffic Monitoring Program. Data shown where available.

TABLE 3.4-2
2007 and 2013 Intersection Operations

	AM Peak				PM Peak Hour			
	2007 Conditions[a]		2013 Conditions[a]		2007 Conditions[a]		2013 Conditions[a]	
Intersection	**Delay (Sec.)[b]**	**LOS**	**ICU Ratio[b]**	**LOS**	**Delay (Sec.)[b]**	**LOS**	**ICU Ratio[b]**	**LOS**
1. Cannon Road/I-5 Northbound Ramps	10.6	B	0.50	A	11.2	B	0.67	B
2. Cannon Road/I-5 Southbound Ramps	16.7	B	0.53	A	13.8	B	0.51	A
3. Cannon Road/Avenida Encinas[c]	15.3	B	—	—	14.7	B	—	—
4. Cannon Road/Carlsbad Boulevard	16.6	B	0.43	A	27.8	C	0.65	B
5. Cannon Road/Paseo Del Norte[d]	—	—	0.59	A	—	—	0.56	A

[a]2007 data obtained from the AFC. 2013 data obtained from the City of Carlsbad 2013 Traffic Monitoring Program. Data shown where available.

[b]2007 LOS is based on seconds of delay and 2013 LOS is based on the Intersection Capacity Utilization method.

[c]Current (2013) traffic data is not available for this intersection.

[d]This intersection was not previously analyzed in the AFC. The LOS information is shown to support the findings that the intersections in the project study area are operating at an acceptable LOS.

All of the study roadways and intersections are currently operating at LOS B or better and in all cases the 2013 conditions are estimated to be operating at a better LOS than was previously identified in the AFC.

3.4.2 Environmental Consequences

The impact of the project is measured by the potential change in the traffic operations of surrounding intersections and roadways. The Development Support Activities proposed in this Petition would result in fewer construction trips than previously analyzed in the AFC as fewer construction workers are needed, and the Development Support Activities would have a significantly shorter construction period.

It is anticipated that the environmental consequences identified in the Final Decision will remain the same. No additional project impacts beyond those described in the AFC/PEAR and Final Decision for the CECP would result from the Development Support Activities, and the COCs identified in the Final Decision will remain the same. The environmental analysis of the project with these additional activities is provided below.

3.4.2.1 Construction Project Trip Generation

Based on the anticipated construction activities and schedule, demolition of ASTs 1, 2, and 4 and the removal of the berm separating ASTs 4 and 5 would generate 148 ADT, with 30 trips occurring during the AM and PM peak hours. The project trip distribution pattern is assumed to be the same as previously analyzed. The project trips are summarized in Table 3.4-3 and discussed in further detail below.

TABLE 3.4-3
Project Construction Trip Generation for the Development Support Activities

	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
		In	Out	Total	In	Out	Total
Autos	40	20	0	20	0	20	20
Trucks	72	3	3	6	3	3	6
PCE- 1.5*	108	5	5	10	5	5	10
Total PCEs	**148**	**25**	**5**	**30**	**5**	**25**	**30**

*Truck trips were converted to passenger car equivalent units (PCE) at a ratio of 1.5 passenger cars for each truck, consistent with the 2010 Highway Capacity Manual (TRB, 2010) guidelines. As a conservative estimate, truck trips were rounded up.

3.4.2.1.1 Workforce Trips

Demolition would occur over a 6-month construction period, with a peak construction effort occurring during Month 6, when 20 workers are projected. Based on this assumption, with the incorporation of the Development Support Activities, the CECP would generate a total of 40 daily auto trips, with 20 trips occurring during the AM and PM peak hours.

3.4.2.1.2 Truck Trips

Truck deliveries will be spread throughout the day, beginning at approximately 6:00 AM and ending at approximately 6:00 PM. The truck trips will peak during Month 6 when 36 deliveries per day (72 one-way trips) are expected.

3.4.2.2 Construction Project Traffic Impacts

3.4.2.2.1 Intersection and Roadway Operations

Based on a review of the existing traffic conditions in the area, the study roadways and intersections are operating at LOS B or better and in all cases, operating at a better LOS than previously estimated in 2007. The proposed demolition/remediation activities would generate 148 ADTs, with 30 trips occurring during the AM and PM peak hours.

Only one potential impact was identified in the AFC as result of construction of the CECP. The Carlsbad Boulevard segment near the CECP site was determined to be operating at LOS C under 2007 conditions and

LOS D under 2007 plus construction project conditions. However, because the number of construction trips will be fewer than was previously identified in the AFC, the project impacts with the Development Support Activities would be less than those identified and analyzed in the AFC. Furthermore, as shown in Table 3.4-1, and based on the City of Carlsbad 2013 Traffic Monitoring Program, Carlsbad Boulevard, adjacent to the project site (between Tamarack Avenue and Cerezo Drive) is currently operating at LOS A. The Development Support Activities would add 148 daily trips to this roadway and the roadway would continue to operate at LOS A with this project-added traffic. There would be no impact.

The AFC also determined that the project-added trips would not cause the study intersections to drop below their existing LOS. Consistent with this finding, the CECP with the Development Support Activities would not cause the intersections to drop below their existing LOSs. There would be no impact.

Finally, to minimize the temporary increase in traffic, the Project Owner will continue to implement the COCs that were set forth in the Final Decision.

3.4.2.2.2 Demolition of ASTs

Demolition of ASTs 1, 2, and 4 will occur concurrently with the demolition of ASTs 5, 6, and 7 (during approximately the first 6 months of construction of the CECP), resulting in a combined peak workforce of 199 workers (or 398 daily round trips) and 65 deliveries (or 130 daily round trips). However, the combined peak trip generation would also be less than was previously identified in the CEC's Final Decision, which assumed a peak construction trip generation of 695 ADT). Based on the traffic analysis provided above, the concurrent demolition of ASTs 1, 2, 4, 5, 6, and 7 would not change the existing LOSs for the study roadways or intersections. The roadways and intersections would continue to operate at acceptable LOSs. There would be no impact.

3.4.2.2.3 Hazardous Materials Management, Traffic Safety, and Parking

No additional project impacts to hazardous materials management, traffic safety, or parking beyond those described in the AFC/PEAR and Final Decision would result from the Development Support Activities.

3.4.3 Mitigation Measures (Conditions of Certification)

No additional or modified mitigation measures or COCs will be required.

3.4.4 Consistency with LORS

The CECP will continue to conform with all applicable LORS related to traffic and transportation after the incorporation of the Development Support Activities.

3.4.5 References Cited

California Department of Transportation (Caltrans). 2012. Traffic Management Branch. 2012 Traffic Counts.

City of Carlsbad and RBF Consulting. 2013. City of Carlsbad Growth Management Plan 2013 Traffic Monitoring Program. November. Website: http://www.carlsbadca.gov/services/traffic/operations/Pages/default.aspx

Transportation Research Board of the National Academy of Sciences (TRB). 2010. Highway Capacity Manual. Available online at: http://hcm.trb.org/

3.4.6 Conditions of Certification

No changes are requested to the Traffic and Transportation COCs included in the Final Decision as a result of the Development Support Activities.

3.5 Visual Resources

3.5.1 Environmental Baseline Information

The baseline for evaluation of the visual effects of the Development Support Activities is the visual conditions that would exist with the CECP in place. These baseline conditions were depicted in the simulations used in the PEAR, Final Staff Assessment, and the Final Decision. Review of these simulations indicates that the only views from which any of the ASTs to be removed would be visible would be KOPs 1 and 8. ASTs 1 and 2 would be fully visible in the view from KOP 1, and the top of AST 2 would be visible from KOP 8. Because the view from KOP 1 is the view in which ASTs 1 and 2 would be fully visible and would be most readily seen by sensitive viewers in the project vicinity, this view was used as the basis for evaluating the visual effects of the Development Support Activities.

Figure 3.5-1 depicts the baseline view from KOP 1, which is located on Carlsbad Boulevard, approximately 0.4 mile northwest the CECP site. See Figure 1-1 for KOP 1's location and relationship to ASTs 1 and 2. The simulation presented in Figure 3.5-1 depicts the view from KOP 1 as it would appear with development of the CECP without the Development Support Activities. The power plant is visible across the lagoon on the left side of the image. In this view, one of the project's large air intake filters is visible, as well as its stacks, heat recovery steam generators, and transmission system. ASTs 1 and 2 are prominently visible in the elevated area on the opposite shore of the lagoon to the left of the center of the view. The completed Poseidon desalinization facility has been added to this view, and is partially visible behind the trees in the elevated area on the opposite side of the lagoon, to the right of ASTs 1 and 2. AST 4, which is located further in the distance and is screened by intervening vegetation, is not visible. Under these baseline conditions, ASTs 1 and 2 are readily visible in the center of the view, and their presence reinforces the visual character of the area bordering the eastern and southern edges of the lagoon as a landscape of energy production.

3.5.2 Environmental Consequences

Figure 3.5-2 is a simulation that depicts the baseline view from KOP 1 as it would appear with implementation of the Development Support Activities in conjunction with the CECP. In this view, ASTs 1 and 2 have been removed, revealing the row of trees along the railroad tracks located to the east of the tanks, as well as more of the Poseidon desalinization facility that will be developed to the south of AST 2. With removal of the tanks, the level of development seen in the view is decreased, and the view appears to be less dominated by infrastructure facilities. The continuous band of vegetation across the center of this view is visually attractive and will contribute to integration of the view's elements into a more visually unified composition. The overall visual effect of the Development Support Activities, therefore, will be positive.

Because the visual effects of the Development Support Activities on the overall CECP will be positive, no additional project impacts beyond those described in the AFC/PEAR and Final Decision would result from adding these activities to the project, and the COCs identified in the Final Decision will remain the same.

3.5.3 Mitigation Measures (Conditions of Certification)

No additional or modified mitigation measures or COCs will be required as a result of the Development Support Activities.

3.5.4 Consistency with LORS

The CECP will continue to conform with all applicable LORS related to visual resources following the incorporation of the Development Support Activities.

3.5.5 References Cited

California Energy Commission (CEC). 2009. *Final Staff Assessment Carlsbad Energy Center Project Application for Certification (07-AFC-6) San Diego County*. November. Available online at: http://www.energy.ca.gov/2009publications/CEC-700-2009-017/CEC-700-2009-017-FSA.PDF

California Energy Commission. 2012. *Carlsbad Energy Center Project Commission Decision.* June. Available online at: http://www.energy.ca.gov/2011publications/CEC-800-2011-004/CEC-800-2011-004-CMF.pdf

CH2M HILL and Shaw, Stone & Webster. 2008. *Carlsbad Energy Center Project (07-AFC-6) Project Enhancement and Refinement Document. Submitted by Carlsbad Energy Center LLC.* July. Available online at: http://www.energy.ca.gov/sitingcases/carlsbad/documents/applicant/2008-08-27_PROJECT_ENHANCEMENT_AND_REFINEMENT.PDF

3.5.6 Conditions of Certification

No changes are requested to the Visual Resources COCs included in the Final Decision.

3.6 Waste Management

3.6.1 Environmental Baseline Information

The project will generate nonhazardous and hazardous wastes during the Development Support Activities.

3.6.1.1 Project Waste Generation

Waste will be generated during demolition of the three additional ASTs 1, 2, and 4. Types of waste generated will include solid nonhazardous waste and liquid and solid hazardous waste. To the extent possible, wastes generated, in particular scrap metal, will be recycled. This Petition includes discussion solely on the waste associated with the demolition/remediation of ASTs 1, 2, and 4 and the removal of the berm separating ASTs 4 and 5.

3.6.1.1.1 Demolition Waste

Table 3.6-1 identifies the anticipated wastes to be generated during the Development Support Activities.

TABLE 3.6-1
Estimated Wastes Generated during Demolition

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Scrap wood, glass, plastic, paper, calcium silicate insulation, and mineral wool insulation	Demolition of Piping, Structure, tanks and equipment	General Construction waste	75 tons	Nonhazardous	Recycle and/or dispose of in a Class II or III landfill
Scrap Metals	Demolition of Piping and Structure	Metal	3050 tons[a]	Nonhazardous	Recycle and/or dispose
Concrete	Demolition	Concrete	1430 tons	Nonhazardous	Recycle and/or dispose of in a Class III landfill
Asphalt	Demolition of roads and berms	Hydrocarbons	None	Nonhazardous	Recycle and/or dispose of in a Class III landfill
Spent welding and cutting materials	Construction	Solid	5 pounds per month	Nonhazardous	Recycle with vendors or Dispose at a Class I landfill if hazardous
Waste oil filters	Construction equipment and vehicles	Solids	10 pounds per month	Nonhazardous	Recycle at a permitted TSDF

TABLE 3.6-1
Estimated Wastes Generated during Demolition

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Used and waste lube oil	Turbine lube oil draining	Hydrocarbons	15 drums	Hazardous	Recycle at a permitted TSDF
Oily rags, oil sorbent excluding lube oil flushes	Cleanup of small spills	Hydrocarbons	5 pounds per month	Hazardous	Recycle or dispose at a permitted TSDF
Spent lead acid batteries	Construction equipment, trucks.	Heavy metals	2.5 batteries per year	Hazardous	Store no more than 10 batteries (up to one year) then recycle offsite
Spent alkaline batteries	Equipment, flashlights	Metals	5 batteries per month	Universal Waste solids	Recycle or dispose offsite at an Universal Waste Destination Facility
Asbestos waste	Demolition of unabated areas in old plant	Asbestos	50 tons[b]	Hazardous	Disposal in licensed and permitted landfill
Waste oil	Equipment, vehicles	Hydrocarbons	25 gallons per month	Non-RCRA Hazardous Liquid	Dispose at a permitted TSDF
Sanitary waste	Portable toilet holding tanks	Sewage	30 gallons per day	Nonhazardous Liquid	Remove by contracted sanitary service
Storm water	Rainfall	Water	8.95 acre-feet (from 10-year storm event)[c]	Nonhazardous Liquid	Discharge to storm water drain
Fluorescent, mercury vapor lamps	Lighting	Metals and PCBs	none	Universal Waste solids	Recycle or dispose offsite at an Universal Waste Destination Facility
Oily sand	Excavation under the tanks	Sand and hydrocarbons	<10,000 cubic yards	Hazardous (pending lab analysis of soils)	Dispose at a permitted TSDF

[a]85% is ferrous material and 15% is copper-based or alloy materials

[b]Includes water as part of the asbestos containing material weight

[c]Calculated from Orange County Hydrology Manual for 10-year storm event

RCRA = Resource Conservation and Recovery Act
TSDF = treatment, storage, and disposal facility

Key environmental concerns related to the demolition of ASTs 1, 2, and 4 include asbestos and lead, which are commonly referred to as hazardous building materials (HBM). Demolition activities will adhere to appropriate regulatory provisions and agency requirements.

Asbestos removal will be monitored in accordance with San Diego Air Pollution Control District (APCD) rules and in accordance with the specific APCD permit that will be obtained for the demolition activities to ensure no asbestos is released into ambient air. During enclosed asbestos removals, only licensed independent or third-party consultant will perform monitoring during the abatement and validate air quality prior to the removal of the containment/enclosure barriers.

HBMs will be identified, characterized, removed, and disposed of at offsite regulated facilities in accordance with local, state, and federal regulations. All nonhazardous building materials will also be characterized prior to on- or offsite storage.

3.6.1.2 Waste Disposal Sites

3.6.1.2.1 Nonhazardous Waste Disposal Facilities

Approximately 4,555 tons of nonhazardous solid waste and approximately 14,568 tons of hazardous solid waste (for a combined total of approximately 19,123 tons of solid waste) will be generated during the demolition of ASTs 1, 2, and 4 and removal of the berm between ASTs 4 and 5. Solid wastes will be recycled to the extent possible, and what cannot be recycled will be disposed of at a permitted landfill as discussed below.

It is anticipated that clean excavated soil can be reused onsite. In the event that some of the excavated soil will not be reused onsite, classification of the soil for disposal would be made on the basis of sampling completed once the soil is excavated and stockpiled. Soil that is determined to be nonhazardous on the basis of the sampling conducted could be suitable for reuse at a construction site or disposal at a regional disposal facility, depending on the chemical quality.

The City of Carlsbad has contracts with both Waste Management and Clean Harbors to collect trash and recycle "typical" municipal waste. The primary disposal facility used by Waste Management is the Otay Landfill, located in Chula Vista, California. Table 3.6-2 shows the waste disposal facilities in the area. At this time it is unknown where demolition waste will be sent for disposal; however, as shown in Table 3.6-2 adequate landfill capacity exists, and disposal of solid nonhazardous waste will not be a constraint on the project.

TABLE 3.6-2
Solid Waste Disposal Facilities in the Vicinity of the CECP

Landfill/MRF/ Transfer Station	Location	Class	Permitted Capacity (cubic yards)*	Remaining Capacity (cubic yards)*	Permitted Throughput (tons per day)*	Estimated Closure Date*	Enforcement Action Taken*
Sycamore Sanitary Landfill	San Diego, CA	III	71,233,171	42,246,551 as of 2/28/11	3,800	10/01/2031	None in 2014
West Miramar Sanitary Landfill	San Diego, CA	III	87,760,000	14,846,602 as of 11/30/13	8,000	8/31/2022	Yes 2014 - Report of Disposal Site Information, Gas Monitoring and Control, Operator Complies with Terms & Conditions
Otay Landfill	Chula Vista, CA	III	61,154,000	25,514,904 as of 3/31/12	5,830	2/28/2028	None in 2014
Buttonwillow Landfill	Buttonwillow, CA	I	14,293,760	23,194,883	10,482	1/01/2040	None in 2014

*Based on CalRecycle Solid Waste Information System Database (CalRecycle, 2014a).

3.6.1.2.2 Hazardous Waste Disposal Facilities

According to the Department of Toxic Substance Control (DTSC), there are currently 68 facilities in California that can accept hazardous waste for treatment and recycling (DTSC, 2014). For ultimate disposal, California has three hazardous waste (Class I) landfills, which are described below. The closest disposal facility to the CECP site is Clean Harbors Buttonwillow Landfill in Kern County.

Clean Harbors' Buttonwillow Landfill, Kern County

This landfill is permitted at 13.1 million cubic yards and can accept 4,050 tons per day (Linton, 2012). As of January 2012, it is approximately 2 percent full (Linton, 2012). The landfill is permitted to accept waste until 2040 (CalRecycle, 2013a). Buttonwillow has been permitted to manage a wide range of hazardous wastes, including RCRA hazardous wastes, California hazardous waste, and nonhazardous waste for stabilization treatment, solidification, and landfill. The landfill can handle waste in bulk (solids and liquids) and in containers. Typical waste streams include nonhazardous soil, California hazardous soil, hazardous soil for direct landfill, hazardous waste for treatment of metals, plating waste, hazardous and nonhazardous liquid, and debris for microencapsulation (Clean Harbors, 2013).

Clean Harbors' Westmorland Landfill in Imperial County

This facility is not currently open or accepting waste because the Buttonwillow facility can accommodate the current hazardous waste generation rate. The facility is, however, available in reserve and could be reopened if necessary. The landfill's conditional use permit prohibits the acceptance of some types of waste, including radioactive (except geothermal) waste, flammables, biological hazard waste (medical), PCBs, dioxins, air- and water-reactive wastes, and strong oxidizers.

Waste Management, Inc.'s Kettleman Hills Landfill in Kings County

This facility accepts Class I and II waste. The B-18 landfill is permitted for and will accept all hazardous wastes except radioactive, medical, and unexploded ordnance. Currently, B-18 landfill phase 1 and 2 are in operation with a permitted capacity of 10.7 million cubic yards. B-18 phase 1 and 2 are near capacity, but B-18 phase 3 will be opening with a permitted capacity of approximately 5 million cubic yards and a life expectancy of 8 years (Henry, 2012). After B-18 closes, a new B-20 landfill will be opened on currently undeveloped land on the site. B-20 has a permitted capacity of 15 million cubic yards and a life expectancy of 24 years (Henry, 2012). As a whole, Kettleman Hills Landfill will be accepting waste for the next 32 years, until 2044. However, they are continuously searching for more expansion opportunities (Henry, 2012).

Additional Commercial Hazardous Waste Treatment and Recycling Facilities

In addition to hazardous waste landfills, there are numerous offsite commercial liquid hazardous waste treatment and recycling facilities in California. NRG currently contracts with Waste Management, Veolia, NRC Environmental Services, and Pacific Transportation for disposal of hazardous addition; some of the closest facilities include Demenno/Kerdoon in the City of Compton, Safety Kleen Systems in Los Angeles and El Monte, Pacific Resource Recovery Services in Los Angeles, and Quemetco in Los Angeles (DTSC, 2014). In accordance with the existing Waste Management COCs, all hazardous waste not treated or recycled by these facilities would then be transported to one of the permitted hazardous waste landfills previously discussed.

3.6.1.2.3 Hazardous Waste Disposal Impacts

The new AST demolition activities proposed herein for the CECP will generate additional nonhazardous solid waste that will add to the total waste generated in San Diego County and in California. However, there is adequate recycling and landfill capacity in California to recycle and dispose of the waste generated by the ASTs demolition. It is estimated that the ASTs demolition for the CECP, including the Development Support Activities, will generate approximately 4,555 tons of nonhazardous solid waste and approximately 1,457 tons of hazardous solid waste (for a combined total of approximately 6,012 tons of solid waste). Considering that 2,936,260 tons of solid waste was landfilled in San Diego County in the year 2013, the solid waste generated by the demolition of ASTs 1, 2 and 4 will likely represent less than 1 percent of the county's total solid waste generation (CalRecycle, 2014b). Therefore, the impact of the revised project on solid waste recycling and disposal capacity will not be significant.

Hazardous waste generated will consist of waste oil, asbestos, and oily sand. The waste oil will be recycled. Hazardous waste treatment and disposal capacity in California is more than adequate. Therefore, adding the

Development Support Activities to the CECP will not have a significant effect on hazardous waste recycling, treatment, and disposal capability.

With implementation of the COCs and compliance with the applicable LORS that are included in the approved Final Decision, potential adverse impacts of incorporating the Development Support Activities into the project would be reduced to insignificant levels and ensure that project wastes are handled in an environmentally safe manner. No new significant impacts to waste management would result from this addition to CECP.

3.6.2 Environmental Consequences

It is anticipated that the environmental consequences identified in the original AFC/PEAR and Final Decision for the CECP will remain the same despite the incorporation of the Development Support Activities into the project. No additional project impacts beyond those described in the AFC/PEAR and Final Decision would result from the Development Support Activities, and the COCs identified in the Final Decision will remain the same.

3.6.3 Mitigation Measures (Conditions of Certification)

No additional or modified mitigation measures or COCs will be required for the Development Support Activities.

3.6.4 Consistency with LORS

The CECP will continue to conform with all applicable LORS related to waste management following the incorporation of the Development Support Activities.

3.6.5 References Cited

CalRecycle. 2014a. Solid Waste Information System (SWIS) Database, San Diego County. Available online at: http://www.calrecycle.ca.gov/SWFacilities/Directory/Default.htm. March.

CalRecycle. 2014b. *2013 Landfill Summary Tonnage* Report. Available online at: http://www.calrecycle.ca.gov/SWFacilities/Landfills/Tonnages/. March.

Clean Harbors. 2013. Buttonwillow Landfill Facility Fact Sheet. Available online at: http://www.cleanharbors.com/locations/index.asp?id=53. June.

Department of Toxic Substance Control (DTSC). 2014. *California Commercial Offsite Hazardous Waste Management Facilities*. Available online at: http://www.envirostor.dtsc.ca.gov/public/commercial_offsite.asp. March.

Henry, Bob/Waste Management – Kettleman Hills Landfill. 2012. Personal communication with Beth Smoker/CH2M HILL. January.

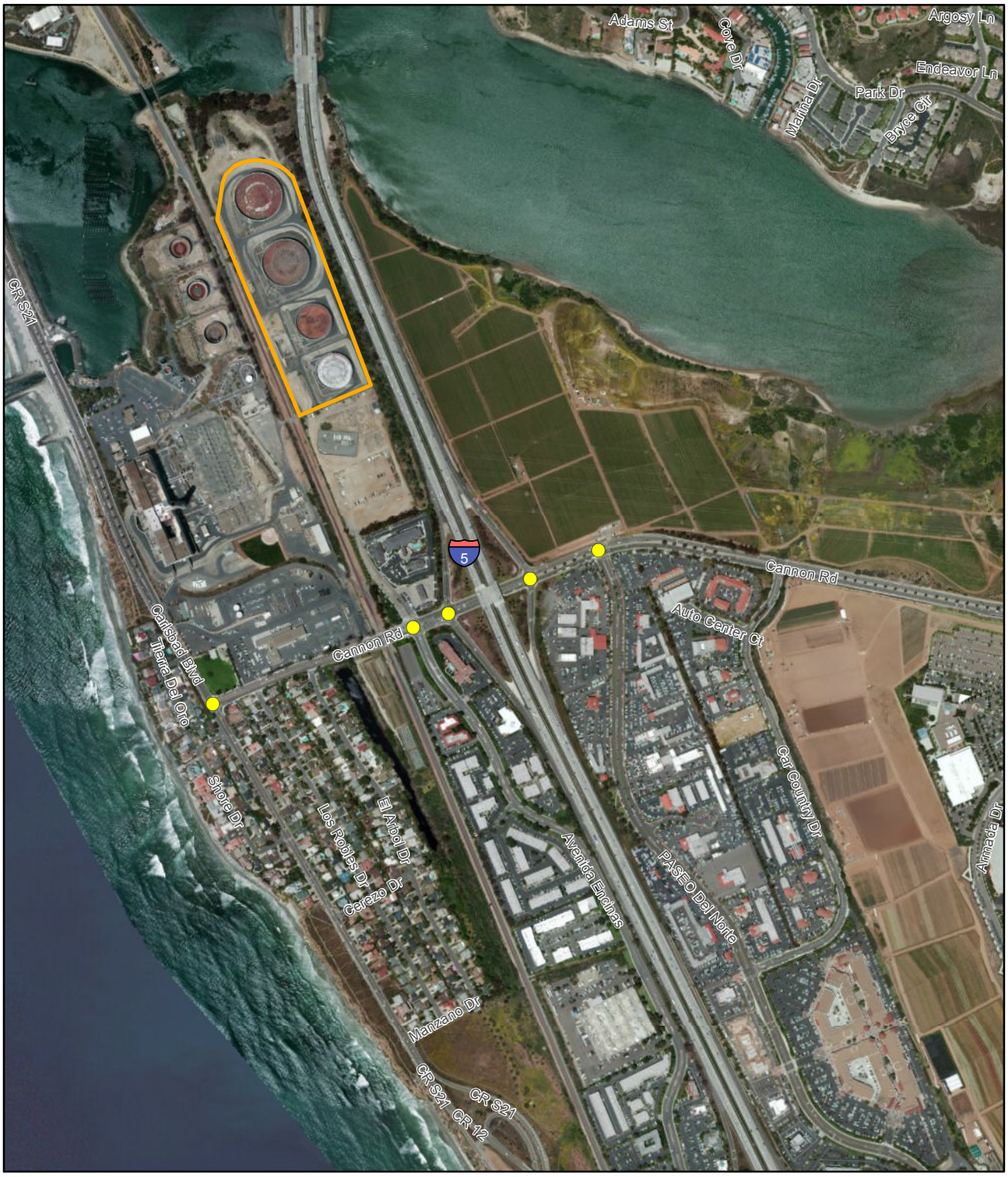
Linton, Ken/Clean Harbors. 2012. Clean Harbor's Buttonwillow Landfill. Personal communication with Beth Smoker/CH2M HILL. January.

3.6.6 Conditions of Certification

No changes are requested to the Waste Management COCs included in the Final Decision.

3.7 LORS

The Final Decision concluded that CECP is or will be in compliance with all applicable LORS. CECP, with the Development Support Activities, will continue to comply with all applicable LORS.



LEGEND

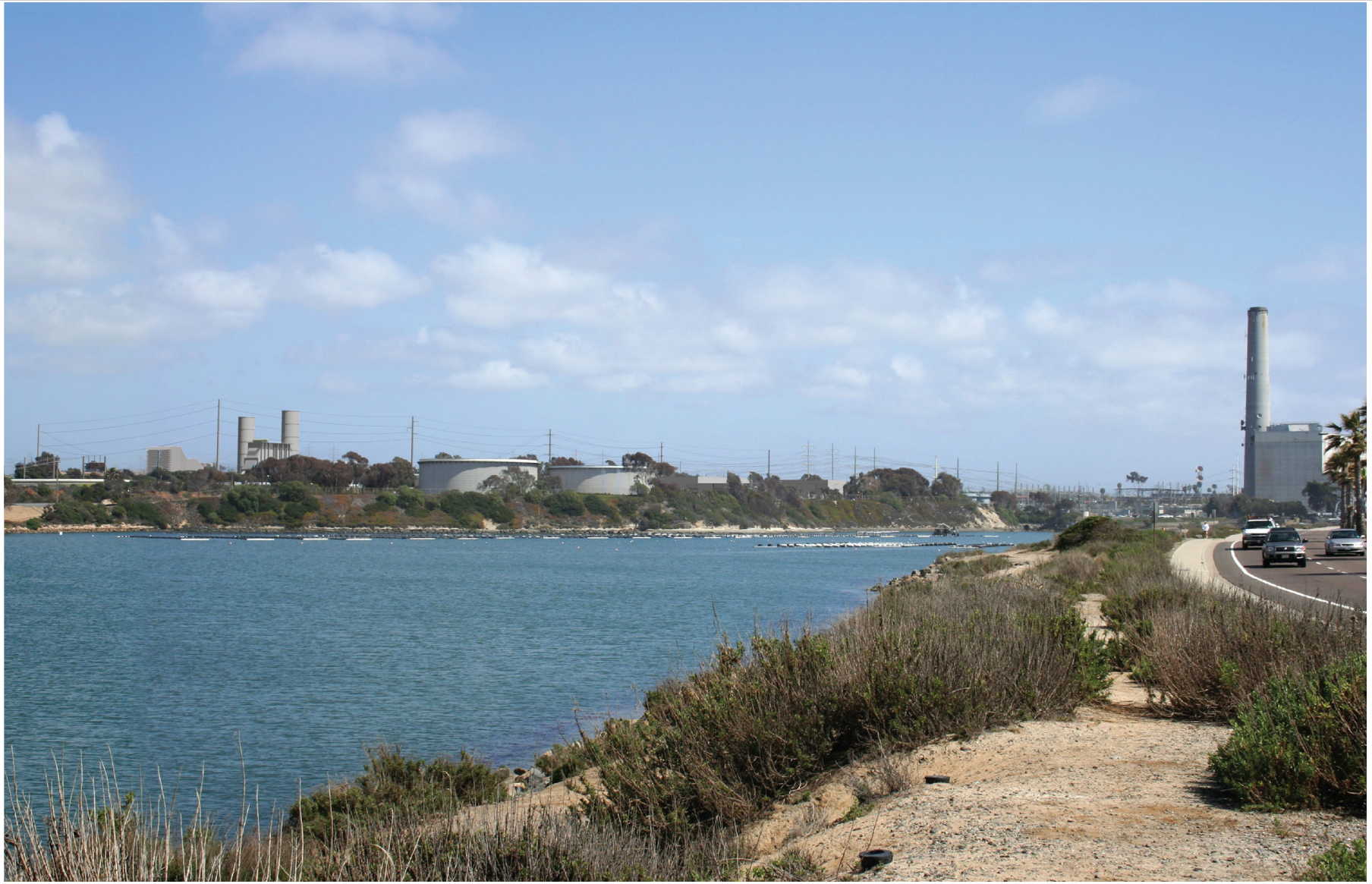
Carlsbad Energy Center Project

Study Intersections

0 500 1,000
Feet

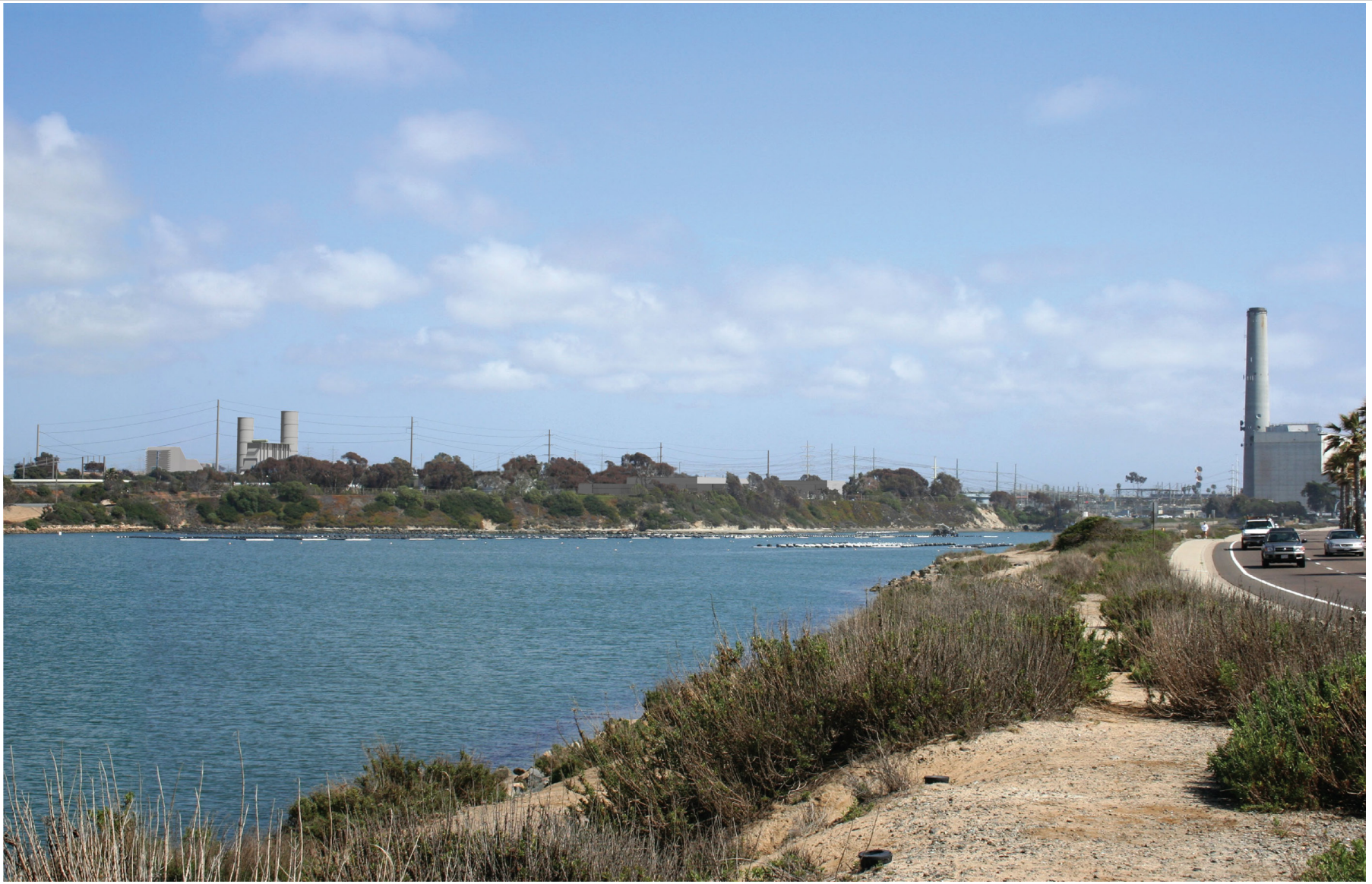
N

Figure 3.4-1
Regional and Local Road Network
Carlsbad Energy Center Project
Carlsbad, California (07-AFC-06)
Petition to Remove



Baseline view toward project site from Carlsbad Boulevard with the Licensed CECP and the Poseidon Desalinization Project in place. Tanks 1 and 2 are prominently visible in the elevated area on the opposite shore of the lagoon. In this view, Tank 4 is not visible because of the screening effects of intervening vegetation and structures.

Figure 3.5-1
KOP 1 - View Toward CECP from Carlsbad Boulevard
Carlsbad Energy Center Project
Carlsbad, California (07-AFC-06)
Petition to Remove



View from Carlsbad Boulevard toward the project site depicting the baseline view as it would appear after Tanks 1, 2, and 4 have been removed.

Figure 3.5-2
KOP 1 - View Toward CECP from Carlsbad Boulevard
Carlsbad Energy Center Project
Carlsbad, California (07-AFC-06)
Petition to Remove

SECTION 4.0

Potential Effects on the Public

This section discusses the potential effects on the public that may result from the Development Support Activities proposed in this Petition (Title 20, CCR, Section 1769[a][1][G]). These activities will result in no greater impacts on the public and local property owners than those analyzed during the CECP licensing process and as addressed in the CEC's Final Decision. Furthermore, the removal of these ASTs will improve visual resources, and specifically KOP 1, by eliminating large, obsolete ASTs that are visible from KOP 1. Therefore, impacts on the public and property owners are expected to remain the same as those analyzed during the license proceedings that resulted in the CEC's Final Decision.

SECTION 5.0

List of Property Owners

A current list of property owners within 1,000 feet of the project boundary has been generated and will be provided to the CEC as a mailing list under separate cover.

SECTION 6.0

Potential Effects on Property Owners

This section addresses potential effects of the Development Support Activities on nearby property owners, the public, and parties in the application proceeding, pursuant to CEC Siting Regulations (Title 20, CCR, Section 1769 [a][1][I]).

The potential effects of the Project on adjacent landowners, as modified hereby, will not differ significantly from the project as licensed by the CEC in 2012. Therefore, incorporating the Development Support Activities into the CECP would have no adverse effects on nearby property owners, the public, or other parties in the application proceeding.

Appendix 3.1
Air Emissions Calculations

TABLE 3.1-1
ASTs 1, 2 and 4 Demolition—Daily and Annual Construction Emissions

Daily Construction Emissions (peak month)
(lbs/day, during the 5-month AST Demolition)

	NOx	CO	VOC	SOx	PM_{10}	$PM_{2.5}$
Onsite						
Off-Road Equipment (combustion)	42.78	55.90	2.14	0.09	1.83	1.83
Off-Road Equipment and Onsite Vehicle (combustion)	42.81	56.00	2.15	0.09	1.83	1.83
Construction - Fugitive Dust					0.28	0.04
Onsite Vehicle - Fugitive Dust					0.02	0.00
Subtotal (Fugitive Dust)					0.30	0.05
Subtotal (Onsite)	42.81	56.00	2.15	0.09	2.13	1.88
Offsite						
Worker Travel (combustion)	0.09	0.89	0.07	0.00	0.001	0.001
Truck Emissions (combustion)	0.11	0.16	0.01	0.00	0.002	0.002
Hauling Emissions (combustion)	3.13	2.59	0.23	0.01	0.05	0.04
Worker Travel - Fugitive Dust					0.14	0.04
Truck - Fugitive Dust					0.01	0.00
Hauling - Fugitive Dust					0.15	0.04
Subtotal (Offsite)	3.33	3.64	0.32	0.01	0.34	0.13
Total	**46.14**	**59.64**	**2.47**	**0.10**	**2.47**	**2.00**

Peak Construction Emissions
(tons/yr, 5-month Tank Demolition Total)

	NOx	CO	VOC	SOx	PM10	PM2.5
Onsite						
Off-Road Equipment (combustion)	1.37	1.80	0.07	0.00	0.06	0.06
Off-Road Equipment and Vehicle (combustion)	1.37	1.81	0.07	0.00	0.06	0.06
Construction - Fugitive Dust					0.01	0.00
Onsite Vehicle - Fugitive Dust					0.00	0.00
Subtotal (Fugitive Dust)					0.02	0.00
Subtotal (Onsite)	1.37	1.81	0.07	0.00	0.07	0.06
Offsite						
Worker Travel (combustion)	0.004	0.04	0.003	0.00	0.00	0.00
Truck Emissions (combustion)	0.006	0.01	0.001	0.00	0.00	0.00
Hauling Emissions (combustion)	0.08	0.06	0.006	0.00	0.00	0.00
Worker Travel - Fugitive Dust					0.01	0.00
Truck - Fugitive Dust					0.00	0.00
Hauling - Fugitive Dust					0.00	0.00
Subtotal (Offsite)	0.09	0.11	0.01	0.00	0.01	0.00
Total	**1.46**	**1.92**	**0.08**	**0.00**	**0.09**	**0.06**

TABLE 3.1-2
Berm Work–Daily and Annual Construction Emissions

Daily Construction Emissions (peak month)
(lbs/day, during the 1-month Berm Work)

	NOx	CO	VOC	SOx	PM10	PM2.5
Onsite						
Off-Road Equipment (combustion)	11.26	15.00	0.58	0.03	0.48	0.48
Off-Road Equipment and Onsite Vehicle (combustion)	11.35	15.18	0.60	0.03	0.48	0.48
Construction - Fugitive Dust					0.00	0.00
Onsite Vehicle - Fugitive Dust					3.37	0.34
Subtotal (Fugitive Dust)					3.37	0.34
Subtotal (Onsite)	11.35	15.18	0.60	0.03	3.85	0.82
Offsite						
Worker Travel (combustion)	0.10	0.99	0.08	0.00	0.001	0.001
Truck Emissions (combustion)	0.11	0.16	0.01	0.00	0.002	0.002
Worker Travel - Fugitive Dust					0.15	0.04
Truck - Fugitive Dust					0.01	0.00
Subtotal (Offsite)	0.21	1.15	0.10	0.00	0.16	0.05
Total	**11.56**	**16.33**	**0.69**	**0.03**	**4.01**	**0.86**

Peak Construction Emissions
(tons/yr, 1-month Total)

	NOx	CO	VOC	SOx	PM_{10}	$PM_{2.5}$
Onsite						
Off-Road Equipment (combustion)	0.12	0.17	0.01	0.00	0.005	0.005
Off-Road Equipment and Vehicle (combustion)	0.12	0.17	0.01	0.00	0.005	0.005
Construction - Fugitive Dust					0.00	0.00
Onsite Vehicle - Fugitive Dust					0.033	0.003
Subtotal (Fugitive Dust)					0.033	0.003
Subtotal (Onsite)	0.12	0.17	0.01	0.00	0.04	0.01
Offsite						
Worker Travel (combustion)	0.001	0.011	0.001	0.00	0.000	0.000
Truck Emissions (combustion)	0.001	0.002	0.000	0.00	0.000	0.000
Worker Travel - Fugitive Dust					0.002	0.0004
Truck - Fugitive Dust					0.0001	0.00002
Subtotal (Offsite)	0.00	0.01	0.00	0.00	0.00	0.00
Total	**0.13**	**0.18**	**0.01**	**0.00**	**0.04**	**0.01**

TABLE 3.1-3
ASTs 1, 2 and 4 Demolition - Greenhouse Gas Emission Calculations

GHG Emissions
(MT, Total for 5-month AST Demolition Period)

	CO_2	CH_4	N_2O	CO_2e
Off-Road Equipment	271.57	0.08	0.00	273.25
Off-Road Equipment and Onsite Vehicle	273.24	0.08	0.00	274.92
Worker Travel	5.81	0.00	0.00	5.82
Truck Emissions	1.19	0.00	0.00	1.19
Hauling Emissions	16.80	0.00	0.00	16.80
Total	**297.03**	**0.08**	**0.00**	**298.72**

TABLE 3.1-4
Berm Work—Greenhouse Gas Emission Calculations

GHG Emissions
(MT, Total for 1-month Berm Work)

	CO_2	CH_4	N_2O	CO_2e
Off-Road Equipment	27.32	0.01	0.00	27.48
Off-Road Equipment and Onsite Vehicle	27.64	0.01	0.00	27.80
Worker Travel	1.70	0.00	0.00	1.71
Truck Emissions	0.24	0.00	0.00	0.24
Hauling Emissions	25.72	0.00	0.00	25.72
Total	**55.29**	**0.01**	**0.00**	**55.46**

TABLE 3.1-5

ASTs 1, 2 and 4 Demolition and Berm Work—Monthly and Annual Emission Calculations

Project Month		1	2	3	4	5	6	
				ROG				
Off-Road Equipment	(tons/month)	0.024	0.016	0.014	0.008	0.007	0.006	
On-site Vehicle	(tons/month)	9.17E-05	9.17E-05	1.41E-04	1.91E-04	1.87E-04	1.53E-04	
Hauling Emission	(tons/month)	0.00E+00	0.00E+00	1.16E-03	2.33E-03	2.34E-03	8.93E-03	
Truck Emission	(tons/month)	1.40E-04	1.40E-04	1.40E-04	1.50E-04	1.40E-04	1.40E-04	
Worker Travel	(tons/month)	7.10E-04	7.10E-04	5.80E-04	4.30E-04	4.00E-04	8.30E-04	
Off-Road Equipment	5-month total (tons/year)					0.07		
Hauling Emission	5-month total (tons/year)					0.01		
Truck Emission	5-month total (tons/year)					0.00		
Worker Travel	5-month total (tons/year)					0.00		
				NOx				
Off-Road Equipment	(tons/month)	0.471	0.315	0.283	0.156	0.142	0.12	
On-site Vehicle	(tons/month)	0.000	0.000	0.001	0.002	0.002	9.86E-04	
Hauling Emission	(tons/month)	0.000	0.000	0.016	0.033	0.033	0.13	
Truck Emission	(tons/month)	0.001	0.001	0.001	0.001	0.001	1.24E-03	
Worker Travel	(tons/month)	9.30E-04	9.40E-04	7.70E-04	5.70E-04	5.20E-04	1.10E-03	
Off-Road Equipment	5-month total (tons/year)					1.37		
Hauling Emission	5-month total (tons/year)					0.08		
Truck Emission	5-month total (tons/year)					0.01		
Worker Travel	5-month total (tons/year)					0.00		
				CO				
Off-Road Equipment	(tons/month)	0.615	0.421	0.371	0.208	0.190	0.1651	
On-site Vehicle	(tons/month)	0.001	0.001	0.002	0.002	0.002	1.82E-03	
Hauling Emission	(tons/month)	0.000	0.000	0.013	0.025	0.025	0.0964	
Truck Emission	(tons/month)	0.002	0.002	0.002	0.002	0.002	0.00163	
Worker Travel	(tons/month)	8.95E-03	9.05E-03	7.37E-03	5.51E-03	5.03E-03	0.0105	
Off-Road Equipment	5-month total (tons/year)					1.80		
Hauling Emission	5-month total (tons/year)					0.06		
Truck Emission	5-month total (tons/year)					0.01		
Worker Travel	5-month total (tons/year)					0.04		
				SO2				
Off-Road Equipment	(tons/month)	9.80E-04	6.70E-04	5.90E-04	3.30E-04	3.00E-04	2.90E-04	
On-site Vehicle	(tons/month)	2.00E-06	2.00E-06	4.16E-06	4.78E-06	4.78E-06	3.54E-06	
Hauling Emission	(tons/month)	0.00E+00	0.00E+00	4.00E-05	7.00E-05	7.00E-05	2.80E-04	
Truck Emission	(tons/month)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	
Worker Travel	(tons/month)	2.00E-05	2.00E-05	2.00E-05	1.00E-05	1.00E-05	2.00E-05	
Off-Road Equipment	5-month total (tons/year)					2.87E-03		
Hauling Emission	5-month total (tons/year)					1.80E-04		
Truck Emission	5-month total (tons/year)					0.00E+00		
Worker Travel	5-month total (tons/year)					8.00E-05		
				PM10			onsite	offsite
Fugitive	(tons/month)	2.96E-03	2.96E-03	2.96E-03	2.96E-03	2.96E-03		
Fugitive (On-site Vehicle)	(tons/month)	1.48E-04	1.49E-04	1.66E-04	1.79E-04	1.71E-04	0.03	
Fugitive - Hauling	(tons/month)	0.00E+00	0.00E+00	7.70E-04	1.54E-03	1.55E-03	5.97	
Fugitive - Truck	(tons/month)	7.00E-05	6.00E-05	7.00E-05	7.00E-05	6.00E-05	0.0001	0.0001
Fugitive - Worker Travel	(tons/month)	1.38E-03	1.40E-03	1.14E-03	8.50E-04	7.80E-04	0.002	0.002
Fugitive	5-month total (tons/year)					1.48E-02		
Fugitive (On-Site Vehicle)	5-month total (tons/year)					8.12E-04		
Fugitive - Hauling	5-month total (tons/year)					3.86E-03		
Fugitive - Truck	5-month total (tons/year)					3.30E-04		
Fugitive - Worker Travel	5-month total (tons/year)					5.55E-03		
Off-Road Equipment	(tons/month)	0.020	0.014	0.012	0.007	0.006	0.005	
On-site Vehicle	(tons/month)	3.96E-06	3.96E-06	1.75E-05	3.04E-05	3.10E-05	1.44E-05	
Hauling Emission	(tons/month)	0.00E+00	0.00E+00	2.50E-04	4.90E-04	5.00E-04	1.89E-03	
Truck Emission	(tons/month)	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	
Worker Travel	(tons/month)	1.00E-05	1.00E-05	1.00E-05	1.00E-05	1.00E-05	1.00E-05	
Off-Road Equipment	5-month total (tons/year)					5.83E-02		
Hauling Emission	5-month total (tons/year)					1.24E-03		
Truck Emission	5-month total (tons/year)					1.00E-04		
Worker Travel	5-month total (tons/year)					5.00E-05		

Note: Onsite vehicle fugitive emissions during month 6 for berm work: workers travel and vendor trips are assumed to be on paved surface, hauling trips are assumed to be on unpaved surfaces.

Offsite vehicle fugitive emissions during month 6 for berm work: workers and vendors trips are assumed to be on paved surface.

TABLE 3.1-5 (CONT.)

ASTs 1, 2 and 4 Demolition and Berm Work—Monthly and Annual Emission Calculations

Project Month		1	2	3	4	5	6	
				PM2.5			onsite	offsite
Fugitive	(tons/month)	4.50E-04	4.50E-04	4.50E-04	4.50E-04	4.50E-04		
Fugitive (On-site Vehicle)	(tons/month)	4.00E-05	4.00E-05	4.43E-05	4.92E-05	4.72E-05	0.003	
Fugitive - Hauling	(tons/month)	0.00E+00	0.00E+00	2.10E-04	4.30E-04	4.30E-04	0.60	
Fugitive - Truck	(tons/month)	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
Fugitive - Worker Travel	(tons/month)	3.70E-04	3.70E-04	3.00E-04	2.30E-04	2.10E-04	4.40E-04	4.40E-04
Fugitive	5-month total (tons/year)					2.25E-03		
Fugitive (On-Site Vehicle)	5-month total (tons/year)					2.21E-04		
Fugitive - Hauling	5-month total (tons/year)					1.07E-03		
Fugitive - Truck	5-month total (tons/year)					1.00E-04		
Fugitive - Worker Travel	5-month total (tons/year)					1.48E-03		
Off-Road Equipment	(tons/month)	0.020	0.014	0.012	0.007	0.006	0.005	
On-site Vehicle	(tons/month)	3.96E-06	3.96E-06	1.64E-05	2.83E-05	2.88E-05	1.35E-05	
Hauling Emission	(tons/month)	0.00E+00	0.00E+00	2.30E-04	4.50E-04	4.60E-04	1.74E-03	
Truck Emission	(tons/month)	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	
Worker Travel	(tons/month)	1.00E-05	1.00E-05	1.00E-05	1.00E-05	1.00E-05	1.00E-05	
Off-Road Equipment	5-month total (tons/year)					5.83E-02		
Off-Road + On-Site Veh	5-month total (tons/year)					5.84E-02		
Hauling Emission	5-month total (tons/year)					1.14E-03		
Truck Emission	5-month total (tons/year)					1.00E-04		
Worker Travel	5-month total (tons/year)					5.00E-05		
				CO2				
Off-Road Equipment	(MT/month)	92.81	63.13	56.11	31.11	28.41	27.32	
On-site Vehicle	(MT/month)	0.18	0.18	0.34	0.49	0.48	0.35	
Hauling Emission	(MT/month)	0.00	0.00	3.35	6.71	6.74	25.72	
Truck Emission	(MT/month)	0.24	0.23	0.24	0.25	0.23	0.24	
Worker Travel	(MT/month)	1.45	1.46	1.19	0.89	0.81	1.70	
Off-Road Equipment	5-month total (tons/year)					272		
Hauling Emission	5-month total (tons/year)					17		
Truck Emission	5-month total (tons/year)					1		
Worker Travel	5-month total (tons/year)					6		
				CH4				
Off-Road Equipment	(MT/month)	0.028	0.018	0.017	0.009	0.008	0.008	
On-site Vehicle	(MT/month)	8.00E-06	8.00E-06	8.62E-06	7.70E-06	6.70E-06	1.02E-05	
Hauling Emission	(MT/month)	0.00E+00	0.00E+00	3.00E-05	5.00E-05	5.00E-05	2.10E-04	
Truck Emission	(MT/month)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Worker Travel	(MT/month)	8.00E-05	8.00E-05	7.00E-05	5.00E-05	4.00E-05	9.00E-05	
Off-Road Equipment	5-month total (tons/year)					0.08		
Hauling Emission	5-month total (tons/year)					0.00		
Truck Emission	5-month total (tons/year)					0.00		
Worker Travel	5-month total (tons/year)					0.00		
				N2O				
Off-Road Equipment	(MT/month)	0	0	0	0	0	0	
On-site Vehicle	(MT/month)	0	0	0	0	0	0	
Hauling Emission	(MT/month)	0	0	0	0	0	0	
Truck Emission	(MT/month)	0	0	0	0	0	0	
Worker Travel	(MT/month)	0	0	0	0	0	0	
Off-Road Equipment	5-month total (tons/year)					0		
Hauling Emission	5-month total (tons/year)					0		
Truck Emission	5-month total (tons/year)					0		
Worker Travel	5-month total (tons/year)					0		
				CO2e				
Off-Road Equipment	(MT/month)	93.39	63.52	56.46	31.31	28.58	27.48	
On-site Vehicle	(MT/month)	0.18	0.18	0.34	0.49	0.48	0.35	
Hauling Emission	(MT/month)	0.00	0.00	3.35	6.71	6.74	25.72	
Truck Emission	(MT/month)	0.24	0.23	0.24	0.25	0.23	0.24	
Worker Travel	(MT/month)	1.45	1.47	1.19	0.89	0.81	1.71	
Off-Road Equipment	5-month total (tons/year)					273		
Hauling Emission	5-month total (tons/year)					17		
Truck Emission	5-month total (tons/year)					1		
Worker Travel	5-month total (tons/year)					6		

TABLE 3.1-6

ASTs 1, 2 and 4 Demolition and Berm Work—Summer (Peak) Daily Emissions

Project Month	1	2	3	4	5	6	
	ROG (lbs/day)						
Off-Road Equipment	2.14	1.49	1.28	0.68	0.68	0.58	
On-site Vehicle	0.01	0.01	0.01	0.02	0.02	0.01	
Hauling Emission	0.00	0.00	0.10	0.19	0.21	0.76	
Truck Emission	0.01	0.01	0.01	0.01	0.01	0.01	
Worker Travel	0.07	0.07	0.05	0.04	0.04	0.08	
	NOx (lbs/day)						
Off-Road Equipment	42.78	29.97	25.72	13.55	13.55	11.26	
On-site Vehicle	0.02	0.02	0.10	0.17	0.18	0.09	
Hauling Emission	0.00	0.00	1.44	2.75	3.03	11.05	
Truck Emission	0.11	0.11	0.11	0.11	0.11	0.11	
Worker Travel	0.08	0.08	0.06	0.05	0.05	0.09	
	CO (lbs/day)						
Off-Road Equipment	55.90	40.08	33.72	18.10	18.10	15.00	
On-site Vehicle	0.10	0.11	0.14	0.17	0.18	0.16	
Hauling Emission	0.00	0.00	0.97	1.85	2.04	7.41	
Truck Emission	0.12	0.12	0.12	0.12	0.12	0.12	
Worker Travel	0.84	0.89	0.69	0.49	0.49	0.99	
	SO2 (lbs/day)						
Off-Road Equipment	0.09	0.06	0.05	0.03	0.03	0.0268	
On-site Vehicle	2.13E-04	2.23E-04	3.60E-04	4.81E-04	5.15E-04	3.83E-04	
Hauling Emission	0.00E+00	0.00E+00	3.30E-03	6.32E-03	6.96E-03	2.53E-02	
Truck Emission	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	
Worker Travel	1.77E-03	1.87E-03	1.46E-03	1.04E-03	1.04E-03	2.08E-03	
	PM10 (lbs/day)					onsite	offsite
Fugitive	0.27	0.28	0.27	0.26	0.28		
Fugitive (On-site Vehicle)	0.01	0.01	0.02	0.02	0.02	3.37	
Fugitive - Hauling	0.00	0.00	0.07	0.14	0.15	609.6426	
Fugitive - Truck	0.01	0.01	0.01	0.01	0.01	0.0062	0.0062
Fugitive - Worker Travel	0.13	0.14	0.11	0.08	0.08	0.1514	0.1514
Off-Road Equipment	1.83	1.31	1.07	0.57	0.57	0.48	
On-site Vehicle	3.75E-04	3.81E-04	1.56E-03	2.64E-03	2.87E-03	1.34E-03	
Hauling Emission	0.00	0.00	0.02	0.04	0.05	0.17	
Truck Emission	1.79E-03	1.79E-03	1.79E-03	1.79E-03	1.79E-03	1.79E-03	
Worker Travel	1.10E-03	1.16E-03	9.00E-04	6.40E-04	6.40E-04	1.29E-03	
	PM2.5 (lbs/day)					onsite	offsite
Fugitive	0.04	0.04	0.04	0.04	0.04		
Fugitive (On-site Vehicle)	3.70E-03	3.90E-03	4.16E-03	4.33E-03	4.53E-03	0.34	
Fugitive - Hauling	0.00	0.00	0.02	0.04	0.04	60.78	
Fugitive - Truck	1.79E-03	1.79E-03	1.79E-03	1.79E-03	1.79E-03	0.00	0.00
Fugitive - Worker Travel	0.03	0.04	0.03	0.02	0.02	0.04	0.04
Off-Road Equipment	1.83	1.31	1.07	0.57	0.57	0.48	
On-site Vehicle	3.43E-04	3.49E-04	1.44E-03	2.42E-03	2.64E-03	1.23E-03	
Hauling Emission	0.00	0.00	0.02	0.04	0.04	0.16	
Truck Emission	1.64E-03	1.64E-03	1.64E-03	1.64E-03	1.64E-03	1.64E-03	
Worker Travel	1.00E-03	1.06E-03	8.30E-04	5.90E-04	5.90E-04	1.18E-03	

TABLE 3.1-6 (CONT.)

ASTs 1, 2 and 4 Demolition and Berm Work—Summer (Peak) Daily Emissions

Project Month	1	2	3	4	5	6	
	CO2 (lbs/day)						
Off-Road Equipment	9,301	6,628	5,623	2,982	2,982	2,738	
On-site Vehicle	19	20	34	47	51	36	
Hauling Emission	0	0	336	643	708	2579	
Truck Emission	24	24	24	24	24	24	
Worker Travel	153	162	126	90	90	180	
	CH4 (lbs/day)						
Off-Road Equipment	2.75	1.93	1.66	0.88	0.88	0.77	
On-site Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling Emission	0.00E+00	0.00E+00	2.72E-03	5.21E-03	5.74E-03	2.09E-02	
Truck Emission	2.10E-04	2.10E-04	2.10E-04	2.10E-04	2.10E-04	2.10E-04	
Worker Travel	8.02E-03	8.49E-03	6.60E-03	4.72E-03	4.72E-03	9.43E-03	
	CO2e (lbs/day)						
Off-Road Equipment	9,359	6,668	5,657	3,001	3,001	2,754	
On-site Vehicle	19	20	34	47	51	36	
Hauling Emission	0	0	336	643	708	2,580	
Truck Emission	24	24	24	24	24	24	
Worker Travel	153	162	126	90	90	180	

TABLE 3.1-7

ASTs 1, 2 and 4 Demolition and Berm Work—Winter (Peak) Daily Emissions

Project Month	1	2	3	4	5	6	
	ROG (lbs/day)						
Off-Road Equipment	2.14	1.49	1.28	0.68	0.68	0.58	
On-site Vehicle	0.01	0.01	0.01	0.02	0.02	0.01	
Hauling Emission	0.00	0.00	0.11	0.21	0.23	0.85	
Truck Emission	0.01	0.01	0.01	0.01	0.01	0.01	
Worker Travel	0.07	0.07	0.06	0.04	0.04	0.08	
	NOx (lbs/day)						
Off-Road Equipment	42.78	29.97	25.72	13.55	13.55	11.26	
On-site Vehicle	0.03	0.03	0.10	0.18	0.19	0.09	
Hauling Emission	0.00	0.00	1.49	2.84	3.13	11.40	
Truck Emission	0.11	0.11	0.11	0.11	0.11	0.11	
Worker Travel	0.09	0.09	0.07	0.05	0.05	0.10	
	CO (lbs/day)						
Off-Road Equipment	55.90	40.08	33.72	18.10	18.10	15.00	
On-site Vehicle	0.11	0.11	0.16	0.20	0.21	0.17	
Hauling Emission	0.00	0.00	1.23	2.35	2.59	9.43	
Truck Emission	0.16	0.16	0.16	0.16	0.16	0.16	
Worker Travel	0.82	0.87	0.68	0.48	0.48	0.96	
	SO2 (lbs/day)						
Off-Road Equipment	0.09	0.06	0.05	0.03	0.03	0.03	
On-site Vehicle	2.02E-04	2.12E-04	3.51E-04	4.74E-04	5.09E-04	3.71E-04	
Hauling Emission	0.00E+00	0.00E+00	3.30E-03	6.31E-03	6.95E-03	2.53E-02	
Truck Emission	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	2.40E-04	
Worker Travel	1.66E-03	1.76E-03	1.37E-03	9.80E-04	9.80E-04	1.96E-03	
	PM10 (lbs/day)					onsite	offsite
Fugitive	0.27	0.28	0.27	0.26	0.28		
Fugitive (On-site Vehicle)	0.01	0.01	0.02	0.02	0.02	3.37	
Fugitive - Hauling	0.00	0.00	0.07	0.14	0.15	609.6426	
Fugitive - Truck	0.01	0.01	0.01	0.01	0.01	0.0062	0.0062
Fugitive - Worker Travel	0.13	0.14	0.11	0.08	0.08	0.1514	0.1514
Off-Road Equipment	1.83	1.31	1.07	0.57	0.57	0.48	
On-site Vehicle	3.78E-04	3.84E-04	1.57E-03	2.65E-03	2.89E-03	1.34E-03	
Hauling Emission	0.00	0.00	0.02	0.04	0.05	0.17	
Truck Emission	1.81E-03	1.81E-03	1.81E-03	1.81E-03	1.81E-03	1.81E-03	
Worker Travel	1.10E-03	1.16E-03	9.00E-04	6.40E-04	6.40E-04	1.29E-03	
	PM2.5 (lbs/day)					onsite	offsite
Fugitive	0.04	0.04	0.04	0.04	0.04		
Fugitive (On-site Vehicle)	0.00	0.00	0.00	0.00	0.00	0.34	
Fugitive - Hauling	0.00	0.00	0.02	0.04	0.04	60.78	
Fugitive - Truck	1.79E-03	1.79E-03	1.79E-03	1.79E-03	1.79E-03	0.00	0.00
Fugitive - Worker Travel	0.03	0.04	0.03	0.02	0.02	0.04	0.04
Off-Road Equipment	1.83	1.31	1.07	0.57	0.57	0.48	
On-site Vehicle	3.46E-04	3.52E-04	1.45E-03	2.44E-03	2.65E-03	1.23E-03	
Hauling Emission	0.00	0.00	0.02	0.04	0.04	0.16	
Truck Emission	1.66E-03	1.66E-03	1.66E-03	1.66E-03	1.66E-03	1.66E-03	
Worker Travel	1.00E-03	1.06E-03	8.30E-04	5.90E-04	5.90E-04	1.18E-03	

TABLE 3.1-7 (CONT.)

ASTs 1, 2 and 4 Demolition and Berm Work – Winter (Peak) Daily Emissions

Project Month	1	2	3	4	5	6	
	CO2 (lbs/day)						
Off-Road Equipment	9,301	6,628	5,623	2,982	2,982	2,738	
On-site Vehicle	18	19	33	47	50	35	
Hauling Emission	0	0	336	642	707	2573	
Truck Emission	24	24	24	24	24	24	
Worker Travel	144	152	118	85	85	169	
	CH4 (lbs/day)						
Off-Road Equipment	2.75	1.93	1.66	0.88	0.88	0.77	
On-site Vehicle	8.33E-04	8.80E-04	8.40E-04	7.88E-04	8.17E-04	1.09E-03	
Hauling Emission	0.00E+00	0.00E+00	2.76E-03	5.27E-03	5.81E-03	2.12E-02	
Truck Emission	2.10E-04	2.10E-04	2.10E-04	2.10E-04	2.10E-04	2.10E-04	
Worker Travel	8.02E-03	8.49E-03	6.60E-03	4.72E-03	4.72E-03	9.43E-03	
	CO2e (lbs/day)						
Off-Road Equipment	9,359	6,668	5,657	3,001	3,001	2,754	
On-site Vehicle	18	19	34	47	50	35	
Hauling Emission	0	0	336	642	707	2,574	
Truck Emission	24	24	24	24	24	24	
Worker Travel	144	152	118	85	85	169	

TABLE 3.1-8
ASTs 1, 2 and 4 Demolition—CalEEMod Input Data

Project Name: CECP Demolition of ASTs (& Berm Work)

District: San Diego County

Wind Speed: 2.6 m/s

Precipitation Frequency: 40 days/year

Climate Zone: 13

Urbanization Level: Urban

Expected Operational Year: 2021

Utility Company: San Diego Gas & Electric

CO_2 Intensity Factor: 720.49

CH_4 Intensity Factor: 0.029

N_2O Intensity Factor: 0.006

CalEEMod Phase Name	Phase Type	Start Date	End Date	Number of Days/Week	Number of Days	Daily Hours	Month
For the 5 months of demolition of Tanks 1,2,4							
Demolition Tanks 1	Demolition	4/1/2015	4/30/2015	5	22	8	1
Demolition Tanks 2	Demolition	5/1/2015	5/31/2015	5	21	8	2
Demolition Tanks 3	Demolition	6/1/2015	6/30/2015	5	22	8	3
Demolition Tanks 4	Demolition	7/1/2015	7/31/2015	5	23	8	4
Demolition Tanks 5	Demolition	8/1/2015	8/31/2015	5	21	8	5
For the 1 month of berm work							
Berm Work 1	Earthwork	9/1/2015	9/30/2015	5	22	8	6

TABLE 3.1-9
ASTs 1, 2 and 4 Demolition and Berm Work—CalEEMod Equipment Schedule Input

Project Month	1	2	3	4	5	6
Equipment Usage	**Demolition of Tanks 1,2,4**					**Berm Work**
CalEEMod INPUT						
Dumpers/Tenders	2	4	2	1	1	4
Excavator	5	4	3	2	2	2
Off-Highway Trucks	3	2	2	1	1	1
Rubber Tire Loader	1	0	0	0	0	0
Skid Steel Loader	6	5	5	2	2	2
Tractors/Loaders/Backhoes	1	1	0	0	0	0

Note: CalEEMod default values for equipment horsepower (hp) and usage load factors are used

TABLE 3.1-10
Tanks 1, 2 and 4 Demolition and Berm Work—CalEEMod Vehicle Trips Input

Project Month	**1**	**2**	**3**	**4**	**5**	**6**
Number of Days	**22**	**21**	**22**	**23**	**21**	**22**
		Demolition of Tanks 1,2,4				**Berm Work**
Workers						
Craft						
Laborers	10	11	10	6	6	16
Operating Engineers	2	2	1	1	1	1
Craft Staff Subtotal	**12**	**13**	**11**	**7**	**7**	**17**
Contractor Staff						
Construction Manager	2	2	1	1	1	1
Administrators	0					
Engineering Supervisor	1	2	1	1	1	1
Health and Safety Engineer	2	1	1	1	1	1
Contractor Staff Subtotal	**5**	**5**	**3**	**3**	**3**	**3**
Worker Trip (trips/day)	**17**	**18**	**14**	**10**	**10**	**20**
Truck Deliveries						
Equipment Services	4	5	4	4	4	5
Oxygen & Propane	3	3	3	2	0	0
Diesel Fuel	5	5	4	4	4	4
Drinking Water	1	2	1	1	1	1
First Aid Supplies	1					
Small Tools & Supplies	5	5	4	4	2	2
Subtotal	**19**	**20**	**16**	**15**	**11**	**12**
Truck Travel (Average Daily)	**1**	**1**	**1**	**1**	**1**	**1**
Truck Hauling – Oily Sand, Tank and Piping			97	194	195	
Onsite Soil Hauling						744
Hauling Trips (total)	**0**	**0**	**97**	**194**	**195**	**744**