# RECOMMENDATION APPROVED; RESOLUTION NO. 17-8180 ADOPTED BY THE BOARD OF HARBOR COMMISSIONERS 

OCTOBER 19, 2017


AMBER M. KLESGES
Board Secretary

Report to the
Board of Harbor Commissioners

DATE: OCTOBER 11, 2017
FROM: ENVIRONMENTAL MANAGEMENT


#### Abstract

SUBJECT: RESOLUTION NO.  - FINAL ENVIRONMENTAL IMPACT REPORT FOR THE BERTHS 226-236 EVERPORT CONTAINER TERMINAL IMPROVEMENTS PROJECT (APP NO. 131015-136; SCH NO. 2014101050)


## SUMMARY:

Staff requests that the Board of Harbor Commissioners (Board) certify the Final Environmental Impact Report (EIR) for the Berths 226-236 Everport Container Terminal Improvements Project prepared in accordance with the California Environmental Quality Act (CEQA), and approve Alternative 5 as identified in the EIR for the proposed Everport terminal modifications. Staff has chosen to recommend adoption of this alternative, as opposed to the proposed Project in the EIR, as it would offer greater on-dock rail potential while meeting the project objectives and supporting the goals of the Clean Air Action Plan. Like the proposed Project, Alternative 5 also requires federal permits from the United States Army Corps of Engineers (USACE). As a result, the document was prepared as a joint Environmental Impact Statement (EIS)/EIR per the requirements of CEQA and the National Environmental Policy Act (NEPA). The USACE will consider approval of the EIS in their decision to grant permits for Alternative 5 in a separate action.

Alternative 5 is similar to the proposed Project in that it would improve marine shipping and commerce at the existing Everport Container Terminal located at Berths 226-236 on Terminal Island to accommodate larger container vessels (up to 16,000 twenty-foot equivalent units (TEUs)) that are anticipated to call at the Everport Container Terminal through the proposed lease extension through December 31, 2038 under Permit 888. Accordingly, Alternative 5 would consist of deepening two existing berths (Berths 226229 and Berths 230-232), adding five new 100-foot gauge A-frame over-water gantry (wharf) cranes, raising up to five existing operational cranes, adding five alternative maritime power (AMP) vaults, and constructing backland improvements. Unlike the proposed Project, however, Alternative 5 would also increase the capacity of the Terminal Island Container Transfer Facility (TICTF) by adding track in order to process more containers at this on-dock facility. Though the overall throughput increase for the facility would be the same under Alternative 5 as for the proposed Project due to space limitations of the container yard backland area, Alternative 5 has the potential to cause fewer containers to be moved offsite by truck than the proposed Project thereby

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potentially reducing environmental impacts. As a result, identical to the proposed Project, Alternative 5 would increase the capacity of the Everport Container Terminal from $1,818,000$ TEUs annually to $2,379,525$ TEUs annually by 2038, which is an increase of 561,525 TEUs.

In this action, the Board will need to independently review and consider the Final EIR and, if deemed adequate under CEQA, certify the EIR, adopt specific Findings of Fact (FOF) regarding the significant environmental impacts of Alternative 5 and mitigation measures to reduce or avoid such impacts, adopt a Statement of Overriding Considerations (SOC), and adopt a Mitigation Monitoring and Reporting Program (MMRP). Similar to the proposed Project, with the application of mitigation measures and lease measures, significant and unavoidable impacts from Alternative 5 would remain related to the following impact areas: air quality, biological resources, cultural resources, and greenhouse gas emissions. Aside from mitigation and lease measures that are the responsibility of the tenant as outlined in the MMRP, the construction of Alternative 5 is the financial responsibility of the City of Los Angeles Harbor Department (Harbor Department).

## RECOMMENDATION:

It is recommended that the Board of Harbor Commissioners (Board):

1. Certify the Final Environmental Impact Report for the Berths 226-236 Everport Container Terminal Improvements Project (a) has been completed in compliance with the California Environmental Quality Act (Public Resources Code $\S 21000$ et seq.), with the California Environmental Quality Act Guidelines (14 Cal. Code Regs. $\$ 15000$ et. seq.), and the City of Los Angeles California Environmental Quality Act Guidelines; (b) was presented to the Board of Harbor Commissioners for review and the Board of Harbor Commissioners considered the information contained in the Final Environmental Impact Report prior to approving Alternative 5 of the Berth 226-236 Everport Container Terminal Improvements Project; and (c) reflects the independent judgment and analysis of the City of Los Angeles Harbor Department, and that all required procedures have been completed;
2. Adopt the Findings of Fact and Statement of Overriding Considerations;
3. Find that, in accordance with the information contained in the Final Environmental Impact Report, Alternative 5 of the Berths 226-236 Everport Container Terminal Improvements Project will have significant environmental effects on air quality and meteorology, biological resources, cultural resources, and greenhouse gas emissions as defined by Public Resources Code Sections 21068 and 21082.2, and the State California Environmental Quality Act Guidelines, Sections 15064, 15064.4, 15064.5, and 15382;

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4. Find that, in accordance with the provisions of the California Environmental Quality Act Guidelines Section 15091(a)(1), changes or alterations have been required in, or incorporated into, the Berths 226-236 Everport Terminal Improvements Project, including the selection of Alternative 5, which substantially lessens or avoids one or more of the significant adverse environmental impacts identified in the Final Environmental Impact Report;
5. Find that, in accordance with the provisions of the California Environmental Quality Act Guidelines Section 15091(a)(3), specific economic, legal, social, technological, or other considerations, make infeasible certain mitigation measures such that some environmental impacts remain significant and unavoidable;
6. Find that, all information added to the Final Environmental Impact Report after public notice of the availability of the Draft Environmental Impact Report for public review but before certification, merely clarifies, amplifies, or makes insignificant modifications in an adequate Environmental Impact Report and recirculation is not necessary;
7. Find that, in accordance with Public Resources Code Section 21081(b) and California Environmental Quality Act Guidelines Section 15093, the benefits of creating a more efficient facility at Berths 226-236 outweigh the significant and unavoidable environmental impacts, and adopt the Findings of Fact and Statement of Overriding Considerations;
8. Adopt the Mitigation Monitoring and Reporting Program as required by Public Resources Code, Section 21081.6. The Mitigation Monitoring and Reporting Program is designed to ensure compliance with the mitigation measures, lease measures, and standard conditions adopted to avoid or lessen significant effects on the environment, pursuant to and identifies the responsibilities of the City of Los Angeles Harbor Department, as lead agency, to monitor and verify project compliance with those mitigation measures and lease measures;
9. Approve Alternative 5 of the Berths 226-236 Everport Container Terminal Improvements Project identified in the Environmental Impact Report including all feasible mitigation measures and lease measures with consideration of the Findings of Fact and Statement of Overriding Considerations, and the Mitigation Monitoring and Reporting Program;
10. Direct the Cargo and Industrial Real Estate Division to incorporate by reference the Environmental Impact Report, mitigation measures, lease measures, and Mitigation Monitoring and Reporting Program into any and all lease agreements or assignments encompassed in the approved Project;

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## 11. Authorize the Environmental Management Division to file the Notice of Determination with the Los Angeles County Clerk, the Los Angeles City Clerk, and the State Secretary of Resources; and

12. Adopt Resolution No. $\qquad$ .

## DISCUSSION:

Background/Context - The fleet mix of vessels calling at the Port of Los Angeles (Port) is trending toward larger vessels as shipping lines continue to increase the size of the vessels they are building. As many terminal berths and cranes within the Port and across the country were not designed to handle vessels of the size that are projected to enter the fleet mix over time, modifications to these facilities are necessary to allow for the efficient servicing of these vessels. The fleet mix of the Everport Container Terminal is expected to include vessels of up to 16,000 TEUs through the end of the terminal's proposed lease extension of December 31, 2038. For these reasons, Everport has proposed terminal modifications that would help the facility be able to service newer and larger ships in the next few decades.

To accomplish Everport's objectives, the Notice of Intent/Notice of Preparation for an EIS/EIR proposed to analyze a Project that would optimize its container yard backland area, deepen its berths, increase the number and size of its ship to shore cranes, and optimize its operations in anticipation of a changing fleet mix expected to be calling at the terminal over the next few decades.

In accordance with CEQA and NEPA, five project alternatives were analyzed in the environmental document to consider if potential environmental impacts of the proposed Project could otherwise be reduced. These alternatives included: (i) No Project at all, (ii) No Federal Action, (iii) Reduced Wharf, (iv) No Backland Expansion, and (v) Expanded On-Dock Rail. After receiving comments on the Draft EIS/EIR, staff has decided to recommend that the Board of Harbor Commissioners approve Alternative 5 - Expanded On-Dock Rail, instead of the proposed Project, for the Everport Container Terminal. Alternative 5 not only contains the same project components originally proposed but also expands on-dock rail capacity with the addition of one rail track at the TICTF. This would allow Alternative 5 to achieve the efficiency and expansion objectives of the originally proposed Project while diverting more containers off local streets and freeways.

Multiple comments were received on the Draft EIR, including three that recommended Alternative 5 be selected as the Project. In addition, the 2017 Draft Clean Air Action Plan (CAAP) was released subsequent to the release of the Draft EIR that also contains a goal of expanding the use of on-dock rail. Alternative 5 is, therefore, consistent with the CAAP and addresses comments raised and achieves the objectives of the Project. 236 EVERPORT CONTAINER TERMINAL IMPROVEMENTS PROJECT

Project Objectives - The primary objectives of the proposed Project are:

- Optimize the use of existing facility and associated waterways in a manner that is consistent with the Harbor Department's public trust obligations;
- Provide sufficient depth to accommodate larger vessels anticipated to call at the terminal;
- Provide new cranes and raise existing cranes to efficiently service the larger container ships anticipated to call at the terminal;
- Improve the container terminal and container handling facilities to accommodate more efficient loading/unloading of the larger and increased number of ships anticipated to call at the terminal;
- Improve the container terminal backland capacity;
- Add an additional rail track to promote more container transport off-site via rail rather than truck;
- Maximize container land use and operations at the Everport Container Terminal consistent with the Port Master Plan; and
- Promote the long-term development and growth of the Port.

Project Description - Elements of Alternative 5 would be constructed over an approximately 24 -month schedule. Construction would be performed in a manner that maintains ongoing terminal operations with one berth shut down at a time to allow for operations to continue. Under the proposed lease amendment, operation of the proposed facility after modification would now continue until December 31, 2038. The proposed modifications include improvements to and expansion of the existing Everport Container Terminal currently in operation at Berths 226-236. The primary components include the following:

- Dredging and installing king piles and sheet piles at Berths 226-229 and Berths 230-232;
- Disposal of dredged materials (30,000 cubic yards from Berths 226-229 and 8,000 cubic yards from Berths 230-232) at an ocean disposal site (i.e., LA-2), an approved upland disposal facility, or a combination of the two;


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 236 EVERPORT CONTAINER TERMINAL IMPROVEMENTS PROJECT- Addition of five new 100 -foot gauge A-frame over-water gantry (wharf) cranes and raising up to five of the existing cranes;
- Addition of five AMP vaults at Berths 226-232;
- Construction of one additional rail track at the TICTF to increase the capacity of the Everport portion of the on-dock railyard;
- Development of approximately 1.5 acres of vacant land as new backlands and development of approximately 22 acres as new backlands with the relocation of the main gate. The development of the 22 acres would require closure (vacation) of streets within this backlands expansion area and demolition of existing structures; and
- Lease extension by 10 years for continued operations from December 31, 2028, to December 31, 2038.


## ENVIRONMENTAL ASSESSMENT:

CEQA Responsibilities - The Harbor Department is the CEQA lead agency for the proposed Project. As such, the Board is responsible for reviewing and considering the Final EIR (Transmittal 1) and, at its discretion, certifying that the Final EIR has been completed in accordance with CEQA, the State CEQA Guidelines, and the Los Angeles City CEQA Guidelines; has been presented to the Board for review and the Board considered the information contained in the Final EIR, and that it reflects the independent judgment and analysis of the Harbor Department. Certification of the Final EIR must precede the project approval. Project approval requires that the Board first independently review and certify the Final EIR as adequate; then adopt the FOF for Alternative 5 (Transmittal 2) on the significant environmental effects and the feasibility of mitigation measures and alternatives; adopt a SOC for Alternative 5 (included in Transmittal 2); and adopt a MMRP (Transmittal 3).

Scope and Content of Environmental Document - The Draft EIR, released April 20, 2017, incorporates, as appropriate, information received on the Notice of Preparation (NOP) for the proposed Project, assesses environmental impacts of the proposed Project, and analyzes alternatives and mitigation measures to reduce or avoid significant environmental effects. The Final EIR clarifies and amplifies the Draft EIR, incorporates modifications and corrections, contains responses to all public comments made on the Draft EIR, and contains records of the public process.

Intended Uses of the EIR - The EIR informs public agency decision-makers and the general public of the significant environmental effects of the proposed Project, recommends mitigation measures to minimize the significant effects, and describes a

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reasonable range of potentially feasible alternatives to the proposed Project, including Alternative 5 which is being recommended for adoption in lieu of the originally proposed Project. The EIR assesses the potential impacts, including unavoidable adverse impacts and cumulative impacts, related to the originally proposed Project and its alternatives, including Alternative 5. The analysis in the EIR supports future potential discretionary actions of the Board and the permitting/approval process of all agencies whose discretionary approvals must be obtained for particular elements of the Project. For the Harbor Department, these actions include but are not limited to: issuance of coastal development permits, issuance of engineering permits, and approval of lease amendments.

Environmental Documentation Process and Public Involvement - The proposed Project was subject to the required environmental documentation process that included public disclosure as required by CEQA. The procedural steps of the process are described below.

1. Notice of Preparation (NOP). In accordance with the Los Angeles City CEQA Guidelines, Article VI, Section 1.5 and the State CEQA Guidelines, Section 15082, the responsible agencies, participating City agencies, and other concerned parties were consulted through an NOP released in October 2014 and public scoping meeting held on November 13, 2014 in the Board Room. No comments were received during the scoping meeting and a total of ten written comment letters were received from various agencies and the public during the comment period, which closed on November 24, 2014.

Copies of the NOP were available for review online at www.portoflosangeles.org, at the City of Los Angeles Harbor Department Environmental Management Division office, and at the Los Angeles San Pedro Branch and Wilmington Branch Libraries.
2. Draft EIR. The Draft EIR was released for public review on April 20, 2017. It was made available on the Port of Los Angeles website, at local libraries, and mailed directly to over 100 interested parties. The 45-day comment period closed on June 5, 2017.

Public notices of availability stating that the Draft EIR was available for review were published in six newspapers: Los Angeles Times, Torrance Daily Breeze, Long Beach Press Telegram, Random Lengths, Metropolitan News Enterprise and HOY.

A public hearing was held on May 10, 2017, in the Board Room to present the findings of the environmental analysis and accept oral comments. Four oral comment were received at the public hearing. A total of 21 written comments were received from various agencies and the public during the 45 -day public comment period.

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3. Responses to Comments. As required by Public Resources Code Section 21092.5, all public responsible and trustee agencies who commented on environmental issues in the Draft EIR were provided with proposed responses to those comments 10 days prior to the Final EIR being submitted to the Board for certification.
4. Final EIR. In accordance with the Los Angeles City CEQA Guidelines, Article I, and the State CEQA Guidelines, Section 15088, comments received on the Draft EIR were evaluated. The comment letters and responses to comments, along with minor modifications to the Draft EIR are presented in the Final EIR. The Final EIR was completed in early September 2017.

Findings and Conclusions - The Final EIR, FOF and SOC, transmitted herewith, identify major findings and conclusions, including a recommendation that Alternative 5 be approved in lieu of the originally proposed Project, a discussion of areas of environmental concern, feasible mitigation measures, and unavoidable impacts. The discussion below summarizes the proposed Findings of Facts for the Board's consideration.

1. Areas of Environmental Concern. Through the public environmental review process, the following areas of environmental concern were identified. These potential impacts and others were assessed in the Final EIR. The impacts associated with the proposed Project are discussed in detail, by resource area. The Final EIR concluded that the following environmental resources would remain significant and unavoidable: air quality, biological resources, cultural resources, and greenhouse gas emissions. These conclusions do not change with the selection of Alternative 5 as the Project.
2. Alternatives. A total of five alternatives to the proposed Project were considered during preparation of the EIR. Alternative 5 is highlighted below as it has been recommended for approval instead of the originally proposed project.
a) Project with Expanded On-Dock Railyard Alternative (Alternative 5). The Expanded On-Dock Rail Alternative includes improving Berths 226-229, Berths 230-232, backland improvements and an additional on-dock rail track at the TICTF. Under this alternative, there would be two operating berths after construction, the same as the proposed Project. This alternative would require the same dredging as the proposed Project and is expected to operate at its maximum capacity of approximately $2,379,525$ TEUs by 2038 , the same as the proposed Project. Under this alternative, 208 vessels would call on the terminal by 2038, the same as the proposed Project.
3. Environmentally Superior Alternative. CEQA requires identification of the Environmentally Superior Alternative. The environmentally superior alternative was determined based on a ranking system that assigned numerical scores comparing the impacts under each resource area for each alternative relative to the proposed Project

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for CEQA. Chapter 6 of the Draft EIR presents a comparison of the proposed Project and each alternative by resource area with significant and unavoidable impacts.

The No Project Alternative is identified as having the fewest impacts because no proposed project-related actions would occur. However, the CEQA Guidelines, Section 15126.6(e) requires that in cases where the No Project Alternative is determined to be the environmentally superior alternative, another alternative must be identified as environmentally superior.

As such, the Reduced Project: No Backland Improvements Alternative is identified as environmentally superior because it would not result in impacts related to cultural resources (historic and archaeological), and would not increase the throughput capacity of the terminal which would have been achieved by allowing larger ships to visit the terminal. Therefore, in accordance with CEQA, Alternative 4 is deemed to be environmentally superior. However, it would not achieve the same level of operational efficiency achieved by Alternative 5. While Alternative 4 would somewhat reduce the impacts related to air pollution and greenhouse gas emissions, adoption of Alternative 5 would accomplish the proposed Project goals and objectives associated with optimizing the use of existing land at the Everport Container Terminal, improving backland capacity, and maximizing container land use and operations. Alternative 5 achieves the same objectives of the proposed Project although construction impacts would be slightly higher and the overall cost of the project would be a little bit more than with the proposed Project, while reducing the overall operational air quality and traffic impacts to the region.

For the reasons discussed above and in the attached FOF, staff recommends that the Board: 1) find that Alternatives 1 through 4 do not fully meet Project objectives and/or do not result in reduction or avoidance of environmental effects relative to the Project; and 2) approve Alternative 5 as described in the Final EIR. Alternative 5 meets all of the Project objectives while reducing on-road truck trips through the incorporation of an additional rail track at the TICTF.
4. Proposed Mitigation Measures. In accordance with the provisions of the Los Angeles City CEQA Guidelines, Article I, the State CEQA Guidelines Section 15091, and the information contained in the EIR, changes or alterations have been required in, or incorporated into the project as recommended for approval (Alternative 5) in the form of feasible mitigation which substantially lessen or avoid significant adverse environmental impacts identified in the EIR. Further, certain mitigation measures were modified/strengthened or added based on public comments received on the Draft EIR.

Mitigation measures contained in the EIR would be incorporated as appropriate in permits, such as, engineering specifications, engineering construction permits, real estate entitlements, and/or coastal development permits for the proposed Project. All

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mitigation measures, lease measures and any standard conditions of approval can be found in the MMRP.
5. Unavoidable Significant Adverse Impacts. Significant impacts of Alternative 5 that could not be reduced below a level of significance are described in the FOF with findings for each impact. The following impact areas could not be mitigated to a level of insignificance under CEQA:

- Air Quality
- Biological Resources
- Cultural Resources
- Greenhouse Gases

Cumulative Impacts. Alternative 5 was analyzed in conjunction with other related projects in the area for its potential to contribute to significant cumulative impacts. Alternative 5 would result in cumulatively considerable contributions to significant cumulative impacts related to aesthetics, air quality and meteorology, biological resources, greenhouse gas emissions, and noise under CEQA after mitigation.

Environmental Justice. Although not required pursuant to CEQA, the EIR includes an environmental justice analysis pursuant to NEPA, which assesses the potential for actions to have disproportionately high and adverse environmental and health impacts on minority and low-income populations. Significant impacts related to air quality would result in disproportionately high and adverse effects on minority and low-income populations.
6. Overriding Considerations. Pursuant to Public Resources Code Section 21081(b), no public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects unless the agency makes the specific findings discussed above with respect to each significant impact and finds that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects. The Statement of Overriding Considerations must identify the substantial adverse environmental impacts that cannot be mitigated or avoided; make recommendations, that the project or alternatives be approved as proposed; and the reasons why, if in the opinion of the decision-making body, the project warrants approval despite such consequences or recommendations.

The Draft FOF and SOC recommended by staff is transmitted for Board consideration and adoption. Staff, in recommending the proposed Project for approval, has identified specific environmental, economic, legal, social, technological and other Project benefits. In summary, Alternative 5 provides the following benefits:

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- Fulfills Harbor Department's legal mandates and objectives. Alternative 5 would fulfill the Harbor Department's legal mandate under the Port of Los Angeles Tidelands Trust (Los Angeles City Charter, Article VI, Sec. 601; California Tidelands Trust Act of 1911) to promote and develop commerce, navigation and fisheries, and other uses of statewide interest and benefit including industrial and transportation uses and the California Coastal Act (PRC Division 20, Section 30700, et seq.), which identifies the Port and its facilities as a primary economic/coastal resource of the state and an essential element of the national maritime industry and obligates the Harbor Department to modernize and construct necessary facilities to accommodate deep-draft vessels and to accommodate the demands of foreign and domestic waterborne commerce and other traditional and water-dependent and related facilities in order to preclude the necessity for developing new ports elsewhere in the state. Further, the California Coastal Act provides that the Harbor Department should give highest priority to the use of existing land space within harbors for port purposes, including, but not limited to navigational facilities, shipping industries and necessary support and access facilities. The proposed Project would also meet the Harbor Department's strategic green growth objectives by maximizing the efficiency and the capacity of facilities while applying mitigation measures that adhere to and/or exceed the San Pedro Bay Clean Air Action Plan (CAAP) requirements and raise environmental standards.
- Optimizes land use. Alternative 5 would maximize the utilization of Port lands by increasing the cargo handling efficiency of an existing container terminal to accommodate the demands of foreign and domestic waterborne commerce.
- Accommodate projected changes to cargo ship fleet mix. Alternative 5 would upgrade an existing facility to accommodate the servicing of larger container ships which are projected to enter the fleet mix calling at the Port in the future.
- Fosters economic growth. Alternative 5 would augment local employment and business opportunities by directly supporting numerous short-term construction and long-term operational jobs and a variety of indirect jobs related to both the construction and operational phases.

In summary, Alternative 5 would allow the Harbor Department to meet its legal mandates to accommodate growing international commerce, while maintaining compliance with important environmental programs and policies. The Board hereby finds that the benefits of the proposed Project described above outweigh the significant and unavoidable environmental effects and are therefore considered acceptable.

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7. Areas of Controversy on Draft EIR. It is important for the Board to be informed as to the areas of controversy associated with the EIR. The areas of controversy have been identified through oral and written comments received on the proposed Project as part of the environmental review and planning processes. The discussion below provides a general overview of the areas of concern identified that staff believes remain controversial. Specific details on issues raised by commenters and the responses to those comments are included in the Final EIR.

During the public review period, comments were raised over the proposed Project's significant air quality impacts, potential impacts to environmental justice communities, the lack of inclusion of the electric dredge for use during construction, the lack of inclusion of an analysis of potential energy consumption impacts, etc. These comments also apply to Alternative 5. Additional mitigation measures were suggested related to locomotives, financial incentives, increased compliance with the Vessel Speed Reduction Program (VSRP), and use of cleaner-tiered vessels. However, additional mitigation measures in these areas proved to be technologically and economically infeasible as detailed in the Final EIR with the exception of the electric dredge which has now been included if available. The inclusion of the electric dredge also applies to Alternative 5 as the MMRP will not change as a result of recommending a project alternative.
8. EIR Certification and Project Approval. In light of these findings and conclusions, staff recommends certification of the Final EIR as being prepared in accordance with CEQA and implementing guidelines, and recommends approval of Alternative 5 and adoption of all feasible mitigation measures and lease measures.
9. Implementation of Mitigation. When making the CEQA findings required by Public Resources Code Section 21081(a), a public agency shall adopt a reporting or monitoring program in accordance with Public Resources Code Section 21081.6 for changes to the proposed Project which it has adopted or made a condition of Project approval in order to mitigate or avoid significant effects on the environment. A MMRP is transmitted for Board consideration and adoption. In addition, should the Board elect to approve the proposed Project or an alternative other than Alternative 5, the mitigation measures contained in the EIR would be incorporated as appropriate in permits, such as, engineering specifications, engineering construction permits, real estate entitlements, and/or coastal development permits for the proposed Project (Recommendation 12). The proposed Findings of Fact and Statement of Overriding Considerations would also need to be revised.
10. Record of Proceedings. When making CEQA findings required by Public Resources Code Section 21081(a), a public agency shall specify the location and custodian of the documents or other material which constitute the record of proceedings upon which its decision is based. These records are in the care of the Director of

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Environmental Management, City of Los Angeles Harbor Department, 222 W. $6^{\text {th }}$ Street, San Pedro, California 90731.

11. Notice of Determination. In accordance with Los Angeles City CEQA Guidelines, Article I, and the State CEQA Guidelines Section 15094, a Notice of Determination will be filed with the County and City Clerk's Office after project approval. Public Resources Code Section 21167(c) provides that any action or proceeding alleging that an EIR does not comply with the provisions of CEQA shall be commenced within 30 days after filing the Notice of Determination.

## FINANCIAL IMPACT:

Certification of the Final EIR and approval of Alternative 5 is an administrative action that would pave the path forward for implementation of the Project. This Board action does not authorize any expenditures related to the project nor does it commit the Harbor Department to complete the project as ultimately approved, if any. Award of any capital construction contract related to the project, as will any approval of a lease extension with Everport under its existing Permit No. 888, would require Board approval under separate future actions. Consultant costs to complete the Everport EIR is estimated at $\$ 2,426,461.87$ (not including Harbor Department staff time and materials). A total of $\$ 58,179,775$ is programmed in the Port's 10-year Capital Improvement Program for Everport improvements which also includes the cost to complete the EIR/EIS. The Harbor Department's financial return on the project will be fully detailed in any future Board actions requesting approval of capital expenditures and/or lease extension under Permit No. 888. However, preliminary financial analysis indicates the undertaking of Alternative 5 would likely conform to the Harbor Department's Board adopted rate of return policy. Aside from mitigation and lease measures that are the responsibility of the tenant as outlined in the MMRP, the project, as ultimately approved, is the financial responsibility of the Harbor Department.

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## CITY ATTORNEY:

Based upon the information presented to the City Attorney's Office, the Board may certify that the EIR for the Berths 226-236 Everport Container Terminal Improvements Project have been completed in accordance with CEQA.

## TRANSMITTALS:

1. Final Environmental Impact Report (FEIR)
2. Findings of Fact and Statement of Overriding Considerations (FOF and SOC)
3. Mitigation Monitoring and Reporting Program (MMRP)

FIS Approval: $7 / \beta$ (initials)
CA Approval: COB (initials)


CHRISTOPHER CANNON
Director of Environmental Management


MICHAEL DiBERNARDO Deputy Executive Director

APPROVED:


EUGENE D. SEROKA
Executive Director
 UPDATED: 10/11/2017 10:01 AM - YO

# Berths 226 to 236 [Everport] Container Terminal Improvements Project 

## Final Environmental Impact Statement/ Environmental Impact Report And

Draft General Conformity Determination


September 2017
Prepared by:
Los Angeles Harbor Department
Environmental Management Division
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OF LOS ANGELESPage
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### 1.1 Final EIS/EIR Organization

This chapter presents background and introductory information for the proposed Project, Berths 226-236 [Everport] Container Terminal Improvements Project, located on Terminal Island within the Port of Los Angeles (Port). Additionally, this chapter discusses general changes and modifications made to the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR), which are mostly editorial in nature. Chapter 2, "Responses to Comments," presents information regarding the distribution of and comments on the Draft EIS/EIR, and the responses to these comments. Chapter 3, "Modifications to the Draft EIS/EIR," presents the modifications to the Draft EIS/EIR.

This Final EIS/EIR has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4341 et seq.), and in conformance with the Council for Environmental Quality (CEQ) Guidelines and the United States Army Corps of Engineers (USACE) NEPA Implementing Regulations. The document also fulfills the requirements of the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR] 15000 et seq.). The USACE is the NEPA lead agency for this proposed Project and the Los Angeles Harbor Department (LAHD) is the CEQA lead agency.

### 1.2 Existing Conditions

### 1.2.1 Regional Context

The Port Complex, which includes the Port of Los Angeles and the Port of Long Beach, is located in the San Pedro Bay, which is approximately 20 miles south of downtown Los Angeles and serves as one of the nation's primary gateways for international trade (and the primary gateway for Asian-based trading partners). International trade is a key economic engine for the region and the country. The Port Complex serves as a vital link in the goods movement chain delivering goods for local markets as well as those shipped by truck and rail throughout the country. Approximately half of the cargo coming through the Ports is delivered by truck to the regional market, which is an area roughly 500 to 700 miles from the Port Complex. The local freeways that directly serve the Port Complex are Interstate (I) 110, I-710, State Route (SR) 47, and SR-103. The Alameda Corridor is the primary rail line between the Port and downtown Los Angeles railyards (Union Pacific [UP] East LA Yard and Burlington Northern Santa Fe [BNSF] Hobart Yard). Other rail lines extend from the downtown area north and east.

### 1.2.2 Project Setting

The Port consists of 7,500 acres and 43 miles of waterfront and is designed for movement of international goods and services. The Port is administered by LAHD under the California Tidelands Trust Act of 1911. LAHD is chartered to develop and operate the Port to benefit maritime uses, and it functions as a property owner by leasing Port properties to more than 300 tenants. With 23 major cargo terminals, including dry and liquid bulk, container, breakbulk, automobile, and passenger facilities, the Port handled about 176.5 million metric revenue tons of cargo in fiscal year 2013/2014 (July 2013June 2014) (POLA, 2015). Of the 23 major cargo terminals, nine are container terminals and include 86 container cranes. In addition to cargo business operations, the Port is home to commercial fishing vessels, a shipyard, a boat repair facility, and recreational, community, and educational facilities.

### 1.2.3 Project Site and Surrounding Uses

The Project site is located at 389 Terminal Way on Terminal Island in the Port of Los Angeles within the Port of Los Angeles Community Plan area of the City, and within the County of Los Angeles, California. The Project site is near the communities of San Pedro and Wilmington and is approximately 20 miles from downtown Los Angeles (Figure 1-1). The site is generally bounded on the west and northwest by the Main Channel; to the north by State Route 47 and the Yusen Terminals, Inc. (YTI) Container Terminal at Berths 212-224; to the east by Los Angeles Export Terminal (LAXT), PBF (formerly ExxonMobil) Inland Tanks facility, and U.S. Customs House; and to the south by the PBF Energy (formerly ExxonMobil) liquid bulk terminal at Berths 238-240, Cannery Street, TriMarine Seafood and both vacant and developed land south of Cannery Street (Figure 1-2). Land uses in the vicinity of the Project site support a variety of cargo handling operations (including container, liquid bulk, dry bulk) commercial fishing, seafood processing, maritime support, and ship repair.

The existing 205-acre container terminal at the Project site (Berths 226-236) is operated by Everport Terminal Services Inc. (ETS) (a wholly owned subsidiary of Evergreen Marine Corporation). ETS is the permit holder under a lease agreement (Permit No. 888, as amended and hereafter referred to as 'the lease') between LAHD and ETS. The main terminal under the current lease agreement totals approximately 180 acres that includes approximately 20.5 acres associated with the existing on-dock railyard behind the YTI Container Terminal, known as the TICTF, which is shared between the YTI and Everport terminals. In addition to the 180 acres under lease, ETS has an existing space assignment for 25 acres of backland area behind Berths 232-236.

The proposed Project would increase the existing terminal size from 205 acres to approximately 229 acres by incorporating into ETS’s lease an additional 23.5 acres (consisting of a 1.5-acre parcel and a 22-acre parcel). The 1.5-acre parcel (located adjacent to the 25 -acre space assignment and PBF tank facility) that is being proposed for development as backlands is vacant and adjacent to the existing terminal, but separated by a chain-link fence. The 22-acre area proposed for development as backlands and the relocation of the main gate (located immediately south of the existing terminal boundary) is currently developed with various structures (including, but not limited to, buildings associated with the former StarKist Tuna Plant, the former Canner’s Steam Company Plant, and an electrical substation), vacant parcels, and portions of Terminal Way, Barracuda Street, Tuna Street, and Ways Street. The development of the


Source: U.S. Census Bureau, Geography Division, 2010

Figure 1-1


Source: U.S. Census Bureau, Geography Division, 2010

Figure 1-2

22 acres would require closure (vacation) of streets within that portion of the Project site and demolition of the existing buildings. The electrical substation will remain.

### 1.2.4 Historic Use of the Project Site

In 1914, the Port of Los Angeles began dredging what would become Fish Harbor, a specialized area for fish processing and canning at Terminal Island. It was operational by 1915, and most of the Port's canneries moved to the new harbor, making tuna fishing and processing the most prominent activity on that part of the island. By the 1920s, 11 canneries operated from the Port, served by a large fleet of fishing vessels and employing 1,800 cannery workers and 4,800 fishermen. The workforce was diverse and included a large number of Japanese and Japanese Americans, many of whom lived on the island just north of Fish Harbor where they formed a distinct dialect and culture unique to the Port. A small but vigorous commercial core emerged on Tuna and Cannery Streets, and by the 1920s the block of Tuna Street between Cannery and Fish Harbor was lined with restaurants, barber shops, pool halls, markets, clothing stores, hardware stores, and grocery and dry goods stores.

Fish Harbor continued to expand through the 1930s and by 1940 the Japanese American population had grown to 3,000 . Following the bombing at Pearl Harbor however, the Port's Japanese Americans were forcibly removed from their homes on Terminal Island and taken to internment camps. The Navy bulldozed their homes and most of the businesses, leaving nothing to return to at the war's end. After World War II, fish canneries expanded their operations throughout Fish Harbor, particularly French Sardine Company, which constructed new facilities on Tuna Street and the east side of Fish Harbor. Across Terminal Island, the Port of Los Angeles expanded into the now-vacant land that had once contained hundreds of Japanese and Japanese-American residences, significantly changing the function and character of the area. The once-bustling commercial district along Tuna Street now primarily housed canneries and other fishingrelated businesses.

This growth was short-lived however, and by the 1960s many of the larger canning operations (i.e., Van Camp and StarKist) began establishing other, more cost-effective, canneries overseas. By 1975, most of the Port's canneries had been bought by multinational corporations, and by the mid-1980s many of their operations had moved out of Los Angeles. The last plant, Chicken of the Sea, closed in 2001. Since that time, many of the buildings associated with the once-vibrant fishing industry at Fish Harbor have been demolished or abandoned.

The Everport Container Terminal gradually developed through infill between 1971 and 1988. Prior to this, it was used for shipping, but had slips for shipping boats with adjacent warehouse buildings (no longer extant).

The 1.5 -acre area was part of the former ExxonMobil oil terminal, which was initially constructed in 1925. Historic photos indicate the 1.5 -acre parcel housed oil tanks beginning in 1925 until they were demolished sometime between 1979 and 1987. The lot has been vacant since this time.

### 1.2.5 Existing Terminal Facilities and Operations

### 1.2.5.1 Terminal Facilities

The 205-acre Everport Container Terminal consists of a cargo ship loading/unloading area, a large container handling and storage yard, and container terminal buildings and areas. In addition, the Everport Container Terminal shares an on-dock rail facility (the TICTF) with the YTI Container Terminal (Figure 1-3). The Everport Container Terminal is fully paved (i.e., there are no pervious areas). There are eight existing A-frame overwater gantry (wharf) cranes located at the Everport Container Terminal. The existing eight wharf cranes consist of three smaller 100-gauge Bardella cranes and five larger 100 -gauge cranes manufactured by ZPMC. The three smaller wharf cranes are located along the southern portions of the existing wharves, and the five larger wharf cranes are located along the northern portion of the wharves.
Alternative Maritime Power (AMP), which is the technique of utilizing shoreside electrical power from the City of Los Angeles Department of Water and Power's power grid to operate the container ships when they are berthed at an appropriately equipped wharf, has been installed and is currently in use at Berth 227 (two existing AMP vaults) and Berth 230 (one existing AMP vault). AMP is used to help the Port meet California Air Resources Board (CARB) regulations for existing and future operations.
The TICTF, which opened in 1997, currently serves the Everport Container Terminal as well as the YTI Container Terminal in the Project area. The TICTF features eight rail tracks, each approximately 2,300 feet long. The Everport Container Terminal currently operates the four southernmost rail tracks within the TICTF on-dock railyard (the YTI Container Terminal operates the four northernmost rail tracks within TICTF). Figure 1-3 shows the existing TICTF on-dock railyard associated with the Everport Container Terminal.

### 1.2.5.2 Terminal Operations

The existing Everport Container Terminal uses traditional cargo handling methods, as compared to automated methods, to service containerized cargo. Once containers have been off-loaded from a ship or received through the gates on trucks and trains, the containers are stored and moved around the backlands area of the terminal using dieselpowered cargo-handling equipment including diesel powered rubber-tire gantry cranes (RTGs) and/or diesel-powered top handlers and yard tractors. Through the use of this cargo handling equipment, containers are stored by either stacking containers on top of each other, up to five containers high with the bottom container placed directly on the ground, or with a container stored directly on a chassis (trailer). All of the unloading/loading equipment used in the backland operations is performed and operated by workers. Outbound containers are transported by both truck and rail. Containers may be forwarded to peel-off yards upon being off-loaded from a ship, where they would subsequently be transported by truck and rail.


Aerial Source: County of Los Angeles, 2012

## Existing Throughput and Vessel Calls

In 2013, the Everport Container Terminal moved 1.24 million TEUs and had 166 vessel calls. The majority of vessels calling at the terminal were $2,000-$ and 6,000 -TEUcapacity vessels. No vessels over 8,000-TEU-capacity called on the Everport Container Terminal in 2013, as the existing depth of berths limits the vessel sizes to 8,000 TEUs. The terminal handled a maximum of two vessel calls in a peak day. With existing infrastructure, maximum throughput capacity at the Everport Container Terminal is approximately $1,818,000$ TEUs annually.

## Ship Operations

Currently the terminal can berth up to three smaller vessels along the two operating berths. However, the occasions when three ships are berthed simultaneously are rare, and the terminal primarily handles up to two vessels at a time. To accommodate berthing, tugboat operations are required. For the Everport Container Terminal, two tugs generally are required during docking and undocking, for a total of four tugs per vessel call. In the case of the 2,000-TEU class vessels, one tug is required each for ship docking and undocking, for a total of two tugs per call.

## Transportation Modes

Currently, about 24.8 percent of Port-wide cargo throughput passes through on-dock rail facilities, 10.5 percent through off-dock rail facilities, and the remaining 64.7 percent via truck to the local and regional markets, including transload facilities. However, the mode split (percent of containers that are conveyed by different transportation modes such as rail or truck) at individual terminals varies. Mode splits differ from terminal to terminal on the basis of the existence and capacity of a terminal's on-dock rail facility, as well as the demands of shipping lines, which are sensitive to the receiving market. Further, the percentage of cargo from a terminal that can be transported via an on-dock railyard is limited because on-dock railyards assemble trains that are destined for a single destination, and only a limited number of containers handled by a terminal have a common rail destination. In 2013, mode splits at the terminal were 18.6 percent through the TICTF, 4.3 percent through off-dock rail facilities, and 77.1 percent by truck to local and regional markets, including transload facilities.

## Truck Operations

The Everport Container Terminal's 2013 throughput required a total of 1,112,735 annual one-way truck trips, with 4,505 daily one-way truck trips in the peak month. Those trips included cargo hauled entirely by truck (principally within Southern California, with some trips to and from northern California, Arizona, Nevada, and Utah) and intermodal cargo bound for, or coming from, locations farther east. Of the approximately 956,755 TEUs transported by trucks, approximately 53,791 TEUs were intermodal cargo trucked between the terminal and off-dock railyards.

## Rail Operations

The Everport Container Terminal's 2013 throughput required an annual average of 1.6 trains per day, and an average of 1.8 trains per day during the peak month. The portion of the TICTF on-dock railyard that serves the Everport Container Terminal handled 230,227 TEUs ( 124,674 TEU imports and 105,553 TEU exports) in 2013. Containers are hauled by yard tractors between the vessel berths and the on-dock railyard. In addition to the throughput handled by TICTF, off dock yards handled 53,791 TEUs. At the railyard,
containers are lifted on and off railcars by top handlers. Both inbound and outbound trains carry an average of the equivalent of 27040 -foot containers; however, the maximum number of containers a train can handle is based on weight considerations. Trains usually carry a mix of 20 - and 40 -foot containers.
Rail operations at the TICTF involve a number of entities. As the terminal operator, ETS moves containers to and from the on-dock facility. Containers are off-loaded and loaded directly from and onto train components known as wells, with each well capable of carrying two 40 -foot containers stacked (i.e., equivalent to four TEU's). Five wells make up a railcar, and each railcar is then coupled with other railcars traveling to the same destination. The coupled railcars are called a unit train. Unit trains vary in length between 21 and 28 railcars ( 105 and 140 wells). The average on-dock train length at the Everport Container Terminal is 25 railcars ( 125 wells), or 7,500 feet. These unit trains are usually built by Pacific Harbor Line (PHL). PHL is a third-party, independent rail company that provides rail transportation, yard switching, maintenance, and dispatching services to the Port Complex.

PHL manages all rail dispatching and switching functions at the on-dock railyards within the Port Complex, including:

- scheduling and overseeing all train movements;
- organizing railroad cars carrying containers of imported goods and switching them onto various tracks to form unit trains;
- breaking down unit trains arriving at the ports, switching railroad cars onto various tracks and distributing them to nine marine terminals where containers are loaded onto ships for export;
- maintaining 60 miles of railroad tracks within the Port Complex; and
- breaking and storing railroad cars awaiting dispatch.

The Port is served by two Class 1 railroads, BNSF and UP, often referred to as the "main line" or "line-haul" rail companies. After PHL has built a unit train, BNSF or UP will hook up their line-haul locomotive(s) to the train and pull the train out of the on-dock railyard on to the main-line tracks to the eventual destination. PHL locomotives will occasionally pull portions of a unit train out of the on-dock facility to the near dock ICTF. A loaded double-stack train is typically pulled by three or four line-haul locomotives although it would be hauled by two or three smaller locomotives if PHL pulls the train.
PHL contracts with LAHD and the Port of Long Beach to operate the centralized traffic control (signaling) system. Agreements with BNSF and UP for international cargo are usually handled by the shipping lines. Many shipping lines have a contract with both BNSF and UP.

## Cargo Handling Equipment

The existing fleet of cargo-handling equipment used at the Everport Container Terminal is as follows:

- 11 forklifts;
- 14 RTG cranes;
- 18 top handlers;
- 6 side picks; and
- 123 yard tractors.

Cargo-handling equipment have useful operating lives, which correspond to the period during which continued operation - with routine maintenance and periodic retrofits - is still cost-effective. At the expiration of useful operating lives or sooner if required by CARB, cargo-handling equipment would be replaced or modified to meet any newly adopted CARB standards.

## Terminal Operating Hours

Currently, Everport Container Terminal operations occur six to seven days per week, and approximately 305 days per year, in two shifts per day (7:00 AM to 6:00 PM, and 6:00 PM to 3:00 AM). The Everport Container Terminal employs approximately 145 union labor employees per day on a typical day, and up to approximately 245 union labor employees under peak conditions.

### 1.3 Project Purpose

The LAHD operates the Port under the legal mandates of the Port of Los Angeles Tidelands Trust (Los Angeles City Charter, Article VI, Section 601) and the California Coastal Act (PRC Division 20 Section 30700 et seq.), which identify the Port and its facilities as a primary economic and coastal resource of the State of California and an essential element of the national maritime industry for the promotion of commerce, navigation, fisheries, and Harbor operations. Activities should be water dependent and the LAHD must give highest priority to navigation, shipping, and necessary support and access facilities to accommodate the demands of foreign and domestic waterborne commerce. The LAHD is chartered to develop and operate the Port to benefit maritime uses, and it functions as a landlord by leasing Port properties to more than 300 tenants.

### 1.3.1 CEQA Project Objectives

The underlying fundamental purpose and Project objective is to optimize the containerhandling efficiency and capacity of the Port to accommodate the projected fleet mix of larger container vessels (up to 16,000 TEUs) that are anticipated to call at the Everport Container Terminal (i.e., Project site) through 2038. The fundamental purpose, in turn, gives rise to the following additional project objectives:

- Optimize the use of existing land at the Everport Container Terminal and associated waterways in a manner that is consistent with the LAHD's public trust obligations;
- Provide sufficient depth along Berths 226-229 and Berths 230-232 to ensure the terminal's ability to accommodate up to 16,000 TEU vessels anticipated to call at the terminal;
- Provide new cranes and raise existing cranes to efficiently service the larger container ships anticipated to call at the terminal;
- Improve the container terminal and container handling facilities to accommodate more efficient loading/unloading of the larger and increased number of ships anticipated to call at the terminal;
- Improve the container terminal backland capacity;
- Maximize container land use and operations at the Everport Container Terminal consistent with the Port Master Plan; and
- Promote the long-term development and growth of the Port.


### 1.3.2 NEPA Purpose and Need

The purpose of the proposed Project is to optimize marine shipping and commerce by upgrading the Everport Container Terminal’s infrastructure in, over, and under water and increasing and improving terminal backlands to accommodate the projected throughput and fleet mix of larger container ships (up to 16,000 TEUs) that are anticipated to call at the terminal through 2038.

The proposed Project is needed for several reasons; however, it is primarily related to an increase in the size of vessels that will be entering the fleet mix throughout the life of the proposed Project. Forecasts show that vessel fleets calling at the Port of Los Angeles and the Everport Container Terminal would include larger vessels (up to 16,000 TEUs), and there is a need to improve Port facilities to accommodate larger vessels. The existing berths that serve the Everport Container Terminal are not deep enough to accommodate the projected fleet mix through 2038 (the existing berths can only accommodate up to 8,000 TEU vessels). These berths would be upgraded (deepened) as part of the proposed Project. In addition to existing berth depth restrictions, additional cranes are needed to efficiently load and unload the larger container ships. Finally, additional container yard backlands are needed to accommodate future operations and the projected Port-wide throughput.

### 1.3.3 Federal Scope of Analysis

In general, the scope of federal review for evaluating the potential impacts of a proposed project is focused on those aspects of the project that affect federal agency jurisdiction. USACE has jurisdiction over activities affecting navigable waters and other waters of the U.S., as well as transport of dredged material for the purpose of ocean disposal.

Under federal law, "the District Engineer should establish the scope of the NEPA document to address the impacts of the specific activity requiring the DA permit and those portions of the entire project over which the District Engineer has sufficient control and responsibility to warrant Federal review" (33 CFR Part 325, Appendix B).

USACE regulations identify four factors to be considered in determining "sufficient federal control and responsibility," which include:

1. whether or not the regulated activity represents merely a link in a corridor-type project;
2. whether there are aspects of the upland facility in the immediate vicinity of the regulated activity that affect the location and configuration of the regulated activity;
3. the extent to which the entire project would be within USACE jurisdiction; and
4. the extent of cumulative federal control and responsibility.

With respect to the first factor, the proposed Project is a container terminal improvement project, which consists of dredging, wharf improvements, addition of overwater cranes,
disposal of dredge material, including potential transport of dredged material for the purpose of ocean disposal, expansion of backlands, and closure of local street sections and rerouting of local traffic. Thus, the regulated activities (dredging, wharf improvements, overwater cranes and potential ocean disposal of dredged material) do not represent "merely a link" in a corridor-type project, such as a highway or a utility line crossing.

Considering the second factor, because the Everport Container Terminal is an existing terminal in the Port, there is a physical connection between the upland areas of the container terminal (the backlands and its portion of the TICTF railyard) and the adjacent wharves and associated cranes in and over waters of the U.S. that support the Everport Container Terminal's operations. While this factor might suggest expanding the scope of analysis to include the upland container yard/backlands, the existing Everport Container Terminal is a fully functioning container terminal that has been operating at this location for many years, and, as such, many of the upland/backland impacts that would or could occur at the site under the proposed Project represent non-jurisdictional activities or operations and the resultant impacts could occur regardless of whether activities regulated by the USACE, as proposed, are authorized. Therefore, the backlands are not considered to be within the Federal Scope of Analysis.

In evaluating the third factor, the extent of waters of the U.S. that would be affected by the proposed Project represents a relatively small portion of the approximately 229-acre Project area. The proposed dredging at Berths 226-229 would impact up to approximately 105,000 square feet ( 2.4 acres) and the dredging at Berths $230-232$ would impact approximately 105,000 square feet ( 2.4 acres) of navigable waters of the U.S. The proposed wharf improvements (new king piles and sheet piles) would take place immediately adjacent to the existing wharf structure and could require access from navigable waters. The five new overwater cranes would be installed on existing crane rails and no direct impact to navigable waters of the U.S. would occur as a result; however, the proposed overwater cranes could affect navigable capacity in the Main Channel by increasing the number or cranes that extend over navigable waters. Based on the above, the USACE's has determined that the extent of the proposed Project within its jurisdiction is based on the area of navigable water potentially affected by the proposed Project (approximately 5.28 acres) and the upland area within 100 feet of the water's edge (wharf pier head line), the area on which the overwater cranes would be installed.

For the fourth factor, other than the requirement to obtain a Department of the Army (DA) permit, there is no other federal involvement on this site that would warrant broadening the federal scope of analysis, such as use, transfer, or sale of federal property; federal funding including cost sharing, guarantee, or financial assistance; or impacts to federally listed historic resources, threatened or endangered species, designated critical habitat, or other federally recognized natural resources. There is also no other federal agency that controls the environmental effects of land development on the upland portions of the Project area, and state and local regulations would control the design of the proposed Project. Further, the federal and non-federal portions of the proposed Project could take place independently of each other.

Based on USACE regulations, including the four factors evaluated above, the appropriate scope of analysis for the federal action consists of permanent and temporary, direct and indirect impacts to waters of the U.S. associated with dredging, dredged material disposal, installation of subsurface king piles and sheet piles, wharf improvements,
raising the heights of up to five of the existing overwater gantry cranes, five new overwater gantry cranes, and construction-related activities in uplands within 100 feet of the water's edge and which are directly traceable to the proposed in/over/under water work and structures. As such, the USACE has determined that construction activities which would take place within 100 feet of the water's edge and are required to complete work and structures in waters of the U.S. (e.g., electrical infrastructure and the travel zone for the new cranes along the existing crane rails) are included in the USACE's scope of analysis and under the USACE's federal control and responsibility.

Based on potential significant indirect and cumulative impacts that are directly traceable to jurisdictional work and structures in navigable waters of the U.S., which are associated with the proposed Project, the USACE is preparing an EIS for the proposed Project and its alternatives. While operational impacts in the uplands would occur outside the jurisdiction and permit authority of USACE, NEPA requires USACE to disclose potentially significant direct, indirect, and cumulative impacts occurring as a result of a proposed federal action. As such, the NEPA analysis herein evaluates construction and operational impacts that would occur within and outside jurisdictional areas of the terminal. Significance of the proposed Project or alternative under NEPA is defined by comparing the impacts of the proposed Project or alternative to the NEPA baseline (i.e., the Project increment). This represents the incremental difference between implementation of the proposed Project or alternative and the future conditions that are likely to occur without federal action, in this case, the issuance of the DA permit. However, the USACE permit decision, mitigation measures and special conditions would focus on direct impacts to the aquatic environment.

### 1.4 Proposed Project

This section describes the proposed improvements to the Everport Container Terminal, the anticipated construction phasing, and the anticipated terminal operations once the improvements are completed. Figure 1-4 shows the Project site improvements.

### 1.4.1 Proposed Project Elements

### 1.4.1.1 Overview

The proposed Project would be constructed in one phase over approximately 24-months and the earliest it could begin would be in 2018. Construction would be performed in a manner that maintains ongoing terminal operations. Under the proposed lease amendment, operation of the proposed Project would continue until 2038. Below is a summary of the improvements that would occur at the terminal, with more detailed descriptions following.
The proposed Project includes improvements to and expansion of the existing Everport Container Terminal currently in operation at Berths 226-236 on Terminal Island in the Port of Los Angeles. This EIS/EIR evaluates the potential impact of the construction and operation of the proposed Project and the Project alternatives. The proposed Project includes:


Aerial Source: County of Los Angeles, 2012

- Dredging (including installation of king piles and approximately 1,400 linear feet of sheet piling to stabilize the wharf) at Berths 226-229 to a design depth of -53 feet mean low low water (MLLW) plus two feet of overdepth tolerance (for a total depth of -55 feet MLLW) to accommodate larger ships (the existing design depth is -45 feet MLLW);
- Dredging (including installation of approximately 1,400 linear feet of sheet piling to stabilize the wharf) at Berths 230-232 to a design depth of -47 feet MLLW plus two feet of overdepth tolerance (for a total depth of -49 feet MLLW) to accommodate larger ships (the existing design depth is -45 feet MLLW);
- Disposal of approximately 38,000 cubic yards of dredged materials ( 30,000 cubic yards from Berths 226-229 and 8,000 cubic yards from Berths 230-232) at an ocean disposal site (i.e., LA-2), an approved upland disposal facility, or a combination of the above;
- Addition of five new 100 -foot gauge A -frame over-water gantry (wharf) cranes manufactured by Shanghai Zhenhua Heavy Industry Co., Ltd. (ZPMC), or equivalent. These additional cranes would be installed upon existing crane rails at Berths 226-229 to accommodate larger ships at the proposed deeper berths. Addition of the new cranes would require infrastructure improvements (such as cable and electrical upgrades);
- The raising of up to five of the existing operational cranes in order to accommodate larger vessels;
- Addition of five AMP vaults (throughout wharf area adjacent to Berths 226 to 232) and associated infrastructure (e.g., electrical conduit and wires);
- Installation of three-foot spacers between the wharf and existing wharf fenders to provide better clearance between the berthed vessels and the new king and sheet piles;
- Development of approximately 1.5 acres of vacant land as new backlands;
- Development of approximately 22 acres as new backlands and modified inbound and outbound gates associated with the relocation of the main gate. The development of the 22 acres would require closure (vacation) of streets within this backlands expansion area (see next bullet) and demolition of existing structures (with the exception of the existing electrical substation);
- Closure of portions of Terminal Way, Barracuda Street, Tuna Street, and Ways Street within the Project site and rerouting of Terminal Way traffic to Cannery Street;
- Improvements to Cannery Street, including: street realignment, pavement improvements, street widening, striping, traffic lighting and signals, drainage, and sidewalk improvements;
- Infrastructure to support 23.5 acres (1.5 + 22 acres) of new backlands (such as lighting, paving, and drainage improvements);
- Amendment of the lease to add approximately 48.5 acres of terminal backlands comprised of approximately 25 acres of existing developed terminal backlands currently under space assignment, and the 23.5 acres ( 1.5 plus 22 acres) of new backland area, for a total terminal acreage of approximately 229 acres; and
- Extension of the facility lease by 10 years for continued operations from the current end date of 2028 to 2038.


### 1.4.1.2 Terminal Improvements

## Dredging and Pilings

The proposed improvements to Berths 226-229 include: 1) dredging to increase the depth from -45 to -53 feet MLLW plus two feet of overdepth tolerance (for a total of -55 feet MLLW); and 2) the installation of approximately 1,400 linear feet of king piles and sheet piles to accommodate the dredging activities and deeper design depth. The maximum tip elevations of the king piles and sheet piles would be approximately 110 feet MLLW, or up to 55 feet below the mudline. Dredging would remove approximately 30,000 cubic yards of sediment from alongside Berths 226-229.
The proposed improvements at Berths 230-232 would include: 1) dredging to increase the depth from -45 to -47 feet MLLW plus two feet of overdepth tolerance (for a total of -49 feet MLLW); and 2) the installation of sheet piles to accommodate the dredging activities and increased design depth. Dredging would remove approximately 8,000 cubic yards of sediment from alongside Berths 230-232. The sheet piles would be installed to approximately - 85 feet MLLW (maximum sheet pile tip elevation of about 36 feet below the mudline) and over approximately 1,400 linear feet along these berths.

Dredging would occur 24 hours per day, for up to eight weeks. In total, approximately 38,000 cubic yards of sediment would be dredged and would require disposal. Disposal options include placement within an approved upland facility or approved ocean disposal site (i.e., LA-2). In addition, a combination of the above dredge material management options could be used.

## Wharf and Crane Improvements

The proposed Project includes installation of three-foot spacers between the wharf and existing wharf fenders to provide better clearance between the berthed vessels and the new king and sheet piles. In addition, the proposed Project includes the raising of up to five of the existing cranes, as well as the installation of five new 100 -foot gauge wharf cranes along the existing crane rail at Berths 226-229. The gauge represents the distance between a crane's rail supports. The new wharf cranes are expected to be similar in size and height as the five largest 100-gauge cranes currently at the Project site, which have an approximate height of 330 feet when stowed at a 45 -degree angle (during crane maintenance activities the cranes can be placed in an 80 -degree angle with a height of about 394 feet). The raised and new cranes would be able to offload cargo from ships loaded up to 22 containers wide. With the addition of the five new cranes under the proposed Project, there would be a total of 13 wharf cranes operating at the Everport Container Terminal. The new larger cranes are expected to be added to the northern end of the wharf, such that the largest cranes would be located along the portion of the wharf with the deepest berth, and the smaller cranes along the southern portions of the wharf.

Improvements associated with the installation of the new cranes include cable and other electrical infrastructure. Trenching/excavating associated with electrical infrastructure required to support the five new cranes would occur within the backlands and adjacent to the existing crane rails. To provide power and communication lines to the five new cranes, five new cable vaults (approximately 10 feet x 8 feet x 9 feet), one high voltage vault (approximately 10 feet x 10 feet x 12 feet), two new fiber optic vaults (approximately 5 feet x 5 feet x 6 feet), and approximately 1,400 feet of conduit (within
trenches ranging from 42 to 54 inches deep and 2 feet wide) would be installed. The proposed vaults and trenching would not include over-excavation.
In addition, two new high voltage vaults (approximately 10 feet x 10 feet x 12 feet), a new switchgear skid (approximately 30 feet x 20 feet x 3 feet), and approximately 1,850 feet of conduit in trenches ranging from 42 to 54 inches deep and 2 feet wide) would be installed in the terminal backlands in order to connect the new crane infrastructure to an existing power source on the terminal.
Further, five new AMP vaults and associated infrastructure (e.g., electrical conduit and wires) would be constructed at various locations within the wharf face of Berths 226 to 232 for a total of eight AMP vaults. The AMP vaults would be approximately 12 feet x 6 feet x 4 feet. The existing substation would be utilized for the new AMP vaults. Three additional pull boxes would be installed to connect the new AMP vaults with the existing substation. The trench depth for the electrical conduit/wires is 42 inches.

## Backland Improvements

Backlands improvements would occur at two locations: the approximately 1.5-acre area adjacent to the PBF Energy (formerly ExxonMobil) liquid bulk terminal at Berths 238240 and the approximately 22 -acre area immediately south of the existing terminal boundary and north of Cannery Street (see Figure 1-4).
The 1.5 -acre site is currently vacant and unpaved. The improvements would consist of placement of engineered fill, followed by the placement of base and pavement. Infrastructure, such as electrical lines, lighting, and drainage would also be installed. The new 1.5 -acre backlands could be used for storing empty containers, chassis, wheeled containers, stacked containers or other purposes, depending on terminal needs.
The 22-acre site is comprised of vacant lots (paved and unpaved) as well as approximately 11 buildings/structures. Development of this 22 -acre area would require demolition of all structures except the electrical substation, site cleanup, grading, followed by paving and development. Lands within the 22-acre area are currently under lease to commercial tenants by the LAHD under revocable permits, and permit revocation would not result in a requirement to relocate the tenants. Infrastructure, such as electrical lines, lighting, and drainage would also be installed. The existing electrical substation would remain operational within the redeveloped terminal, but would be fenced and segregated. Further, electrical infrastructure and connections to the substation may have to be relocated to avoid damage during development of the surrounding areas as backlands. The proposed layout of the Project includes the relocation of the main gate (inbound and outbound lanes) to the newly developed 22-acre area, and would include direct access onto the Project site from Earle Street at Terminal Way. Portions of the 22acre area would also be used to improve the terminal circulation system, and to store chassis' and wheeled or stacked containers, or other terminal uses.
In addition, as part of ongoing and separate activities associated with the former Canner's Steam Company Plant site (a related project), contaminated soil and groundwater cleanup of that site would continue in accordance with the Los Angeles Regional Water Quality Control Board (LARWQCB) standards for the property. Ongoing remediation activities could include groundwater monitoring, extraction, and in-situ chemical oxidation. If required by the LARWQCB and/or LAHD and until the site case is officially closed, semi-annual groundwater monitoring and sampling would continue to document site conditions and to determine whether the site groundwater quality meets site cleanup requirements.

## Street Closures

The expansion of the existing terminal to the 22 -acre area south of the existing boundary would require the closure (vacation) of Terminal Way from Earle Street (on the east) to Seaside Avenue (on the west) and Tuna Street, Ways Street, and Barracuda Street from Terminal Way (on the north) to Cannery Street (on the south). Closure of these streets would require rerouting of traffic. Vehicles traveling on Terminal Way west of Earle Street would be rerouted to Cannery Street. Tuna Street, Ways Street, and Barracuda Street between Terminal Way and Cannery Street are limited north-south roadways that serve only the buildings or parcels that would be demolished or become part of the proposed Project. Vehicles traveling east from Seaside Avenue would travel east on Cannery Street, north on Earle Street, then east on Terminal Way. Drayage trucks going to/from the Project site would access the terminal from Earle Street (through the new gate), and through traffic going to and from Fish Harbor and the portions of Terminal Island along Seaside Avenue would utilize Cannery Street and Seaside Avenue after Terminal Way (between Seaside Avenue and Earle Street) is vacated. All the roadways that would be affected are designated "Local Roads," which would require street vacation approval from the City's Bureau of Engineering. The proposed Project would require utility relocations associated with the street closures. In addition, the proposed Project would include realignment of Cannery Street, as well as pavement improvements, widening, striping, traffic lighting and signals, drainage, and sidewalk improvements along Cannery Street.

### 1.4.1.3 Project Construction Phasing and Schedule

Construction of the proposed Project is expected to take approximately 24 months and the earliest it could begin would be in 2018. In-water construction would be staged such that one vessel could be at berth at any given time. Under this scenario, installation of sheet piles would occur along Berths 230-232, followed by dredging along these berths. Installation of spacers between the wharf and existing wharf fenders at Berths 230-232 would then occur. Operation of the terminal would continue during construction, with vessels utilizing Berths 226-229. Once work is completed at Berths 230 through 232, sheet and king piles would be installed along Berths 226-229, followed by dredging. Installation of spacers between the wharf and existing wharf fenders at Berths 226-229 would then occur. The AMP vaults (to be located at various locations along the wharf) would be constructed beginning the fifth month. Operation of the terminal would continue during construction, with vessels using Berths 230-232. The new cranes would be delivered and installed along the northern berths following in-water construction. The raising of up to five existing cranes would occur throughout the construction period. Backland construction at the 1.5 -acre expansion area would occur concurrent with inwater construction. The following components would be subject to negotiations and an agreement between the Port and ETS: development of the approximately 22 acres as new backlands and relocation of the main gate, the closure of portions of Terminal Way, Barracuda Street, Tuna Street, and Ways Street within the Project site and rerouting of Terminal Way traffic to Cannery Street, as well as the demolition of the remaining buildings within the 22-acre area, including, but not limited to, buildings associated with the former StarKist Tuna Plant and the former Canner’s Steam Company Plant. To be conservative, for the purposes of this Draft EIS/EIR's analysis, it is assumed that the agreement would be finalized such that the demolition and backland construction at the 22-acre expansion area would occur concurrent with the backland development at the 1.5 -acre expansion area and in-water construction.

### 1.4.1.4 Proposed Project Operations

## Lease Amendment

The existing 205-acre container terminal is operated by ETS. ETS (a wholly owned subsidiary of Evergreen Marine Corporation) is the permit holder under a lease agreement (Permit No. 888, as amended) between LAHD and ETS. As part of the proposed Project, the lease would be amended to include the addition of approximately 25 acres of existing terminal backlands currently under space assignment and the addition of approximately 23.5 acres ( 1.5 acres and 22 acres) proposed for backlands development under the proposed Project. The total terminal acreage for the proposed Project is approximately 229 acres. The existing lease began in 1997 and ends in 2028, and the lease amendment would extend the lease period by 10 years, for continued operations through 2038.

## Terminal Operations

The Everport Container Terminal would continue container handling operations, as occurs under existing conditions. At this time, no foreseeable changes in the type of operations, such as terminal automation, are expected through 2038.

## Anticipated Throughput

The proposed Project would improve the container-handling efficiency of the existing Everport Container Terminal at the Port to accommodate the projected fleet mix of larger container vessels (up to 16,000 TEUs) that are anticipated to call at the terminal through 2038. The proposed Project would increase the throughput capacity of the Everport Container Terminal from 1,818,000 TEUs to up to 2,379,525 TEUs annually. Under the proposed Project, maximum throughput is projected to occur by 2033 and remain at that level through 2038. Analysis of the impacts in this EIS/EIR assumes the maximum physical capacity to represent the worst-case scenario and ensure that all reasonably foreseeable and potentially significant adverse environmental impacts are identified and mitigated to the extent feasible. This EIS/EIR analyzes the proposed Project at the end of the new lease term at 2038 with the throughput ramping up in interim study years (2019, 2026, and 2033). The actual throughput levels for the proposed Project may be lower than the projected throughput at capacity as analyzed in this document due to market conditions.

## Ship Operations

Currently, the terminal can service up to two larger vessels (up to 8,000 TEUs) concurrently at the two operating berths. After construction of the proposed Project, the terminal would be able to accommodate up to two larger vessels (one 16,000 TEU vessel and one 10,000 TEU vessel) concurrently. Although the proposed Project would not increase the number of vessels the terminal could manage concurrently, increasing the design depths along the wharf would allow the terminal to accommodate larger vessels with deeper drafts (up to 16,000 TEU vessels). The existing berth depths can accommodate vessels up to 8,000 TEUs, which constrains the existing terminal's capacity to approximately 1.82 million TEUs with 166 existing annual ship calls. The proposed Project would deepen the operating berths to accommodate larger vessels (up to 16,000 TEUs), which would remove the existing berth capacity constraint and allow the terminal to handle up to $2,379,525$ TEUs annually. By 2038, at 2,379,525 TEUs, the terminal is anticipated to receive 208 annual ship calls, along with associated tugboats (2 tugs are required for each vessel move).

## Rail Operations

In 2013, the Everport Container Terminal's throughput required an annual average of 1.6 trains per day, and an average of 1.8 trains per day during the peak month. The portion of the TICTF on-dock railyard that serves the Everport Container Terminal handled 230,227 TEUs (124,674 TEU imports and 105,553 TEU exports) in 2013. Under the proposed Project, the volume of cargo passing through the Everport Container Terminal's portion of the TICTF on-dock railyard is projected to increase from 230,227 TEUs in 2013 to 606,341 TEUs through 2038. The Everport Container Terminal’s 2038 throughput is projected to result in an annual average of 5.0 trains per day, and an average of 5.6 trains per day during the peak month. The proposed Project would not make changes to the capacity of the Everport portion of TICTF, which would remain at 606,341 TEUs annually.
The existing TICTF on-dock railyards is projected to have slightly less capacity than the full amount of anticipated demand for on-dock rail facilities associated with the maximum terminal throughput of $2,379,525$ TEUs. The volume of cargo passing through off-dock railyards is projected to increase from 53,791 TEUs in 2013 to 345,469 TEUs through 2038. The percentage of terminal throughput that would be handled by on-dock rail is expected to increase from approximately 18.6 percent in 2013 to approximately 25.5 percent by 2038, and off-dock railyards from approximately 4.3 percent in 2013 to approximately 14.5 percent by 2038. Loading, unloading, and hauling of rail cars would occur as it does under existing conditions.
In addition to transportation of cargo by on-dock rail, draying of containers to near- and off-dock facilities would continue to occur under the proposed Project, just as it occurs under existing conditions. Generally, trains are composed of containers that are all destined for one location. Where there is not a sufficient number of containers destined for the same location to make up a train, those containers are hauled to near- and off-dock facilities to be grouped with containers from other terminals bound for that same destination. Trucks would haul those containers on public highways to and from offdock railyards, including the UP Carson ICTF, the BNSF Hobart Yard in Vernon, and the UP East Los Angeles Yard.

## Truck Operations

In 2013, existing terminal operations resulted in 4,505 daily one-way truck trips (within the peak month) and $1,112,735$ annual truck trips. Based on the anticipated mode splits for the proposed Project, the throughput capacity of 2,379,525 TEUs by 2038 would require a total of 7,028 average daily truck trips in the peak month, and 1,735,916 annual truck trips. Of the approximately $1,427,715$ TEUs projected to be transported by trucks by 2038, approximately 345,469 TEUs (approximately 24 percent) would be intermodal cargo trucked to off-dock railyards.

## Cargo-handling Equipment

The existing types of cargo handling yard equipment (such as RTG, side picks, top handlers, yard tractors and forklifts) are not expected to change as part of the proposed Project. As throughput increases, equipment would be added.

## Terminal Operating Hours

The terminal operating hours are not expected to change from existing conditions (24hour operations). Existing container handling activities largely occur across two shifts, but occasionally across three shifts during periods of high demand. Under the proposed

Project, container-handling activities would occur across three shifts to accommodate the higher throughput levels. The number of employees working at the terminal is expected to increase from an average daily total of 145 in 2013 to approximately 999 by 2038. The terminal is run as a continuous operation, in which more employees are hired to supplement operations as needed.

### 1.5 Port of Los Angeles Plans and Programs

LAHD has implemented a variety of plans and programs to reduce the environmental effects associated with operations at the Port. These programs include, but are not limited to the following: the San Pedro Bay Ports Clean Air Action Plan (CAAP), Water Resources Action Plan (WRAP), and Sustainable Construction Guidelines. All of these efforts ultimately reduce adverse environmental effects. Furthermore, LAHD is aggressively studying zero-emission technology with the intent of integrating zero emission equipment into terminal operations

### 1.5.1 Clean Air Action Plan (CAAP)

The Ports of Los Angeles and Long Beach, with the participation and cooperation of the staff of the USEPA, CARB, and SCAQMD, prepared the San Pedro Bay Ports CAAP, a planning and policy document that sets goals and implementation strategies to reduce air emissions and health risks associated with Port operations while allowing Port development to continue. In addition, the CAAP sought the reduction of criteria pollutant emissions to the levels that assure Port-related sources decrease their "fair share" of regional emissions to enable the South Coast Air Basin to attain state and federal ambient air quality standards. Each individual CAAP measure is a proposed strategy for achieving these emissions reductions goals. The Ports approved the first CAAP in November 2006.
The CAAP focuses primarily on reducing diesel particulate matter (DPM), along with nitrogen oxides $\left(\mathrm{NO}_{\mathrm{x}}\right)$ and sulfur oxides $\left(\mathrm{SO}_{\mathrm{x}}\right)$. This strategy reduces emissions and health risk and thereby allows for future Port growth while progressively controlling the impacts associated with such growth. The CAAP includes emission control measures as proposed strategies that are designed to further these goals expressed as Source-Specific Performance Standards which may be implemented through the environmental review process, or could be included in new leases or Port-wide tariffs, Memoranda of Understanding (MOU), voluntary action, grants, or incentive programs.

The CAAP Update, adopted in November 2010, includes updated and new emission control measures as proposed strategies that support the goals expressed as the Source-Specific Performance Standards and the Project-Specific Standards. In addition, the CAAP Update includes the recently developed San Pedro Bay Standards, which establish emission and health risk reduction goals to assist the Ports in their planning for adopting and implementing strategies to significantly reduce the effects of cumulative Port-related operations.

The goals set forth as the San Pedro Bay Standards are the most significant addition to the CAAP and include both a Bay-wide health risk reduction standard and a Bay-wide mass emission reduction standard. Ongoing Port-wide CAAP progress and effectiveness will be measured against these Bay-wide Standards, which consist of the following reductions as compared to 2005 emissions levels:

- Health Risk Reduction Standard: 85 percent reduction in DPM by 2020
- Emission Reduction Standards:
o By 2014, reduce emissions by 72 percent for DPM, 22 percent for $\mathrm{NO}_{\mathrm{x}}$, and 93 percent for $\mathrm{SO}_{\mathrm{X}}$
o By 2023, reduce emissions by 77 percent for DPM, 59 percent for $\mathrm{NO}_{\mathrm{x}}$, and 92 percent for $\mathrm{SO}_{\mathrm{X}}$
The Project-Specific Standard remains as adopted in the original CAAP in 2006, that new projects don't exceed a 10 in $1,000,000$ excess residential cancer risk threshold, as determined by health risk assessments conducted subject to CEQA statutes, regulations, and guidelines, and implemented through required CEQA mitigations and/or lease negotiations. Although each Port has adopted the Project-Specific Standard as a policy, the Board of Harbor Commissioners retain the discretion to consider and approve projects that exceed this threshold if the Board deems it necessary by adoption of a statement of overriding considerations at the time of project approval.

This EIS/EIR analysis assumes compliance with the 2010 CAAP Update. Proposed Project-specific mitigation measures applied to reduce air emissions and public health impacts are consistent with, and in some cases exceed, the emission-reduction strategies of the CAAP.

In 2016, the Ports began the process of updating the CAAP to produce the third version. The scope and framework of this CAAP 3.0 Update continues to look at the five major mobile sources of air pollution in and around the ports, while placing new Bay-wide Standards for the future. In addition, the CAAP will be expanded to address the following:

- zero-emissions technologies
- greenhouse gas emissions reductions
- energy strategies
- supply chain optimization


## Zero Emission Equipment

While the CAAP has been very successful at encouraging substantial emission reductions, further reductions are needed as port throughput continues to increase in the coming years. Furthermore, important greenhouse gas reduction deadlines approaching in the next few years, the LAHD has identified zero emission equipment as a critical element to be integrated into marine related goods movement in the future.

In 2011, the LAHD and the Port of Long Beach released a Zero Emission Technologies Roadmap to establish an initial plan for identifying technologies to pursue demonstrations to advance zero emission technology development. In July 2015, the LAHD released a draft Zero Emission white paper. The LAHD has provided over \$7 million in funding for projects aimed at developing zero emission technology for shorthaul drayage trucks and on-terminal yard tractors. Initial zero emission vehicle testing has shown mixed results, but more recent progress has been made that reinforces the LAHD's belief that zero emission container movement technologies show great promise for helping to reduce criteria pollutant and greenhouse gas emissions in the future.

The LAHD, working collaboratively with the Port of Long Beach and several stakeholders and partnerships, is committed to expanded development and testing of zero emission technologies, identification of new strategic funding opportunities to support these expanded activities, and new planning for long-term infrastructure development to sustain developed programs, all while ensuring competitiveness among the maritime goods movement businesses.

### 1.5.2 Water Resources Action Plan (WRAP)

Both LAHD and the Port of Long Beach face ongoing challenges from contaminants that remain in Port sediments, flow into the harbor from Port land, and flow from upstream sources in the watershed, well beyond the Ports' boundaries. Therefore, the Ports undertook a collaborative, scientific effort to address existing and potential sources of water and sediment pollution. Building on the collaborative model developed by the CAAP, under the WRAP the Ports will continue to work together and with other stakeholders to achieve further progress in water and sediment quality improvement. The WRAP establishes a program of water quality improvement measures necessary to achieve the goals and targets that will be established by the LARWQCB in upcoming regulations. The WRAP targets the four basic types of potential sources of pollutants to harbor waters (land use discharges, on-water discharges, sediments, and watershed discharges) and includes control measures zeroing in on known and potential sources of water and sediment contamination in the harbor area.

### 1.5.3 Port of Los Angeles Sustainable Construction Guidelines

LAHD adopted the Port of Los Angeles Sustainable Construction Guidelines in February 2008. The guidelines are used to establish air emission criteria for inclusion in bid specifications for construction. The guidelines reinforce and require sustainability measures during performance of the contracts, balancing the need to protect the environment, be socially responsible, and provide for the economic development of the Port. Future resolutions are anticipated to expand the guidelines to cover other aspects of construction, as well as planning and design. These guidelines support the Port Sustainability Program. The intent of the guidelines is to facilitate the integration of sustainable concepts and practices into all capital projects at the Port and to phase in the implementation of these procedures in a practical, yet aggressive, manner. These guidelines are made a part of all construction specifications advertised for bids.

### 1.5.4 Other Environmental Programs

## Air Quality

Alternative Maritime Power. AMP reduces emissions from container vessels docked at the Port. Normally, ships shut off their propulsion engines when at berth, but use auxiliary diesel generators to power electrical needs such as lights, pumps, and refrigerator units. These generators emit an array of pollutants, primarily $\mathrm{NO}_{x}, \mathrm{SO}_{x}$, and particulate matter ( $\mathrm{PM}_{10}$ and $\mathrm{PM}_{2.5}$ ). The Port is in the process of providing shore-based electricity as an alternative to running the generators (a process also referred to as cold ironing). The AMP program allows ships to "plug-in" to shoreside electrical power while at dock instead of using on-board generators, a practice that will dramatically reduce emissions. Before being used at the Port, AMP was used commercially only by the
cruise ship industry in Juneau, Alaska. Now, Port AMP facilities have been installed and are currently in use at China Shipping Terminal, Yusen Terminal, Everport Container Terminal (the Project site), TraPac Terminal, and the Cruise Ship Terminal among others. AMP has been incorporated into the CAAP as a project-specific measure.

Off-Peak Program. Extending cargo terminal operations by five night and weekend work shifts, the Off-Peak Program, managed by PierPASS (an organization created by marine terminal operators) has been successful in increasing cargo movement, reducing the waiting time for trucks inside Port terminals, and reducing truck traffic during peak daytime commuting periods.

On-Dock Rail and the Alameda Corridor. Use of rail for long-haul cargo is acknowledged as an air quality benefit. Four existing on-dock railyards at the Port, including the existing on-dock facility on the Project site, significantly reduce the number of short-distance truck trips (the trips that normally would convey containers to and from off-site railyards). Combined, these intermodal facilities eliminate an estimated 1,400,000 truck trips per year and the emissions and traffic congestion that go along with them. A partner in the Alameda Corridor project, the Port is using the corridor to transport cargo to downtown railyards at 10 to 15 miles per hour faster. Use of the Alameda Corridor allows cargo to travel the 20 miles to downtown Los Angeles at a faster pace and promotes the use of rail versus truck. In addition, the Alameda Corridor eliminates $200 \mathrm{rail} /$ street crossings and emissions produced by cars with engines idling while the trains pass. In 2004, the Port of Los Angeles Board of Harbor Commissioners adopted an Intermodal Rail Policy to guide the development of additional rail facilities, to reduce the number and length of truck trips in the Port area, and to achieve reductions in rail-related air emissions. The Port Resolution:

- Provides for on-dock and comparable near-dock intermodal facilities for shippers, carriers, terminal operators, and Class I railroads;
- Ensures all Port customers are utilizing on-dock intermodal rail to the fullest extent feasibly possible;
- Ensures sufficient rail capacity is maintained to increase rail usage, meet future demand, and adapt to evolving intermodal rail operations;
- Provides the opportunity to direct local movements of cargo from truck to rail;
- Encourages Port customers to pool container cargo and share on-dock and-near dock rail facilities to the fullest extent feasible.
Tugboat Retrofit Project. The engines of several tugboats in the Port were replaced with ultra-low-emission diesel engines. This was the first time such technology had been applied to such a large engine. Emissions testing showed a reduction of more than 80 tons of $\mathrm{NO}_{\mathrm{x}}$ per year, nearly three times better than initial estimates. Under the Carl Moyer Program, ${ }^{1}$ the majority of tugboats operating in the Port Complex have been retrofitted.

[^0]Electric and Alternative Fuel Vehicles. LAHD has converted more than 35 percent of its fleet to electric or alternative-fuel vehicles. These include heavy-duty vehicles and passenger vehicles. LAHD proactively has embarked on the use of emulsified fuels that are verified by CARB to reduce diesel particulates by more than 60 percent compared to diesel-powered equipment.

Electrified Terminal Operating Equipment. The approximately 86 ship-loading cranes currently in use at the Port operate under electric power. In addition, numerous other terminal operations equipment has been fitted with electric motors.

Yard Equipment Retrofit Program. Over the past five years, diesel oxidation catalysts have been applied to nearly all yard tractors at the Port. This program has been carried out with Port funds and funding from the Carl Moyer Program.

Vessel Speed Reduction Program. Under this voluntary program, oceangoing vessels slow to 12 knots when within 20 and 40 nautical miles of the entrance to Los Angeles Harbor, thus reducing emissions from main propulsion engines. As of 2014, approximately 100 percent of ships comply with the voluntary program within 20 nautical miles and 95 percent comply within 40 nautical miles.

## Everport Enhanced Cargo Demonstration Project(s)

ETS (through LAHD) was awarded a grant from the California Energy Commission (CEC) in late 2016 to commission a demonstration project for five zero-emission yard tractors, and 20 near-zero-yard tractors equipped with the California Air Resources Board certified Cummins Westport Low NOx engines ( 0.02 grams of nitrogen oxides/brake horsepower-hour) at the Everport Container Terminal. To further reduce greenhouse gases the near-zero-emission yard tractors will be fueled with renewable liquefied natural gas provided by Clean Energy via a mobile liquefied natural gas fueling system. This demonstration project is expected to begin in mid-2018 and last for 12 months.

In addition, the LAHD was awarded a second CEC grant in early 2017 to commission a demonstration project for two zero-emission battery electric top handlers and three additional zero-emission battery electric yard tractors to undergo a demonstration project at the Everport Container Terminal as well. This demonstration project will be followed and included into Lease Measure (LM) AQ-1 regarding the periodic review of new technology (refer to Section 3.2.4.7 in Section 3.2, Air Quality and Meteorology, for a description of LM AQ-1). This demonstration project is expected to begin in Summer 2019 and last for 12 months.

The project will take the next step toward demonstration of an entire zero emissions pathway throughout the marine container terminal for cargo handling equipment, starting with the electric ship-to-shore cranes unloading cargo to zero-emission yard tractors to zero-emission top handlers to receive cargo to the yard trucks and either stack containers or load drayage trucks/trains for departure to the terminal.
The demonstration project will also integrate an Electric Truck Smart Plug-In System which will automatically connect and automatically disconnect from zero-emission yard tractors. This system, first of its kind, if successful, will be the standard for connecting zero-emission yard tractors to grid power, which is expected to be safer and more efficient way to connect zero-emission equipment to electrical power for vehicle charging. The zero-emission top handlers will be charged with standard infrastructure.

The design for a Smart Plug-In System for zero-emission top handlers has not been engineered for this project.

## Water Quality

Water Quality Monitoring. LAHD has been monitoring water quality at 31 established stations in San Pedro Bay since 1967, and the water quality today at the Port is among the best of any industrialized port in the world. Samples are tested on a monthly basis for dissolved oxygen, biological oxygen demand, and temperature. Other observations are noted, such as odor and color, as well as the presence of oil, grease, and floating solids. The overall results of this long-term monitoring initiative show the tremendous improvement in harbor water quality that has occurred over the last four decades.

Inner Cabrillo Beach Water Quality Improvements. The Port is one of the few industrial ports in the world to have a swimming beach. Inner Cabrillo Beach provides quiet water for families with small children. However, in recent years, upland runoff has resulted in high levels of bacteria in shoreline waters. LAHD has invested hundreds of thousands of dollars in water circulation/quality models and studies to investigate the problem. Recently, LAHD repaired storm drains and sewer lines, replaced poor quality beach sand with clean sand, removed the groin at the north end of the beach, and installed a bird exclusion device, all as part of its commitment to make sure that Inner Cabrillo Beach continues to be an important regional recreational asset, but more importantlyimprove water quality. In 2004, the LARWQCB adopted an Amendment to the Water Quality Control Plan to incorporate the Los Angeles Harbor Bacteria Total Maximum Daily Load (TMDL). The TMDL was developed to address impairments of water quality standards by coliform and beach closures at Inner Cabrillo Beach and the Main Ship Channel at the Port. A TMDL specifies the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and allocates the pollutant loadings to point and nonpoint sources.

## Habitat Management and Endangered Species

California Least Tern Site Management. The federal- and state-endangered California least tern (a species of small sea bird) nests from April through August on Pier 400 in the Port adjacent to the Pier 400 container terminal. Through an interagency nesting site agreement, LAHD maintains, monitors, and protects the approximately 15 -acre nesting site on Pier 400.

Interagency Biomitigation Team. As part of the development of mitigation for the Deep-Draft Navigation Improvements, including the Pier 400 Landfill, the Port Complex helped establish an interagency mitigation team to evaluate and provide solutions for impacts of landfill and terminal construction on marine resources in the Ports. The primary agencies involved include USACE, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife. A number of mitigation agreements have been established through this coordination, and the team continues to meet as necessary to address environmental issues associated with Port development and operations.

## General Port Environmental Programs

Green Building Policy. In August 2007, LAHD adopted a Green Building Policy, which outlines the environmental goals for newly constructed and existing buildings, dictates
the incorporation of solar power and technologies that are efficient with respect to the use of energy and water, dedicates staffing for the advancement and refinement of sustainable building practices, and maintains communication with other City of Los Angeles departments for the benefit of the community. The policy incorporates sustainable building design and construction guidelines based on the U.S. Green Building Council Leadership in Energy and Environmental Design Green Building Rating System.

Recycling. LAHD incorporates a variety of innovative environmental ideas into its construction projects. For example, when building an on-dock rail facility, LAHD saved nearly $\$ 1,000,000$ and thousands of cubic yards of landfill space by recycling existing asphalt pavement instead of purchasing new pavement. LAHD also maintains an annual contract to crush and recycle broken concrete and asphalt. In addition, LAHD successfully has used recycled plastic products, such as fender piles and protective front-row piles, in many wharf construction projects.

### 1.6 Changes to the Draft EIS/EIR

Actual changes to the text, organized by Draft EIS/EIR chapters and sections, can be found in Chapter 3, "Modifications to the Draft EIS/EIR," of this Final EIS/EIR. The changes to the Draft EIS/EIR have been made for the purpose of correcting and clarifying information contained within the Draft EIS/EIR based on comments received from the public. Changes noted in Chapter 3 are identified by text strikeout and underline. These changes are referenced in Chapter 2, "Responses to Draft EIS/EIR Comments," of this Final EIS/EIR, where applicable. The project description is presented above and summarized in the Executive Summary, incorporating the editorial changes noted in the Responses to Comments and other minor corrections.

The changes and clarifications presented in Chapter 3 of the Final EIS/EIR were reviewed to determine whether or not they warranted recirculation of the Draft EIS/EIR prior to certification of the EIS/EIR according to CEQA and NEPA Guidelines and Statutes. The changes would not result in any new significant environmental impacts or a substantial increase in the severity of an existing environmental effect. In response to public comments, changes and clarifications have been made throughout the Draft EIS/EIR. The changes are consistent with the findings contained in the environmental impact categories in Chapter 3, "Environmental Analysis," of the Draft EIS/EIR, as amended. There would be no new or increased significant effects on the environment due to the proposed project changes, and no new alternatives have been identified that would reduce significant effects of the proposed Project. Therefore, the Draft EIS/EIR does not need to be recirculated, and the EIS/EIR can be certified without additional public review, consistent with PRC Section 21092.1 and CEQA Guidelines Section 15088.5, and NEPA regulations in 40 Code of Federal Regulations 1502 and 1503.

### 1.7 References

Port of Los Angeles (POLA). 2015. Tonnage Statistics. Available: http://www.portofla.org/maritime/tonnage.asp. Accessed January 2015.

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### 2.1 Distribution of the Draft EIS/EIR

The Draft EIS/EIR prepared for the LAHD and USACE was distributed to the public and regulatory agencies on August 20, 2017, for a 45-day review period. Approximately 162 printed and digital copies (CD) of the Draft EIS/EIR were distributed to various government agencies, organizations, individuals, and Port tenants. The USACE also published a Notice of Availability (NOA) of the Draft EIS/EIR in the Federal Register (Volume 82, No. 76 page 18759) and published a Public Notice, both on April 21, 2017. LAHD, in cooperation with the USACE, conducted a public hearing regarding the Draft EIS/EIR on May 10, 2017, to provide an overview of the proposed Project and alternatives and to accept public comments on the proposed Project, alternatives, and environmental document.

Printed and digital copies of the Draft EIS/EIR were available for review at the following locations:

- Los Angeles Harbor Department, Environmental Management Division, 222 West 6th Street, Suite 900, San Pedro, CA 90731
- Los Angeles Public Library - Central Branch, 630 West $5^{\text {th }}$ Street, Los Angeles, CA 90071
- Los Angeles Public Library - San Pedro Branch, 931 South Gaffey Street, San Pedro, CA 90731
- Los Angeles Public Library - Wilmington Branch, 1300 North Avalon, Wilmington, CA 90744
In addition to printed copies of the Draft EIS/EIR, digital copies were made available in response to specific requests. Due to the size of the document, the digital copies were prepared as a series of PDF files to facilitate downloading and printing. Members of the public were also invited to request a CD containing the EIS/EIR. Digital copies of the Draft EIS/EIR on CD were available free of charge to interested parties. The Draft EIS/EIR was available in its entirety on the Port web site at http://www.portoflosangeles.org/environmental/publicnotice.htm, with the public notice available online at www.spl.usace.army.mil/regulatory/POLA.htm. The USACE NOA and Public Notice were also made available online at www.federalregister.gov, and www.spl.usace.army.mil/Missions/CivilWorks/Regulatory, respectively.


### 2.2 Comments on the Draft EIS/EIR

The public comment and response component of the NEPA/CEQA process serves an essential role. It allows the respective lead agencies to assess the impacts of a project based on the analysis of other responsible, concerned, or adjacent agencies and interested parties, and it provides an opportunity to amplify and better explain the analyses that the lead agencies have undertaken to determine the potential environmental impacts of a project. To that extent, responses to comments are intended to provide complete and thorough explanations to commenting agencies and individuals, and to improve the overall understanding of the Project for the decision-making bodies.

The USACE and LAHD received 21 comment letters on the Draft EIS/EIR during the public review period. Four verbal comments were received at the public hearing. Table 21 presents a list of those agencies, organizations, and individuals who commented on the Draft EIS/EIR.

Table 2-1: Public Comments Received on the Draft EIS/EIR

| Letter Code | Date | Individual/Organization | Page |
| :---: | :---: | :---: | :---: |
| Federal Government |  |  |  |
| NMFS | 05/31/17 | Bryant Chesney, U.S. Dept. of Commerce, National Oceanic and Atmospheric Admin., National Marine Fisheries Service | 2-24 to 2-25 |
| USDOI | 06/04/17 | Janet L. Whitlock, Regional <br> Environmental Officer, U.S. Dept. of the Interior | 2-26 to 2-27 |
| USEPA | 06/05/17 | Kathleen Martyn Goforth, Mgr., <br> Environmental Review Section, U.S. <br> Environmental Protection Agency, Region IX | 2-28 to 2-45 |
| USFWS | 06/05/17 | Jonathan Snyder for Karen A. Goebel, Asst. Field Supervisor, U.S. Dept. of the Interior, Fish and Wildlife Service, Ecological Services | 2-46 to 2-49 |
| State Government |  |  |  |
| DTSC | 05/19/17 | Department of Toxic Substances Control | 2-50 to 2-57 |
| DOT | 05/24/17 | DiAnna Watson, IGR/CEQA Branch <br> Chief, California Dept. of Transportation, <br> District 7 - Office of Regional Planning | 2-58 to 2-59 |
| CARB | 06/05/17 | Elizabeth Yura, Chief, Emissions Assessment Branch, Transportation and Toxics Division, California Air Resources Board | 2-60 to 2-80 |
| Regional and Local Government |  |  |  |
| BOS | 05/01/17 | Ali Poosti, Division Mgr., City of Los Angeles, Bureau of Sanitation, | 2-81 to 2-83 |


| Letter Code | Date | Individual/Organization | Page |
| :---: | :---: | :---: | :---: |
|  |  | Wastewater Engineering Services Division |  |
| SCAQMD | 06/02/17 | Jillian Wong, Ph.D., Planning and Rules Mgr., Planning, Rule Development \& Area Sources, South Coast Air Quality Management District | 2-84 to 2-103 |
| Organizations |  |  |  |
| JTR | 04/20/17 | John Tommy Rosas, Tribal Administrator, Tongva Ancestral Territorial Tribal Nation | 2-104 to 2-105 |
| CCSC | 06/05/17 | Dr. Tom Williams, Sr. Technical Advisor, Citizens Coalition for a Safe Community | 2-106 to 2-110 |
| CFSE | 06/05/17 | Coalition for a Safe Environment | 2-111 to 2-133 |
| EJ | 06/05/17 | Adrian Martinez, Staff Attorney, Earthjustice | 2-134 to 2-136 |
| LAC | 06/05/17 | Gary Toebben, President \& CEO, Los Angeles Area Chamber of Commerce | 2-137 to 2-138 |
| NRDC | 06/05/17 | Melissa Lin Perrella, Natural Resources Defense Council | 2-139 to 2-146 |
| PMSA | 06/05/17 | Thomas Jelenić, Vice President, Pacific Merchant Shipping Association | 2-147 to 2-148 |
| Individuals/Companies |  |  |  |
| MK | 05/03/17 | Michelle Kosik | 2-149 to 2-150 |
| IB | 05/07/17 | ibeahimaadji1 | 2-151 to 2-152 |
| HP | 05/15/17 | Stephane de Bord, Hellman Properties | 2-153 to 2-154 |
| VICA | 06/01/17 | Kevin Tamaki, Chair, and Stuart Waldman, President, Valley Industry and Commerce Association | 2-155 to 2-156 |
| MCC | 06/05/17 | George H. Atkinson, Vice President and So. CA Area Mgr., Manson Construction Company | 2-157 to 2-159 |
| Draft EISIEIR Public Hearing - Transcript |  |  |  |
| PH1 | May 10, 2017 | Melissa Lin Perrella, Natural Resources Defense Council | $\begin{aligned} & \text { 2-177 to 2-178 } \\ & \text { and 2-186 } \end{aligned}$ |
| PH2 | May 10, 2017 | Jesse Marquez, Coalition for a Safe Environment | $\begin{aligned} & 2-178 \text { to } 2-180 \\ & \text { and 2-186 to } 2- \\ & 187 \end{aligned}$ |
| PH3 | May 10, 2017 | Kathleen Woodfield, San Pedro Peninsula Homeowners Coalition | $\begin{aligned} & \text { 2-181 to 2-182 } \\ & \text { and 2-187 to } 2- \\ & 188 \end{aligned}$ |
| PH4 | May 10, 2017 | David Therrien | $\begin{aligned} & 2-182 \text { to } 2-184 \\ & \text { and 2-188 } \end{aligned}$ |

### 2.3 Responses to Comments

In accordance with NEPA (23 CRR Part 771) and CEQA (Guidelines Section 15088), the USACE and LAHD have evaluated the comments on environmental issues received from agencies and other interested parties and have prepared written responses to each comment pertinent to the adequacy of the environmental analyses contained in the Draft EIS/EIR. In implementing regulations 23 CFR Part 771 of NEPA and specific compliance with CEQA Guidelines Section 15088(b), the written responses address the environmental issues raised. In addition, where appropriate, the basis for incorporating or not incorporating specific suggestions into the proposed Project is provided. In each case, the USACE and LAHD have expended a good faith effort, supported by reasoned analysis, to respond to comments.

This section includes responses not only to the written comments received during the 45day public review period of the Draft EIS/EIR, but also verbal comments made at the public hearing for the Draft EIS/EIR. Some comments have prompted revisions to the text of the Draft EIS/EIR, which are referenced and shown in Chapter 3, "Modifications to the Draft EIS/EIR." A copy of each comment letter/comment is provided, and responses to each comment letter immediately follow. All of the comments received and the responses to those comments will be considered by the decision-makers prior to taking any action on the proposed Project.

Several comments on the Draft EIS/EIR claimed that the document should be revised and recirculated for additional public review and comment. The following response discusses the standards generally applicable to this issue, particularly under CEQA, and applies those standards to the comments requesting recirculation.

A lead agency is required to recirculate a Draft EIR when the agency adds "significant new information" to the EIR after the close of the public comment period but prior to certification of the Final EIR (Public Resources Code Section 21092.1; State CEQA Guidelines Section 15088.5.). "New information added to an EIR is not 'significant' unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement" (State CEQA Guidelines Section 15088.5(a)). "Significant" new information includes information showing that "(1) [a] new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented [;] or (2) [a] substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance" (State CEQA Guidelines Section 15088.5 (a)(1), (a)(2)).

The Resources Agency adopted Section 15088.5 of the State CEQA Guidelines in order to incorporate the California Supreme Court's decision in Laurel Heights Improvement Assn. v. Regents of the Univ. of Cal. (1993) 6 Cal.4th 1112. According to the Supreme Court, the rules governing recirculation of a Draft EIR are "not intend[ed] to promote endless rounds of revision and recirculation of EIRs" (Laurel Heights II, supra, 6 Cal.4th at p. 1132). Instead, recirculation is "an exception, rather than the general rule" (Mount Shasta Bioregional Ecology Center v. County of Siskiyou (2012) 210 Cal.App.4th 184, 221).

Under these standards, a change to a proposed project, made in response to comments on a Draft EIR, generally does not trigger the obligation to recirculate the Draft EIR. "The CEQA reporting process is not designed to freeze the ultimate proposal in the precise mold
of the initial project; indeed, new and unforeseen insights may emerge during investigation, evoking revision of the original proposal" (County of Inyo v. City of Los Angeles (1977) 71 Cal.App.3d 185, 199; see River Valley Preservation Project v. Metropolitan Transit Development Bd. (1995) 37 Cal.App.4th 154, 168, fn. 11).

As these cases recognize, CEQA encourages the lead agency to respond to concerns as they arise, by adjusting a project or developing mitigation measures, as necessary. That a project evolves to address such concerns is evidence of an agency performing meaningful environmental review. A rule requiring recirculation of the Draft EIR any time a project changes would have the perverse unintended effect of calcifying or freezing the original proposal, and of penalizing the lead agency or the project sponsor for revising the project in ways that may be environmentally benign or even beneficial. In light of this policy concern, the courts uniformly hold that the lead agency need not recirculate the Draft EIR merely because the proposed project evolves during the environmental review process. (See, e.g., Citizens for a Sustainable Treasure Island v. City and County of San Francisco (2014) 227 Cal.App.4th 1036, 1061-1065 [project modification requiring consultation with Coast Guard regarding building designs did not require recirculation of Draft EIR]; South County Citizens for Smart Growth v. County of Nevada (2013) 221 Cal.App.4th 316, 329-332 [identification of staff-recommended alternative after publication of Final EIR did not trigger obligation to recirculate Draft EIR because alternative resembled other alternatives that the EIR had already analyzed]; Western Placer Citizens for an Agricultural and Rural Environment v. County of Placer (2006) 144 Cal.App.4th 890, 903-906 [revision in phasing plan did not trigger recirculation requirement because revision addressed environmental concerns identified during EIR process].)

Similarly, information that clarifies or expands on information in the Draft EIR/EIS does not require recirculation. (See, e.g., North Coast Rivers Alliance v. Marin Municipal Water Dist. Bd. of Directors (2013) 216 Cal.App.4th 614, 654-656 [addition of a hybrid alternative to the Final EIR did not trigger duty to recirculate the Draft EIR]; Clover Valley Foundation v. City of Rocklin (2011) 197 Cal.App.4th 200, 219-224 [information regarding presence of cultural resources on property did not require recirculation because information amplified on information that was already in Draft EIR]; California Oak Foundation v. Regents of Univ. of Cal. (2010) 188 Cal.App.4th 227, 266-268 [letters addressing seismic risks did not trigger duty to recirculate Draft EIR, where letters recommended further analysis but did not contradict conclusions in Draft EIR]; Cadiz Land Co. v. Rail Cycle, L.P. (2000) 83 Cal.App.4th 74, 97 [commenter's disagreement with analysis of groundwater flow in EIR did not require recirculation because substantial evidence supported EIR's analysis; lead agency had discretion regarding which expert to rely upon]; Marin Municipal Water Dist. v. KG Land California Corp (1991) 235 Cal.App.3d 1652, 1666-1668 [clarifying information regarding potential length of moratorium was not "significant new information"].)

The following discussion applies these standards to the comments stating that the LAHD should recirculate the Draft EIR. In particular, the discussion focuses on whether the information provided in the comment is new, and whether that information discloses:

- A new significant impact that the project or mitigation would cause,
- An impact that would be substantially more severe unless mitigation is adopted that avoids the impact,
- A feasible project alternative is available that would avoid a significant impact, but the applicant will not adopt it, or
- That the Draft EIR is "fundamentally and basically inadequate" such that meaningful public comment was precluded (CEQA Guidelines Section 15088.5(a)).

In the instance of the EIS/EIR, a number of comments were provided on the document. Comments were provided on nearly every impact addressed in the EIS/EIR. Further, comments were also provided on the alternatives.

The responses to comments are extensive, in large part because the comments were also extensive. The responses to comments provide the following information:

- First and foremost, the responses address the environmental concerns raised by the comments, and describe how they are addressed in the document;
- They provide corrections to the text, where such corrections are warranted;
- They expand on or provide minor clarifications to information already included in the Draft EIR in those instances where comments question this information;
- They result in proposals for new mitigation measures that may more effectively reduce already identified significant environmental impacts of the project; and
- They address recommendations for alternatives to the project, including whether these recommendations are already included in the alternatives evaluated in the EIS/EIR.

However, none of the conditions warranting recirculation of a Draft EIR, as specified in State CEQA Guidelines Section 15088.5 and described above, has occurred. As a result of responses to comments and the additional of new information, no new significant impacts would result; there is no increase in the severity of a significant impact identified in the Draft EIR, following mitigation; no feasible alternatives have been recommended that would avoid a significant impact, wherein the applicant has refused to adopt such an alternative; and as to the Draft EIR adequacy, the LAHD believes the EIR is complete and fully compliant with CEQA.

### 2.3.1 Master Responses

Because a large number of the comment letters received had similar concerns, a set of master responses were developed to address common topics in a comprehensive manner. The following Master Responses section includes feedback on the following topics:

1. Feasible Mitigation - Guidance and Applicability
2. Zero-Emission Technologies
3. Port-wide Emission Reduction Programs
4. Energy Usage and Appendix F

Individual responses to all comment letters/comments received on the Draft EIS/EIR are presented following the Master Responses and may refer to the Master Responses in total or in part.

### 2.3.1.1 Master Response 1: Feasible Mitigation - Guidance and Applicability

Several comments questioned whether all feasible mitigation measures have been identified within the Draft EIS/EIR to reduce impacts to the maximum extent feasible. This response provides the CEQA and NEPA requirements for consideration of mitigation measures.

Mitigation is required only for significant environmental impacts (PRC 21100(b)(3); State CEQA Guidelines Sections 15126.4(a)(1)(A) and 15064(e)). CEQA provides that environmental analysis should emphasize feasible mitigation measures (PRC 21003(c)). An agency may, however, reject mitigation measures or project alternatives if it finds them to be "infeasible" (PRC 21081(a)(3); State CEQA Guidelines Section 15091(a)(3)).
"Feasible" is defined as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" (PRC 21061.1; State CEQA Guidelines Section 15364).
Consideration of feasibility of mitigation measures may also be based on practicality (No Slo Transit, Inc. v. City of Long Beach [1987] 197 Cal.App.3d 241, 257). In addition, while a lead agency is required to respond to comments proposing concrete, obviously feasible mitigation measures, it is not required to accept suggested mitigation measures (A Local and Regional Monitor (ALARM) v. City of Los Angeles (1993) 12 Cal. App. 4th 1773, 1809). Although not entirely the same as CEQA, mitigation requirements exist under NEPA (40 CFR 1500-1508) and USACE program regulations (33 CFR 320-332).

In reviewing specific proposed suggestions for mitigation measures, LAHD has been cognizant of the legal obligation under CEQA to substantially lessen or avoid significant environmental effects to the extent feasible. LAHD recognizes, moreover, that comments frequently offer thoughtful suggestions regarding how a commenter believes that a particular proposed mitigation measure can be modified, or perhaps changed significantly, in order to more effectively, in the commenter's view, reduce the severity of environmental effects. LAHD is also cognizant, however, that, the mitigation measures presented in the Draft EIR represent the expert opinions of the preparers of the Draft EIS/EIR regarding how best to effectively, and feasibly, substantially reduce or avoid the proposed Project's significant environmental effects. Further, those mitigation measures have been subjected to public review and scrutiny through the Draft EIS/EIR process. In determining whether to accept such changes, either in whole or in part, LAHD has considered the following factors, among others: (i) whether the proposed revisions are feasible from an economic, technical, legal, environmental, or other standpoint; (ii) whether the mitigation measure(s) suggested to be revised relate to a significant and unavoidable environmental effect of the proposed Project, or instead relate to an effect that can already be mitigated to less-thansignificant levels by the mitigation measures proposed in the Draft EIS/EIR; (iii) whether the proposed revisions represent a clear improvement, from an environmental standpoint, over the draft language that a commenter seeks to replace; and (iv) whether the proposed revisions are sufficiently clear as to be easily understood by those who will implement them.

In coordination with the LAHD's identification of mitigation measures for impacts identified under CEQA, the USACE has also identified mitigation measures for impacts identified under federal law. The NEPA (40 CFR 1500-1508) and USACE regulatory program regulations (33 CFR 320-332) provide authority for USACE to require mitigation for impacts on waters of the United States (U.S.) ( 40 CFR 1508.14 and 1508.20; 33 CFR 320.4, 33 CFR 325.4, 33 CFR 325 Appendix B paragraph 9(5)(e), and 33 CFR 332).

USACE also implements the USEPA Section 404(b)(1) Guidelines (40 CFR 230), which provide authority for USACE to require mitigation for impacts on waters of the U.S., including special aquatic sites, when the impact results from a discharge of dredged or fill material. To determine mitigation requirements during the DA permit evaluation process, USACE applies established regulations and/or the 404(b)(1) Guidelines (if applicable), including the avoidance/minimization/compensation sequencing described in the USACEUSEPA Memorandum of Understanding (1990) and the South Pacific Division procedures for determining compensatory mitigation ratios. Under Section 10 of the Rivers and Harbors Act (33 U.S.C. 403), which authorizes work and structures in, over, and under any navigable water of the U.S., the required public interest review at 33 CFR 320.4 provides authority for USACE to require mitigation for impacts on navigable waters of the U.S.

While the Berths 226-236 [Everport] Container Terminal Improvements Project (proposed Project) would not result in a discharge of dredged or fill material into waters of the U.S. and therefore, the 404(b)(1) Guidelines would not be applicable to this permit application, mitigation requirements for the proposed Project have been developed as part of the NEPA (EIS) process and USACE permit evaluation process to address potential impacts related to the proposed work and structures in, over, and under navigable waters of the U.S., which are regulated under Section 10 of the Rivers and Harbors Act. More specifically, mitigation requirements associated with USACE's federal action on the proposed Project (i.e., potential issuance of a permit) are primarily guided by the required public interest review (33 CFR 320.4(a) and (r)). Pending USEPA approval under Section 103 of the Marine Protection, Research and Sanctuaries Act (33 U.S.C. 1413), the USACE may also authorize the transport of suitable dredged material for disposal at the LA-2 offshore dredged material disposal site. Pursuant to USACE implementing regulations (33 CFR 325.4), the Los Angeles District Regulatory Division has developed standard special conditions that are specific to transport of dredged material for the purpose of ocean disposal; such conditions are designed to avoid and minimize impacts on ocean resources and are always included on DA permits when ocean disposal of dredged material is approved. Such conditions include, but are not limited to, measures to reduce air quality impacts associated with the transport of the dredged materials, specifically, MM AQ-1 Harbor Craft Used During Construction, MM AQ-3 - Non-Road Construction Equipment, and MM AQ-5 - General Construction Mitigation Measure. In the event that disposal of dredged material occurs in upland areas, instead of ocean disposal, the reduction of air quality impacts would occur through the USACE requirement of measures such as MM AQ-1 - Harbor Craft Used During Construction, MM AQ-2 - On-road Trucks Used During Construction, MM AQ-3 - Non-Road Construction Equipment, and MM AQ-5 - General Construction Mitigation Measure.

As is often evident from the specific responses given to specific suggestions, the LAHD and USACE staff and consultants spent large amounts of time carefully considering proposed suggestions for new and revised mitigation measures and in some instances adopted some or all of what a commenter suggested. In no instance did the LAHD and USACE fail to take seriously a suggestion made by a commenter or fail to appreciate the effort that went into the formulation of suggestions.

LAHD and USACE have identified and propose to incorporate all feasible mitigation measures, including feasible mitigation measures and feasible revisions to the existing mitigation measures recommended by commenters. No additional mitigation measures have been determined to be feasible to reduce significant impacts disclosed in the EIS/EIR; however, MM AQ-5 has been modified to require that, subject to availability, all dredging
equipment be electric powered (please refer to Chapter 3 of this Final EIS/EIR). Many of the comments on mitigation feasibility focused on zero-emission technologies. This topic and its feasibility are discussed in detail in Master Response 2: Zero-Emissions Technologies, below. The feasibility of other specific suggested measures is discussed in the individual responses below, as appropriate.

### 2.3.1.2 Master Response 2: Zero-Emission Technologies

A commenter requested the Final EIS/EIR to include specific mitigation measures for how the proposed Project will achieve the goals and objectives of the San Pedro Bay Ports 2017 Clean Air Action Plan Discussion Draft. Other commenters mentioned that the Draft EIS/EIR did not include discussion of, or meaningful commitment to, zero-emissions technologies. This master response addresses those comments by explaining how the LAHD has invested in or secured funding to advance zero- and near-zero technologies in the goods movement industry, including a late-2016 grant from the California Energy Commission (CEC) to demonstrate the extended use of zero- and near-zero yard tractors and top picks at the Evergreen Container Terminal.

## Background

While the CAAP has been very successful at encouraging substantial emission reductions, further reductions are needed Port-wide as growth continues to increase in the coming years. Furthermore, the LAHD has identified zero-emission equipment as a critical element to be integrated into marine related goods movement in order to meet greenhouse gas (GHG) reduction deadlines. The Technology Status Report - Zero Emission Drayage Trucks (TIAX, 2011), prepared for the Ports of Los Angeles and Long Beach, examined the state of current zero-emission technologies and outlined a reasonable, programmatic approach to commercialization, based on thorough demonstration and evaluation. The report concludes that a two-phase demonstration approach to commercialization is needed. The first phase would be a small-scale (one to three units) demonstration to test basic technical performance. This would be followed by the second phase consisting of a broader, large-scale (ten to twenty units) demonstration to assess how the technologies fit into existing operations on a multi-unit basis.

In July 2011, at a joint meeting with the Harbor Commissions of the Ports of Los Angeles and Long Beach (also called the San Pedro Bay Port Complex), staff presented the Roadmap for Zero Emissions (Port of Los Angeles and Port of Long Beach, 2011). This document, prepared by the two Ports, expresses the Ports' commitment to zero-emission technologies by establishing a reasonable framework for future identification, development, and testing of non-polluting technologies for moving cargo. The Ports of Los Angeles and Long Beach's joint San Pedro Bay Ports Technology Advancement Program (TAP) funds efforts to evaluate and demonstrate new technologies such as zero-emission trucks that could further reduce emissions from goods movement. The Port of Los Angeles and Long Beach regularly meet with technology developers to stay informed about new and emerging technologies that may provide options for reducing emissions from Port operations. Furthermore, annual status reports on the TAP's completed and ongoing projects are provided on the TAP website at http://www.cleanairactionplan.org/technology-advancement-program/. Recommendations from the TAP are taken to the Boards of Harbor Commissioners when selecting and funding projects.

As detailed in Section 1.6.8.1 of Chapter 1, Introduction of the Draft EIS/EIR, Zero Emission Equipment, in July 2015, the LAHD released a draft Zero Emission White Paper
to assist the Port in moving toward the adoption of zero-emission technologies utilized for the purpose of moving cargo on and off Port terminals to a final destination. The LAHD has provided over $\$ 7$ million in funding for projects aimed at developing zero-emission technology for short-haul drayage trucks and on-terminal yard tractors. Initial zeroemission vehicle testing has shown mixed results, but more recent progress has been made that reinforces the LAHD's belief that zero-emission container movement technologies show great promise for helping to reduce criteria pollutant and GHG emissions in the future. While zero-emission technologies are promising, zero emission trucks and most zero-emission container movement systems (ZECMS) require longer-term evaluations to establish the technical viability, operational reliability and the ability to attract participation from established original equipment manufacturers that will lower acquisition and maintenance costs and allow this equipment to become commercially viable. ZECMS also present many operational concerns, such as charging/fueling and maintenance that need to be examined prior to full deployment into the fleet. Additionally, durability, loss of power potential, and safety need to be monitored through testing before stakeholders commit to large capital investments. The amount of existing data in these areas is extremely limited, although several demonstration projects are currently underway.

Further, without the completion of the real-world fleet testing with full loads and full duty cycles, including longer-term mechanical service and reliability over a sufficient demonstration period, a system that later proved to be unreliable would result in disruption and delay of cargo flow and trade at the Port Complex. In recognition of the potential future promise of such technologies, LAHD has included a lease measure (LM) in this document that requires periodic technology reviews (LM AQ-1). This lease measure will ensure that the Tenant reconsiders the feasibility of zero- and near-zero- emission technologies in the future as the technologies continue to develop. In addition, the tenant will be required to confer with LAHD any time they are replacing any on-site Cargo Handling Equipment (CHE).

See below for discussions of specific zero- and near-zero emission demonstrations underway for trucks and container handling equipment. Additionally, see below for information regarding the upcoming zero- and near-zero- emissions yard tractor demonstration project at Evergreen Container Terminal.

## Drayage Trucks

In 2006, LAHD co-funded with SCAQMD the world's first plug-in, battery-powered, heavy-duty truck prototype. Subsequently, through the TAP, the Ports of Los Angeles and Long Beach have funded the demonstration of seven TransPower pre-commercial electric drayage trucks, electric drayage infrastructure and charger improvements, and SCAQMD's Zero Emission Cargo Transport II project (which will demonstrate seven trucks including six fuel cell hybrid and one natural gas hybrid.

The Ports of Los Angeles and Long Beach conducted demonstration projects for two battery plug-in trucks and one hydrogen fuel cell hybrid truck. In June 2012, the battery plug-in truck was tested on a dynamometer using a Port-specific duty cycle at University of California Riverside’s Center for Environmental Research \& Technology. The test provided a baseline for future improvements. Since the dynamometer testing, the batterypowered truck has been tested using empty and fully loaded containers that were loaned to the Port for these tests. In this testing, the unit has accumulated approximately 250 hours of use. In February 2014, a heavy-duty battery electric prototype truck that uses the ElecTruck drive system developed by TransPower successfully hauled a 75,000-pound load up and
down the Gerald Desmond Bridge multiple times. These ElecTruck drive systems were developed for demonstration in real-world drayage service as part of a zero-emission cargo transport demonstration program funded by a U.S. Department of Energy grant and in collaboration with SCAQMD and the Ports of Los Angeles and Long Beach TAP. The seven trucks that use the ElecTruck drive system were assembled and demonstrated by Port drayage truck operators. The hydrogen fuel cell-powered truck has been used in isolated tests. One test at a facility in Commerce, California, included picking up fully loaded containers and traveling over a 6 percent incline grade. Another test was done by a national retailer picking up containers, crossing the Vincent Thomas Bridge, and delivering them to distribution centers. The truck achieved 200 miles on a single tank of hydrogen, and a demonstration of an extended range of 400 miles is planned. These technologies have been promising in initial use and additional hours of usage are currently being accrued. In addition to the demonstration projects mentioned above, information on planned zeroemission truck development can be found at the Port's website:
http://www.portoflosangeles.org/environment/zero.asp. Real-world, in-use data is essential, particularly when deploying new technologies on public roads.

The technology of heavy-duty electric drive engines with the potential for zero emissions has advanced greatly in recent years. LAHD has been a leader in developing and testing zero-emission, heavy-duty trucks and has sent a clear message to technology providers that zero-emission technologies are needed as soon as practicable.

Although zero-emission trucks are currently in limited use, development and deployment of this technology involves the following four steps: (1) research and development; (2) technology development and demonstration; (3) pre-production deployment and assessments; and, (4) early production deployments. Real-world, in-use data is essential, particularly when deploying new technologies on public roads As a funding partner in those efforts, LAHD supports accelerating zero-emission technologies through LM AQ-1 required for this proposed Project, among other commitments as described above.

## Cargo Handling Equipment (CHE)

LAHD is also focused on the development of zero-emission technologies for CHE and is in the process of developing and testing some off-road CHE. Several different zero-emission technologies for CHE are being developed and demonstration projects that have been completed or are currently underway are discussed below. Most important, CEC funding for the Evergreen Container Terminal will support the testing of electric (zero-) and liquified natural gas (near-zero-) yard tractors.

## Zero-Emission Yard Tractors

LAHD has funded numerous zero-emission yard tractor projects through the TAP, including plug-in battery electric yard tractors and a hydrogen fuel cell yard tractor. However, the feasibility of zero-emission technology for yard tractors or the likelihood of availability of zero-emission yard tractors on the market in the near-term has not yet been shown. Testing of zero-emission yard tractors has been ongoing since 2008, including demonstration projects funded by the Port, but testing and demonstration have not yet produced a viable candidate for large-scale testing or use in a marine terminal operation and duty cycle. In 2013, CARB selected the Ports of Los Angeles and Long Beach to be recipients of grant funding for a two-year project to develop and demonstrate two electric yard tractors developed by TransPower. The yard tractors are currently being demonstrated at the Port's APM and PST terminals. Previously these yard tractors have been successfully
demonstrated at the Port's SA Recycling terminal and the Dole terminal at the Port of San Diego. The Port has been proactive in working with manufacturers (such as Balqon and TransPower) to design and produce prototype plug-in electric yard tractors, which operate on lithium-ion batteries. Initial testing of the Balqon yard tractors at the California Cartage Intermodal Facility indicated that the yard tractors were capable of operating for over 12 hours on a single charge. Balqon, however, is no longer producing CHE.

Five battery electric yard tractors are intended to be tested at Evergreen Container Terminal for a period of one year, which is expected to begin in Spring - Summer 2018. Information collected during this demonstration project and others will dictate whether further larger scale demonstrations using 10- to 20- yard tractors are ready to take place. Once the larger scale demonstrations are deemed successful, the electric yard tractors could be ready for commercialization.

The 2010 Hybrid Yard Hostler Demonstration and Commercialization Project was a TAP project that involved three hybrid (diesel-battery-electric) yard tractors. These three hybrid yard tractors were put into service at the Port of Long Beach for a period of 6 months performing ship, rail, and dock work, with a goal of measuring the emissions of a conventional and hybrid yard tractor following cycles developed from monitoring in-use activities. Results indicated that at low loads, the hybrid consumed about 7 percent more fuel and at high loads the hybrid saved about 3 percent fuel, while nitrogen oxide (NOx) emissions were reduced at both load levels. Considering that the results did not indicate fuel savings for the hybrid yard hostler, further refinement of the hybrid drive system design was recommended to improve the yard tractors' fuel economy. The Liquefied Natural Gas (LNG) Yard Hostler Demonstration and Commercialization Project assessed the performance and emissions of three LNG yard tractors over 8 months from June 2006 to January 2007 at the Port of Long Beach. Results indicated that LNG yard tractors used about 30 percent more diesel gallon equivalents than diesel yard hostlers, had higher NOx emissions, and had an incremental cost over a diesel yard truck of approximately $\$ 40,000$.

ETS (through LAHD) was awarded a grant from the California Energy Commission (CEC) in late 2016 to commission a demonstration project for five zero-emission yard tractors, and 20 near-zero-yard tractors equipped with the California Air Resources Board certified Cummins Westport Low NOx engines ( 0.02 grams of nitrogen oxides/brake horsepowerhour) at the Everport Container Terminal. The Port has constructed electric charging stations at the Everport Container Terminal in preparation of the five zero-emission yard tractors. To further reduce GHG the 20 near-zero-emission yard tractors will be fueled with renewable LNG provided by Clean Energy via a mobile LNG fueling system. This demonstration project is expected to begin in Spring - Summer 2018 and last for 12 months. In addition, the LAHD was awarded a second CEC grant in early 2017 to commission a demonstration project for two zero-emission battery electric top handlers and three additional zero-emission battery electric yard tractors to undergo a demonstration project at the Everport Container Terminal as well. This demonstration project is expected to begin in Summer 2019 and last for 12 months. The demonstration project's main goal is to determine the long-term feasibility of near-zero yard tractors. More specifically, the project is expected to: (1) significantly reduce emissions of GHGs, diesel particulate matter (DPM), NOx, and reactive organic gases (ROG) from the Evergreen Container Terminal; and (2) create a test facility for the commercialization of zero- and near-zero- emission technologies that can move break bulk and containerized cargo.

Although progress is being made, these examples illustrate the challenges that continue to face developers of zero- and near-zero- emission yard tractors to bring the technology to the market.

## Electric Rubber Tire Gantry Cranes (ERTG) and Electric Rail-Mounted Gantry Cranes (ERMGs)

A standard rubber tire gantry crane (RTG) runs on diesel fuel and is used for stacking intermodal containers within the stacking areas of a container terminal. An electric RTG (ERTG) runs primarily on electric power provided by a bus bar, overhead conductor, or cable reel but retains diesel engine capabilities for moving between rows of containers. The extensive infrastructure makes ERTG systems extremely expensive to build and makes the layout and operations highly inflexible, which would be difficult to implement on an existing operational container terminal. As such, ERTG systems are best suited for masterplanned terminals where the physical layout and operations are specifically designed to accommodate the ERTG system. Additionally, although the proposed Project involves the renewal of a lease at an existing terminal with some expansion of backlands, the extensive reconfiguration which would be required to utilize such equipment at the terminal is beyond the scope of the proposed Project.

An electric rail-mounted gantry crane (RMG) system is used for stacking intermodal containers. By mounting a gantry crane on rails, ERMGs sacrifice the mobility of their diesel counterparts; however, ERMGs have lower long-term operating costs and provide substantial environmental benefits since ERMGs run entirely on electricity. ERMG systems involve similar financial and operational restrictions to those discussed above for ERTGs, though to a greater degree. ERMGs operate on rail tracks, making them even more operationally restrictive than ERTGs. Additionally, the capital investment and intensity of construction required to develop an ERMG system are greater than for an ERTG system. As with ERTG systems, ERMG systems are best suited for master-planned terminals where the physical layout and operations are specifically designed to accommodate the RMG system. Additionally, although the proposed Project involves the renewal of a lease at an existing terminal with some expansion of backlands, the extensive reconfiguration which would be required to utilize such equipment at the terminal is beyond the scope of this proposed Project.

## Hybrid RTGs (EcoCrane ${ }^{\text {TM }}$ )

In a demonstration project sponsored by the Ports of Los Angeles and Long Beach under the TAP, a hybrid RTG, EcoCrane ${ }^{\text {TM }}$ equipped with an advanced energy capture and battery storage system was placed into testing in 2009 and eventually commissioned after initial engineering issues in 2010. While the EcoCrane ${ }^{\mathrm{TM}}$ showed reductions in criteria air pollutant emissions, fuel consumption, and GHGs, as compared to a conventional dieselelectric RTG crane, it experienced engineering issues related to inverter failure, battery/inverter compatibility, and generator failure. In August 2010, the LAHD received a grant from the USEPA to demonstrate a second generation EcoCrane ${ }^{\mathrm{TM}}$ hybrid RTG system at the West Basin Container Terminal at the Port of Los Angeles. As such, this technology was verified by the USEPA in June 2013 for specific applications and demonstrated a 56 percent fuel economy improvement.

Additional concerns associated with the use of hybrid RTGs include the following: safety hazards posed by potential leaks from battery packs; the need for additional labor staffing on the ground due to the reduced visibility from the size and location of the battery box; the
logistical difficulties associated with the use of the batteries, which must be drained and "equalized" every 21 days, a process that requires eight hours to complete, thereby negatively impacting the use and efficacy of the RTGs; the increased stress fractures noted in equipment welds due to the additional battery weight on one side of the equipment; and the need to dispose of the batteries (which have a useful life of only three years) as hazardous waste (LAHD, 2016).

## Ship-to-Shore Cranes

Ship-to-shore cranes are large stationary dockside gantry cranes used for loading and unloading intermodal containers from container ships of various sizes at container terminals. All of the ship-to-shore cranes currently servicing container vessels at the Port are powered by electricity provided from the City of Los Angeles Department of Water and Power.

## Conclusion

The LAHD, working collaboratively with Port tenants and other stakeholders, is committed to expanded development and testing of zero-emission technologies, identification of new strategic funding opportunities to support these expanded activities, and planning for longterm infrastructure development to sustain ongoing programs, all while ensuring competitiveness among the maritime goods movement businesses.

As noted above, ZECMS (including drayage trucks, yard tractors, and gantry cranes) require longer-term evaluations to establish the technical viability, operational reliability and the ability to attract participation from established original equipment manufacturers that will lower acquisition and maintenance costs and allow this equipment to become commercially viable. When commercial viability is achieved, the proposed Project lease measure LM AQ-1 was specifically established to integrate these systems into terminal operations. At this time, however, LAHD cannot take mitigation credit for zero-emission technologies for this Project.

### 2.3.1.3 Master Response 3: Port-wide Emission Reduction Programs

Several comments requested that the LAHD implement additional mitigation beyond what current regulations and the San Pedro Bay Ports Clean Air Action Plan (CAAP) would accomplish. This Master Response addresses these comments.

The Ports of Los Angeles and Long Beach originally developed the CAAP in 2006 with input from a number of stakeholders, including the USEPA, CARB, and SCAQMD. The CAAP was updated in 2010, and underwent a revision in Summer 2017. The Draft CAAP Update was released in July 207 with a tentative adoption date set for November 2017. The CAAP has produced emission reductions of criteria pollutants, toxic air contaminants, and GHG either in excess of those required by existing federal and state regulations, or have accelerated achievement of the reductions anticipated in the regulations. Through the CAAP and the associated programs, emission reduction technologies have been tested and are being developed to produce commercially viable mitigation for Port emission sources. The CAAP and updates, as well as accomplishments of Port-wide emission reduction programs can be reviewed at:

- https://www.portoflosangeles.org/environment/caap.asp
- https://www.portoflosangeles.org/environment/ogv.asp
- https://www.portoflosangeles.org/ctp/idx_ctp.asp
- https://www.portoflosangeles.org/environment/amp.asp
- https://www.portoflosangeles.org/environment/progress/initiatives/technology-advancement-program/
The Ports are committed to updating the CAAP this year, with the Draft 2017 CAAP released for public review in mid-July 2017, with anticipated adoption of the final 2017 CAAP update by the end of 2017. Note that the CAAP will continue to push technological improvements for emission reductions at a pace faster than regulations alone. In addition, the cost of zero-emission technologies can be substantially higher than conventional equipment, making economic feasibility challenging. However, the Ports cannot yet rely on any programs in this update to be available and appropriate for claiming additional emission reductions in the Draft EIS/EIR. As technologies become technologically feasible, economically viable, and commercially available in the region, they will become requirements at the Port of Los Angeles as stated in lease measure LM AQ-1: Replacement of Equipment and Review of New Technology (please see the Draft EIS/EIR, page 3.2-51).

In various comments from regulatory agencies, as well as other stakeholders, on the Draft EIS/EIR, requests were made that the LAHD should implement mitigation measures that, at this time, are not feasible, or for which LAHD lacks jurisdiction to implement.

### 2.3.1.4 Master Response 4: Energy Usage and Appendix F

## Introduction

LAHD respectfully disagrees with the commenter's opinion that the Draft EIR/EIS fails to comply with Appendix F of the State CEQA Guidelines regarding energy consumption, and that the proposed Project would result in a significant impact from energy consumption requiring mitigation. This master response clarifies the assumptions and information contained in the EIS/EIR, and expands upon that information. It does not constitute "significant new information" requiring recirculation. (See PRC Section 21092.1; CEQA Guidelines Section 15088.5.)

Appendix F of the State CEQA Guidelines states that "the goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include the following: decreasing overall per capita consumption; decreasing reliance on fossil fuels such as coal, natural gas and oil, and increasing the reliance on renewable energy sources." The objective of the Everport Container Terminal Improvement Project is to accommodate larger ( 16,000 TEU), more efficient vessels at the site to improve energy and fuel efficiency and reduce pollution. Currently, the facility can only accommodate 8,000 TEU vessels. Upon project completion, the facility will be able to accommodate 16,000 TEU vessels. These vessels are newer and cleaner burning with the ability to connect to auxiliary maritime power (AMP). Further, accommodating larger vessels significantly reduces vessel transit time to further the goal of improved fuel efficiency at the site.

Appendix F further states that "Potentially significant energy implications of a project shall be considered in an EIR to the extent relevant and applicable to the project." There were no significant energy impacts associated with the proposed Project; in fact, the Project's objective is to improve energy efficiency and the overall efficiency of the facility. This

Project and its overall objective were evaluated against Appendix F and it was determined that many of its components were found to be unnecessary. However, this response has been prepared to further clarify energy consumption related to the proposed Project. Specific areas of focus include the following:

- Energy requirements and energy use by amount and fuel type for construction and operation;
- The effects of the Project on local and regional energy supplies;
- The effects of the Project on peak and base period demands for electricity;
- Compliance with energy standards;
- Effects of the Project on energy resources;
- The Project's projected transportation energy use requirements and overall use of efficient transportation alternative; and
- Energy conservation measures that have been incorporated into the Final EIS/EIR.

The proposed Project, in combination with improved fuel standards and energy efficient technology, would achieve the abovementioned objectives outlined in Appendix F. The proposed Project includes a throughput increase yet the per-container energy usage decreases over time. This decrease can also be compared to the No Project Alternative which still accounts for natural growth at the site without the project and still shows fuel efficiency. This decrease is attributable to several factors that include cleaner, newer, more efficient replacement equipment over time; increases in regulations and policies related to energy consumption; and mitigation measures imposed on the proposed Project to conserve or reduce energy consumption to the maximum extent feasible. In addition, the facility itself has embarked on two different zero- and near-zero emission demonstration projects that may also decrease the facility's use of fossil fuels.

To demonstrate the operational fuel efficiency of the proposed Project, for the CEQA Baseline, 2038 CEQA No Project and the 2038 Proposed Project, energy demand was calculated and energy consumed per TEU processed by the Everport Container Terminal for the following energy categories: Diesel Fuel, Gasoline Fuel, and Electricity. The comparisons between the CEQA and NEPA Baselines and the 2038 Proposed Project shows the positive effect that the project would have in preventing wasteful, inefficient, and unnecessary consumption of energy. Efficiency breakdowns and energy per TEU reductions associated with the proposed Project over the CEQA and NEPA baselines were calculated for each source type. For energy sources consuming electricity, the same 2013 CO2e per MWh emission factor was used for the CEQA Baseline as for the 2038 Proposed Project. Thus, this analysis does not take credit for reductions in electricity emission rates associated with the introduction of higher percentages of renewable resources that would happen irrespective of the proposed Project.

Table MR 4-1: Operational Energy Consumption per TEU for Proposed Project year 2038 and CEQA Baseline and CEQA No Project year 2038


| On-terminal <br> Electricity Use 9,280 $2,379,525$ 0.0039 $40 \%$ <br>  Worker Vehicles 380,859 0 0.00Total Operations - <br> Diesel | $\mathbf{2 4 , 5 9 7 , 2 8 6}$ | $\mathbf{2 , 3 7 9 , 5 2 5}$ | $\mathbf{1 0 . 3 4}$ | $\mathbf{1 8 \%}$ |
| :--- | :--- | :--- | :--- | :--- |
|  | $\mathbf{3 8 0 , 8 5 9}$ | $\mathbf{0}$ | $\mathbf{0 . 0 0}$ | $\mathbf{0 \%}$ |
|  | $\mathbf{3 , 3 7 0 , 4 0 9}$ | $\mathbf{2 , 3 7 9 , 5 2 5}$ | $\mathbf{1 . 4 2}$ | $\mathbf{4 \%}$ |

* The change in energy consumption per TEU relative to the existing conditions (CEQA Baseline) if provided for both the 2038 No Project and 2038 Proposed Project scenarios to allow the reader to compare future energy consumption without and with the project, respectively.

Energy consumption data related to the proposed Project can be found throughout the Draft EIS/EIR as it is an integral data component of addressing and identifying air quality impacts related to emissions of criteria pollutants and greenhouse gases from the proposed Project as well as all project alternatives. For example, Appendix B1 highlights air quality calculations, methodology and assumptions and includes fuel usage in order to complete the calculations. Sections 3.2, Air Quality and Meteorology, and 3.5, Greenhouse Gas Emissions, highlight mitigation measures that effectively conserve energy as well highlight existing regulations related to GHGs and air quality that have secondary benefits related to energy conservation.

## Energy Requirements and Energy Use by Amount and Fuel Type

## Construction

Energy (primarily as diesel fuel, but including minor amounts of gasoline) would be used during construction of the proposed Project. Project construction activities and elements for which energy consumption was calculated include: (a) off-road diesel-powered construction equipment; (b) on-road diesel-powered delivery and haul trucks; and (c) worker commute vehicles. Energy expenditures during construction would be temporary, lasting for approximately 24 months. These energy expenditures are short-term but necessary to achieve the overall objective of the Project; which is the efficiency of the terminal and the associated reduction of fuel consumption.
Construction would not result in substantial waste or inefficient use of energy. The construction of the improvements would undergo a competitive bid that includes energy conservation measures in the bid specifications that must be adhered to throughout the construction process. In addition, construction would be consistent with the policies in the Port of Los Angeles’ Sustainable Construction Guidelines, which guide the content of bid specifications. Current LAHD bid specifications include provisions to reduce energy consumption, such as staging work during nonpeak hours when appropriate, and minimum engine emissions standards for construction equipment in accordance with the Clean Air Action Plan. Accordingly, construction would comply with all existing energy standards.
Further, because construction would occur at an existing terminal, the site will have limited operation during this time period so energy consumption related to existing operations will decrease while construction is occurring helping to offset energy demand from construction.

Total construction energy efficiency for the proposed Project is presented below for informational purposes.

Table MR 4-2: Construction Energy Consumption for Proposed Project Ocean Disposal

| Proposed Project Construction - <br> Ocean Disposal | Year | Fuel | GHG Emissions <br> (Metric Tons) | Fuel Consumed <br> (Gallons) |
| :--- | :--- | :--- | :--- | :--- |
| Off-road Construction Equipment | 2018 | Diesel | 2,148 | 211,407 |
| Marine Source Exhaust | 2018 | Diesel | 477 | 46,947 |
| On-road Construction-Related Vehicles | 2018 | Diesel | 1,014 | 99,798 |
| Worker Vehicles | 2018 | Gasoline | 21 | 2,362 |
| Off-road Construction Equipment | 2019 | Diesel | 161 | 15,846 |
| Marine Source Exhaust | 2019 | Diesel | 800 | 78,736 |
| On-road Construction-Related Vehicles | 2019 | Diesel | 118 | 11,614 |
| Worker Vehicles | 2019 | Gasoline | 10 | 1,125 |
| Total Construction - Diesel | ALL | Diesel | $\mathbf{4 , 7 1 8}$ | 464,348 |
| Total Construction - Gasoline | ALL | Gasoline | $\mathbf{3 1}$ | $\mathbf{3 , 4 8 7}$ |

## Operation

Operational electricity demands of the proposed Project would be related to additional wharf cranes, additional AMP vaults, and additional facility and backland operations. The new wharf cranes would represent a new electrical demand, since the existing cranes would remain in use as would the additional AMP vaults. However, these taller cranes are necessary to accommodate the larger vessels and further the goal of accommodating these larger vessels that are generally cleaner, more able to plug in to AMP and will allow for the goal of increased container throughput with as few vessel trips as possible. . Truck trips would increase as well as on-dock rail activity to accommodate the increase throughput. Please see Table MR 4-1 above for operation-related fuel consumption estimates on a per TEU basis associated with the proposed Project.

## Effects of the Project on Local and Regional Energy Supplies

Consistent with the goal of conserving energy expressed in CEQA Guidelines Appendix F, the proposed Project would include decreased reliance on fossil fuels through the accommodation of larger vessels thereby reducing significant transiting time and unnecessary fuel consumption. Future operations would be subject to the Port of Los Angeles' conservation and sustainability goals, standards, and initiatives, as set forth in the Sustainability Assessment and Plan Formation (LAHD, 2008). These include a number of programs under the Clean Air Action Plan (currently being updated), various greenhouse gas reduction and zero-emissions programs, recycling and other sustainability programs, and the Port Leasing Policy. The increased use of trains to transport containers directly from the terminal would represent a more fuel-efficient mode than trucking containers to off-dock yards. Energy conservation measures were also incorporated into the document through mitigation that will further the goal of fuel efficiency and decreased energy consumption. Finally, the Port's Energy Management Action Plan and Alternative Energy Program would promote increasing efficiency of energy usage in terminal operations.

## The Effects of the Project on Peak and Base Period Demands for Electricity

The Los Angeles Department of Water and Power (LADWP) is charged with maintaining sufficient capability to provide its customers with a reliable supply of power, and will continue to do so with proper planning and development of facilities in accordance with the City Charter, using such mechanisms as the Power Integrated Resources Plan (IRP). Based
on the LADWP Power IRP, electricity resources and reserves at LADWP will adequately provide electricity for all of its customers, including the proposed Project, through the current Power IRP planning horizon of 2040 (LADWP, 2016). Furthermore, because LADWP is moving toward increasing renewable energy supplies in its resource portfolio, the electricity demand of the proposed Project, by itself, would not result in the need to construct a new off-site power station or facility.

Fuel consumption from the proposed Project does not pose a significant adverse impact to energy. The Project decreases its energy consumption on a per TEU basis over time thereby achieving the objectives outlined in Appendix F.

## Compliance with Energy Standards

Over time, implementation of the proposed Project would replace older, less efficient pieces of equipment and vehicles. The improved terminal will be required to comply with current state energy efficiency standards and regulations pursuant to the California Building Code (CBC), California Green Building Standards (CALGreen) and City of Los Angeles Green Building Code (LAGBC) that would reduce long-term energy demand. These requirements would reduce wasteful, inefficient and unnecessary consumption of energy over the long-term. Additional information regarding these and other regulations and programs that support energy conservation through the reduction of GHGs are described in further details for information purposes below. In addition, summaries of some of these regulations can be found in Appendix B1 as well. All of these regulations will be complied with as applicable for the proposed Project.

## Natural Gas and Electricity Infrastructure

Electrical power within the City of Los Angeles is supplied by LADWP, which serves approximately 3.8 million people. LADWP obtains electricity from various generating sources that utilize coal, nuclear, natural gas, hydroelectric and renewable resources to generate power. Its current system capacity is 7,630 megawatts (MW). LADWP does not forecast that peak demand will reach capacity through 2040. LADWP is committed to increasing the share of renewable energy and promoting increased energy efficiency and conservation by its customers. Diversification of LADWP's energy portfolio, increasing electricity through renewable energy and new customer energy efficiency measures will all help meeting the City needs.

According to the most recent data available from the LADWP, approximately 23 percent of its electricity purchases in 2013 were from eligible renewable sources. LADWP has adopted a number of initiatives to increase its use of renewable energy resources to support the goal of reducing GHG emissions, reducing reliance on fossil fuels and meeting state mandates requiring all utilities to provide 33 percent of their energy from renewable resources by 2020 .

Existing energy infrastructure has sufficient capacity to accommodate the needs of its 3.8 million people along with sufficient capacity to accommodate the Everport Container Terminal Project. The regulations listed below must be complied with throughout the Project to further ensure that the Project will not result in wasteful, inefficient or unnecessary consumption of electricity or natural gas.

## Green LA

In May 2007, the City of Los Angeles introduced Green LA - An Action Plan to Lead the Nation in Fighting Global Warming (Green LA). Green LA presents a framework targeted
to reduce the City’s GHG emissions by 35 percent below 1990 levels by 2030. The plan calls for an increase in the City's use of renewable energy to 35 percent by 2020 in combination with promoting water conservation, improving the transportation system, reducing waste generation, greening the ports and airports, creating more parks and open space and greening the economic sector. Green LA identifies objectives and actions in various focus areas.

## Executive Directive No. 10

Executive Directive No. 10 was issued in 2007 regarding environmental stewardship practices. Consistent with the goal specified in Green LA, Executive Directive No. 10 requires that City departments create a "Statement of Sustainable Building Policies" including sustainable design, energy and atmosphere, materials and resources, water efficiency, landscaping and transportation resources. City departments are required to submit annual sustainability reports to the Mayor for review.

## Sustainable City Plan

In 2014, Mayor Eric Garcetti launched the City of Los Angeles’s first-ever Sustainable City Plan. The pLAn is a comprehensive policy roadmap that prepares the City for an environmentally healthy, economically prosperous and equitable future. The framework of the pLAn includes the vision of things to be accomplished over the next 20 years and highlights near-and long-term outcomes. Through the pLAn, the City's goal is to become a national leader in carbon reduction and climate action by eliminating coal from the City's energy mix, prioritizing energy efficiency, and inspiring other cities to take similar action. The pLAn sets targets of reducing GHG emissions below 1990 levels by at least 45 percent by 2025, 60 percent by 2035 and 80 percent by 2050 .

## LAHD Sustainable Construction Guidelines

In February 2008, the LAHD Board of Harbor Commissioners adopted the Los Angeles Harbor Department Sustainable Construction Guidelines for Reducing Air Emissions (LAHD Construction Guidelines). These guidelines will be used to establish air emission criteria for inclusion in construction bid specifications. The LAHD Construction Guidelines reinforce and require sustainability measures during performance of the contracts, balancing the need to protect the environment, be socially responsible, and provide for the economic development of the Port. The intent of the LAHD Construction Guidelines is to facilitate the integration of sustainable concepts and practices into all capital projects at the Port and to phase in the implementation of these procedures in a practical yet aggressive manner. These Guidelines are currently being revised to include additional measures to ensure that construction activities are conducted in the most sustainable manner possible.

## San Pedro Bay Ports Clean Air Action Plan (CAAP)

In 2006, the ports of Long Beach and Los Angeles created and approved the San Pedro Bay Ports Clean Air Action Plan, or "CAAP." The CAAP provides the overall strategy for dramatically reducing air pollution emissions from cargo movement in and around the Ports. The Ports updated the CAAP in 2010 with new strategies and emission-reduction targets. Since the adoption of the original CAAP, diesel particulate emissions from mobile sources in and around the Ports are down 84 percent. Despite this significant progress, the Ports recognize that more needs to be done. The CAAP 2017 Update provides new and updated strategies and emission-reduction targets to cut emissions from sources operating in and around the Ports, setting the Ports firmly on the path toward zero-emissions goods movement.

The CAAP 2017 Update contains 14 strategies to reduce emissions from sources in and around the Ports, plan for zero-emissions infrastructure, encourage freight efficiency, and address energy resources. These strategies include:

- Advancing the Clean Trucks Program to phase out older trucks and transition to zero-emission trucks by 2035;
- Support and advance state-led efforts to transition terminal equipment to zero emissions by 2030;
- Further reducing emissions from ships at-berth, and transitioning the oldest, most polluting ships out of the San Pedro Bay fleet;
- Accelerating the deployment of cleaner harbor craft engines and operational strategies to reduce harbor craft emissions;
- Expanding use of on-dock rail to shift more cargo leaving the port to go by rail;
- Reduce population-weighted residential cancer risk of Port-related DPM emissions by 85 percent by 2020;
- Reduce port-related emissions by 59 percent for NOx, 93 percent for SOx and 77 percent for DPM by 2023; and,
- Reduce GHGs from port-related sources to 40 percent below 1990 level by 2030 and 80 percent below 1990 levels by 2050.


## Effects of the Project on Energy Resources

As discussed above, the overall objective of the proposed Project is to reduce fuel consumption and improve energy efficiency. The Project consists of short-term construction impacts to achieve long-term fuel consumption benefits. There is no significant adverse effect on energy resources as a result of the proposed Project. Construction-related fuel usage would be short-term and necessary to further the overall goal of fuel efficiency at the terminal. In addition, energy conservation measures have been incorporated into construction and operation of the proposed Project wherever feasible to further reduce energy consumption when possible (see below).

## Transportation Energy Use Requirements

In addition to the abovementioned policies and regulations pertaining to energy usage, there are numerous adopted ordinances related to energy efficiency as well. Below please find a list of regulations that also apply to the project and its construction to ensure that energy is conserved to the maximum extent feasible.

- Renewable Portfolio Standard
- LADWP Power Plan
- Climate LA
- GHG and Fuel Efficiency Standards for Passenger Cars and Light-Duty Trucks
- AB 1493 - Pavley
- California Advanced Clean Cars/Zero Emission Vehicle Program


## Energy Conservation Mitigation Measures

Although fuel consumption and energy usage decreases with time as a result of the Project, energy conservation measures have nonetheless been incorporated into the Draft EIR where feasible, including the following:

- MM AQ-2 - On-road Trucks Used During Construction (increase fuel efficiency)
- MM AQ-3 - Non-Road Construction Equipment (increase fuel efficiency)
- MM AQ-6 - Vessel Speed Reduction Program (VSRP) (increase fuel efficiency)
- MM AQ-7 - Alternative Maritime Power (AMP) (reduction in use of fossil fuels by allowing electric plug-in capability)
- LM AQ-1 - Replacement of Equipment and Review of New Technology (may result in fuel efficiency depending upon results of technology review)
- LM AQ-2 - Priority Access System (potential fuel efficiency from reduced idling at the gate)
- MM GHG-1 - LED Lighting (electricity reduction)
- MM GHG-2 - Solar Electricity (electricity reduction)
- LM GHG-1 - GHG Credit Fund (funding local programs aimed at the reduction of GHGs and generally result in a decrease on the reliance of fossil fuels)

These measures can be found Section 3.2, Air Quality and Meteorology and Section 3.5, Greenhouse Gas Emissions, as well as in the Mitigation Monitoring and Reporting Program for the Project. These mitigation measures and lease measures not only have the direct benefit of reducing emissions of GHGs and criteria pollutants but they have the secondary benefit of reducing energy consumption and usage (see above).

In addition to the mitigation measures described above, the facility was awarded two separate grants and has voluntarily agreed to participate in two demonstration projects related to the use of zero-emission and zero-emission equivalent cargo handling equipment at the facility. Everport will be utilizing 20 zero-emission equivalent (ultra-low NOx with renewable natural gas) yard tractors, eight battery electric yard tractors, and two battery electric top picks. In total, 30 pieces of equipment will undergo testing for a period of approximately 12 months. If this equipment proves feasible and successful at the site, it may be a viable replacement in the future and help further the goal of reducing the reliance on fossil fuels at the site.

The proposed Project does not pose a significant adverse impact to energy usage. The proposed Project seeks to avoid any wasteful, unnecessary or inefficient consumption of energy and modify the facility to achieve these objectives. As stated above, energy consumption decreases over time at the Project site through the use of cleaner equipment, compliance with regulations and policies and implementation of the mitigation measures and lease measure described above. Because there are no energy impacts, there are also no unavoidable adverse effects nor is there an irreversible commitment of resources or growthinducing effects created or exacerbated by the Project.

### 2.3.2 Federal Government Comments

-----Original Message-----<br>From: Bryant Chesney - NOAA Federal [mailto:bryant.chesney@noaa.gov]<br>Sent: Wednesday, May 31, 2017 10:29 AM<br>To: Stevens, Theresa CIV USARMY CESPL (US) [Theresa.Stevens@usace.army.mil](mailto:Theresa.Stevens@usace.army.mil)<br>Subject: [Non-DoD Source] Berths 226-236 Everport Container Terminal Improvements Project

Theresa,
NOAA's National Marine Fisheries Service (NMFS) has reviewed the U.S. Army Corps of Engineers (USACE) letter dated April 21, 2017, and the Essential Fish Habitat (EFH) Assessment, for the Los Angeles Harbor Department's (LAHD) proposed terminal improvement project at Berths 226-236. NMFS generally concurs with the adverse effect determination made within the EFH Assessment. The proposed project would not result in a permanent loss of EFH, and adverse impacts to the quality of EFH are not expected to be substantial. The USACE would require best management practices to address temporary adverse impacts associated with increased noise and turbidity. There are currently no feasible project-specific mitigation measures to reduce the potential for the introduction of invasive species via hull fouling. Therefore, NMFS has no additional EFH conservation recommendations to provide for the LAHD's proposed terminal improvement project. Thank you for consulting with NMFS.

Regards,
Bryant

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### 2.3.2.1 U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS)

## Response to Comment NMFS-1

Thank you for your review of the Draft EIS/EIR. The comment is noted. Potential impacts and mitigation measures for noise and turbidity are discussed in Sections 3.10.4.3 and 3.11.4.3, respectively, of the Draft EIS/EIR.

The Marine Invasive Species Program intended to prevent the spread of invasive species is discussed in Section 3.3.3.7 of the Draft EIR/EIS. Potential impacts from invasive species are discussed in Section 3.3.4.3, Impact BIO-3, of the Draft EIS/EIR. All marine vessels associated with project operation would be required to adhere to the Marine Invasive Species Act, specifically those directives included under 2007 Assembly Bill (AB 740) that prescribe measures to prevent hull fouling, such as regular hull cleaning and maintenance.

The comment generally concurs with the findings of the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

# United States Department of the Interior 

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance 333 Bush Street, Suite 515
San Francisco, California, 94104

IN REPLY REFER TO
(ER 17/0198)

Filed Electronically

June 4, 2017
Theresa Stevens
U.S. Army Corp of Engineers

Los Angeles District
Regulatory Division
2121 Alessandro Drive, Suite 110
Ventura, CA 93001
Subject: Draft Environmental Impact Statement by the Army Corps of Engineers for the Berths 226-236 [Everport] Container Terminal Improvements Project - Port of Los Angeles, California

Dear Ms. Stevens:
The Department of the Interior has no comments on the Draft Environmental Impact Statement for the Berths 226-236 [Everport] Container Terminal Improvements Project - Port of Los Angeles, California. Thank you for the opportunity to review this project. If you have any questions, pleases call me at (415) 296-3355.

Sincerely,

Regional Environmental Officer
Cc:
Cheryl Kelly, DOI, OEPC
Alan Schmierer, NPS
Michael Norris, USGS
Ellen McBride, FWS
John Rydzik, BIA
Elizabeth Meyer-Shields, BLM

## 1 2.3.2.2 U.S. Department of Interior (USDOI) <br> 2 Response to Comment USDOI-1

3 Thank you for your comment on the Draft EIS/EIR. LAHD and USACE acknowledge the U.S. Department 4 of the Interior's review and that no comments are provided; therefore, no further response is required (PRC 5 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

June 5, 2017
Ms. Theresa Stevens, Ph.D.
U.S. Army Corps of Engineers

Los Angeles District, Regulatory Division
Ventura Field Office
2151 Alessandro Drive, Suite 110
Ventura, California 93001
Subject: Draft Environmental Impact Statement/Report (EIS/EIR) for the Berths 226-236 [Everport] Container Terminal Improvements Project, Los Angeles, California (EIS No. 20170060)

Dear Ms. Stevens:
The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement/Report (EIS/EIR) for the Everport Container Terminal (ECT) Improvements Project. Our comments are provided pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The U.S. Army Corps of Engineers (USACE) proposes to dredge at Berths 226-229 and Berths 230-232 in order to accommodate the fleet of larger vessels expected to call at ECT through 2038. The proposed project would also include various infrastructure improvements to manage the resulting increase in throughput, which is expected to reach $2,379,525$ twenty-foot equivalents (TEUs) annually by 2033.

EPA recognizes the significant long-term operational air quality improvements that the applicant, Los Angeles Harbor Department (LAHD), has made over the years, particularly its efforts to reduce diesel particulate matter emissions and health risks to neighboring communities. Construction and operation of the proposed terminal redevelopment project, however, would result in greater emissions from ECT.

While we applaud the efforts already underway to deploy effective control technologies at ECT, EPA is concerned about the project-related air quality impacts that would remain significant after the project is completed and proposed mitigation measures are implemented. Based on our concerns regarding the project's air quality impacts, we have rated the action alternatives as Environmental ConcernsInsufficient Information, EC-2 (see attached "Summary of the EPA Rating System"). Given the anticipated adverse health impacts to the general population and vulnerable low-income and minority communities, in an area with some of the nation's worst air quality, we strongly encourage USACE to work with LAHD to explore additional opportunities to reduce emissions associated with the project. Additionally, we recommend that LAHD and USACE use information gathered from public outreach efforts to design mitigation measures that respond to the needs of adjacent communities that would be adversely affected by the project. Our concerns and recommendations are discussed further in the enclosed detailed comments.

EPA appreciates the opportunity to review this Draft EIS. When the Final EIS is released for public review, please send one copy to the address above (mail code: ENF-4-2). If you have any questions, please contact me at (415) 972-3521, or contact Morgan Capilla, the lead reviewer for this project, at 415-972-3504 or capilla.morgan@epa.gov.


Kathleen Martyn Goforth, Manager Environmental Review Section

Enclosures: Summary of EPA Rating Definitions EPA's Detailed Comments

Electronic copy: Christopher Cannon, Port of Los Angeles John Hummer, U.S. Maritime Administration Susan Nakamura, South Coast Air Quality Management District Robbie Morris, California Air Resources Board Jason Roach, Caltrans District 7

## SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

## ENVIRONMENTAL IMPACT OF THE ACTION

## "LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.
'EC" (Environmental Concerns)
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.
"EO" (Environmental Objections)
The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.
"EU" (Environmentally Unsatisfactory)
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

## ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)
EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

## "Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

## "Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.
*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment

## EPA DETAILED COMMENTS ON THE BERTHS 226-236 [EVERPORT] CONTAINER TERMINAL IMPROVEMENT PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT/REPORT, CALIFORNIA JUNE 5, 2017

## Air Quality and Environmental Justice

EPA recognizes the efforts that the U.S. Army Corps of Engineers (USACE) and the Los Angeles Harbor Department (LAHD) have put forth to reduce emissions associated with the proposed project. We commend LAHD for its pursuit of 2010 Clean Air Action Plan (CAAP) goals, particularly its commitment to the Vessel Speed Reduction Program and Alternative Maritime Power. We also support Everport Terminal Services's (ETS's) proactive participation in zero-and near-zero-emission technology demonstrations, and encourage continued pursuit of these opportunities in the future.

Notwithstanding the above, EPA is concerned about the increase in ambient air pollution that would result from the Proposed Action after mitigation. The project area is located within the South Coast Air Basin (SCAB), an area that faces some of the worst air quality in the country. EPA currently designates SCAB as an extreme nonattainment area for ozone and a serious nonattainment area for particulate matter of less than 2.5 microns $\left(\mathrm{PM}_{2.5}\right)$. Chapter 3 of the Draft Environmental Impact Statement (DEIS) notes that air quality impacts from the proposed project would remain significant after mitigation, thus contributing to the poor air quality in the project area. Peak daily emissions from construction would exceed South Coast Air Quality Management District (SCAQMD) thresholds for volatile organic compounds (VOC) and nitrogen oxides (NOx), as well as SCAQMD thresholds for federal one-hour nitrogen dioxide $\left(\mathrm{NO}_{2}\right)$. Project operational emissions would exceed SCAQMD thresholds for VOC, NOx, and carbon monoxide (CO), as well as the SCAQMD off-site threshold for particulate matter of less than 10 microns $\left(\mathrm{PM}_{10}\right)$. Construction emissions would also exceed federal de minimis levels for NOx in 2018.

## Recommendations:

- Given the severe air quality issues within the project area and the residual impacts that would result from the proposed project, we recommend that USACE work with LAHD to consider including the following mitigation measures in the Final EIS (FEIS) to reduce emissions to the greatest extent feasible. ${ }^{1}$
- On-Highway Vehicles: Require on-highway vehicles servicing ECT to meet or exceed EPA exhaust emissions standards for model year 2010 and newer heavy-duty on-highway compression-ignition engines (e.g., drayage trucks, long haul trucks, refuse haulers, etc.). ${ }^{2}$
- Marine Vessels: Require marine vessels, including all dredging equipment, servicing ECT to meet or exceed the latest EPA exhaust emissions standards for marine compression-ignition engines (i.e., Tier 4 for Category $1 \& 2$ vessels, and Tier 3 for Category 3 vessels). ${ }^{3}$
- Locomotives: Require locomotives servicing ECT to meet or exceed EPA Tier 4 exhaust

[^1]emissions standards for line-haul and switch locomotive engines. ${ }^{4}$

- Cargo-Handling Equipment: Require all cargo-handling equipment to be zero-emissions, subject to equipment availability, by 2030, as envisioned in the draft 2017 Clean Air Action Plan Discussion Document. ${ }^{5}$
- Discuss, in the FEIS, the minimum performance requirements of mitigation measures Air Quality (AQ)-2 and AQ-3 that would be instated if contractors are unable to access the specified technologies, and describe how partial implementation of mitigation measures would influence emissions estimates.
- Include a commitment to all proposed mitigation measures, and any port-wide mitigation that would reduce air quality impacts, in the FEIS and Record of Decision (ROD).
- Consider updating Table 3.2-1 with information from EPA's Criteria Air Pollutant web resource. ${ }^{6}$

Chapter 5 of the DEIS indicates that, under the mitigated scenario, the Proposed Action would result in significant, disproportionate air quality impacts-including a cumulatively considerable contribution to cancer risk-to low-income and minority communities in and around the project area. Section 5.4.2.1 identifies a multitude of health risks that these communities could face, such as decreased lung function, adverse birth outcomes, asthma exacerbation, among others, due to project-related emissions. Such populations are already heavily impacted by poor air quality, a condition that could be exacerbated by the Proposed Action, when considered cumulatively with other proposed projects around the Port.

According to Chapter 2, the Proposed Action would result in 7,028 average daily truck trips during peak months in 2038-an increase of 2,213 average daily truck trips compared to the NEPA baseline (p. 2-4). Figure 3-1 of Appendix B2, which illustrates offsite vehicle source locations, suggests that truck routes associated with the project would traverse low-income and minority communities identified in Figures 5-1 and 5-2 of Chapter 5; however, this map does not indicate the number of trucks expected to use each route. Disclosure of such information is important to inform decision-making regarding project design and mitigation needs, and to enable affected communities to understand how the project would impact their neighborhoods and health.

EPA supports Lease Measure (LM) AQ-2, which would allow zero- and near-zero-emission trucks priority access to ECT. We are concerned about the timing of this measure, given that truck emissions are projected to be at their highest in earlier years of the project (Table 3.2-20).

## Recommendations:

- Disclose the expected distribution of drayage truck traffic among the identified routes associated with the Proposed Action.
- Identify and evaluate any additional mitigation measures that could offset health impacts within communities that would experience high concentrations of project-related truck traffic, such as targeted air quality monitoring and adaptive management in highly affected areas, planting of shade trees along affected corridors, and the installation of air filtration systems in buildings that

[^2]house or serve sensitive receptors located near affected areas.

- Establish a more rigorous timeframe for implementing the priority access system described in LM AQ-2 and explore other incentives to promote earlier adoption of zero- and near-zeroemission truck technologies.

Recommendation: In the FEIS, discuss the results, if available, of YTI's FRATIS pilot program
and the potential for the FRATIS system to reduce single transactions associated with the Proposed Action. Consider incorporating FRATIS or other measures to increase the number of dual transactions at ECT into the project description.

The DEIS notes that USACE and LAHD made "considerable efforts to provide public outreach beyond what is minimally required by environmental or agency guidelines" (p. 5-38). EPA commends the lead agencies for this proactive community engagement. Information gained through such efforts can be useful in identifying appropriate project design and/or mitigation measures.

Chapter 7 of the DEIS provides a brief description of the Port Community Mitigation Trust Fund (PCMTF), a port-wide program that endeavors to "address the negative cumulative environmental and public health impacts created by the business operations at the Port" (p. 7-29). The DEIS does not disclose whether or how the project would contribute to the PCMTF, nor whether any activities undertaken with PCMTF funding would be relevant to any of the proposed project's impacts.

## Recommendations:

- In the FEIS, summarize the main concerns expressed by community members during public meetings, and explain how the proposed mitigation measures would address those concerns. Identify any measures that were developed in response to concerns raised by the public, and any additional measures that could offset residual air quality health impacts of the Proposed Action to low-income and minority communities. EPA is available to participate as a partner with the community and the lead agencies to assist in the identification of mitigation opportunities.
- Disclose whether and, if so, how the Proposed Action would contribute to the PCMTF, including: (1) the amount of money that would be contributed; (2) the activities the funds could potentially support; and (3) the monitoring and evaluation methods used to measure the PCMTF's effectiveness.
Maximizing the efficiency of freight movement is important to minimize the project's air emissions. EPA understands that LAHD has been testing new technologies that could improve the number of "dual transaction" trips and yield additional efficiencies at the Port. For example, Yusen Terminal Inc. (YTI) participated in a pilot program for the Freight Advanced Traveler Information System (FRATIS) to improve drayage truck and container handling, which could lead to increases in dual transactions. ${ }^{7}$ It is unclear whether this technology has been expanded to ECT.

Traffic
Traffic congestion can adversely affect local air quality and community health. Chapter 3, Section 6 of the DEIS notes that the Proposed Action would result in significant traffic impacts at the Ferry Street

[^3]and State Route 47 (SR-47) intersection in years 2026 and 2038. The DEIS states that, because this intersection is within Caltrans's right-of way and not owned by the City of Los Angeles, "no mitigation is within the Port's jurisdictional control that could reduce the intersection impact to a less than significant level" (p. 3.6-2). Please note that guidance issued by the Council on Environmental Quality states that an EIS should identify "all relevant, reasonable mitigation measures that could improve the project...even if they are outside the jurisdiction of the lead agency or the cooperating agencies." ${ }^{8}$

Recommendations: Coordinate with Caltrans to identify transportation system improvements (e.g., intersection improvements, additional signaling) that could reduce traffic impacts at Ferry Street and SR-47 to a less-than-significant level during years 2026 and 2038. In the FEIS, disclose such measures and the potential process and funding mechanisms for their implementation.

## Solar Electricity

The DEIS states that photovoltaic panels would be installed over the employee parking lot, pending a feasibility study, as a mitigation measure for the proposed project's significant greenhouse gas emissions (p. 3.5-33). EPA commends USACE and LAHD for this mitigation measure, as the project location appears to be conducive to solar energy generation, and shading parking areas can also reduce evaporative emissions of air pollutants from parked vehicles.

Recommendation: Include a commitment to the installation of photovoltaic panels over the employee parking lot in the FEIS and ROD, assuming that such installation is feasible. Disclose the conditions that will be used to determine feasibility of this measure.

## Dredged Material

The DEIS correctly states that the Dredged Material Management Team (DMMT), including EPA, found dredged sediment associated with the Proposed Action to be suitable for ocean placement. It should also be noted that final concurrence by EPA on disposal site use conditions is required prior to ocean disposal occurring. Under the Marine Protection, Research, and Sanctuaries Act (MPRSA), EPA must consider impacts to human health and the marine environment when evaluating the suitability of sediment placement options. Appendix F2 to the DEIS discusses only the human health effects of placing dredged sediment at the LA-2 Ocean Disposal Site (p. 6).

## Recommendations:

- Clarify, in the FEIS, that final concurrence must be obtained from EPA prior to use of the ocean disposal site.
- Revise Appendix F2 to demonstrate that disposing of dredged sediment at LA-2 would not significantly affect human health or the marine environment.

[^4]
### 2.3.2.3 U.S. Environmental Protection Agency, Region IX (USEPA)

## Response to Comment USEPA-1

The comment is noted. Although the commenter applauds the LAHD for the significant long-term operational air quality improvements, an USEPA rating of EC-2 (Environmental Concerns - Insufficient Information) was given due to concerns about significant air quality impacts. It recommends that the USACE and LAHD explore additional mitigation measures (please see Master Response 1: Feasible Mitigation - Guidance and Applicability, for information on the feasibility of mitigation). The Draft EIS/EIR adequately and in great detail addressed the existing conditions, existing regulations, project impacts and feasible mitigation measures associated with the air quality impacts and to minority populations and/or low-income populations resulting from the proposed Project (refer to Section 3.2, Air Quality and Meteorology, and Chapter 5, Environmental Justice, of the Draft EIS/EIR). In addition, the LAHD has an extensive public outreach program associated with activities at the Port, particularly related to air quality and greenhouse gas emissions, and implementation of mitigation as recommended by the commenter. Please also see Master Response 3: Port-wide Emission Reduction Programs for a general review of the various measures and programs implemented at the Port by LAHD to reduce emissions for Port operations. The comment does not identify any specific deficiencies or contest the adequacy of the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

## Response to Comment USEPA-2

The comment is noted. A copy of the Final EIS/EIR will be provided as requested.

## Response to Comment USEPA-3

The USEPA rating and comment is noted and will be before the decision-makers for their consideration prior to taking any action on the proposed Project.

## Response to Comment USEPA-4

The commenter notes the project would have significant and unavoidable air quality impacts and that construction emissions exceed the federal de minimis levels in 2018. Note that the SCAQMD has indicated that the construction emissions from the project's Federal Action have been included in the General Conformity set-aside in the Final 2012 Air Quality Management Plan, which is the currently approved SIP. The SCAQMD also confirmed that "...the project will conform to the SIP and is not expected to result in any new or additional violations of the NAAQS or impede the projected attainment of the standards" (Letter from Dr. Philip M. Fine, SCAQMD to Mr. Chris Cannon, Port of Los Angeles, August 24, 2016). Therefore, these emissions do not cause or contribute to a new violation of an ambient air quality standard, nor do they increase the frequency or severity of any existing violation of any standard. The Draft General Conformity Determination, which contains the SCAQMD letter on Attachment C, was included in Appendix B4 of the Draft EIS/EIR.

The commenter suggests several mitigation measures to further reduce air emissions, and includes a footnote (fn 1) opining that exemptions should be allowed "only if: 1) a piece of specialized equipment is not available for purchase or lease within the United States; or 2) the relevant project contractor has been awarded funds to retrofit existing equipment, or purchase/lease new equipment, but the funds are not yet available." This latter recommendation is already incorporated into the applicable mitigation measures as detailed in the Mitigation Monitoring and Report Program for the proposed Project. Several of the construction mitigation measures, for example, (MM AQ-1, MM AQ-2, and MM AQ-3) allow exemptions
if it can be demonstrated that the required equipment is unavailable, to the satisfaction of LAHD. As it applies to implementing these measures, the exemption means that the equipment is not commercially available in California, incentive funds for the equipment upgrades have been applied for but not yet approved (or approved but not yet available), and/or the required equipment/control device is on order but not yet completed by the dealer or manufacturer. The first recommendation made by the commenter in fn . 1 (to allow the exemption only if equipment is not available from within the entire U.S., rather than within the state of California) is not feasible because a piece of specialized equipment, if geographically located far from the Port, for example, would likely not be able to be acquired in a reasonable and timely manner and is therefore too broad of a proposed requirement. Such a requirement could also require acquisition and use of equipment that is not yet commercially available and, hypothetically, could be located far from Los Angeles - such as on the east coast; thus, requiring long distance transport and the direct and indirect air emissions associated with such transport. Under this scenario, a requirement to acquire as yet unidentified "specialized equipment" would not necessarily result in avoiding or substantially lessening the significant impacts of the Project. More importantly, California already has a large equipment pool and a progressive regulatory framework targeting the reduction of air emissions and mandatory use of engines and/or equipment that in many instances is more stringent than other states and the federal government. Therefore, the Port believes that the existing exceptions within the applicable mitigation measures ensure the feasibility of such measures, and represent an adequate and reasonable approach to mitigating impacts to air quality while maintaining flexibility to address potential equipment availability shortcomings.

The commenter recommends requiring on-highway vehicles servicing the Everport Container Terminal to meet or exceed USEPA 2010 heavy-duty on-highway compression-ignition engine standards. This requirement is already incorporated into mitigation measure MM AQ-2 in the Draft EIS/EIR (page 3.2-32). In addition, the Clean Truck Program has banned trucks that do not meet the USEPA 2007 engine standards, with approximately 45 percent already meeting the 2010 standards. The reduced emissions associated with the Clean Truck Program are incorporated into both unmitigated and mitigate Project emissions. The Port continues to investigate updates to the Clean Air Action Plan (CAAP) that will reduce truck emission, as stated in the Draft 2017 Clean Air Action Plan Update (LAHD, 2017; https://www.portoflosangeles.org/pdf/CAAP_2017_Draft_Document-Final.pdf, accessed August 11, 2017). The program outlined in the Draft CAAP update for drayage trucks provides an additional path to substantially reduce truck emissions from Port operations over time. However, since the 2017 CAAP Update has not been formally adopted and the 2017 CAAP Update is a Port-wide program, LAHD is not taking any credit for the CAAP-estimated emission improvements in the proposed Project's EIS/EIR nor imposing on this Project a mitigation measure that cannot now be implemented Port-wide.

The commenter recommends that marine vessels, including all dredging equipment, to meet or exceed the Tier 4 marine CI engine standards for Category $1 \& 2$ vessels, and Tier 3 standards for Category 3 vessels. With regard to dredging equipment, LAHD has added to mitigation measure MM AQ-5 a requirement that, subject to availability, all dredging equipment shall be electric (see Chapter 3 of this Final EIS/EIR). LAHD requires the use of Tier 3 engines in harbor craft (usually Category 1 or 2 vessels) used in construction (MM AQ-1) and in operations per the currently approved CAAP, as noted in the Draft EIS/EIR, Section 3.2, Table 3.2-21 (pages 3.2-56 and 57). These requirements were incorporated into the unmitigated and mitigated emission inventories developed in the Draft EIS/EIR. Any requirements for Tier 4 engines in harbor craft will coincide the federal or state regulations and availability of Tier 4 harbor craft, and will be applied Port-wide. The incorporation of Category 3 Tier 3 vessels was included in both mitigated and unmitigated scenarios, based on forecasts provided by LAHD (Starcrest, 2015). Also see Chapter 3 of this Final EIS/EIR regarding changes to emissions tables in Section 3.2 of the Draft EIS/EIR. As stated on page B1-3 of Appendix B1 of the Draft EIS/EIR, these emission standards are assumed to apply to all harbor craft, but not oceangoing vessels, since it is likely that oceangoing vessels would be manufactured overseas and, therefore, would not be subject to the rule.

The recommendation to require all locomotives servicing Evergreen Container Terminal to exceed the San Pedro Bay Ports 2010 CAAP Update requirement of full compliance with USEPA Tier 4 locomotive emissions is not feasible because LAHD is pre-empted by the federal Surface Transportation Board from requiring/mandating certain types of locomotives operate at the Port.

With regard to requiring that all cargo handling equipment (CHE) be zero-emission equipment by 2030, see Master Response 2: Zero-Emissions Technologies for details regarding zero- and near-zero- emissions Cargo-Handling Equipment. As noted in the Draft 2017 CAAP Update, LAHD will work with CARB to facilitate technology demonstrations. As noted above, any such requirements would be implemented Portwide and not as a mitigation measure for a single terminal project.

Regarding minimum performance requirements of mitigation measures MM AQ-2 and MM AQ-3, the assumptions used to calculate emissions were conservative in that for MM AQ-2 it assumes that 50 percent of on-road trucks used in construction will meet the USEPA 2010 on-road emission standards. The remaining 50 percent were assumed to meet the default EMFAC2014 fleet average for the given year. See Response to Comment SCAQMD-12 for revisions to MM AQ-2. For mitigation measure MM AQ-3, the assumptions were that 50 percent of non-road construction equipment will meet the USEPA Tier 4 final emission standards, 45 percent will meet USEPA Tier 3 standards, with additional control of particulate matter using Level 3 CARB-verified VDECS, and 5 percent will meet USEPA Tier 2 standards, with additional control of particulate matter using Level 3 CARB-verified VDECS. See Comment SCAQMD-12 for revisions to MM AQ-3.

LAHD has determined that all feasible mitigation measures have been incorporated at this time. Compliance with the 2017 CAAP Update will be implemented on a Port-wide basis, not project by project to avoid imposing a competitive disadvantage to one terminal over the others. In addition, please see Master Response 3: Port-wide Emission Reduction Programs, for a general review of the various measures and programs implemented at the Port by LAHD to reduce emissions from Port operations.

Table 3.2-1 in the Draft EIS/EIR (page 3.2-7) contains sufficient detail to inform readers of the potential effects of exposure to the criteria air pollutants, per NEPA and CEQA standards (State CEQA Guidelines Section 15151 and 40 CFR 1502.2, 1502.24).

## Response to Comment USEPA-5

The comment is noted. All feasible project-level mitigation measures have been applied to reduce any high and adverse impact to adjacent communities. Although Chapter 5, Environmental Justice, specifically addresses any disproportionate effects on minority and/or low-income populations associated with the proposed Project and alternatives, Section 4.2.2 of Chapter 4, Cumulative Analysis of the Draft EIS/EIR, details the cumulative impacts related to air quality and health risks associated with the proposed Project along with current or reasonably foreseeable future projects (approved or proposed). Therefore, the proposed Project/action was considered cumulatively with other proposed projects within the Ports of Los Angeles and Long Beach. The comment does not identify any specific deficiencies or contest the adequacy of the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

## Response to Comment USEPA-6

The comment is noted. Communities develop over time around major highways. Truck travel associated with Port activities uses the major highways wherever they are situated. Truck routes used during construction are discussed in Section 3.6.4.3 (page 3.6-53) of the Draft EIS/EIR. For the commenter’s convenience, the following graphics overlay Figures 5-1 and 5-2 from the Draft EIS/EIR with potential,
assumed truck routes during project operation. While it is unknown the exact route any individual truck may take, as can be seen truck routes likely would be situated in a manner that minimizes impacts to communities, including minority and low-income housing, thus minimizing potential impacts associated with operational truck trips.



Source: U.S. Census Bureau, 2009-2013
Figure 5-2: Percent of Low-Income Population (by Census Tract)


Peak-daily truck trips are estimated by calculating the percent of truck-based traffic attributed to the Everport Container Terminal operations for year 2038 projected to use each of the routes shown below (see
6 Appendix E1 of the Draft EIS/EIR).


## Response to Comment USEPA-7

3 For information regarding estimated truck trip numbers by potential, assumed route, see Response to

Air quality monitoring is conducted at four locations in and around the Port of Los Angeles, including two community monitoring stations, one in San Pedro and one in Wilmington (see Section 3.2.2.2, Criteria Pollutants and Air Monitoring Criteria Pollutants, in the Draft EIS/EIR, page 3.2-9). The air quality monitoring station at the Terminal Island Water Reclamation Plant (referred to as the 'source dominated site’) provides the best characterization of Port source impacts on air quality, including impacts from container trucks traveling to and from the Everport, YTI and APL terminals because of its close proximity to the Project site, as shown in Figure USEPA-7-1 below. Therefore, additional monitoring stations are not likely to produce a better evaluation of Port impacts.

Figure USEPA-7-1 Location of TITP Monitoring Station Relative to Project Site


See Response to Comment USEPA-6 above, for a discussion on minimizing impacts on communities, including minority and low-income housing, associated with truck trips. The planting of shade trees along affected corridors, and installing air filtration systems in buildings that house or serve sensitive receptors along route, are not appropriate or feasible because the transportation corridors used by the proposed Project are regionally used and not specific to, or under the control of the Everport Container Terminal and/or proposed Project, and because regional housing is largely privately owned. In addition, in the absence of a Port-wide program requiring the proposed Project to add these types of mitigation measures, a competitive disadvantage would be placed on Everport, which would not be appropriate for inclusion in, or the ability to implement through, the Draft EIS/EIR (State CEQA Guidelines Section 15126.4(a)(1); 40 CFR 1502.14(f)). However, mitigation for potential air quality impacts can be found in Section 3.2.4 of the Draft EIS/EIR, which includes seven mitigation measures and two lease measures to reduce impacts to air quality during construction and operation from sources that operate on regional roadways, railways, and shipping lanes, as well as on Port property.

The recommendation to establish a more rigorous timeframe for implementation of a zero- and near-zeroemission preferential access system is infeasible because a successful preferential access system cannot be appropriately evaluated until construction finishes in 2019 and port traffic analyses are updated; therefore, it is not appropriate for inclusion in the Draft EIS/EIR (State CEQA Guidelines Section 15126.4(a)(1); 40 CFR 1502.14(f)). Also, please see Master Response 2: Zero-Emission Technologies.

## Response to Comment USEPA-8

The U.S. Department of Transportation (USDOT) is currently testing the Freight Advanced Traveler Information System (FRATIS) in the Ports of Los Angeles/Long Beach. FRATIS is currently only in development and therefore not available for inclusion with the proposed Project. At the commenter's request, information pertaining to FRATIS is included below.

FRATIS is designed to improve the efficiency of drayage and container handling by using several levels of real-time information to guide adaptive and effective decision making for drayage companies and drivers. The FRATIS demonstration project is focused on: (1) improving communications and sharing intermodal logistics information between the drayage industry and port terminals to reduce congestion during peak hours; and (2) improving traveler information so that drayage operators can more effectively plan around traffic and port congestion. The FRATIS system is not currently designed to increase dual transactions in container terminals. Some of the information provided via the system could potentially be used to indirectly facilitate increased dual transactions.

The primary objectives of FRATIS are:

- Reduce truck-miles traveled
- Reduce truck-hours travelled via reduced truck-miles travelled, reduced roadway travel times, and reduced container terminal visit times
- Reduce emissions and fuel consumption as co-benefits

These objectives are achieved via the following functions of FRATIS:

- Optimize routing and sequencing of truck missions (delivery or pick-up of containers) to/from the Ports of Los Angles and Long Beach, via pre-planning and real-time optimization during these missions
- Using real-time traffic data from the Los Angeles County Metropolitan Transportation Authority (LA Metro) for freeways and roadways throughout southern California
- Container terminal turn times
- Automate messaging by truck dispatchers to terminals of estimated arrival times

The USDOT previously tested FRATIS with 50 trucks at one terminal in the Port (USDOT, 2016). The current USDOT demonstration phase involves 200 trucks with several trucking companies. This current phase has commenced and will end in early 2018, but does not include a terminal operator. Estimated time of arrival of the trucks at the terminal is being disseminated via a website available to all terminal operators. Hence, terminal operators can "pull" ETA if they so desire.

Additionally, the USDOT project, the Port and the California Energy Commission (CEC) will be conducting a one-year pilot project that entails the expansion and enhancement of FRATIS. The Port of Los Angeles-CEC project, termed Eco-FRATIS, entails demonstrating ITS technology with 100 drayage trucks (in addition to 200 in the USDOT demonstration). The field-testing portion of the Port of Los Angeles-CEC project will commence in late 2017. In addition to the technologies and functions listed above, Eco-FRATIS will also include:

- Enhanced real-time container terminal visit times (in-terminal turn and gate queue times) via an automated mobile smart device application (Harbor Trucking Association/InfoMagnus Geostamp)
- University of California Riverside’s ECO-Drive application, which entails using traffic signal timing information to optimize acceleration/deceleration of trucks (UCR, Center for Environmental Research and Technology, 2017)


## Response to Comment USEPA-9

The comment is noted. The comment does not identify any specific deficiencies or contest the adequacy of the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

## Response to Comment USEPA-10

LAHD is committed to addressing the overall off-Port impacts created by Port operations on surrounding communities and their residents. The Harbor Community Benefit Foundation (HCBF) is a nonprofit organization that administers the Port Community Mitigation Trust Fund (PCMTF). The PCMTF was established following a Memorandum of Understanding (MOU) between appellants and the City of Los Angeles to settle appeals to the Board of Harbor Commissioner's certification of the Berths 136-147 [TraPac] Container Terminal Project Final EIS/EIR. The TraPac MOU was executed on April 2, 2008. Pursuant to Exhibit B of the TraPac MOU, a specific list of Port expansion projects was established for which LAHD would contribute to the PCMTF if implementation of the project occurs within the coverage dates of the MOU. Any EIR not certified by May 2016 falls outside of the effective coverage date of the MOU and is not required under the MOU to make a contribution to the PCMTF. Because the MOU is no longer in effect, there is no legal implementing mechanism for LAHD to make a contribution to this fund at this time. Although LAHD will not be contributing to the HCBF as a result of this project, it is important to note that LAHD contributes 10 percent of its operating income annually in local public infrastructure improvement projects. This amount of money equates to approximately $\$ 22-\$ 25$ million per year. In addition, LAHD contributes approximately $\$ 20$ million additionally on an annual basis to public programs and public access projects. Further, the applicant will be contributing to the GHG Fund and this contribution will be increasing to approximately $\$ 300,000$. The TraPac MOU does not allow the funding to be used as mitigation for direct project effects. Rather, the HCBF awards grants to a variety of projects and
programs aimed at reducing health, environmental, and community impacts from overall Port operations in the communities of San Pedro and Wilmington. Further information about the HCBF can be obtained from http://hcbf.org/.

Appendix A, Notice of Intent/Notice of Preparation, of the Draft EIS/EIR contains comment letters received in response to the NOI/NOP, which were considered throughout document preparation of the Draft EIR/EIS. Table 1-4 in Chapter 1 of the Draft EIS/EIR contains a summary of the comments received in response to the NOI/NOP. This Response to Comments chapter contains comment letters from community members as well as a transcript of the public hearing conducted for the Draft EIS/EIR; all of which have been responded to here per CEQA and NEPA requirements (PRC 21091(d); State CEQA Guidelines Section 15088; 40 CFR 1503.4 (a)(5)). The HCBF is tasked with administering the PCMTF and organizes "special events and ongoing community programs," such as "educational boat tours, summer concerts, parades, festivals, and outdoor movies" (Draft EIS/EIR, page 7-28). Refer to Chapters 5 and 7 of the Draft EIS/EIR for discussions on environmental justice and socioeconomic conditions, respectively, within the community and region.

## Response to Comment USEPA-11

LAHD is currently working the Caltrans regarding the re-striping of this intersection to reduce the impacts in the 2026 study year and beyond. However, since no formal agreement has been reached at this time, this impact will remain significant and unavoidable. The Port has insufficient legal authority to enact transportation system improvements that are not under its jurisdiction and, therefore, per 2011 CEQ guidance on Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact, cannot "commit to mitigation measures" that they cannot perform or ensure the performance of (page 6). Also see State CEQA Guidelines Section 15126.4(a)(2) and (5) for CEQA criteria regarding legally binding mitigation. Every attempt will be made to formalize this agreement and there is no traffic impact triggered at this intersection until 2026 so it is LAHD's hope that this issue will be resolved by then and that this measure will be implemented.

## Response to Comment USEPA-12

The comment is noted. The feasibility of the photovoltaic (solar) panels over the employee parking lot would depend on the project's approval and ultimate design. Feasibility cannot be determined at this time as detailed layout and engineering plans associated with the modified gate complex, which is a component of the proposed Project and Alternatives 1, 3 and 5, has not been completed. The detailed layout, which may involve reconfiguring and/or relocating the parking lot, will influence the feasibility of installing solar panels. As stated in mitigation measure MM GHG-2 on page 3.5-33 of the Draft EIS/EIR, if the feasibility study finds the solar parking structure to be feasible, it will be installed.

## Response to Comment USEPA-13

The comment is noted. Approval from USEPA is required for disposal of dredge material at LA-2. Appendix F of the Draft EIS/EIR (on page 3) discusses the USEPA's regulatory and permit authority for ocean disposal actions pursuant to Sections 102 and 103 of the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972. Further, the USACE is aware of requirements to obtain USEPA approval for disposal at LA-2 prior to issuing a DA permit.

Regarding impacts to human health and the marine environment associated with disposal of dredge material at LA-2, the discussion in Section 3.3.4.3 (under Impact BIO-1) in the Draft EIS/EIR determined, based on the sediment testing, that impacts to biological resources, including marine environment, would not be significant. To clarify this in the Evaluation of Dredged Material Disposal Options document (Appendix F2
of the Draft EIS/EIR), the assessment under the heading "Impacts of Ocean Disposal" beginning on page 10 of Appendix F2 has been supplemented (see Chapter 3 of this Final EIS/EIR) to indicate that anticipated impacts to the marine environment associated with disposal of dredge materials at LA-2 would not be significant. Based on the revised Appendix F2 assessment, significant impacts to human health and the marine environment are not anticipated. In addition, because there are no sensitive receptors near LA-2, there are no adverse air-pollution related human health impacts associated with disposal at this site. It should also be noted that as discussed in the Draft EIS/EIR, the environmental effects associated with disposal of dredged sediments at LA-2 were evaluated during the site designation process (USEPA, 1988) and subsequently evaluated in consideration of higher maximum annual disposal volume (USEPA and USACE, 2005). By meeting the sediment testing and disposal parameters established for LA-2, the disposal of project-related dredge material would have no additional direct, indirect, or cumulative adverse impact on the human or aquatic environment.

# United States Department of the Interior 

FISH AND WILDLIFE SERVICE<br>Ecological Services<br>Carlsbad Fish and Wildlife Office<br>2177 Salk Avenue, Suite 250<br>Carlsbad, California 92008

In Reply Refer To:
FWS-LA-17B0406-1710904

June 5, 2017
Sent by Email

Aaron O. Allen, Ph.D.
North Coast Branch Regulatory Division
U.S. Army Corps of Engineers, Los Angeles District

Ventura Field Office
2151 Alessandro Drive, Suite 110
Ventura, California 93001
Attention: Theresa Stevens, Ph.D., Project Manager
Subject: Informal Section 7 Consultation for the Berths 226-236 Everport Container Terminal Improvements Project, Port of Los Angeles, Los Angeles County, California

Dear Dr. Allen:
This letter is in response to your April 21, 2017, request for informal consultation pursuant to section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 et seq.) for the proposed Berths 226-236 Everport Container Terminal Improvements Project in the Port of Los Angeles (Port), Los Angeles County, California. You have requested our concurrence that the proposed project is not likely to adversely affect the federally endangered California least tern [Sternula antillarum browni (Sterna a. b.); least tern]. This consultation is based on information provided with your request and the Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) for the project dated April 2017.

The proposed project will improve the container-handling efficiency and capacity of the Port to accommodate larger container vessel needs projected through 2038. The project includes dredging a total of 38,000 cubic yards of sediment to increase the depth at Berths 226-229 to -55 feet mean lower low water (MLLW) and the depth at Berths 230-232 to -49 feet MLLW. Dredge materials will be disposed at an ocean disposal site (i.e., LA-2) and/or an upland disposal facility. Sheet piles and/or king piles will be installed below the mud line to stabilize the existing wharves over a total distance of approximately 2,800 feet. The number of operational cranes will be increased from 8 to 13 , and up to 5 existing cranes will be modified to accommodate larger vessels. A total of 23.5 acres of new backlands and associated infrastructure will be developed, for a total terminal acreage of 229 acres. Vessel traffic is projected to increase by 42 ship calls annually by 2038. Construction will be initiated at the end of 2017 and will be completed in approximately 24 months. A detailed project description is included in the EIS/EIR.

The proposed project is located about 2.5 miles from a least tern nesting site maintained by the Los Angeles Harbor Department (LAHD) on Pier 400. Potential effects to least terns from the proposed project include: (1) reduced foraging success as a result of construction-related disturbance and increased turbidity levels, (2) reduced foraging success due to increased vessel traffic and operationrelated disturbances, and (3) increased potential for predation due to an increase in the number of high perches available for avian predators, such as peregrine falcons (Falco peregrinus).

Noise and disturbance associated with installation of the wharf stabilization structures and backland improvements could discourage least terns from foraging in the vicinity of the project site.
According to the Draft EIS/EIR, sound pressure waves associated with pile driving could cause fish mortality (i.e., where noise levels are greater than 183 decibels) and are expected to cause fish to leave the project area. While foraging by least terns has been documented in the Inner Harbor where the project will occur, they prefer waters of the Outer Harbor that are closer to the nesting site. Turbidity from dredging is anticipated to be limited to about 1,000 feet from the project site (Draft EIS/EIR). Because impacts to foraging habitat will be limited to the Inner Harbor and several hundred acres of foraging habitat will be available for use by least terns in the Outer Harbor, we do not anticipate construction of the proposed project to impact least tern foraging success.

Operation of the proposed project will increase the number of cranes by 5 and associated vessel traffic by 42 ships per year by 2038. Information provided with your request suggests that the operation of 5 additional cranes will not measurably alter the environmental conditions at the Everport Container Terminal. We currently do not have sufficient information to evaluate the individual or cumulative effects of increased vessel traffic and associated activities within San Pedro Bay on least tern foraging. Presumably, Port activities have been steadily increasing over time and have not resulted in a commensurate reduction in the productivity of least terns at Pier 400 (Draft EIS/EIR); however, human disturbances associated with aircraft and personnel watercraft have been identified as potential factors leading to reduced nesting and foraging success in the Port (Langdon Biological 2017). The LAHD proposes to conduct a least tern foraging study in 2017 that will include observations of any disturbances that may affect foraging behavior. We anticipate this study will contribute to our knowledge of the types and extent of disturbances to least tern foraging that may occur within San Pedro Bay. In addition, we will continue to work directly with the LAHD to identify monitoring strategies that could assist in tracking the current and future extent of activities in the vicinity of least tern foraging and nesting habitat to help inform management of the Pier 400 nesting site over time.

Peregrine falcons are known predators on least terns at Pier 400 (e.g., Langdon Biological 2017). While the addition of 5 cranes to Everport Container Terminal could provide additional perching opportunities for avian predators, the terminal is over 2.5 miles from the least tern nest site and is not in a preferred foraging area for least terns. Therefore, the additional cranes are not anticipated to increase the risk of predation on least terns.

Based on the above analysis, we concur with your determination that the proposed project is not likely to adversely affect the least tern. With our concurrence, the interagency consultation
requirements of section 7 of the Act have been satisfied. Although our concurrence ends informal consultation, obligations under section 7 of the Act shall be reconsidered if (1) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously considered, (2) this action is subsequently modified in a manner that was not considered in this assessment, or (3) a new species is listed or critical habitat designated that may be affected by the action.

USFWS-1 cont.

With respect to (1) above, our conclusions are based on the availability of Outer Harbor foraging areas for least terns in San Pedro Bay during the construction of the proposed project. If other projects with the potential to impact Outer Harbor foraging areas are scheduled to occur concurrently with the proposed project, our office should be contacted to determine if reinitiation of consultation is warranted. We appreciate your coordination on the above project. If you have any questions regarding this letter, please contact Fish and Wildlife Biologist Christine Medak at 760-431-9440, extension 298.

> Sincerely,

| JONATHAN | Digitally signed by JONATHAN <br> SNMDER <br> SNYDER |
| :--- | :--- |
| Date: 2017.06 .05 09:33:14-0700' |  |

for Karen A. Goebel
Assistant Field Supervisor
cc:
Bryant Chesney, NOAA National Marine Fisheries Service Loni Adams, California Department of Fish and Wildlife

## LITERATURE CITED

[Langdon Biological] Langdon Biological Consulting. 2017. Monitoring report for the California least tern 2016 season, Pier 400 nesting site, Los Angeles Harbor, City of Los Angeles, Los Angeles County, California. Prepared for Los Angeles Harbor Department, San Pedro, California.

### 2.3.2.4 U.S. Department of Interior, Fish and Wildlife Service, Ecological Services (USFWS)

## Response to Comment USFWS-1

Thank you for your concurrence that the proposed Project is not likely to adversely affect the federallylisted as endangered California least tern and that the interagency consultation requirements pursuant to Section 7 of the Endangered Species Act of 1973 have been satisfied. The proposed Project will not affect the availability of Outer Harbor foraging areas for least terns in San Pedro Bay during construction. No further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

### 2.3.3 State Government Comments

Matthew Rodriquez Secretary for Environmental Protection

Edmund G. Brown Jr. Governor

May 19, 2017

Dr. Theresa Stevens, Ph.D.
U.S. Army Corps of Engineers

Los Angeles District Regulatory Division
Ventura Field Office
2151 Alessandro Drive, Suite 110
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Mr. Christopher Cannon, Director
Environmental Management Division
City of Los Angeles Harbor Department
P.O. Box 151

San Pedro, California 90731
cegacomments@portla.org
DRAFT ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT AND DRAFT GENERAL CONFORMITY DETERMINATION (EIS/EIR) FOR THE BERTHS 226-236 [EVERPORT] CONTAINER TERMINAL IMPROVEMENTS PROJECT (SCH\# 2014101050)

Dear Dr. Stevens and Mr. Cannon:
The Department of Toxic Substances Control (DTSC) has reviewed the subject document. The following project description is stated in the draft EIS/EIR: "The existing terminal consists of two operating berths, Berths 226-229 and Berths 230-232, with eight operational 100-foot gauge wharf gantry cranes. Physical improvements proposed at the Everport Container Terminal include dredging and installing sheet piles ${ }^{1}$ and king piles $^{2}$ at Berths 226-229, dredging and installing sheet piles at Berths 230-232, installation of spacers between the wharf and existing wharf fenders to provide better clearance between the berthed vessels and the new king and sheet piles, adding five new 100-foot gauge wharf gantry cranes, modifying the wharf to install five additional AMP vaults near the water's edge, expanding the backlands to a 1.5 -acre parcel at the southern end and a 22 -acre parcel between Terminal Way and Cannery Street. The 1.5-acre parcel is vacant. As part of the backland development, existing structures within the 22-acre parcel would be demolished, and the streets vacated."

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Mr. Christopher Cannon, Director
May 19, 2017
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Based on the review of the EIS/EIR, DTSC has the following comments:

1. The EIS/EIR should identify and determine whether current or historic uses at the project site may have resulted in any release of hazardous wastes/substances. A Phase I Environmental Site Assessment may be appropriate to identify any recognized environmental conditions.
2. If there are any recognized environmental conditions in the project area, then proper investigation, sampling and remedial actions overseen by the appropriate regulatory agencies should be conducted prior to the new development or any construction.
3. If the project plans include discharging wastewater to a storm drain, you may be required to obtain an NPDES permit from the overseeing Regional Water Quality Control Board (RWQCB).
4. The EIS/EIR states, "As part of the backland development, existing structures within the 22-acre parcel would be demolished, and the streets vacated." If planned activities include building modifications/demolitions, lead-based paints or products, mercury, and asbestos containing materials (ACMs) should be addressed in accordance with all applicable and relevant laws and regulations. In addition, evaluate whether polychlorinated biphenyls (PCBs) containing materials is present in onsite buildings and address as necessary to protect human health and the environment.
5. The EIS/EIR further states, "All dredged material would be disposed of at an approved site, such as U.S. Environmental Protection Agency (EPA)-approved Ocean Disposal Site LA-2 (LA-25 2), an approved upland facility, or a combination of the two." If the project site is contaminated, wastes should be managed and disposed of in accordance with all relevant and applicable laws and regulations.
6. The EIS/EIR states, "The 180 acres includes approximately 20 acres for use as a railyard (the Everport Container Terminal portion of the TICTF). Railroad easements and rail yards are commonly impacted due to spillage of chemicals, fuels, and lubricants, and use of pesticides and herbicides along the tracks for weed control. DTSC recommends assessment/investigation and/or cleanup as necessary to confirm that no residual contamination associated with rail operation is present onsite if this area was used for railroad in the past.
7. The project includes, "Addition of five alternative maritime power (AMP) vaults (throughout wharf area adjacent to Berths 226 to 232) and associated infrastructure (e.g., electrical conduit and wires); ${ }^{1 .}$. DTSC recommends evaluation, proper investigation and mitigation, if necessary, on onsite areas with current or historic PCB-containing transformers or electrical equipment.

DTSC-1
cont.

DTSC-2

Dr. Theresa Stevens, Ph.D.
Mr. Christopher Cannon, Director
May 19, 2017
Page 3
8. Aerially deposited lead (ADL) is generally encountered in unpaved or formerly unpaved areas adjoining older roads, primarily as a result of deposition from historical vehicle emissions when gasoline contained lead. As the project site is located adjacent to Ocean Boulevard, Ferry Street, Terminal Way and Cannery Street, this issue should be addressed in accordance with all applicable and relevant laws and regulations.
9. The EIS/EIR states that several areas at the project site were remediated or currently under remediation. The EIS/EIR should provide the following information:
a. Identify the name(s) of the regulatory agency(ies) approved /currently overseeing the remediation of specific areas of contamination and the current status of investigation/remediation.

DTSC-9
b. Past operations at each area and the detected contaminants.
c. Indicate whether the discharges resulted in groundwater or surface contamination.
d. DTSC is unable to evaluate whether vapor sampling and/or potential vapor intrusion risk was adequately addressed due to lack of relevant detailed information in the EIS/EIR.
10. Human and ecological risks for the future users associated with the residual contaminants left in place at the site should be evaluated/remediated in accordance with all applicable and relevant laws and regulations. This information should be included in the EIS/EIR.
11. If soil contamination is suspected or observed in the project area, then excavated soil should be sampled prior to export/disposal. If the soil is contaminated, it should be disposed of properly in accordance with all applicable and relevant laws and regulations. In addition, if the project proposes to import soil to backfill the excavated areas, proper evaluation and/or sampling should be conducted to make sure that the imported soil is free of contamination.
12. If during construction/demolition of the project, soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented. If it is determined that contaminated soil and/or groundwater exist, the EIS/EIR should identify how any required investigation and/or remediation will be conducted, and the appropriate government agency to provide regulatory oversight.

Dr. Theresa Stevens, Ph.D.
Mr. Christopher Cannon, Director
May 19, 2017
Page 4

If you have any questions regarding this letter, please contact me at (714) 484-5380 or email at Johnson.Abraham@dtsc.ca.gov.

gur
Johnson P. Abraham
Project Manager
Brownfield Restoration and School Evaluation Branch
Brownfield and Environmental Restoration Program - Cypress
kl/sh/ja
cc; See next page.

Dr. Theresa Stevens, Ph.D.
Mr. Christopher Cannon, Director
May 19, 2017
Page 5
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CEQA\# 2014101050

### 2.3.3.1 California Department of Toxic Substances Control (DTSC) <br> Response to Comment DTSC-1

Thank you for your review of the Draft EIS/EIR. The comment is noted. Section 3.7.2, Groundwater and Soils of the Draft EIS/EIR, provides a detailed description of the existing groundwater and soil conditions associated with current and historic uses at the Project site, a summary of findings from previous soil and groundwater investigations, and a description of potential site contamination due to those current and prior uses. Figure 3.7-1 in Section 3.7 illustrates the areas of potential concern within the Project site. As detailed in Section 3.7.2, both backland expansion areas ( 22 -acre and 1.5 -acre sites) have been the subject of various investigations over the years; therefore, the condition and contents of the backlands expansion sites have been investigated and an additional Phase 1 investigation is not warranted. Further, as detailed in Section 3.7.2.5, an Environmental Data Resources (EDR) data base report was prepared for the proposed Project, which identified approximately 50 sites (multiple facility names at the same address are considered one site) in various environmental data bases within the search radius of $1 / 8$ mile of the Project site.

## Response to Comment DTSC-2

The comment is noted. As described in Section 3.7.4.1 of the Draft EIS/EIR, groundwater and surface soil impacts were evaluated with respect to several general parameters, including existing and potential groundwater quality and soil contaminants. These evaluations include the former Canner's Steam Company Plant site within the 22-acre backlands expansion area and the 1.5 -acre backlands expansion area, which are subject to oversight by the Los Angeles Regional Water Quality Control Board (LARWQCB). The impact of the proposed Project and the alternatives on each of these parameters was evaluated assuming compliance with all regulatory controls. Specifically, the Draft EIS/EIR assumes that any contaminated soil and groundwater encountered during or prior to construction of the proposed Project would be characterized, handled, transported, remediated, and/or disposed of in accordance with the LAHD protocols and all applicable federal, state, and local regulations.

## Response to Comment DTSC-3

The comment is noted. As described in Section 3.7.4.1 of the Draft EIS/EIR, an individual NPDES permit for stormwater discharges or coverage under the General Construction Activity Storm Water Permit would be obtained for the proposed Project or alternatives. Please refer to Section 3.11.3 (within Section 3.11, Water Quality, Sediments, and Oceanography) for information on the NPDES regulations.

## Response to Comment DTSC-4

The comment is noted. Section 3.7.2.3 of the Draft EIS/EIR, provides a subsection (beginning on page 3.710) that details known asbestos, lead-based paint and other hazardous materials (such as PCB-containing light ballasts) associated with the former Canners Steam Plant. Section 3.7.3 (beginning on page 3.7-11) also provides a description of the applicable laws, regulations governing the demolition of structures with regard to the potential encountering of PCBs and ACMs. These applicable regulations would address any known or unknown contamination discovered during construction and are in place to protect human health and the environment.

## Response to Comment DTSC-5

The comment is noted. As detailed in Section 3.11.2.3 (in Section 3.11, Water Quality and Oceanography beginning on page 3.11-14) a sediment characterization study was performed at Berths 226-232 to determine the suitability of the dredged sediments for a range of potential dredged material management
options (Ramboll Environ, 2015). Results from this evaluation are presented in Section 3.11.2.3. To summarize, the results indicated that the sediments were suitable for unconfined aquatic disposal. In addition, on August 26, 2015, members of the Los Angeles Regional Contaminated Sediments Task Force agreed with the results and determined that all sediments dredged during the proposed Project would be suitable for ocean disposal at LA-2. However, if contamination is found on the landside of the Project site during construction, as stated within Section 3.7.4.3 (beginning on page 3.7-21), under Impact GW-1, all contaminated groundwater and/or soil encountered would be characterized, handled, transported, remediated, or disposed of in accordance with all applicable federal, state, and local laws and regulations and in accordance with the regulatory lead agencies’ (e.g., USEPA, DTSC, LARWQCB, and LACFD) requirements.

## Response to Comment DTSC-6

The comment is noted. As analyzed in Section 3.7.4.3, under Impact GW-1 (beginning on page 3.7-40), Alternative 5 would include the installation of a new rail line at the TICTF. The new rail line would be installed between existing rails, and would involve pavement removal, excavation to approximately 3 feet below ground surface (bgs), soil compaction, placement of base, installation of rail ties and track, and repaving. Terminal Island has undergone extensive changes since the later 1800s, and a review of the historic topographic maps referenced in Section 3.7 Groundwater and Soils (EDR, 2016b) shows early development of rail lines on what is now the TICTF on Terminal Island. No contaminant spills or discoveries of pesticide contamination have been documented at the TICTF in the 2016 EDR report; however, some indications of potential contamination were identified near the periphery of the Everport portion of the TICTF. As a consequence, there is a potential to encounter contaminated soil during installation of the new rail line at the TICTF; however, groundwater will not be encountered due to the depth of the excavation. As with the proposed Project, any contaminated soil encountered during construction of Alternative 5 would be handled, transported, remediated, or disposed of in accordance with all applicable federal, state, and local laws and regulations and in accordance with the regulatory lead agencies' (e.g., USEPA, DTSC, LARWQCB, and LACFD) requirements. Further, any soil disturbance in TICTF requires a soil management plan by the LARWQCB. Therefore, with adherence to existing laws and regulations, exposure associated with prior uses, which would be deleterious to humans, based on regulatory standards established by the lead agency for the site, would be less than significant.

## Response to Comment DTSC-7

The comment is noted. The five additional AMP vaults and associated infrastructure is proposed for the area within 100 feet of the wharf, and not within an area that would have historically used PCB-containing transformers or electrical equipment. In addition, there is no removal of any PCB-containing transformers or electrical equipment associated with the proposed Project.

## Response to Comment DTSC-8

The comment is noted. The Project site is not located adjacent to Ocean Boulevard. The proposed Project is located on Terminal Island along Terminal Way and Cannery Street. The existing terminal is paved, but portions of the backland expansion areas are unpaved. However, because Terminal Island is isolated from the mainland and the local streets in the project vicinity have historically had low traffic volumes relative to the high-volume highways and freeways in the distant vicinity and mainland, aerially deposited lead is not expected to be substantially above background levels on Terminal Island. In addition, the majority of Port activities involve diesel fuels and not gasoline. Therefore, based on the relatively low traffic volumes in the vicinity of the Project site and the limited use of gasoline in the area, it is not anticipated that aerially deposited lead would be an issue during construction. However, soils that would require disposal may be subject to representative sampling and analysis for contaminants prior to disposal, as a standard requirement
for Port construction contractors and included as a permit condition issued to the applicant prior to construction and excavation. Any soil found to be contaminated would be managed and/or disposed of in accordance with all applicable laws and regulations.

## Response to Comment DTSC-9

The comment is noted. Section 3.7.2, Groundwater and Soils of the Draft EIS/EIR, provides a detailed description of the existing groundwater and soil conditions associated with current and historic uses at the Project site, as well as a summary of findings from previous soil and groundwater investigations, and a description of potential site contamination due to those current and prior uses. As detailed in Section 3.7.2, both backland expansion areas ( 22 -acre and 1.5 -acre sites) have been the subject of investigations and reports, within which details on the contaminants found (soil and/or groundwater), agency(ies) involved, and current circumstances with regulators, is provided. Soil remediation was completed at the former Canner's Steam Company Plant site under oversight of LARWQCB and is currently undergoing groundwater monitoring activities. Parcel H (1.5-acre site) is part of the former ExxonMobil (now PBF) site under oversight of LARWQCB and is currently undergoing groundwater monitoring activities (Cleanup and Abatement Order No. 0333, Site ID NO. 2040087). As for vapor information, on page 3.7-12 of the Draft EIS/EIR, the ExxonMobil/PBF site includes a full-scale free hydrocarbon product recovery system and vapor extraction system which has been in operation since 1996. The system continues to remove free hydrocarbon product from the ExxonMobil/PBF site and nearby areas. Any further potential vapor intrusion would be managed in accordance with all applicable laws and regulations.

## Response to Comment DTSC-10

The comment is noted. The future uses of the Project site would continue to be General/Bulk Cargo (Non Hazardous Industrial and Commercial) and zoned as [Q]M3-1 (which allows for heavy industrial uses). The site will be paved and thus potential exposure pathways to the residual contamination in soil and groundwater for future site usage would be incomplete and minimized. As noted in the Draft EIS/EIR, and above in Response to Comments DTSC-5 and DTSC-6, all contaminated groundwater and/or soil encountered during construction would be characterized, handled, transported, and disposed of in accordance with all applicable federal, state, and local laws and regulations and in accordance with the regulatory lead agencies’ (e.g., USEPA, DTSC, LARWQCB, LACFD, and LAHD) requirements pertaining to site investigation, testing, and treatment, and adherence to a contamination contingency plan. If further evaluation or remediation is necessary during construction, the adherence to existing laws and regulations would be followed (as described and evaluated in the Draft EIS/EIR), and would ensure that significant human or ecological risks to future uses would not occur. Therefore, no additional information or analysis is required in the EIS/EIR.

## Response to Comment DTSC-11

The comment is noted. As noted in the Draft EIS/EIR, and above in Response to Comments DTSC-5, DTSC-6, and DTSC-10, all contaminated groundwater and/or soil encountered during construction would be characterized, handled, transported, and disposed of in accordance with all applicable federal, state, and local laws and regulations and in accordance with the regulatory lead agencies’ (e.g., USEPA, DTSC, LARWQCB, LACFD, and LAHD) requirements. Any soil import will adhere to LAHD's Environmental Guidance for Import Soil Requirements (June 2016). Therefore, no additional information or analysis is required in the EIS/EIR.

## Response to Comment DTSC-12

Refer to Response to Comments DTSC-5, DTSC-6, DTSC-10, and DTSC-11 above.

## DEPARTMENT OF TRANSPORTATION

DISTRICT 7-OFFICE OF REGIONAL PLANNING
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May 24, 2017
Mr. Christopher Cannon
City of Los Angeles Harbor Dept
Environmental Management Division
P.O. Box 151

Los Angeles, CA 90731

> RE: Berths 226-236 [Everport] Container Terminal Improvements
> Vic: LA-47 / PM: 0.325
> GTS\# 07-LA-2017-00859
> SCH\# 2014101050

Dear Mr. Cannon:
Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The project involves construction and operation of terminal improvements within and adjacent to Everport Container Terminal, including: dredging at Berths 226-236; installing five new wharf cranes; backlands improvements on adjacent 23.5 acres; and wharf efficiency improvements to accommodate larger ships.

Please note the nearest State facility is State Route 47, Caltrans does not anticipate any adverse impacts on State Highway System as a result of this project.

Any transportation of heavy construction equipment and/or materials requiring use of oversizedtransport vehicles on State highways will require a Caltrans transportation permit. Caltrans recommends that large size truck trips be limited to off-peak commute periods. Also, storm water run-off is a sensitive issue for Los Angeles and Ventura counties. Be mindful that the project needs to be designed to discharge clean run-off water.

If you have any questions or concerns regarding these comments, please contact project coordinator, Severin Martinez at (213) 897-0067 or severin.martinez@dot.ca.gov and refer to GTS\# 07-LA-2017-00859.

## Sincerely,



DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

### 2.3.3.2 California Department of Transportation, Caltrans District 7 (DOT)

## Response to Comment DOT-1

Thank you for your review of the Draft EIS/EIR. The comment is general and anticipates that the proposed Project would not have any adverse impacts on the State Highway System. The comment does not identify any specific deficiencies or contest the adequacy of the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

Mary D. Nichols, Chair

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Edmund G. Brown Jr. Governor

June 5, 2017

Mr. Christopher Cannon, Director<br>City of Los Angeles Harbor Department<br>Environmental Management Division<br>P.O. Box 151<br>San Pedro, California 90731<br>Theresa Stevens, Ph.D.<br>U.S. Army Corps of Engineers<br>Los Angeles District<br>2151 Alessandro Drive, Suite 110<br>Ventura, California 93001<br>Dear Mr. Cannon and Dr. Stevens:

Thank you for providing the California Air Resources Board (CARB or Board) staff the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the City of Los Angeles Harbor Department (LAHD) and U.S. Army Corps of Engineers Everport Container Terminal (ECT) Improvements for Berths 226-236 (Project). We understand that the proposed Project would improve container handling efficiency, increase container capacity, and accommodate larger vessels at ECT.

California's 2016 Sustainable Freight Action Plan (State Plan) supports projects that seek to improve system efficiencies and port competitiveness. But the State Plan also highlights the need to reduce or eliminate the health impacts on communities disproportionately affected by freight operations and to accelerate the transition to zero and near-zero emission equipment powered by renewable energy sources, including supportive infrastructure. The efficiency, competitiveness, and environmental objectives of the State Plan are echoed in the San Pedro Bay Ports 2017 Clean Air Action Plan Discussion Draft. For the proposed Project to achieve these objectives, we recommend that LAHD strengthen the proposed mitigation measures and include additional measures to directly address the increase in locomotive, vessels, and truck throughput projected to account for the increases in harmful diesel particulate and nitrogen oxides (NOx) emissions.

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LAHD has been a worldwide leader in reducing harmful emissions from maritime and support operations, and would continue that role under the 2017 Clean Air Action Plan
with strong support for zero and near-zero emission technologies. CARB commends LAHD for its collaborative efforts on Everport's Enhanced Cargo Demonstration Project. CARB is aware that ECT was awarded a grant from the California Energy Commission in late 2016 and recently took possession of a portion of the near-zero liquefied natural gas yard tractors and battery electric yard tractors.

CARB-1
cont.

## Project Description

The proposed Project site is located within the Port of Los Angeles. The existing site is a 205-acre area that includes 20.5 acre area associated with the existing on-dock railyard (Terminal Island Transfer Facility) and 25 acres of a backland area. The proposed Project includes adding 23.5 acres for development, adding new backlands, relocating the main gate, adding parking and amending the lease to include the new parcels and extend Everport's lease through 2038. Construction of the proposed Project will take approximately 24 months and includes improvements, such as dredging, adding wharf piles and spacers, raising and adding cranes, installing additional shorepower and associated infrastructure which will allow the terminal to accommodate up to 16,000 ton equivalent units (TEU) vessels.

Cargo containers at ECT are moved off-terminal by both rail and trucks. Operations at ECT are projected to increase from the current maximum capacity of $1,818,000$ TEUs to a maximum projected capacity of $2,379,525$ by 2038 (peaking in 2033), resulting in an increase projected throughput of 561,525 TEUs.

## Results of the DEIR

The DEIR shows that the largest sources of harmful PM2.5 and NOx emissions are ships and locomotives. However, the DEIR does not propose any new mitigation measures to minimize or eliminate the increases that directly affect nearby disadvantage communities. While ECT may have a lesser ability to effect change, the Evergreen Line and the Port can and must secure reductions in these ship and locomotive emissions. The operational and construction emission tables presented in Chapter 3, Section 3.2, include proposed Project emissions per day, with and without mitigation. In 2033, NOx emissions from the source category "ships: main propulsion engines" drop a surprising 53 percent "with mitigation". Given that LAHD has not proposed mitigation measures that would achieve reductions from ship main engines other than the existing Voluntary Speed Reduction Program (VSRP), LAHD should recalculate the emissions and revise the tables, accordingly. In addition, LAHD should

Mr. Christopher Cannon<br>Dr. Theresa Stevens<br>June 5, 2017<br>Page 3

revise all of the emission tables to include a break-down of the expected emission reductions attributable to each of the proposed mitigation measures and any additional mitigation measures.

Construction of the proposed Project will result in significant and unavoidable impacts for NOx in 2018 and 2019, volatile organic compounds (VOCs) in 2019, and overlapping construction and operations impacts for NOx in 2019. For operations, the proposed Project results in significant and unavoidable impacts for carbon monoxide (CO) and VOCs in 2033 and 2038. Furthermore, the mitigated proposed Project results in significant and unavoidable, cumulative air quality and health impacts in the region and to the nearby community. Even where impacts will remain significant and unavoidable after mitigation, CEQA nevertheless requires that all feasible ${ }^{1}$ mitigation measures be incorporated. (See Cal. Pub. Resources Code § 21081; 14 CCR § 15126.2(b).)

## General Recommendations

CARB finds that the DEIR needs improvement in clarity and requires further development and consideration of our comments below. Furthermore, given the increased emissions from future terminal operations and cumulative impacts, LAHD should aggressively deploy the lowest emission technologies possible. This deployment should include those technologies that are "capable of being accomplished in a successful manner within a reasonable period of time" (Public Resources Code §21061.1; California Code of Regulations, title 14, section 15364), such as zero and near-zero emission technologies that are expected early in the life of the project. With these technologies, CARB staff believes that the proposed Project's air quality, health, and greenhouse gas impacts can feasibly be further mitigated. To that end, CARB staff recommends that the Final EIR include the additional mitigation measures outlined below.

In addition, the 2017 Clean Air Action Plan Discussion Draft identifies that reductions in emissions can be achieved by shifting to on-dock rail, where possible. Projected truck trips per day is estimated to increase by nearly 60 percent, therefore CARB recommends that LAHD evaluate options to expand the on-dock rail capacity at ECT.

CARB-3 cont.

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## Mitigation Measures

1) LAHD should add a mitigation measure that requires accelerating the turnover of older line-haul locomotives servicing ECT to ones meeting Tier 4 emission standards. By the proposed Project's interim year (2026), LAHD should require that all line-haul locomotives servicing Everport meet Tier 4 emission standards. To monitor the progress of this acceleration, include the distribution of engine tiers used in determining the locomotive emissions for the baseline year (2013) and the opening year (2019). Furthermore, CARB recommends that LAHD incentivize or require the use of cleaner locomotive technologies, through lease agreements, as rail use increases. This would include, but is not limited to, a hybrid-electric locomotive with all electric capability. CARB's Technology Assessment: Freight Locomotives provides information on projected development of cleaner freight locomotives. This assessment can be found at https://www.arb.ca.gov/msprog/tech/techreport/freight locomotives tech report.pdf.
2) Mitigation Measure (MM) AQ-7 requires an 85 percent shore power compliance rate by 2020 and 95 percent compliance by 2026. Recipients, such as the LAHD, of Proposition 1B funding for grid-based electric power at T227, must meet a 90 percent utilization rate by 2020. Furthermore, the proposed Project includes adding five alternative maritime power (AMP) terminal vaults. With these added AMP vaults and given the terminal operator owns the majority of the ships that will call at ECT's berths (specifically T227 and T230), it is reasonable that ten vaults are sufficient to achieve a 100 percent compliance rate. In March 2017, our Board directed staff to expand the at-berth regulation to achieve up to 100 percent compliance. In anticipation of CARB's regulatory amendments, LAHD should expand MM AQ-7 to require a 100 percent shore-power compliance rate from vessels equipped with shore power starting in 2020 and require alternative capture and control systems for all ships that are not equipped to use shore-based electricity. This includes all vessels subject to MM AQ-4. Currently, MM AQ-4 only requires ships and barges used to deliver construction-related materials to comply with the expanded Vessel Speed Reduction Program. All ocean-going vessels as part of the construction phase of the proposed Project should also be required to use alternative capture and control systems if they are not equipped to use shore-based electricity for the duration of their stay. Furthermore, LAHD should utilize mechanisms to incentivize or encourage the terminal operator to bring their cleanest ships to ECT.

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3) Given the projected increase in throughput of cargo containers at ETC, LAHD should require the use of cargo handling equipment (CHE), including yard trucks, handlers, gantry cranes, fork lifts, that includes technologies beyond those required by the mobile CHE regulation, and includes use of zero and near-zero emission technology

CARB-9 as it becomes commercially available. CARB's Technology Assessment: Mobile Cargo Handling Equipment, provides information on current and projected development of CHE. This assessment can be found at https://www.arb.ca.gov/msprog/tech/techreport/che tech report.pdf.
4) According to LAHD, the container throughput at ECT includes refrigerated shipping containers; however, the DEIR does not include information regarding this emission source or associated emissions. The LAHD should revise the DEIR to include refrigerated shipping containers as an emission source category, including their dwell times and mitigation that will eliminate or reduce these emissions. CARB recommends that the LAHD consider requirements that refrigerated shipping containers on rail cars be plugged in to a containerized hydrogen fuel cell generator carried on adjacent rail car or other available technology. ARB's Technology Assessment for Transport Refrigerators is available at https://www.arb.ca.gov/msprog/tech/techreport/tru 07292015.pdf.
5) MM AQ-1 requires that the harbor craft used for construction must be equipped with engines meeting the U.S. Environmental Protection Agency Tier 3 emission standards or cleaner at all times during construction. LAHD should expand this measure to require the use of the cleanest available commercial harbor craft (CHC) (LPG/LNG, biodiesel, electric hybrid) during operations. CARB's Technology Assessment: Commercial Harbor Craft, provides information on current and projected development of CHC, including current and anticipated costs at widespread development. This assessment can be found at https://www.arb.ca.gov/msprog/tech/techreport/draft chc technology assessment.p df.
6) MM AQ-6 requires Evergreen vessels to comply with the expanded VSRP (12 knots at 40 nautical miles) by 95 percent. CARB recognizes that LAHD implements an incentive based, voluntary VSRP and based on the VSRP Operator Summary Report, Evergreen vessels met a 99 percent participation rate to 20 nautical miles and a 97 percent participation rate to 40 nautical miles in 2016. Since LAHD is already achieving projected emission reductions beyond what MM AQ-6 requires, there is no additional benefit. Therefore, LAHD should propose further mitigation to achieve reductions from vessels calling at ECT.

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Page 6
7) Lease Measure AQ-1 requires tenants to meet with LAHD when a tenant needs to replace or turnover equipment to determine the availability and feasibility of cleaner equipment. Furthermore, the tenant is required to assess any new technology for

CARB-13 feasibility and report back to LAHD every five years. Given the changing market conditions and advances in technology, LAHD should reduce the tenant's reporting and technology review requirements to every two years.
8) LAHD should describe the type of dredging (i.e. mechanical, hydraulic, hybrid, etc.) and the expected emissions from this activity, as well as adding mitigation that requires using the cleanest available technology.
9) Starting in 2033, off-dock truck traffic is projected to increase by 18 percent from the 2013 baseline. According to Table 3.2-20, truck emissions account for 40 percent of the total PM10, 17 percent of total PM2.5, and approximately six percent of the total emissions for NOx and CO in 2033. As technology becomes available, LAHD should require that medium-heavy and heavy-heavy duty trucks traveling within 100 miles of the terminal use zero and near-zero technology. CARB's Technology and Fuels Assessments provide information on the current and projected development of mobile source technologies and fuels, including current and anticipated costs at widespread deployment. The assessments can be found at http://www.arb.ca.gov/msprog/tech/tech.htm.

## Recommendations to Improve the Health Risk Analysis Discussion

1) Appendix B3, Section 4.3, Page B3 13; "Exposure Scenarios for Individual Cancer Risk", indicates that Project emissions spanning construction and operation of the proposed Project were averaged and applied chronologically to each age bin identified in the OEHHA Air Toxics Hot Spots Program, Risk Assessment Guidelines (2015). This approach can mask any peak emissions and the associated potential health impacts that may occur over the lifetime of the project. Therefore, LAHD should revise the DEIR to include an evaluation of the potential cancer risk starting when peak emissions occur (e.g. PM10 and PM2.5 appear to increase in 2033 according to tables 3.2-11 and 3.2-20). The reason for starting the risk analysis at these point(s) is because pregnancy, and the age bin encompassing birth through age two, can occur concurrently with the emissions peaks over the course of the construction and operation of the proposed project. Presenting the potential health impacts beginning at these points throughout the project will provide the public with a more comprehensive understanding of the project and how the potential health risk estimates may change as the project is completed and the facility changes to full operation.

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2) Appendix B3, Table B3-5; "Maximum CEQA Health Impacts Estimated for Construction and Operation of the Proposed Project Without Mitigation": LAHD should revise this table, and any other table presenting similar information, to more clearly present the potential cancer and noncancer health impacts from the proposed Project. In this table, it is difficult to understand the potential health impacts and where they occur for each receptor type (i.e., residential, occupational, and sensitive) and what the column headers (e.g., Proposed Project, CEQA Baseline, CEQA Increment, Future CEQA Baseline, and Future CEQA Increment) actually represent. For example, it is not clear in the table that the potential health impacts for the receptors under the column headers may occur at different locations. To address this, please add additional receptor description information (e.g., receptor index) to clarify the table. Furthermore, to better provide transparency and clarity to the public, LAHD should revise the text associated with these tables to fully explain any necessary information.

## Additional Comments

1) Appendix F2 provides an evaluation for the disposal of the dredged material, concluding that the only disposal option feasible and practical is 100 percent ocean disposal at LA-2 Facility, located 11 kilometers offshore from the entrance to LAHD. However, Tables 3.2-10A and Table 3.2-10B include both upland and ocean disposal and associated emissions. LAHD should revise these tables and include the emissions and assumptions associated with the ocean disposal option.
2) Air Quality Emissions, Appendix B1 includes sweepers as part of the CHE emission inventory. Sweepers are no longer part of CARB's CHE regulation and should be removed. Sweepers are regulated under either CARB's Off-Road Regulation or the Statewide Truck and Bus Regulation, depending on the sweeper engine. LAHD should revise these emission inventories, appropriately. To determine which regulation applies to sweepers, please reference CARB's Enforcement Advisory Number 401, which can be found at https://www.arb.ca.gov/enf/advs/advs401.pdf.

## Closing

CARB recognizes the role the proposed Project can have in supporting a more efficient and economically competitive Port, but we urge you to augment the mitigation measures to ensure the community is not adversely impacted. We appreciate the opportunity to comment on the DEIR, and CARB is available to provide further assistance, as needed.
Mr. Christopher Cannon
Dr. Theresa Stevens
June 5, 2017
Page 8
Please include CARB on your State Clearinghouse list of selected State agencies that will receive the Final Environmental Impact Report as part of the comment period.
If you have questions, please contact me at (916) 322-8277, or Robbie Morris, AirPollution Specialist, at (916) 327-0006 or robbie.morris@arb.ca.gov.
Sincerely,
Pichand $P_{\text {Sin }}$
for Elizabeth Yura, Chief
Emissions Assessment Branch
Transportation and Toxics Division
cc: Louis Dominguez, Chair
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Continued next page.
Mr. Christopher Cannon
Dr. Theresa Stevens
June 5, 2017
Page 9
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### 2.3.3.3 California Air Resources Board (CARB)

## Response to Comment CARB-1

Thank you for your review and comments on the Draft EIS/EIR. Please see Master Response 1: Feasible Mitigation - Guidance and Applicability, Master Response 2: Zero-Emission Technologies, Master Response 3: Port-wide Emission Reduction Programs, and the responses to specific comments below.

## Response to Comment CARB-2

The comment is noted. The comment does not identify any specific deficiencies or contest the adequacy of the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

## Response to Comment CARB-3

The comment is noted. The comment notes that in 2033, peak daily NOx emissions from the source category "ships: main propulsion engines" with mitigation drops 53 percent compared to without mitigation despite an apparent lack of mitigation measures affecting this category. This reduction is due to an assumption that the peak daily emissions without mitigation would not include Tier 3 vessels, while peak daily emissions with mitigation would include Tier 3 vessels. The assumption that Tier 3 vessels would arrive by 2033 is based on a market analysis developed by Starcrest Consulting Group (Starcrest, 2015). For disclosure purposes, applying the phase-in of Tier 3 vessels to the unmitigated scenarios in 2026, 2033 and 2038 results in the Proposed Project peak daily operational emissions presented below. Additionally, the revised ship main propulsion engine NOx emissions in Alternatives 1 through 5 are summarized in Tables CARB-3-2 through CARB-3-5, below. Finally, the revisions summarized in the tables below have been incorporated into the Draft EIS/EIR, Tables 3.2-20, 3.2-35, 3.2-52, 3.2-69, and 3.2-86 as shown in Chapter 3 of this Final EIS/EIR. The results of these revisions are that incremental unmitigated operational emissions relative to the CEQA Baseline would be lower for NOx under the proposed Project and all alternatives and years, except for Alternative 1 in 2019.

Table CARB-3-1: Revised Unmitigated Peak Daily Operational Emissions for the Proposed Project

| Year - Category | Unmitigated NOx <br> (Without Tier 3) | Unmitigated NOx <br> (Tier 3 Included) |
| :--- | :--- | :--- |
| 2026 - Ships: Main Propulsion Engines | 7,148 | $\underline{6,293}$ |
| 2026 - Total Operational Year 2026 | 11,777 | $\underline{10,922}$ |
| 2026 - Project Minus CEQA Baseline | -982 | $\underline{-1,837}$ |
| 2026 - Project Minus NEPA Baseline | 3,255 | $\underline{2,400}$ |
| 2033 - Ships: Main Propulsion Engines | 10,544 | $\underline{\underline{5,862}}$ |
| 2033 - Total Operational Year 2033 | 16,869 | $\underline{12,187}$ |
| 2033 - Project Minus CEQA Baseline | 4,110 | $\underline{\underline{-572}}$ |
| 2033 CEQA - Significant? | $\underline{\text { Nos }}$ |  |
| 2033 - Project Minus NEPA Baseline | $\underline{9,140}$ | $\underline{4,458}$ |
| 2038 - Ships: Main Propulsion Engines | 10,544 | $\underline{\underline{3,541}}$ |
| 2038 - Total Operational Year 2038 | 15,862 | $\underline{\underline{8,859}}$ |
| 2038 - Project Minus CEQA Baseline | 3,103 | $\underline{\underline{-3,900}}$ |
| 2038 CEQA - Significant? | Yes | $\underline{\underline{4,335}}$ |
| 2038 - Project Minus NEPA Baseline | 11,338 |  |

Table CARB-3-2: Revised Unmitigated Peak Daily Operational Emissions for Alternatives 1 \& 2

| Year - Category | Unmitigated NOx <br> (Without Tier 3) | Unmitigated NOx <br> (Tier 3 Included) |
| :--- | :--- | :--- |
| 2026 - Ships: Main Propulsion Engines | 7,508 | $\underline{\underline{6,326}}$ |
| 2026 - Total Operational Year 2026 | 11,357 | $\underline{10,175}$ |
| 2026 - Project Minus CEQA Baseline | $-1,402$ | $\underline{-2,584}$ |
| 2033 - Ships: Main Propulsion Engines | 10,812 | $\underline{5,139}$ |
| 2033 - Total Operational Year 2033 | 15,975 | $\underline{10,302}$ |
| 2033 - Project Minus CEQA Baseline | 3,216 | $\underline{-2,457}$ |
| 2033 CEQA - Significant? | Yes | $\underline{\text { No }}$ |
| 2038 - Ships: Main Propulsion Engines | 10,812 | $\underline{\underline{2,302}}$ |
| 2038 - Total Operational Year 2038 | $\underline{15,327}$ | $\underline{6,817}$ |
| 2038 - Project Minus CEQA Baseline | $\underline{2,569}$ | $\underline{-5,941}$ |
| 2038 CEQA - Significant? | Yes | $\underline{\text { No }}$ |

Table CARB-3-3: Revised Unmitigated Peak Daily Operational Emissions for Alternative 3

| Year - Category | Unmitigated NOx <br> (Without Tier 3) | Unmitigated NOx <br> (Tier 3 Included) |
| :--- | :--- | :--- |
| 2026 - Ships: Main Propulsion Engines | 6,968 | $\underline{5,782}$ |
| 2026 - Total Operational Year 2026 | 11,186 | $\underline{10,000}$ |
| 2026 - Project Minus CEQA Baseline | $-1,573$ | $\underline{-2,759}$ |
| 2026 - Project Minus NEPA Baseline | 2,664 | $\underline{1,478}$ |
| 2033 - Ships: Main Propulsion Engines | 10,432 | $\underline{5,330}$ |
| 2033 - Total Operational Year 2033 | 16,448 | $\underline{11,346}$ |
| 2033 - Project Minus CEQA Baseline | 3,689 | $\underline{-1,413}$ |
| 2033 CEQA - Significant? | Yes | $\underline{\text { No }}$ |
| 2033 - Project Minus NEPA Baseline | 8,719 | $\underline{3,617}$ |
| 2038 - Ships: Main Propulsion Engines | 10,432 | $\underline{3,038}$ |
| 2038 - Total Operational Year 2038 | 15,530 | $\underline{-4,136}$ |
| 2038 - Project Minus CEQA Baseline | 2,772 | $\underline{\underline{\text { No }}}$ |
| 2038 CEQA - Significant? | $\mathbf{Y e s}$ | $\underline{3,612}$ |
| 2038 - Project Minus NEPA Baseline | 11,006 |  |

Table CARB-3-4: Revised Unmitigated Peak Daily Operational Emissions for Alternative 4

| Year - Category | Unmitigated NOx <br> (Without Tier 3) | Unmitigated NOx <br> (Tier 3 Included) |
| :--- | :--- | :--- |
| 2026 - Ships: Main Propulsion Engines | 7,382 | $\underline{6,192}$ |
| 2026 - Total Operational Year 2026 | 11,193 | $\underline{10,003}$ |
| 2026 - Project Minus CEQA Baseline | $-1,565$ | $\underline{-2,755}$ |
| 2026 - Project Minus NEPA Baseline | 2,671 | $\underline{1,481}$ |
| 2033 - Ships: Main Propulsion Engines | 7,467 | $\underline{3,842}$ |
| 2033 - Total Operational Year 2033 | 13,651 | $\underline{10,026}$ |
| 2033 - Project Minus CEQA Baseline | 893 | $\underline{-2,732}$ |
| 2033 CEQA - Significant? | $\underline{\text { Yes }}$ |  |
| 2033 - Project Minus NEPA Baseline | 5,922 | $\underline{2,297}$ |
| 2038 - Ships: Main Propulsion Engines | 7,467 | $\underline{2,406}$ |
| 2038 - Total Operational Year 2038 | 12,823 | $\underline{7,762}$ |
| 2038 - Project Minus CEQA Baseline | 65 | $\underline{-4,996}$ |

Table CARB-3-4: Revised Unmitigated Peak Daily Operational Emissions for Alternative 4

| Year - Category | Unmitigated NOx <br> (Without Tier 3) | Unmitigated NOx <br> (Tier 3 Included) |
| :--- | :--- | :--- |
| 2038 CEQA - Significant? | Yes | $\underline{\text { No }}$ |
| 2038 - Project Minus NEPA Baseline | 8,299 | $\underline{3,238}$ |

Table CARB-3-5: Revised Unmitigated Peak Daily Operational Emissions for Alternative 5

| Year - Category | Unmitigated NOx <br> (Without Tier 3) | Unmitigated NOx <br> (Tier 3 Included) |
| :--- | :--- | :--- |
| 2026 - Ships: Main Propulsion Engines | 7,148 | $\underline{6,293}$ |
| 2026 - Total Operational Year 2026 | 11,777 | $\underline{10,922}$ |
| 2026 - Project Minus CEQA Baseline | -982 | $\underline{-1,837}$ |
| 2026 - Project Minus NEPA Baseline | 3,255 | $\underline{2,400}$ |
| 2033 - Ships: Main Propulsion Engines | 10,544 | $\underline{5,862}$ |
| 2033 - Total Operational Year 2033 | 16,867 | $\underline{\underline{12,185}}$ |
| 2033 - Project Minus CEQA Baseline | 4,109 | $\underline{-573}$ |
| 2033 CEQA - Significant? | $\underline{\text { Yes }}$ |  |
| 2033 - Project Minus NEPA Baseline | 9,138 | $\underline{4,456}$ |
| 2038 - Ships: Main Propulsion Engines | 10,544 | $\underline{\underline{3,541}}$ |
| 2038 - Total Operational Year 2038 | 15,856 | $\underline{\underline{8,853}}$ |
| 2038 - Project Minus CEQA Baseline | 3,097 | $\underline{\underline{-3,906}}$ |
| 2038 CEQA - Significant? | Yes | $\underline{\underline{4,329}}$ |
| 2038 - Project Minus NEPA Baseline | 11,332 |  |

A sensitivity analysis on the ship main propulsion engine contributions to the peak hourly NO2 concentrations indicated that the peak receptors were not substantially impacted by ship emissions (see Tables CARB 3-6 and CARB 3-7 for the results of this sensitivity analysis). The correction to the peak NO2 concentration would be a reduction, if the peak concentration reported in the Draft EIS/EIR occurred in 2026 or later. No change in the peak NO2 concentration would occur if the reported peak occurred in 2019, since no Tier 3 vessels are assumed to call on the terminal in 2019. This methodology was applied to all alternatives, years and NO2 averaging periods under CEQA and NEPA. This sensitivity analysis was applied to all alternatives and years 2026, 2033, and 2038. The results of these evaluations are summarized in Table CARB-3-6 for CEQA and Table CARB-3-7 for NEPA, which disclose the revised peak NO2 concentrations for unmitigated scenarios. No concentration related significance determinations presented in the Draft EIS/EIR were changed as a result of this analysis.

Table CARB-3-6: Revised Unmitigated Peak Operational 1-hour NO2 Ground-Level Concentrations (ppm) under CEQA

| Scenario | Concentrations <br> (Without Tier 3) | Reductions due <br> to inclusion of <br> Tier 3 OGV | Concentrations (Tier 3 <br> Included) |
| :--- | :--- | :--- | :--- |
| Proposed Project. 1-hour NAAQS | 0.119 | $\mathrm{~N} / \mathrm{A}^{*}$ | Same as w/o Tier 3 |
| Proposed Project. 1-hour CAAQS | 0.16 | $\mathrm{~N} / \mathrm{A}^{*}$ | Same as w/o Tier 3 |
| Alternative 1. 1-hour NAAQS | 0.117 | $\mathrm{~N} / \mathrm{A}^{*}$ | Same as w/o Tier 3 |
| Alternative 1. 1-hour CAAQS | 0.15 | $\mathrm{~N} / \mathrm{A}^{*}$ | Same as w/o Tier 3 |
| No Project. 1-hour NAAQS | 0.117 | $\mathrm{~N} / \mathrm{A}^{*}$ | Same as w/o Tier 3 |
| No Project. 1-hour CAAQS | 0.15 | $\mathrm{~N} / \mathrm{A}^{*}$ | Same as w/o Tier 3 |
| Alternative 3. 1-hour NAAQS | 0.117 | $\mathrm{~N} / \mathrm{A}^{*}$ | Same as w/o Tier 3 |

Table CARB-3-6: Revised Unmitigated Peak Operational 1-hour NO2 Ground-Level Concentrations (ppm) under CEQA

| Scenario | Concentrations <br> (Without Tier 3) | Reductions due <br> to inclusion of <br> Tier 3 OGV | Concentrations (Tier 3 <br> Included) |
| :--- | :--- | :--- | :--- |
| Alternative 3. 1-hour CAAQS | 0.15 | $\mathrm{~N} / \mathrm{A}^{*}$ | Same as w/o Tier 3 |
| Alternative 4. 1-hour NAAQS | 0.088 | -0.0009 | 0.087 |
| Alternative 4. 1-hour CAAQS | 0.11 | -0.0010 | 0.11 |
| Alternative 5. 1-hour NAAQS | 0.119 | $\mathrm{~N} / \mathrm{A}^{*}$ | Same as w/o Tier 3 |
| Alternative 5. 1-hour CAAQS | 0.16 | $\mathrm{~N} / \mathrm{A}^{*}$ | Same as w/o Tier 3 |

Notes.
N/A* - The year of peak operational concentrations is 2019, which does not include Tier 3 OGV assumptions.

Table CARB-3-7: Revised Unmitigated Peak Operational 1-hour NO2 Ground-Level Concentrations (ppm) under NEPA

| Scenario | Concentrations <br> (Without Tier 3) | Reductions due <br> to inclusion of <br> Tier 3 OGV | Concentrations (Tier 3 <br> Included) |
| :--- | :--- | :--- | :--- |
| Proposed Project. 1-hour NAAQS | 0.097 | -0.0033 | $\underline{0.094}$ |
| Proposed Project. 1-hour CAAQS | 0.13 | -0.0034 | $\underline{0.13}$ |
| Alternative 3. 1-hour NAAQS | 0.096 | -0.0036 | $\underline{0.092}$ |
| Alternative 3. 1-hour CAAQS | 0.12 | -0.0037 | $\underline{0.12}$ |
| Alternative 4. 1-hour NAAQS | 0.111 | 0.0006 | $\underline{0.112}$ |
| Alternative 4. 1-hour CAAQS | 0.14 | $\mathrm{~N} / \mathrm{A}^{*}$ | Same as w/o Tier 3 |
| Alternative 5. 1-hour NAAQS | 0.097 | -0.0033 | $\underline{0.094}$ |
| Alternative 5. 1-hour CAAQS | 0.13 | -0.0034 | $\underline{\underline{0.13}}$ |

Notes.
N/A* - The year of peak operational concentrations is 2019, which does not include Tier 3 OGV assumptions.

The commenter also requested that all of the emissions tables be revised to include a breakdown of the expected emission reductions attributable to each proposed mitigation measure. Revisions to each impact table in the Draft EIS/EIR to include the breakdown of mitigated emissions for each source relative to each mitigation measure would cause the impact tables to be confusing due to the larger amount of information which would be presented. However, for the commenter's convenience, we have provided Table CARB-38 detailing the modeled impact of each mitigation measure on each source group throughout the project.

Table CARB-3-8: Effects of Mitigation Measures on Emissions Source Groups

| Measure | Brief Description | Source Category | Peak Day Reduction |  |
| :---: | :---: | :---: | :---: | :---: |
| MM AQ-1 | Construction Harbor Craft must comply with USEPA Tier 3 engine standards or cleaner throughout construction. | Marine Source Exhaust | PM ${ }_{10}$ | 50\% |
|  |  |  | PM 2.5 | 44\% |
|  |  |  | NOx | 19\% |
|  |  |  | SOx | 0\% |
|  |  |  | CO | 0\% |
|  |  |  | VOC | 14\% |
| MM AQ-2 | On-Road construction trucks must comply with USEPA 2010 on-road emission standards or cleaner throughout construction. | On-Road Construction Vehicles | PM ${ }_{10}$ | 0\% |
|  |  |  | PM 2.5 | 0\% |
|  |  |  | NOx | 0\% |
|  |  |  | SOx | 0\% |
|  |  |  | CO | 0\% |
|  |  |  | VOC | 0\% |

Table CARB-3-8: Effects of Mitigation Measures on Emissions Source Groups

| Measure | Brief Description | Source Category | Peak Day Reduction |  |
| :---: | :---: | :---: | :---: | :---: |
| MM AQ-3 | Non-Road construction equipment greater than 50 horsepower must comply with USEPA Tier 4 emission standards or cleaner throughout construction. | Off-road Construction Equipment Exhaust | $\mathrm{PM}_{10}$ | 29\% |
|  |  |  | PM ${ }_{2.5}$ | 29\% |
|  |  |  | NOx | 19\% |
|  |  |  | $\mathrm{SO}_{\mathrm{x}}$ | 0\% |
|  |  |  | CO | 0\% |
|  |  |  | VOC | 0\% |
| MM AQ-4 | Cargo Ships delivering primarily construction-related materials or cranes must comply with the expanded Vessel Speed Reduction Program (VSRP) or 12 knots between 40 nautical miles ( nm ) from Point Fermin and the Precautionary Area. | Marine Source Exhaust | $\mathrm{PM}_{10}$ | 0\% |
|  |  |  | PM ${ }_{2.5}$ | 0\% |
|  |  |  | $\mathrm{NO} \times$ | 0\% |
|  |  |  | SOx | 0\% |
|  |  |  | CO | 0\% |
|  |  |  | VOC | 0\% |
| MM AQ-5 | For all previous mitigation measures, if better technology becomes available and approved by CARB and LAHD, it could be used to replace existing mitigation. | ALL | N/A - Not Quantified |  |
| MM AQ-6 | Starting January 1, 2019, 95\% of ships calling at Everport Container Terminal (ECT) shall be required to comply with the expanded VSRP. | Ships: Main Propulsion Engines | $\mathrm{PM}_{10}$ | $13-18 \% \text { varying }$ each year |
|  |  |  | PM 2.5 | 12 - 18\% varying each year |
|  |  |  | NOx | $11 \text { - 15\% varying }$ each year |
|  |  |  | SOx | $19-28 \%$ varying each year |
|  |  |  | CO | 07 - 10\% varying each year |
|  |  |  | VOC | $04 \text { - 06\% varying }$ each year |
| MM AQ-7 | Starting 2020 or upon substantial completion of construction, 85\% of ships calling at ECT shall be required to utilize Alternative Maritime Power (AMP). By 2026, 95\% of ships shall be required to use AMP. | Ships: Aux Engines and Boilers | $\mathrm{PM}_{10}$ | 07 - 17\% varying each year |
|  |  |  | PM 2.5 | 05 - 18\% varying each year |
|  |  |  | $\mathrm{NO} \times$ | $21-60 \% \text { varying }$ each year |
|  |  |  | SOx | 02 - 11\% varying each year |
|  |  |  | CO | 08 - 20\% varying each year |
|  |  |  | VOC | 07 - 20\% varying each year |
|  |  | AMP Electricity Use | PM ${ }_{10}$ | 100\% increase |
|  |  |  | PM ${ }_{2.5}$ | 100\% increase |
|  |  |  | NOx | $70-42 \%$ <br> increase varying each year |
|  |  |  | SOx | $75-40 \%$ <br> increase varying each year |

Table CARB-3-8: Effects of Mitigation Measures on Emissions Source Groups

| Measure | Brief Description | Source Category | Peak Day Reduction |  |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  | CO $-33 \%$ <br> increase varying <br> each year |  |
|  | LM AQ-1 | Every five years, LAHD and the <br> tenant shall meet to determine if <br> newly available technology for <br> reduction of emissions is feasible for <br> use at ECT. Any new technology <br> could replace the requirements of <br> other mitigation measures pending <br> approval by LAHD. | ALL | VOC |

Notes:
All reductions mentioned in this table are for the Proposed Project. While not identical, reductions are similar for Alternatives 1-5. All construction emission reductions are based on the ocean disposal scenario.
Emission reductions are based on peak day emissions. Emission reductions for average day emissions are usually greater and never less.

## Response to Comment CARB-4

The comment is noted. The comment is general and does not identify any specific deficiencies or contest the adequacy of the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

## Response to Comment CARB-5

The comment is noted. Please see Master Response 2: Zero-Emission Technologies, and Master Response 3: Port-wide Emission Reduction Programs.

## Response to Comment CARB-6

The comment is noted. Alternative 5 in the Draft EIS/EIR presents LAHD's analysis of an expanded ondock rail alternative. The air quality impacts associated with Alternative 5 can be found starting on page 3.2-205 of the Draft EIS/EIR.

## Response to Comment CARB-7

The comment is noted. Thank you for the reference to the 2016 Draft Technology Assessment: Freight Locomotives. Although CARB is recommending that the Port require Tier 4 locomotives as mitigation,
neither the Port nor the Everport Container Terminal has any jurisdiction or an implementation mechanism for such a requirement. LAHD is pre-empted by the federal Surface Transportation Board from requiring/mandating certain types of locomotives be operated at the Port. Because of this limited jurisdiction and the much broader state-wide jurisdiction and mission of CARB, achieving accelerated conversion of the locomotive fleet that serves California might be better served through initiation by CARB or the USEPA.

## Response to Comment CARB-8

The comment is noted. LAHD will require at least 90 percent utilization of shore-based power by 2020 for vessels equipped with shore power capabilities as mandated in Proposition 1B. The text of mitigation measure MM AQ-7 has been revised to reflect this in the Final EIS/EIR. The calculations in the Draft EIS/EIR represent a conservative analysis with 85 percent shore-based power utilization because shorebased power is lower emitting than power from ship engines. Therefore, the analysis provided in the Draft EIS/EIR is conservative and does not require revisions.

LAHD encourages all tenants to strive for 100 percent utilization of shore power but recognizes that 100 percent utilization is not obtainable due to real world market conditions discussed below. The Everport Container Terminal does occasionally service non-Evergreen ships and may continue to do so in the future. These other vessels may or may not be equipped to utilize shore power; therefore, the air quality impact analysis reasonably assumes 90 percent utilization by 2020 and 95 percent utilization with MM AQ-7 by 2026. Please also see Master Response 1: Feasible Mitigation - Guidance and Applicability for a description of mitigation feasibility, and Master Response 3: Port-wide Emission Reduction Programs.

The requirement to utilize shore power or an alternative capture and control system is not applied to construction-related ocean-going vessels because only one to two such vessels are expected to be utilized during construction. These cargo vessels, intended to deliver cranes to the Project site, may or may not be able to use shore power. These vessels would only be hoteling for a maximum of two weeks total (one week each vessel). Therefore, it is not anticipated that the ocean-going vessels required for construction would generate substantial emissions. Annual emissions for the crane deliveries is presented in the Draft EIS/EIR, Appendix B1, Table 37 and indicate emissions of all criteria pollutants except NOx would be less than 1 ton per year, and NOx emissions would be less than 9 tons per year. The cargo ships used for crane delivery would be subject to the vessel speed reduction mitigation measure (MM AQ-6). Also, please see Master Response 1: Feasible Mitigation - Guidance and Applicability for a description of mitigation feasibility and Master Response 2: Zero Emission Technologies and Master Response 3: Port-wide Emission Reduction Programs for a discussion and links to on-going LAHD efforts to reduce emissions from Port operations. Finally, both of the Bay Area Ports are considering, as part of the 2017 CAAP Update, implementation of a differentiated rate structure on ships according to engine tier level to encourage calls by cleaner ships and to discourage older ships. However, this potential rate structure, if adopted, would be implemented Port-wide and not on a project-by-project basis.

## Response to Comment CARB-9

Please see Master Response 2: Zero-Emission Technologies and Master Response 3: Port-wide Emission Reduction Programs. As noted in that response, LAHD and Everport are in the process of testing several zero-emission yard tractors. Other cargo handling equipment zero-emission technologies are not yet ready for commercialization.

## Response to Comment CARB-10

The comment is noted. The proposed Project would not result in a reasonably foreseeable change or increase the number of refrigerated containers (reefer) plugs at the ECT, and thus, additional reefers and their potential effects are not included in the proposed Project. Reefers are included in total TEU numbers, and although the number of refrigerated units does shift over time, each reefer is plugged into the terminal's power supply, eliminating the need to power the reefers using fossil-fuel generators. Because the proposed Project would not increase the number of reefer plugs at the terminal, the maximum capacity of the terminal to process refrigerated containers is therefore expected to remain constant throughout each alternative, year, and mitigation scenario. The electrical demand of keeping a container refrigerated while at the terminal is not calculated because it is a constant throughout each scenario. Once the reefers leave the terminal, a secondary power supply is necessary, however, the recommendation that refrigerated containers transported by rail be required to be plugged in to hydrogen fuel cells (or other available technology) on adjacent rail cars is not within the Port's control, as it has no jurisdiction over railroad operations, which are governed at the Federal level and preempt Port oversight. Therefore, the modeled results presented in the Draft EIS/EIR are conservative and no changes to the model or impact analysis is required.

## Response to Comment CARB-11

The comment that the LAHD should expand MM AQ-1 to require use of the cleanest available commercial harbor craft (CHC) (LPG/LNG, biodiesel, electric hybrid) during operations is noted. While LAHD will continue to identify methods to reduce emissions from all harbor craft including assist tugs, a one-size fits all strategy is not likely to be successful given the variety of engine sizes and types used on harbor craft. Therefore, the strategy to address harbor craft emissions has been outlined in the Draft 2017 CAAP Update, which will be implemented Port-wide, not on a project-by-project basis. Please also see Master Response 1: Feasible Mitigation for a description of what is generally feasible under CEQA.

In addition, note that the future scenarios for the proposed Project and all alternatives assumes that the assist tugs associated with terminal operations will meet Tier 3 standards, given the estimated propulsion engine model years. The Draft EIS/EIR, Appendix B1, Table 84 (beginning on page 290 of the Appendix B1 pdf file) indicates that assist tug average propulsion engine model year is estimated to be 2016 for operations in 2019, 2026, and 2033, and the engine model year is estimated to be 2037 in 2038, using a 21 -year useful life. Therefore, the assist tugs assumed for operational emission calculations would already meet Tier 3 standards given the CARB implementation schedule for harbor craft engine standards.

## Response to Comment CARB-12

The comment is noted. When the project construction is completed, it is projected that the terminal will grow in TEUs handled per year. Although the vessels calling at the Everport Container Terminal already have high compliance rates with the VSRP, the additional ship calls associated with the proposed Project will also be required to comply with the expanded VSRP ( 12 knots at 40 nautical miles). In addition, please see Master Response 1: Feasible Mitigation - Guidance and Applicability, and Master Response 3: Portwide Emission Reduction Programs. LAHD continues to support the development of emission reduction technologies and procedures, including those for OGVs using Port of Los Angeles facilities. However, as these technologies become available they will be implemented Port-wide, using lease measure LM AQ-1.

## Response to Comment CARB-13

The comment is noted. The commenter has recommended that the tenant equipment and technology feasibility review occur every two years rather than a five-year period required in lease measure LM AQ-1. The development of zero-emission technology equipment from concept and prototyping, through capability
and longevity demonstration, and then to commercial production (assuming technical and economic feasibility has been demonstrated) is a relatively slow and methodical process, especially for container terminals that pose challenging operating conditions. Some zero-emission technologies are also dependent on the concurrent development of alternative fuel infrastructure and/or energy storage technology advancements. Because of the long development lifecycle of zero-emission technology equipment, the recommendation of a two-year review period is not warranted. Further, a two-year review period would not allow for the amortization of new equipment, which typically have life-cycles that exceed two years. It should be noted that the proposed new lease would be for a period of 30 years. Per LM AQ-1, any time the tenant needs to replace or turnover equipment in its fleet, the tenant shall meet with LAHD to determine if something cleaner is feasible or technologically available. Also per LM AQ-1, when no new purchase or equipment turnover occurs, a five-year period is appropriate over the course of the lease to incorporate the potential emergent of new emission reduction technologies and time for the applicant/tenant to incorporate these new technologies into their operations. Please also refer to Master Response 1: Feasible Mitigation Guidance and Applicability.

## Response to Comment CARB-14

The comment is noted. The specific type of dredge used will depend on the dredge(s) that the successful bidder has in its fleet. However, a clam shell-type dredge was assumed for the analysis. The engine assumptions used in the air quality impact analysis for dredging and pile driving were provided in Table 10 of Appendix B1 of the Draft EIS/EIR and schedule assumptions were provided in Table 9 of Appendix B1. Finally, the construction harbor craft (tugs and dive boats) assumptions were included in Table 24 of Appendix B1. The general information and assumptions regarding the dredge barge equipment and engines, and associated harbor craft are now provided in Table CARB-14-1 below for further clarification.

Table CARB-14-1: Construction Dredge Barge and Piling Barge Equipment Information

| Equipment | No. of <br> equip. | HP <br> (per piece of <br> equipment) | LF <br> (per piece of <br> equipment) | hours/day | Total days |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Dredge Barge: | 1 |  |  | 22 | 28 |
| Barge Crane | 1 | 300 | 0.29 | 22 | 28 |
| Deck Door Eng | 1 | 86 | 0.89 | 22 | 28 |
| Dredge (Clam Shell) | 1 | 527 | 0.51 | 22 | 28 |
| Generator | 1 | 464 | 0.75 | 22 | 28 |
| Hoist Swing Winch | 1 | 379 | 0.31 | 22 | 28 |
| Hoist Swing Pump | 1 | 517 | 0.71 | 22 | 28 |
| Tug Boat (derrick barge) | 1 | $680 \times 2$ | 0.31 | 5 | 28 |
| Dump Scows | 2 |  |  | 8 | 28 |
| Generators | 2 |  |  | 1 | 28 |
| Tug Boats (scows) | 2 | $680 \times 2$ | 0.31 | 22 | 28 |
| Derrick Barge (Piling): | 1 |  |  | 8 | 170 |
| Compressor | 1 | 353 | 0.54 | 4 | 170 |
| Barge Crane | 1 | 300 | 0.29 | 8 | 170 |
| Deck Door Eng | 1 | 86 | 0.89 | 8 | 170 |
| Generator | 1 | 464 | 0.75 | 8 | 170 |
| Hoist Swing Winch | 1 | 379 | 0.31 | 8 | 170 |
| Hoist Swing Pump | 1 | 517 | 0.71 | 8 | 170 |
| Vibratory Hammer | 1 | 439 | 0.62 | 4.8 | 170 |
| Pile Hammer | 1 | 439 | 0.62 | 0.8 | 170 |
| Jet Pump | 1 | 113 | 0.74 | 8 | 170 |
| Supply Barge (no equip) | 1 |  |  | 8 | 170 |
| Tug Boat (supply barge) | 1 | $680 \times 2$ | 0.31 | 2 | 170 |

Table CARB-14-1: Construction Dredge Barge and Piling Barge Equipment Information

| Equipment | No. of <br> equip. | HP <br> (per piece of <br> equipment) | LF <br> (per piece of <br> equipment) | hours/day | Total days |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Dive Boat | 1 | $528 \times 2$ | 0.38 | 3 | 170 |

Notes:
HP = engine horsepower
LF = load factor

Regarding mitigation, LAHD has verified that electric dredge equipment has been demonstrated to be technologically feasible, and is commercially available. Mitigation measure MM AQ-5 has been revised to require, subject to availability at the time of construction, electric dredge equipment for construction of the proposed Project. See Chapter 3 of this Final EIS/EIR for the addition of this requirement to MM AQ-5. Note that the mitigated construction results are not being revised based on this addition to the mitigation measures. Therefore, the mitigated construction emissions within the EIS/EIR are considered conservative.

## Response to Comment CARB-15

The comment is noted. Please see Master Response 2: Zero-Emission Technologies, and Master Response 3: Port-wide Emission Reduction Programs. As noted in Master Response 2, zero- and near-zero- emission technologies are not commercially feasible. When these technologies become commercially available, lease measure LM AQ-1 will be used to incorporate them into terminals Port-wide. Note that the commenter suggests that "...LAHD should require medium-duty and heavy-duty trucks traveling within 100 miles of the terminal use zero and near-zero technology." Since neither LAHD nor the Everport Container Terminal operator control every truck traveling within 100 miles of the Port; therefore, this is not an appropriate mitigation measure for the proposed Project's EIS/EIR (see Master Response 1: Feasible Mitigation - Guidance and Applicability).

## Response to Comment CARB-16

The comment is noted. As described in Section 7.0 of Appendix B3, this risk assessment used healthprotective assumptions to provide a margin of safety with respect to human health. The Port elected to start the cancer risk exposure period in 2018 for all receptor types for several reasons. First, 2018 is the first planned year of proposed Project construction, when construction emissions would combine with operational emissions to produce a temporary spike in emissions that would coincide with the highestweighted age range (3rd trimester to 2 years) for residential risk. Second, this exposure period represents immediate impacts to the surrounding community. By contrast, starting the exposure period in 2033 would mean the cancer risk impact would not even begin for another 16 years. Third, the Port would have low confidence in the estimated cancer risks for an exposure period starting in 2033 because (a) all but the first five years of the exposure period would take place after the proposed Project's lease expires in 2038; and (b) the exposure period would extend well beyond the current forecast horizons for air quality emissions models (they currently forecast to about 2045 or 2050).

Nevertheless, for informational purposes, the Port conducted a sensitivity analysis for two HRA receptors to see how the predicted cancer risks would change if the exposure period was to start in 2033 instead of 2018. The sensitivity analysis is provided as an additional appendix in Chapter 3 of this Final EIS/EIR and summarized herein. The two selected receptors were the maximally impacted residential and sensitive receptors for the NEPA increment, as shown in Table 3.2-27 of the Draft EIS/EIR. For lack of better data, proposed Project emissions were assumed to continue until the end of the exposure period (even beyond the proposed lease period) at the same rate as their latest projected year in the Draft EIS/EIR. The sensitivity analysis showed that the unmitigated cancer risks for the proposed Project before subtracting baseline would be about 3 to 4 percent (about 2 per million) higher for both receptor types if the exposure period
were to start in 2033 instead of 2018. The mitigated cancer risks would be about 1 percent ( 0.6 per million) lower for the residential receptor and 0.6 percent ( 0.2 per million) higher for the sensitive receptor. Both the mitigated and unmitigated results would be below the threshold of significance. The chronic and acute hazard indices would not be affected because they were analyzed in the Draft EIS/EIR with their maximum emissions from all analysis years. Therefore, no finding would have changed as a result of the conducting the HRA in the manner suggested by the commenter.

## Response to Comment CARB-17

The comment is noted. The Draft EIR/EIS included text and table footnotes in Appendix B3 to describe the meaning of the tabular results. For example, the "Proposed Project" column in Table B3-5 represents the maximum predicted health values associated with construction and operation of the proposed Project, before subtracting the baseline health values. This is indicated in Footnote (a). The "CEQA Baseline" column represents the maximum predicted health values associated with operation of the CEQA baseline. The emissions assumed for the CEQA baseline are described in Section 2.1 of Appendix B3. The "CEQA Increment" column represents the maximum difference of the Proposed Project minus the CEQA Baseline, determined by subtracting the results at each receptor and selecting the maximum receptor. This is indicated in Footnote (b) as well as the text on Page B3-18. The "Future CEQA Baseline" column represents the maximum predicted health values associated with operation of the future CEQA baseline. The emissions assumed for the future CEQA baseline are described in Section 2.1 of Appendix B3. The "Future CEQA Increment" column represents the maximum difference of the Proposed Project minus the future CEQA baseline, determined by subtracting the results at each receptor and selecting the maximum receptor. This is indicated in Footnote (c) as well as the text on Page B3-18. Furthermore, Footnote (d) explains that the maximum health values for the Proposed Project, CEQA Baseline, and CEQA Increment may not all occur at the same receptor location; likewise, the maximum health values for the Proposed Project, Future CEQA Baseline, and Future CEQA Increment may not all occur at the same receptor location.

The locations of the maximum increment receptors (i.e., corresponding to the maximum health values for the "CEQA Increment" and "Future CEQA Increment" in Table B3-5) are shown in Figure B3-3.

## Response to Comment CARB-18

The comment is noted. As detailed in Response to Comment USEPA-12, before a project is authorized to utilize ocean disposal site, approval from the USEPA is required, which cannot be guaranteed at this time. Therefore, both 100 percent upland disposal and 100 percent ocean disposal options for dredged material were analyzed for air quality impacts, as presented in Section 3.2.4.5 of the Draft EIS/EIR, disclosing the impacts for whichever option is finally selected. Although Appendix F2 determined that ocean disposal of dredged material is the only practicable disposal option, should USEPA not grant approval of ocean disposal at LA-2, an upland disposal option will become necessary. Therefore, the Draft EIS/EIR intentionally evaluated both dredge material disposal options. In essence, the upland disposal scenario is analyzed to disclose the potential impacts in the case that USEPA approval for dredge material disposal at LA-2 is not granted. Regarding the comment that the referenced table should include the assumptions for ocean disposal, the key assumptions associated with ocean disposal are contained in Appendix B.

## Response to Comment CARB-19

The comment is noted. Sweeper emission rates under former CARB CHE regulations would be higher across all criteria pollutants than sweeper emission rates as reflected in the CARB OFFROAD inventory. Therefore, the analysis presented in the Draft EIS/EIR is conservative and no changes to the model or impact analysis is needed. For the commenter's convenience, provided below are the CARB CHE sweeper
emission rates and the CARB OFFROAD sweeper emission rates, both in units of grams per hour. The CHE emission rates are presented in Appendix B1. The OFFROAD rates are from CARB's
OFFROAD2007 emissions model. The rates below are for calendar year 2018.

| Sweepers | CO | HC | TOG | NOx | PM | PM10 | PM2.5 | Sox | CO2 | CH4 | N2O |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| CHE | 338.9 | 38.7 | 89.6 | 1074.9 | 41.7 | 41.4 | 39.6 | 1.7 | 165529 | 9.1 | 0.0 |
| Offroad'07 | 145.9 | - | 40.5 | 275.2 | 9.2 | 9.2 | 9.1 | 0.8 | 73424 | 3.7 | 0.0 |

The text in the Draft EIS/EIR will be revised to show that sweepers are classified and regulated as OFFROAD equipment, not CHE, under CARB.

## Response to Comment CARB-20

The comment is noted. The comment is general and does not identify any specific deficiencies or contest the adequacy of the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

## Response to Comment CARB-21

The comment is noted. A copy of the Final EIS/EIR will be provided as requested.

### 2.3.4 Regional and Local Government Comments



TO: Christopher Cannon, Director of Environmental Management Los Angeles Harbor Department

FROM: Ali Poosti, Division Manager Wastewater Engineering Services Division LA Sanitation

This is in response to your April 18, 2017 letter requesting a review of your proposed improvement project located at 389 Terminal Way, Terminal Island. The Bureau of Sanitation, Wastewater Engineering Services Division (WESD) has reviewed the request and found the project to be related to physical improvements of facilities.

Based on the project description, we have determined the project is unrelated to sewer capacity availability, but may require sewer line relocation. We therefore do not have sufficient detail to offer an analysis for sewer capacity at this time. Should the project description change, please continue to send us information so that we may determine if a sewer assessment is required in the future. If sewer relocation is required for this project, the relocation must be coordinated with the Bureau of Sanitation.

If you have any questions, please call Eduardo Perez of my staff at (323) 342-6207.

## STORMWATER REQUIREMENTS

LA Sanitation, Watershed Protection Division (WPD) is charged with the task of ensuring the implementation of the Municipal Stormwater Permit requirements within the City of Los Angeles. We anticipate the following requirements would apply for this project.

## POST-CONSTRUCTION MITIGATION REQUIREMENTS

The project requires implementation of stormwater mitigation measures. These requirements are based on Stormwater Low Impact Development (LID) requirements. The projects that are subject to LID are required to incorporate measures to mitigate the impact of stormwater runoff. The requirements are outlined in the guidance manual titled "Development Best Management Practices Handbook - Part B: Planning Activities". Current regulations prioritize infiltration, capture/use, and then biofiltration as the preferred stormwater control measures. The relevant documents can be found at: www.lastormwater.org. It is advised that input regarding LID requirements be received in the early phases of the project from WPD's plan-checking staff.

## GREEN STREETS

The City is developing a Green Street Initiative that will require projects to implement Green Street elements in the parkway areas between the roadway and sidewalk of the public right-ofaway to capture and retain stormwater and urban runoff to mitigate the impact of stormwater runoff and other environmental concerns. The goals of the Green Street elements are to improve the water quality of stormwater runoff, recharge local ground water basins, improve air quality, reduce the heat island effect of street pavement, enhance pedestrian use of sidewalks, and encourage alternate means of transportation. The Green Street elements may include infiltration systems, biofiltration swales, and permeable pavements where stormwater can be easily directed from the streets into the parkways and can be implemented in conjunction with the LID requirements.

## CONSTRUCTION REQUIREMENTS

The project is required to implement stormwater control measures during its construction phase. All projects are subject to a set of minimum control measures to lessen the impact of stormwater pollution. In addition for projects that involve construction during the rainy season that is between October 1 and April 15, a Wet Weather Erosion Control Plan is required to be prepared. Also projects that disturb more than one-acre of land are subject to the California General Construction Stormwater Permit. As part of this requirement a Notice of Intent (NOI) needs to be filed with the State of California and a Storm Water Pollution Prevention Plan (SWPPP) needs to be prepared. The SWPPP must be maintained on-site during the duration of construction.

If there are questions regarding the stormwater requirements, please call Kosta Kaporis at (213) 485-0586, or WPD's plan-checking counter at (213) 482-7066. WPD's plan-checking counter can also be visited at 201 N . Figueroa, $3{ }^{\text {rd }} \mathrm{Fl}$, Station 18.

## SOLID RESOURCE REQUIREMENTS

The City has a standard requirement that applies to all proposed residential developments of four or more units or where the addition of floor areas is 25 percent or more, and all other development projects where the addition of floor area is 30 percent or more. Such developments must set aside a recycling area or room for onsite recycling activities. For more details of this requirement, please contact Daniel Hackney of the Special Project Division at (213)485-3684.

## EP/AP:as

c: Kosta Kaporis, LASAN<br>Daniel Hackney, LASAN<br>Eduardo Perez, LASAN

[^7]
### 2.3.4.1 City of Los Angeles, Bureau of Sanitation, Wastewater Engineering Services Division (BOS)

## Response to Comment BOS-1

Thank you for your comment. The comment indicates that the proposed Project is unrelated to sewer capacity availability, but may require sewer line relocation. Should sewer relocation be required, the relocation will be coordinated with the Bureau of Sanitation. The proposed Project does not require the relocation of any sewer line but LAHD will coordinate with BOS if such a need arises.

## Response to Comment BOS-2

The comment is noted. The comment provides standard requirements related to the implementation of stormwater mitigation measures. Section 3.11.3.10 of the Draft EIS/EIR discussed the applicable regulations related to the Los Angeles Municipal Separate Storm Sewer System (MS4) permit, including the LID requirements, as they relate to the proposed Project. Additionally, Section 3.11.4.1 of the Draft EIS/EIR identifies LAHD's commitments during construction and long-term operation for the reduction of impacts on water quality, which includes LAHD incorporating MS4/LID measures into the proposed Project design for review and approval. The impact analysis (Section 3.11.4.3 under Impact WQ-1) in the Draft EIS/EIR assumes runoff at the Project site will be collected by the on-site storm drain system and is managed in compliance with applicable permits and ordinances (including MS4/LID requirements).

The comment provides background on the City's Green Street Initiative. It should be noted that the proposed Project includes closure of portions of Terminal Way, Barracuda Street, Tuna Street, and Ways Street within the Project site and rerouting of Terminal Way traffic to Cannery Street. The Project site is at the downstream end of the watershed and in a location (within Harbor waters) where groundwater recharge does not provide a water supply benefit; therefore, the proposed Project does not have the opportunity to implement Green Street elements.

## Response to Comment BOS-3

The comment is noted. Section 3.11.3.9 of the Draft EIS/EIR discusses the State Water Resources Control Board Stormwater Permits that are applicable for construction activities. Additionally, Section 3.11.4.1 of the Draft EIS/EIR identifies the assumptions that will be adhered to during construction for the reduction of impacts to water quality.

## Response to Comment BOS-4

The comment is noted. The proposed Project does not involve residential development or the addition of building floor area. All improvements would occur within the existing limits of the terminal, and do not include any new building areas. Therefore, the recycling requirements discussed by the commenter are not applicable.

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

## SENT VIA E-MAIL \& USPS:

June 2, 2017
theresa.stevens@usace.army.mil
U. S. Army Corps of Engineers, Los Angeles District

Regulatory Division
ATTN: Ms. Theresa Stevens, Ph.D.
2151 Alessandro Drive, Suite 110
Ventura, California 93001
ceqacomments@portla.org
City of Los Angeles Harbor Department
Environmental Management Division
ATTN: Mr. Christopher Cannon, Director
P.O. Box 151

San Pedro, CA 90731

## Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) for <br> the Proposed Berths 226-236 [Everport] Container Terminal Improvements Project ("Proposed Project") (SCH No.: 2014101050)

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to comment on the above-mentioned document. The following comments are meant as guidance for the Lead Agency and should be incorporated into the Final EIS/EIR.

SCAQMD staff understands that the fundamental purpose of the proposed project is to increase the container-handling efficiency and capacity of the existing Everport Container Terminal ("Terminal") at the Port of Los Angeles ("Port") in order to accommodate larger container vessels of up to 16,000 twenty-foot equivalent units [TEUs] that are anticipated to call at the Terminal through year 2038. This proposed project supports the long-term development and growth of the Port.

On March 3, 2017, the SCAQMD's Governing Board adopted the 2016 Air Quality Management Plan (2016 AQMP), which was later approved by the California Air Resources Board of Directors on March $23^{\text {rd }}$. The $2016 \mathrm{AQMP}^{1}$ is a regional blueprint for achieving air quality standards and healthful air in the South Coast Air Basin. Built upon the progress in implementing the 2007 and 2012 AQMPs, the 2016 AQMP provides a regional perspective on air quality and lays out the challenges facing the South Coast Air Basin. The most significant air quality challenge in the Basin is to achieve an additional 45 percent reduction in nitrogen oxide (NOx) emissions in 2023 and an additional 55 percent NOx reduction beyond 2031 levels for ozone attainment.

[^8]SCAQMD staff supports the Port's commitment to improve air quality while the Port continues to be economically competitive, efficient, and environmentally sustainable. This commitment was recently reaffirmed in the San Pedro Bay Ports Clean Air Action Plan 2017 Discussion Draft ${ }^{2}$. As described above, achieving NOx emission reductions in a timely manner is critical to attaining the National Ambient Air Quality Standard (NAAQS) for ozone before the 2023 and 2031 deadlines. SCAQMD is committed to attaining the ozone NAAQS as expeditiously as practicable, and we believe that the Port plays an important role in supporting SCAQMD's commitment.

## Project Description

The Lead Agency proposes to dredge and dispose of approximately 38,000 cubic yards of sediment, provide structural improvements to stabilize the wharf, raise the existing eight cranes, install five new cranes, build vessel servicing infrastructure with five maritime power vaults, and develop 23.5 acres as new terminal backlands on 229 acres. The Lead Agency also proposes to extend the Terminal lease by 10 years from 2028 through 2038.

Construction is expected to take approximately 24 months and would begin in late $2017^{3}$. The Terminal would continue to operate during construction with vessels using Berths 226-229 while Berths 230-232 are under construction, and vice versa ${ }^{4}$. By year 2038, approximately 2.38 million TEUs (an increase of 1.14 million TEUs from 1.24 million TEUs in year 2013) and 208 annual vessel calls (an increase of 42 from the 166 vessel calls in 2013) ${ }^{5}$ are expected at the Terminal. The number of trains would increase to approximately six trains per day from the two in year 2013. Daily truck trips would also increase by 2,523 to 7,028 daily truck trips in the peak month ${ }^{6}$. The net increase in employment attributable to the proposed project (direct) would be 4,230 jobs in year $2038^{7}$.

## Air Quality and Health Risk Assessment (HRA) Analyses

The Lead Agency found that the proposed project's regional air quality impacts from construction for NOx in 2018 and $2019^{8}$ and for VOC in 2019 will be significant and unavoidable after mitigation ${ }^{9}$. Overlapping construction and operational emissions will remain significant after mitigation for NOx in 2019. ${ }^{10}$ The Lead Agency also found that maximum off-site ambient air pollutant concentrations during construction would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average), and overlapping construction and operations would be significant and

[^9]unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average) and $\mathrm{PM}_{10}$ (24-hour and annual average) ${ }^{11}$. The proposed project's regional operational impacts after incorporating mitigation measures will remain significant and unavoidable for CO and VOC in year 2033 and year 2038. ${ }^{12}$ The proposed project's mitigated maximum cancer risk (MICR) for residential, occupational, and sensitive receptors was found to be 1.3 in a million, 5.8 in a million, and 0.8 in a million, respectively ${ }^{13}$.

After a review of the air quality and health risk analyses and supporting technical documents, SCAQMD staff has concerns about the analyses in the Draft EIS/EIR, which have likely led to an under-estimation of the project's impacts. First, the analyses improperly credit the proposed project with emission reductions that will occur independent of the proposed project due to adopted state and federal rules and regulations. Second, the modeling performed for the proposed project used improper parameters and outdated meteorological data. Additional details are included in the attachment. The attachment also includes a discussion of recommended changes to the existing mitigation measures for air quality which the Lead Agency should implement.

Pursuant to Public Resources Code Section 21092.5, SCAQMD staff requests that the Lead Agency provide SCAQMD with written responses to all comments contained herein prior to the certification of the Final EIS/EIR. Further, SCAQMD staff is available to work with the Lead Agency to address the comments raised herein and any other questions that may arise. If you have any questions regarding this letter, please contact me at jwong1@aqmd.gov or Lijin Sun, Program Supervisor, CEQA IGR, at lsun@aqmd.gov.

SCAQMD-1 cont.


Jillian Wong, Ph.D.
Planning and Rules Manager
Planning, Rule Development \& Area Sources

Attachment
JW:LS/JC/MS/GM
LAC170421-03
Control Number

[^10]
## ATTACHMENT

## CEQA Baseline

1. The Draft EIS/EIR should include a realistic baseline which accurately reflects the improvements in air quality that will occur, independent of the proposed project. The CEQA baseline year for determining the air quality impacts from criteria pollutants was $2013{ }^{14}$. This baseline is held constant (i.e. using emission rates from 2013) and compared to future interim years under the proposed project (i.e. using emission rates from future years). This approach using a comparison between the proposed project's impacts in future years (using emission rates from those years) and a 2013 baseline (using emission rates from 2013) improperly credits the proposed project with emission reductions that will occur independent of the proposed project due to adopted state and federal rules and regulations, since these rules and regulations are expected to improve air quality, even in the absence of the proposed project. Therefore, SCAQMD staff believes that the proposed project may have underestimated the true impacts attributable to the proposed project's activities. In Neighbors for Smart Rail v. Exposition Metro Line Construction (2013) 57 Cal.4th 439, the California Supreme Court held that using a future baseline is proper in some cases. The purpose of CEQA is to disclose environmental impacts from the proposed project to the public and decision makers in order to provide the public and decision makers with the actual changes to the environment from the activities involved in the proposed project. By taking credit for future emission reductions from existing air quality rules and regulations, the proposed project's air quality impacts are underestimated. Therefore, SCAQMD staff recommends that the Lead Agency revise the air quality analysis to include a comparison between the emissions in year 2019, year 2026, year 2033, and year 2038 with the proposed project and the emissions in the same respective years without the proposed project, and use this analysis to determine the level of significance. By using a consistent emission rate for the analysis, the air quality and health risk impacts of the project will be accurately disclosed (i.e. impacts based on the change in activity due to the proposed project).

## SCAQMD's Air Quality CEQA Thresholds of Significance

2. Based on the proposed project's construction schedule ${ }^{15}$, construction and operation activities are expected to overlap in 2018 and 2019. In the case of overlapping construction and operation activities, SCAQMD staff recommends adding the construction and operational emissions and comparing those emissions to the SCAQMD's air quality CEQA significance thresholds for operation ${ }^{16}$.

## Methodology for Determining the Significance of Air Quality Impacts

3. As described in Comment No. 1, SCAQMD staff found that the proposed project's operational air quality emissions from criteria pollutants, with and without mitigation, were first subtracted

[^11]from the 2013 CEQA baseline air emissions, and the resulting differences were compared to the SCAQMD's regional air quality CEQA significance thresholds to determine the level of significance in year 2019, year 2026, year 2033 and year 2038. However, based on a review Appendix B3, Health Risk Assessment ${ }^{17}$, SCAQMD staff found that the methodology for the HRA analysis included a comparison between potential health risks in year 2038 with and without the proposed project to determine the level of significance without subtracting the 2013 CEQA baseline. As such, SCAQMD staff found that the methodology for determining the significance of air quality impacts is not consistent with the methodology for determining the significance of health risks. It is recommended that the Lead Agency use consistent methodologies when determining both air quality and health risk impacts in the Final EIS/EIR.

## Air Dispersion Modeling Parameters

4. Some of the receptors were placed within the volume source exclusion zone, and the results at these locations might not be accurate. Therefore, SCAQMD staff recommends that the Lead Agency revise the HRA by using a greater number of smaller volume sources to avoid placing receptors within the volume source exclusion zone.
5. The Lead Agency used differing Locomotives transit - Day and Night release heights in their source parameters (Day - 5.6 meters and Night - 14.6 meters). Appendix B2, Section 3.1.2 Operational Emission Sources, stated that the "locomotives in transit were set to different heights for daytime conditions compared to nighttime conditions." Changes in atmospheric conditions are already accounted for within AERMOD. By using higher nighttime release heights, the Lead Agency has likely underestimated health risks. The Lead Agency should revise the HRA to use the same release heights for daytime and nighttime locomotive emissions and re-evaluate the health risks.
6. Page B2-8 of Appendix B2 of the Draft EIS/EIR indicated that 2006-2007 meteorological data from the Terminal Island Water Reclamation Plant (TITP) was used for dispersion modeling for both criteria pollutants and toxic air contaminants (TACs). The meteorological data is outdated, and the Lead Agency used an outdated version of AERMOD to process the meteorological data. SCAQMD staff has prepared AERMOD-ready meteorological data which could be used by the Lead Agency in the air quality analysis ${ }^{18}$. The Lead Agency could use the SCAQMD meteorological data collected at the Long Beach station ${ }^{19}$. Additionally, the U.S. EPA recommends that for on-site meteorological data, the most recent five-year data be used for the purposes of air dispersion modeling ${ }^{20}$. Therefore, SCAQMD staff recommends that the Lead Agency update HRA using the latest five years of available meteorological data

[^12]and use AERMET version 16216 (or the most recent version available at the time of analysis) to process the data. Updates and improvements to AERMET may also affect the air dispersion modeling results.

## Methodology for Determining Morbidity and Mortality Impacts

7. Mortality is a measure of the number of deaths in a population, scaled to the size of that population, per unit time. Morbidity refers to the number of individuals who have contracted a disease during a given time period (the incidence rate) or the number who currently have that disease (the prevalence rate), scaled to the size of the population. On Page 3.2-76 of the Draft EIS/EIR, the Lead Agency found that the proposed project would not exceed the Los Angeles Harbor Department's (LAHD) criterion for calculating morbidity and mortality impacts attributable to PM, and that mortality and morbidity significance would be identified by exceedance of SCAQMD's PM2.5 localized significance criterion of $2.5 \mu \mathrm{~g} / \mathrm{m}^{3}$.

First, SCAQMD staff does not agree with using SCAQMD's localized PM2.5 threshold as a screening threshold for determining the significance of morbidity and mortality impacts. The SCAQMD's PM2.5 significance threshold of $2.5 \mu \mathrm{~g} / \mathrm{m}^{3}$ is designed to determine the significance of localized impacts on nearby receptors, and it was made to be consistent with existing permitting requirements under SCAQMD Rule 1303. The PM2.5 significance threshold of $2.5 \mu \mathrm{~g} / \mathrm{m}^{3}$ was not intended to be used as a screening tool to determine if mortality and morbidity impacts analysis would be warranted. As such, SCAQMD staff recommends that the Lead Agency revise the PM mortality analysis and use the methods described in California Air Resources Board's 2010 guidance document ${ }^{21}$. Second, the analysis did not include a reference to the LAHD's criterion that was used for determining if calculating morbidity and mortality impacts attributable to PM would be warranted. As such, SCAQMD staff recommends providing a reference to the LAHD's criterion in the Final EIS/EIR.

## Recommended Changes to Existing Mitigation Measures

Technology Review
8. The Draft EIS/EIR includes a mitigation measure under lease management (LM) AQ-1, which requires a review of new emissions reduction technologies for feasibility every five years beginning five years after the lease agreement. SCAQMD staff believes that the Lead Agency should take this opportunity to deploy the lowest emission technologies possible. This is consistent with Port's air quality commitment, as well as in support of SCAQMD's commitment to achieve NOx emission reductions. The deployment should include those technologies that are "capable of being accomplished in a successful manner within a reasonable period of time" (Public Resources Code Section 21061.1), such as zero and nearzero emission technologies that are expected to be available in the life of the proposed project. As such, SCAQMD staff recommends that the Lead Agency assess equipment availability,

[^13]equipment fleet mixtures, and best available emissions control devices every two years beginning two years after lease agreement is entered. When a new emission control technology is found feasible and would substantially reduce air emissions, but the Lead Agency declines to implement such technology, a subsequent EIR shall be prepared (CEQA Guidelines Section 15162(a)(3)(C)). SCAQMD staff's recommended revisions to LM AQ-1 are below:

## LM AQ-1: Replacement of Equipment and Review of New Technology

"[...] LAHD shall require the tenant to review any new emissions-reduction technology for feasibility and report back to LAHD every five two years beginning five two years after lease agreement if no new purchase or equipment turnover occurs sooner as noted in the aforementioned paragraph. If LAHD and tenant determine the technology is feasible in terms of cost and operations, subject to the requirements as set forth in the CEQA Guidelines Section 15162(a)(3)(C), the tenant shall work with LAHD to implement such technology."

## Enforceability

9. Mitigation Measure (MM) AQ-2 and MM AQ-3 provide circumstances under which the EPA 2010 on-road haul truck and Tier 4 off-road construction equipment requirements would not apply. CEQA requires that mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments (Public Resources Code Section 21081.6 (b) and CEQA Guidelines Section 15126.4 (a)(2)). To ensure that the requirements set forth in MM AQ-2 and MM AQ-3 are enforceable, and to further reduce emissions during construction and operation, SCAQMD staff recommends the following revisions:

MM AQ-2: On-Road Trucks Used During Construction. On-road trucks shall comply with EPA 2010 on-road emission standards or better, unless the contractor ean reasenably demenstrate provides a written finding consistent with project contract or lease management requirements and obtains written approval from the Lead Agency that such equipment is unavailable to the satisfaction of LAHO.

MM AQ-3: Non-road Construction Equipment (except vessels, harbor craft, on-road trucks, and dredging equipment). All non-road construction equipment greater than 50 hp must meet EPA Tier 4 emission standards, unless the contractor ean reasonably demonstrate provides a written finding consistent with project contract or lease management requirements and obtains written approval from the Lead Agency that such equipment is unavailable to the satisfaction of LAHB.

## General Conformity Determination

10. On May 17, 2017, SCAQMD staff received a letter from the Port requesting confirmation that the previously allocated emissions for construction in 2018 were still valid. ${ }^{22}$ Based on a review of Appendix B4, Draft General Conformity Determination, SCAQMD staff found that

[^14]construction emissions for year 2019 were not analyzed because "very little [construction] is expected to occur in 2019 [...]"23. SCAQMD staff recommends that the Lead Agency provide an estimate of the proposed project's construction emissions in 2019 and compare those emissions to the de minimis thresholds in the Final EIS/EIR in order to provide substantial evidence that construction emissions in 2019 are below the de minimis thresholds. In the event that a general conformity determination for 2019 is required from SCAQMD, the estimation of the proposed project's construction emissions in 2019 will assist SCAQMD staff in reviewing and determining if the NOx emissions from 2019 can be accommodated within the General Conformity Budgets established in the Final 2012 AQMP.

[^15]
### 2.3.4.2 South Coast Air Quality Management District (SCAQMD)

## Response to Comment SCAQMD-1

The comment is noted. The comment summarizes the conclusions of the Draft EIS/EIR with respect to air quality impacts and does not identify any specific deficiencies or contest the adequacy of the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

## Response to Comment SCAQMD-2

The comment is noted. LAHD does not agree that there was any underestimation of emissions associated with the proposed Project. Please refer to responses to SCAQMD-4 through SCAQMD-10 for discussions of the specific technical issues to which this comment generally refers.

## Response to Comment SCAQMD-3

The comment is noted. Responses to SCAQMD's comments are provided in this Final EIS/EIR. As required by law, LAHD will be providing all commenter's with written responses prior to the certification of the Final EIS/EIR.

## Response to Comment SCAQMD-4

The comment is noted. The commenter contends that a comparison between the proposed Project's impacts in future years (using emission rates from those years) and a 2013 baseline (using emission rates from 2013) improperly credits the proposed Project with emission reductions that will occur independent of the proposed Project due to adopted state and federal rules and regulations, since these rules and regulations are expected to improve air quality, even in the absence of the proposed Project.

Draft EIS/EIR Section 3.2.4.2 discusses the legal basis for the selection of a 2013 CEQA baseline. The CEQA analysis of air quality impacts is based on a comparison of the proposed Project emissions to the baseline existing conditions. This is consistent with CEQA Guidelines §15125(a), which states that the environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. Section 15125(a) also provides that the existing conditions are normally described as they exist at the time the notice of preparation (NOP) is published, which, in the case of the proposed Project, was 2014. Other courts have also recognized the discretion of lead agency's to determine the baseline. (See Communities for a Better Environment v. South Coast Air Quality Management Dist. (2010) $48 \mathrm{Cal} .4 \mathrm{th} 310,320-322$ [also reasoning that "the baseline for an agency's primary environmental analysis under CEQA must ordinarily be the actually existing physical conditions"].) For purposes of this Draft EIS/EIR, the CEQA baseline takes into account the throughput for the 12 -month calendar year preceding NOP publication (January through December 2013) in order to provide a representative characterization of activity levels throughout the complete calendar year preceding release of the NOP.

Using existing conditions as the baseline is appropriate for the proposed Project air quality analysis because, in part, the analysis is based on comparison of the baseline with construction emissions and with operational emissions at several discrete points in time for specific analysis years. This approach is consistent with Neighbors for Smart Rail v. Exposition Metro Line Construction Authority (2013) 57 Cal.4th 439. In that case, the Court held that the lead agency erred because there was not sufficient justification in the administrative record to justify its decision to use only a baseline of conditions projected to exist in the year 2030. In so holding, the Supreme Court endorsed the rule enunciated in Sunnyvale West

Neighborhood Assn. v. City of Sunnyvale City Council (2010) 190 Cal.App.4th 13511: "[A] project’s effects on future conditions are appropriately considered in an EIR's discussion of cumulative effects and in discussion of the no project alternative. (Sunnyvale West, supra, 190 Cal.App.4th at pp. 1381-1382.)" (Neighbors for Smart Rail, at p. 454.)

Here, the Draft EIS/EIR includes a comparison of the future Project emissions to an appropriate future baseline under the NEPA impact analysis discussion. ${ }^{2}$ The NEPA Baseline operational emissions, by year, are presented in the Draft EIS/EIR, Section 3.2.4.3, Table 3.2-5, on pages 3.2-18 and 19. Comparison of the proposed Project emissions, by year, against the NEPA Baseline (same emissions as the No Project Alternative) Study Year scenarios are presented in the Draft EIS/EIR, Section 3.2.4.5, Table 3.2-20, on pages 3.2-46 through 48 (under the NEPA Impacts rows for each Study Year). Therefore, the comparison between the proposed Project and a future baseline (the NEPA Baseline/No Project scenario) in a manner that applies the same emission factors and regulations to each scenario has already been presented in the Draft EIS/EIR, as requested. The significance threshold used for NEPA impact analysis is identical to the threshold used for the CEQA impact analysis, thus disclosing the significance of the project's impacts as compared to a future baseline. Mitigation measures will be implemented for both CEQA and NEPA significant impacts.

The approach used in the Draft EIS/EIR (i.e., the use of existing conditions as a CEQA baseline to determine CEQA impacts, while at the same time disclosing impacts against a future baseline as part of the No Project/No Action analysis), was upheld in the matter of Fast Lane Transportation, Inc. v. City of Los Angeles, et al. (2016) Case No. CIV. MSN-14-0300, the full decision of which is incorporated herein by reference.

## Response to Comment SCAQMD-5

The comment is noted. The Port used the construction thresholds when assessing overlapping construction and operation activities because the impacts would occur during the construction period, prior to operation of the Project in its proposed configuration as described in the EIS/EIR.

## Response to Comment SCAQMD-6

The comment is noted. To the extent the commenter is asserting that the HRA only evaluated year 2038, improperly did not subtract the 2013 CEQA baseline, and was required to use the same assumptions and methodologies as those used in the analysis of air quality, the commenter is incorrect. As explained in Sections 2.1 and 2.2 of Appendix B3, the HRA analysis and the methodologies used to prepare the HRA are supported by substantial evidence and did not evaluate only the year 2038. For example, residential cancer risks for the proposed Project were determined by modeling emissions over a 30 -year period, 2018-2047. Non-cancer risks were determined by modeling maximum emissions from years 2018, 2019, 2026, 2033, and 2038. The HRA used industry standard models (AERMOD and HARP2) and exposure assumptions built into the models and consistent with current guidance (OEHHA, 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February).

[^16]Regarding the methodology for determining the significance of impacts under CEQA, the HRA is consistent with the other portions of the air quality analysis because it compares the future proposed Project risk to the 2013 CEQA baseline risk. This risk increment is shown in the $5^{\text {th }}$ column of Table B3-5 ("CEQA Increment"). However, as explained in Section 2.1 of Appendix B3, the extremely long exposure periods assumed in the HRA for cancer risk ( 30 years for residential exposure and 25 years for occupational exposure) make cancer risk unique among all other air quality indicators in the DEIS/EIR. Therefore, to resolve the complexity of evaluating a fixed point in time (the 2013 baseline condition) over decades-long exposure periods, the Port elected to evaluate the CEQA baseline cancer risk using a second approach. In this second approach, the "future CEQA baseline" is evaluated by assuming constant 2013 terminal activity levels for each year of the exposure period, but the emission factors vary year-by-year, starting with 2013 and continuing for the entire exposure period. The "Future CEQA Increment", which is the future proposed Project risk minus the future CEQA baseline risk, is shown in the $7^{\text {th }}$ column of Table B3-5. The purpose of the Future CEQA Increment is not to compare the project to a without-project scenario, as asserted by the commenter, but rather to compare the proposed Project to an alternate, less conservative version of the 2013 CEQA baseline (the subtraction of which yields a more conservative project increment).

The need to compare the proposed Project to two versions of the CEQA baseline does not exist for any other air quality indicators (such as regional criteria pollutant emissions, local criteria pollutant concentrations, or the chronic and acute hazard indices) because the other indicators are based on emissions or modeled concentrations over the period of one year or less, which fit entirely within the 2013 baseline period. Therefore, evaluation of a future baseline is not applicable to any air quality indicator except cancer risk.

Please see the Response to Comment SCAQMD-4 for the legal justification for the selection of the CEQA baseline in the HRA and air quality impacts analysis.

## Response to Comment SCAQMD-7

The commenter recommends that the HRA be revised to use a greater number of smaller volume sources to avoid placing receptors within the volume source exclusion zone. The comment is noted. The HRA, however, is supported by substantial evidence and was expansive in scope. The air dispersion modeling for example, using AERMOD, predicts the reasonably foreseeable project-related impacts to ambient air quality from the operation of ships, harbor craft, cargo handling equipment, rail locomotives, and container trucks at the Everport Container Terminal, as well as from construction equipment used to build the project elements. The vessels, equipment, and vehicles are modeled in AERMOD as either area sources or volume sources. Ships and the assist tugs, rail locomotives, and trucks travel on set paths (shipping lanes, rail lines, or roadways), and are modeled as line sources in AERMOD. These line sources are analyzed by creating a series of volume sources along the ship or equipment path. Cargo handling and project construction equipment generally operate within the confines of the terminal boundary, and are modeled as areas sources with an extent and shape that matches the terminal area, or the specific construction area where the equipment would operate. Each model run included in the Draft EIS/EIR analyzed up to 9,500 individual area and volume sources.

Receptors were also incorporated into the AERMOD models. These receptors are the geographic locations where air pollutant concentrations are calculated, and typically represent residents, school children, offsite workers, or other potentially impacted populations. Each model run typically analyzed concentrations at 1,300 receptors. The AERMOD algorithms make no restrictions on the distances between area sources and receptors. However, the AERMOD algorithms do check distances between receptors and volume sources because the equations used to calculate concentrations from volume sources are not appropriate at distances very close to the source. This distance is referred to as the exclusion zone, and if a receptor is located within a volume source exclusion zone AERMOD does not perform the concentrations calculation for that
specific source and receptor pair. Of the 1,300 receptors in the model runs, approximately 150 fell within exclusion zones for one or more volume sources.

Sensitivity analysis (modeling) was performed to address the excluded sources for these receptors and determine if any increase in concentrations for the peak receptor would have occurred as a result of including those sources. It should be noted that, for a particular modeled receptor, excluded sources were one to three specific volume sources among a series of volume sources used to represent a roadway or rail line). Consequently, the excluded sources would have a very isolated/localized contribution to receptor concentrations. Notwithstanding, sensitivity analyses were conducted at several key receptor points to determine the potential effects that the excluded sources may have had on the HRA results. These receptor points included the maximum Residential and Occupational Cancer Risk locations for the CEQA impact analysis, as well as the maximum Residential and Occupational Cancer Risk locations for the NEPA impact analysis.

Beginning with the CEQA impact analysis, it was confirmed by reviewing the graphical displays of source and receptor locations that the maximum Occupational Cancer Risk receptor along the southern boundary of the Everport Container Terminal (Figure B3-3, page B3-20 in Appendix B3 of the Draft EIS/EIR) was outside of any source exclusion zones. Therefore, the maximum Occupational Cancer Risk value reported in Table 3.2-26 (page 3.2-68) of the Draft EIS/EIR remains unchanged.

Continuing with the CEQA impact analysis, it was confirmed that the maximum Residential Cancer Risk receptor next to the southbound lanes of the I-110 Freeway between Lomita Boulevard and Pacific Coast Highway, was within the exclusion zones for several volumes that were part of the I-110 freeway source. This location was the only residential site with excluded sources, and was found to have four (4) operational truck source volumes, 4 operational worker vehicle volumes, and 5 construction truck volumes excluded from the Proposed Project calculations. In addition, this location was found to have 5 operational truck source volumes and 5 operational worker vehicle volumes excluded from the CEQA Baseline calculations. (See Figure SCAQMD-7-1) As a note, this receptor is located at the sound wall next to the freeway, yet the residential homes are actually 35 to 40 feet back from the freeway. Therefore, the results from the revised analysis discussed below are very conservative and would have been lower than presented at the actual residences.

To estimate the potential effect of excluded sources on the incremental residential cancer risk, both the Proposed Project and Future CEQA Baseline scenarios were rerun for the peak receptor using a 30-year average diesel particulate matter (DPM) emission rate for all sources. The Proposed Project and Future Baseline scenarios were both run once with no changes in source locations to determine the 30-year average DPM concentration when the nearfield sources were excluded; and once with the I-110 roadway sources modified to prevent the receptor from being within the exclusion zones (see Figure SCAQMD-7-2). The 30year average DPM concentration was used as a surrogate for residential cancer risk.

Figure SCAQMD-7-1 Excluded Sources from CEQA Residential Cancer Risk Receptor


[^17]Figure SCAQMD-7-2. CEQA Peak Residential Cancer Risk Receptor with Sources Modified to Remove Exclusions


The Proposed Project 30-year average DPM concentration without the excluded source emissions was 0.01977 micrograms per cubic meter $\left(\mu \mathrm{g} / \mathrm{m}^{3}\right)$, and the Future CEQA Baseline 30 -year average DPM concentrations without excluded source emissions was $0.01495 \mu \mathrm{~g} / \mathrm{m}^{3}$, resulting in an incremental 30 -year average DPM concentration of $0.00482 \mu \mathrm{~g} / \mathrm{m}^{3}$ without the excluded source emissions. After rerunning to include the previously excluded sources, the resulting 30-year average DPM concentration was 0.02743 $\mu \mathrm{g} / \mathrm{m}^{3}$ for the Proposed Project and $0.02244 \mu \mathrm{~g} / \mathrm{m}^{3}$ for the Future CEQA Baseline. The resulting incremental concentration for the maximum Residential Cancer Risk receptor was $0.00498 ~ \mu \mathrm{~g} / \mathrm{m}^{3}$ which is only 4 percent higher than the increment before the source adjustment. Therefore, the peak Residential Cancer Risk value would be essentially the same as the value reported in the Draft EIS/EIR for the Unmitigated Future CEQA Increment in Table 3.2-26 (page 3.2-68). The Residential Cancer Risk would remain less than significant and the conclusions found in the Draft EIR/EIS do not change.

The maximum residential cancer risk under NEPA was located in Fish Harbor south of the Everport terminal (Figure B3-5, page B3-25 in Appendix B3 of the Draft EIS/EIR). This location was outside all of the source exclusion zones, therefore, the maximum Residential Cancer Risk value reported in Table 3.2-27 (page 3.2-71) of the Draft EIS/EIR remains unchanged.

The location of the maximum Occupational Cancer Risk receptor under NEPA was on the north side of the Everport Container Terminal, next to the on-dock railyard. This location was found to have several operational rail locomotive volume sources excluded from both the proposed Project and Future CEQA Baseline calculations. Therefore, all of the rail line sources within the Everport Container Terminal boundary were remodeled as area sources. Figure SCAQMD-7-3 presents a graphical representation of the original on-dock rail sources relative to the receptor locations along the northeast terminal boundary, north of the railyard. In addition, many of the roadway sources in the area of the railyard were also modified to prevent the receptors from being within the roadway source exclusion zones. Figure SCAQMD-7-4 presents a graphical representation of the revised area sources in the on-dock railyard and revised roadway sources nearby. Using the 25 -year average DPM concentration as a surrogate for occupational cancer risk, both the proposed Project and Future NEPA Baseline concentrations were calculated in AERMOD with the original source configurations and again with the revised source configurations.

The proposed Project 25 -year average DPM concentration without the excluded source emissions was 0.797 $\mu \mathrm{g} / \mathrm{m}^{3}$, and the Future NEPA Baseline 25-year average DPM concentrations without excluded source emissions was $0.649 \mu \mathrm{~g} / \mathrm{m}^{3}$. This resulted in an incremental 25 -year average DPM concentration of 0.148 $\mu \mathrm{g} / \mathrm{m}^{3}$. The location of this peak receptor is shown on Figure SCAQMD-7-3 as a red triangle. After rerunning with area sources for the on-dock railyard, and modified volume sources for nearby roadways, the resulting peak location moved slightly east, but is still located on the north side of the Everport portion of the on-dock railyard (Figure SCAQMD-7-4). The revised 25-year average DPM concentrations at this location were $1.25 \mu \mathrm{~g} / \mathrm{m}^{3}$ for the proposed Project and $1.02 \mu \mathrm{~g} / \mathrm{m}^{3}$ for the Future NEPA Baseline. The resulting incremental concentration for the maximum Occupational Cancer Risk receptor was $0.223 \mu \mathrm{~g} / \mathrm{m}^{3}$. The Draft EIS/EIR reported the peak Occupational Cancer Risk as 4.6 per million; therefore, the revised peak Occupational Cancer Risk value would be approximately 7 per million for the Unmitigated Future NEPA Increment, which is still less than the significance threshold. Please note that any activity at this location is sporadic and involves many different individuals coming in for short-term periods of time rather than full-time staff working for 25 years and being exposed to DPM. As a result, this revised maximum occupational receptor location is very conservative and not realistic relative to the activity actually occurring at the site.

Figure SCAQMD-7-3. NEPA Occupational Cancer Risk Receptor and Sources Near Railyard


AERMOD View - Lakes Environmental Software
CMLakeshProjectsiPOLA-EverportL25Yr_PP_DPM25Y__PP_DPM.isc


Reviewing the Chronic Non-cancer and Acute hazard index results under both CEQA and NEPA (Draft EIS/EIR, Tables 3.2-26 and 3.2-27) indicates that the change in incremental concentrations would have to be more than twice, and often more than 5 to 10 times higher than the modeled increments before a significance threshold would be exceeded. This change would be extremely unlikely; therefore, CEQA and NEPA hazard index results reported in the Draft EIS/EIR represent reasonable estimates of the Proposed Project impacts to non-cancer risks. Note that no sensitive receptors (schools, daycares, hospitals, elderly care facilities) were located within any volume sources exclusion zones.

## Response to Comment SCAQMD-8

The comment is noted. The volume source heights for locomotives in transit were set based on the methodology in CARB's Roseville Rail Yard Study (2004). Because volume sources do not have a plume rise algorithm in AERMOD, it was necessary to set the volume source heights equal to the plume heights instead of the locomotive exhaust stack heights. Locomotive exhaust plumes rise to a height above the locomotive stack height because of upward momentum and thermal buoyancy. Differences in atmospheric conditions (specifically, stability) between daytime and nighttime lead to different daytime and nighttime locomotive final plume heights. As a result, different volume source heights were needed for daytime versus nighttime. AERMOD then accounts for atmospheric conditions after the plume is released from the volume source and travels downwind, with no further adjustment to plume rise.

## Response to Comment SCAQMD-9

The comment is noted. The meteorological data used in the air dispersion modeling analyses were recorded from September 2006 through August 2007, the first complete 12-month period recorded at all six of the site-specific monitoring stations operated by the Ports of Los Angeles and Long Beach. As discussed in Section 3.1.3 of Appendix B2, a comparison of this time period with the 2009 to 2012 data period showed that the 2006-2007 data period represents typical conditions in the project region and therefore requires no updating to a newer period of record. Furthermore, the use of one year of meteorological data is consistent with USEPA guidelines, which state that "at least one year of site-specific" data are required (USEPA, 2017).

The project air dispersion modeling analyses in the Draft EIS/EIR were performed with the most recent version of AERMOD at the time of the analysis (version 15181, released June 30, 2015), but the meteorological data used in the analyses were processed with AERMET version 12345 (released December 11, 2012). At the time of the analysis, the USEPA had updated AERMET four times since version 12345: (1) version 13350 (released December 16, 2013); (2) version 14134 (released May 14, 2014); (3) version 15181 (released June 30, 2015); and version 16216 (the current version, released August 3, 2016). As part of its ongoing documentation of AERMOD and AERMET, the USEPA performs sensitivity analyses that compare model updates to past model versions to enable users to understand the effects of new model updates. Sensitivity analyses that directly compare AERMET versions 12345 and 16216 are not available. However, analyses are available showing that there are no significant differences between consecutive versions of AERMET. For example, the use of AERMOD version 13350 to simulate the same source types as those in the project analyses (volume or point sources in flat terrain) with AERMET versions 12345 and 13350 resulted in differences in impacts of no greater than 0.5 percent and in some cases none at all between these two versions of AERMET (USEPA Support Center for Regulatory Atmospheric Modeling [SCRAM] website http://www.epa.gov/ttn/scram/dispersion prefrec.htm\#aermod).

Additional analyses from the USEPA SCRAM site also show that use of AERMOD version 14134 to simulate the same source types with AERMET versions 13350 and 14134 resulted in no differences in impacts. The use of AERMOD version 15181 to simulate the same source types with AERMET versions 14134 and 15181 resulted in no differences in impacts. The use of AERMOD version 16216r (the current
version, released January 17, 2017, after the start of the modeling analysis for Everport) to simulate the same source types with AERMET versions 15181 and 16216 resulted in no differences in impacts.

These analyses show that since impacts from (1) AERMET version 12345 are nearly equal to version 13350, (2) AERMET version 13350 are equal to version 14134, (3) AERMET version 14134 are equal to version 15181, and (4) AERMET version 15181 are equal to 16216, then (5) AERMET version 12345 are nearly equal to 16216. Therefore, use of AERMET version 16216 instead of version 12345 in the project dispersion modeling analyses would not produce a substantial difference in impacts compared to those presented in the Draft EIS/EIR.

The Terminal Island Treatment Plant (TITP) monitoring station was the preferred site for meteorological data for this Draft EIS/EIR because it is part of the Port's site-specific monitoring network and is located just east of the Everport Container Terminal, less than 0.5 miles from the center of the terminal. The Port appreciates the offer to use AERMOD-ready meteorological data processed by the SCAQMD. However, since these data were collected several miles from the Port area, they are not as representative of conditions within the project region as the Port's data.

## Response to Comment SCAQMD-10

The comment is noted. Neither CARB nor AQMD have established a methodology or significance threshold for evaluating PM2.5 mortality and morbidity in a CEQA document. In its response to the Notice of Preparation of the Draft EIS/EIR, SCAQMD did not reference any requirement for conducting a mortality and morbidity analysis for the proposed Project nor provide any suggestion as to how such an analysis would be undertaken (CARB did not respond to the NOP). Moreover, CARB's latest 2010 document, which estimates premature deaths associated with PM2.5, does not provide any guidance as to whether such an analysis should be prepared for a project level CEQA assessment, nor does it explain how such an analysis would be conducted. In the absence of any guidance, the Port followed the methodology described in Section 3.2.4.1 and Impact AQ-7 of the Draft EIS/EIR.

Mortality and morbidity studies examining health effects of exposure to fine particulate matter have been used by the USEPA and CARB to set the NAAQS and CAAQS, respectively, and by SCAQMD to set the CEQA significant concentration thresholds for particulate matter. For this reason, a comparison of the Project's modeled PM2.5 concentrations to the SCAQMD's CEQA significance threshold for PM2.5, which is more stringent than the NAAQS and CAAQS, implicitly accounts for mortality and morbidity effects on sensitive receptors. Therefore, if project impacts were found to be greater than the SCAQMD's CEQA significance threshold for PM2.5 concentrations at residential receptors, the estimate of mortality and morbidity in the areas above the threshold would be conducted to better describe the effect of the significant impact.

To determine whether a detailed mortality and morbidity analysis was necessary for the proposed Project, the Port compared the ambient PM2.5 impacts predicted for proposed Project operation to the $2.5 \mathrm{ug} / \mathrm{m} 3$ 24-hour threshold set by SCAQMD. While peak impacts on Port property adjacent to the Everport vehicle entrance gate exceeded the PM2.5 threshold, no residential receptors (including sensitive receptors) were found that exceeded the threshold.

## Response to Comment SCAQMD-11

The comment is noted. Please see Response to Comment CARB-13 regarding the suggestion to review the tenant equipment and technology feasibility every two years rather than five years. It should be noted; however, that the applicant/tenant has agreed to working with LAHD any time a piece of on-site equipment needs to be replaced regardless of how much time as gone by since the previous CHE was turned over. This
indicates the facility's willingness to work with LAHD to ensure that the cleanest technology is employed at the terminal wherever possible. Please also refer to Master Response 2: Zero Emission Technologies.

## Response to Comment SCAQMD-12

Mitigation measures MM AQ-2 and MM AQ-3 will be revised for the Final EIS/EIR as suggested in the comment. Please refer to Chapter 3, Modifications to the Draft EIS/EIR of the Final EIS/EIR. Regarding lease measure LM AQ-1, please refer to Response to Comment CARB-13, Master Response 1: Feasible Mitigation - Guidance and Applicability, and Master Response 2: Zero-Emission Technologies.

## Response to Comment SCAQMD-13

The comment is noted. General conformity determinations for both 2018 and 2019 were calculated and are available in Appendix B1 of the Draft EIS/EIR toward the bottom of Table 9 (pages 74 and 89 of the Appendix B1 pdf). For the readers' convenience, the results for 2019 are repeated below and do not exceed general conformity de minimis threshold for any criteria pollutant.

| 2019 Construction Emissions (tons per year) |  |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Compared to General Conformity de minimis Thresholds |  |  |  |  |  |  |  |
| Year | VOC | NOx | CO | SO $_{\mathbf{2}}$ | PM10 | PM2.5 |  |
| Construction Year 2019 | 0.35 | 9.01 | 0.93 | 0.3 | 0.19 | 0.17 |  |
| General Conformity <br> de minimis level | 10 | 10 | 100 | -- | 100 | 100 |  |
| Exceeds de minimis level? | No | No | No | NA | No | No |  |

Notes:
VOC - volatile organic compounds, NOx - nitrogen oxides, CO - carbon monoxide, $\mathrm{SO}_{2}$ - sulfur dioxide, and PM10/2.5 - particulate matter

### 2.3.5 Organization Comments

| From: | Johntommy Rosas |
| :--- | :--- |
| To: | Stevens, Theresa CIV USARMY CESPL (US); MCDonald, A Meg CIV USARMY CESPL (US); $;$ IOHNTOMMY ROSAS |
| Subject: | [Non-DoD Source] Re: Notice of Availability of a Draft EIS/EIR for Berths 226-236 [Everport] Container Terminal |
| Date: | Improvements Project |
|  | Thursday, April 20, 2017 5:28:45 PM |

Thanks -
I will request sec 106 NHPA tribal consultation process as a consulting party,

JTR-1
especially on our tribal resources affected by this proposed project.
thanks jt

### 2.3.5.1 Tongva Ancestral Territorial Tribal Nation - John Tommy Rosas (JTR)

## Response to Comment JTR-1

The comment is noted. As described on page 3.4-54 of the Draft EIS/EIR, Assembly Bill (AB) 52, which establishes a formal consultation process for California tribes as part of CEQA, became law on January 1, 2015. The Notice of Intent/Notice of Preparation of the Draft EIS/EIR associated with the proposed Project was prior to the law being in effect (October 2014). However, as detailed beginning on page 3.4-48 of the Draft EIS/EIR, both the LAHD and USACE have initiated, and the USACE has completed, Native American consultation for the Project in compliance with Section 106 of the National Historic Preservation Act.

| From: | Tom Williams [ctwilliams2012@yahoo.com](mailto:ctwilliams2012@yahoo.com) |
| :--- | :--- |
| Sent: | Monday, June 05, 2017 1:19 PM |
| To: | theresa.stevens@usace.army.mil; Ceqacomments |
| Cc: | christopher.cannon@lacity.org; christopher.cannon@lporta.org; Jim Stewart; Steve |
|  | Wicke; Paul Ferrazzi |
| Subject: | Berths 226-236 [Everport] Container Terminal Improvements Project Comments |

DATE: June 5, 2017
TO: US Army Corps of Engineers, LA District, Reg.Div., Ventura Field Office

## 110 Ventura CA 93001

theresa.stevens@usace.army.mil
Port of Los Angeles Christopher Cannon Dir. of Envir. Mngmt. P.O. Box 151 San Pedro, CA 90733-0151
ceqacomments@portla.org christopher.cannon@lacity.org - christopher.cannon@lporta.org

## CC:

FROM: Dr. Tom Williams, Senior Technical Advisor
Citizens Coalition for A Safe Community 4117 Barrett Rd, LA, CA

## 323-528-9682 ctwilliams2012@yahoo.com

## SUBJECT/ Berths 226-236 [Everport] Container Terminal Improvements Project PROJECT: Draft EIS/EIR SCH \#2014101050 April 2017 <br> RE: Comments on Draft EIS/EIR SCH \#2014101050 and CEQA/NEPA

Considerations
After lengthy review of the various documents related and referenced in the circulated DEIR/DEIS, I request that the Harbor Department/Port of Los Angeles withdraw all current documents, review comments, revise/quantify, and prepare a complete and adequate Environmental Impact Report and Statement with a fuller range of maritime and transportation alternatives and a draft mitigation monitoring and report program. This request is based on the many inadequacies and incompleteness of the DEIR/S. Continuation with the current documents will lead to prolonged reviews and further actions.

I have reviewed and find the DEIR/S incomplete and inadequate based on summary remarks below.

Current documents are totally unsuitable, incomplete, and inadequate for public review and meaningful comments due to lack of clarity in assignment of "impacts". General Comments:

Lack of use of historic/1923-1928 and later aerial photos and lack of public access to referenced later photos and their value to description/assessment of subsurface historic resources and hazards/haz.matls.;
Lack of consideration for Pleistocene archaeological and paleontological resources during|ccsc-3 deepening and excavation of Pleistocene deposits;
Reassignment of typical hazardous materials to groundwater and soils;
Inclusion of "terrorist acts" as part of "Hazards..." without setting and assessment in objective and numerical presentation and assessment;
Although available records locate >200 earthquakes within two miles of the site geology and seismicity were eliminated from DEIR/S as long as project complies with undefined and "future" consideration without public review of compliance with engineering requirements;
Container forecasts: Lack of use or even reference to "Mercator and Oxford, 2016" forecasts for the San Pedro Ports voids all presentations, assessment, and mitigation regarding projected maritime traffic and the project's participation and related air quality. This is also related to the railroad alternatives as the Alameda Corridor Transportation Authority.

### 2.3.5.2 Citizens Coalition for a Safe Community (CCSC)

## Response to Comment CCSC-1

The comment is noted. The LAHD and USACE respectfully disagree that the Draft EIS/EIR is incomplete and inadequate, should be withdrawn, and revised with a fuller range of maritime and transportation alternatives. The Draft EIS/EIR included a detailed/co-equal analysis of five alternatives (the no project and four build alternatives, see Section 2.9 in Chapter 2 of the Draft EIS/EIR) to the proposed Project, with various maritime and transportation elements. As with other LAHD EIR's, the Final EIS/EIR for the proposed Project will include the mitigation monitoring and reporting program (MMRP), which includes mitigation measures to reduce the potential environmental effects of the proposed Project. The MMRP will be provided and adopted per CEQA Guidelines Section 15091(d) and Section 15097(a).
The Draft EIS/EIR includes several features that provide clarity regarding the potential impacts associated with the proposed Project. Chapters and each resource section begin with a summary of the analysis, and each resource section concludes with a table that summarizes the impacts, mitigation measures and residual impacts associated with the proposed Project and each alternative. In addition, the Executive Summary also includes an extensive table (Table ES-3) which summarizes the potential significant impacts and mitigation for the proposed Project and alternatives for all resource areas.

The comments do not identify any specific deficiencies in the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)). The Draft EIS/EIR contains the sufficient detail required by NEPA and CEQA (State CEQA Guidelines Section 15151 and 40 CFR 1502.2, 1502.24).

## Response to Comment CCSC-2

The comment is noted. The Draft EIS/EIR included a figure (Figure 3.4-2 in the Cultural Resources, Section 3.4) that shows the development of the Project site over time. The historical topographical maps used in Figure 3.4-2 include maps from 1898, 1925, 1964, 1981, and 2012; therefore, historic maps from earlier and later than 1923-1928 were included within the Draft EIS/EIR. These maps were used in determining hazardous materials and cultural resource impacts associated with the Project site development over time. Further, historic photos of the project site and area, some pre-dating 1923, are included in Appendix D, Cultural Resources Evaluation, of the Draft EIS/EIR.

## Response to Comment CCSC-3

The comment is noted. Section 3.4, Cultural Resources of the Draft EIS/EIR, includes an analysis of archaeological and paleontological resources in addition to the historic/built environment (architectural resources). The Project site has been subjected to major soil disturbance over the years (Figure 3.4-2). As detailed throughout Section 3.4, although the Port area is underlain with potential fossil-bearing geologic units, sediments that immediately underlie the Project area consist of imported or modern fill material placed in the early twentieth century. As shown on Figure 3.4-3, Geologic Map, no Pleistocene deposits are associated with the Project site.

## Response to Comment CCSC-4

The comment is noted. Section 3.7, Groundwater and Soils, of the Draft EIS/EIR evaluates groundwater and soil conditions in the proposed Project area and assesses how the construction and operation of the proposed Project or one of its alternatives would affect or be affected by the potential to encounter existing soil and groundwater contamination. As described in Section 3.7, the NOI/NOP (Appendix A of this Draft EIS/EIR) determined that potential impacts related to routine transport, use, or disposal of hazardous materials and hazardous emissions would be less than significant. As such, those impacts were not
discussed in the Draft EIS/EIR. The commenter did not identify any specific deficiencies in the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

## Response to Comment CCSC-5

The comment is noted. Section 3.8, Hazards and Hazardous Materials, of the Draft EIS/EIR analyzes the effects of the proposed Project and alternatives on increasing the risk probability and criticality of hazardous spills or releases and risk of upset due to terrorism. Three are no known numerical data associated with potential terrorist attacks and container terminals. As detailed in Section 3.8, there are limited data available to indicate the likelihood of a terrorist attack aimed at the Port or the Project site; therefore, the probability component of the analysis contains a considerable amount of uncertainty. The likelihood of such an attack would be based on the desire to cause harm to the Port and/or the desire to use a container as a vehicle to hide a device for use at a different location. The probability of an attack would have no relationship to a specific terminal or project-related throughput.

## Response to Comment CCSC-6

The comment is noted. The commenter is correct that the NOI/NOP (Appendix A of the Draft EIS/EIR), which was released for public review in October 2014, determined that potential impacts related to geology would be less than significant. As such, those impacts were not discussed in the Draft EIS/EIR. As detailed in Checklist Item VI.a.(i) in Appendix A of the Draft EIS/EIR, the proposed Project features would not cause or accelerate geologic hazards. Wharf and terminal improvements would be conducted in accordance with LAHD and City of Los Angeles seismic design and engineering criteria, which includes recommendations in a geotechnical report prepared as part of the design process, to minimize potential risks in the event of seismically-induced geologic hazards. The design would incorporate measures pertaining to temporary construction conditions, such as maximum temporary slope gradient. Therefore, through compliance with appropriate engineering standards and building codes, the impacts were considered less than significant. As the commenter did not provide comments on the NOI/NOP, and did not identify any specific deficiencies in the Draft EIS/EIR, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

## Response to Comment CCSC-7

The comment is noted. At the time of the NOI/NOP (2014), which represents the CEQA baseline, the 2009 forecast was the information available on long-term containerized cargo growth at the Ports of Los Angeles and Long Beach.

Section 1.2.3.1 (Cargo Demand Forecast) of the Draft EIS/EIR summarizes the unconstrained cargo forecast in the 2009 Cargo Forecast for the Port through 2030 (Tioga and HIS Global, 2009), and extends the horizon to 2035. When considering future throughput, the Port considers both the unconstrained projection (future cargo demand if physical capacity does not constrain throughput) and the projected future physical capacity of the Port terminals. An unconstrained forecast merely represents the estimated upper bounds of future throughput without consideration of physical limitations. As discussed in the Draft EIS/EIR, the 2009 forecast projected unconstrained throughput to be $34,600,000$ TEUs in 2030, which was extended to 2035. The 2016 cargo forecast (Mercator, 2016) predicts that unconstrained cargo demand will reach 34.3 million TEUs in 2035 (which is less that but very similar to the 2009 forecast for 2030). When evaluating impacts of container terminal projects, the Port uses the maximum physical capacities of the terminals based on the terminals' berth and backland capacities. As described in Section 1.2.3.2 (Container Terminal Capacity) of the Draft EIS/EIR, future throughput at the San Pedro Bay Ports will be constrained at $37,367,000$ TEUs, which is greater than both the 2009 and 2016 unconstrained cargo forecasts. The
throughput projections for the proposed Project and for the San Pedro Bay Ports as a whole, are based on the Ports' physical throughput capacity, rather than the lower unconstrained cargo forecasts, in order to evaluate reasonable worst-case conditions. Thus, because the Draft EIS/EIR evaluate a reasonable worst case future throughput that is somewhat greater than either the 2009 or the 2016 unconstrained forecasts, the impact evaluations in the Draft EIS/EIR and applicable mitigation measures are valid.

## Coalition For A Safe Environment

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Re: Berths 226-236 [Everport] Container Terminal Improvements Project April 2017 Draft Environmental Impact Report (DEIR)/Draft Environmental Impact Statement (DEIS) SCH No. 2014101050, APP No. 131015-136, SPL-2013-00756-TS

Su: Submission of Public Comments Regarding The Berths 226-236 Everport Draft EIR/Draft EIS

The Coalition For A Safe Environment (CFASE) and et all undersigned organizations and individuals wish to submit the following public comments on the Berths 226-236 [Everport] Container Terminal Improvements Project Draft Environmental Impact Report (DEIR)/Draft Environmental Impact Statement (DEIS).

## 1. USACE Purpose \& Need/CEQA Project Objectives Are Not Accurate

It is stated that the Purpose, Need and Objectives are to accommodate the project throughput and fleet mix of larger container ships (up to 16,000 TEU's) which may not be entirely accurate and true. Evergreen has no orders pending for 16,000 TEU ships. The current Evergreen ship orders are for 14,000 TEU and 18,000 TEU ships. There are currently 5 cranes which can accommodate 18,000 TEU ships and the 5 new cranes to be purchased can accommodate 18,000 TEU's.

We do not believe that POLA will refuse to allow future 18,000 TEU ships to arrive in the future. The additional negative impacts of larger 18,000 TEU ships need to be identified, assessed and mitigated. See Public Comments Table of Contents and Attachments:
A. Evergreen Ship Information
a. List of EVERGREEN Ships
b. Evergreen Line To Charter Ten 14,000 TEU Vessels
c. Evergreen to Charter Eleven 18,000 TEU Vessels
d. Reference Table ES-1 Everport Container Terminal Crane Specifications
e. Freight Efficiency Strategies
B. CFASE Requests
a. We request that a restriction be placed into all new and future leases that will prohibit 18,000 TEU ships from docking at the Port of Los Angeles.
b. We request that the a new Draft EIR be prepared and re-circulated that will include all Identified Negative Impacts, an Increased Negative Impacts Assessment and Mitigation Measures for addressing larger 18,000 TEU ships negative impacts to less than significant.
c. We request that the a new Draft EIR be prepared and re-circulated that will include a plan and annual schedule for contracting/purchasing additional trucks, contracting/purchasing additional chassis, acquisition of additional truck storage/staging areas and container storage yards to prevent Truck and Facility Shortages or Unavailability.
d. We request that the a new Draft EIR be prepared and re-circulated that will include a plan and annual schedule for recruitment of drivers and training of drivers to prevent Driver Shortages.

## 2. Ground Traffic Transportation Unavoidable Significant Impacts Determination

We disagree with your determination because there are Alternatives and Feasible Mitigation Measures that can reduce significant impacts that you are not including in the project or as proposed Mitigation Measures. In addition, your DEIR identified impacts are under-identified and under-estimated. Your inclusion, identification and use of the term Peel-Off Yards is not acceptable.
a. The term Peel-Off Yards is unacceptable because it is not a standard industry term and from our Environmental Justice perspective is an attempt to hide the real truth that is actually an "off-Port Truck/Container Staging Area" in the bordering harbor communities. Most likely to be in Wilmington. There will be additional truck traffic to these locations, causing additional increased traffic congestion, increased air pollution, increased greenhouse gasses, increased noise, increased ground and street contamination, diversion of city services when there are truck accidents, increased public infrastructure damage, increased public health and safety impacts. The DEIR failed to disclose the locations of the Peel-Off Yards and how many trucks trips and containers will go to each.
b. The DEIR fails to include a Mitigation Measure to mandate the increased use of the Alameda Corridor to reduce ground traffic congestion.
c. The DEIR fails to include an assessment of Alternative Rail Transportation Technologies as a Mitigation Measure which are faster, more efficient and can significantly increase throughput such as a Maglev Train. American MagLev Technologies, Inc. has proposed to the Port of Los Angeles, Port of Long Beach, South Coast AQMD and the Southern California Association of Governments a feasible container transport Maglev Train System.

EMMI Logistics Solutions and American MagLev Technology have designed a state-of-theart goods movement transportation system that can transport up to 8,000 containers a day and more than 3 times the speed of a traditional diesel locomotives. This technology does not require having to accumulate 250-300 train cars before it can travel to its destinations.
d. The increased velocity and through-put would therefore not require the construction of additional backlands, since the traditional long queue times would be eliminated. This high speed transportation logistics system would decrease the need for 1,000 's of additional diesel air polluting trucks trips a day to carry cargo since higher volumes could be transported by the Maglev System. CFASE has requested numerous times that POLA sponsor a Pilot Study and again requests a Maglev Train Pilot Study and is supported by the public and Environmental Justice Communities.
e. The DEIR fails to identify, assess and mitigate all truck, container and chassis negative impacts from Truck Points of Origin to all Port and Tenant destinations. The number of 7,028 average daily truck trips is significantly underestimated because they do not include all truck points of origin locations, port and tenant travel destinations. These negative impacts include but are not limited to: increased traffic congestion, increased air pollution, increased greenhouse gasses, increased noise, increased ground and street contamination, diversion of city services when there are truck accidents, increased public infrastructure damage, increased public health and safety impacts. These origins and destinations include as a minimum:

- Truck Point of Origin. Throughout Los Angeles and Orange Counties.
- On/Off Tidelands Property Truck Container/Flat Bed Inspection Facilities.
- On/Off Tidelands Property Container Storage Yards, Maintenance \& Repair Facilities.
- On/Off Tidelands Property Container/Flat Bed Chassis Storage Yards, Maintenance \& Repair Facilities.
- On/Off Tidelands Property Chassis $40^{\prime}$ to 53' Modification, Cutting, Welding \& Painting Facilities
- On/Off Tidelands Property TRU/Genset Storage Yards, Maintenance \& Repair Facilities.
- On/Off Tidelands Property Truck Storage Yards, Staging, Maintenance \& Repair Facilities.
- On/Off Tidelands Property Yard Tractor Storage Yards, Maintenance \& Repair Facilities.
- On/Off Tidelands Property Container Fumigation Facilities.
- On/Off Tidelands Property Container Transloading Facilities.
- On/Off Tidelands Property Truck Fueling Facilities: Diesel, Natural CNG, LNG, Hydrogen.
- On/Off Tidelands Property Truck Yard Tractor Fueling Facilities: Diesel, Natural CNG, LNG, Hydrogen.
- On/Off Tidelands Property Truck Electrical Charging Stations.
- On/Off Tidelands Property Truck Yard Tractor Fueling Facilities.
- On/Off Tidelands Property Peel-Off Yards.

CFASE has conducted a survey of Container Storage Yards in Wilmington and has identified 117 locations. See Public Comments Table of Contents and Attachments:
f. The DEIR fails to include dedicated freeway and highway truck lanes are also an Alternative Mitigation Measure of which the Port has not considered, assessed, proposed or sponsored and is supported by the public and Environmental Justice Communities.
g. The DEIR fails to include the building of a dedicated underground truck tunnel from the Ports to various rail transportation yards is also an Alternative Mitigation Measure of which the Port has not considered, assessed, proposed or sponsored and is supported by the public and Environmental Justice Communities.
h. The DEIR fails to include the use of multi-story parking structures On-Port Property to maximize space such as in Import Car Parking Lots and in Industrial Zones Areas which is an Alternative Mitigation Measure of which the Port has not considered, assessed, proposed or sponsored and is supported by the public and Environmental Justice Communities.

## 3. Air Quality \& Meteorology Unavoidable Significant Impacts Determination

We disagree with your determination because there are numerous feasible technologies that can reduce air quality significant impacts that you are not including in the project or as proposed Mitigation Measures. These include Zero Emission Technologies, Near Zero Emission Technologies, Best Available Control Technologies (BACT) and Emission Capture Technologies. All referenced technologies are commercially available today and can be ordered with delivery within one year depending on the quantity ordered.
The DEIR does not identify, assess or mitigate all Greenhouse Gas Impacts on Climate Change and Public Health as identified in these public comments and referenced CFASE Bibliographies. See Public Comments Table of Contents and Attachments.

LM AQ-1 and LM AQ-2 are unacceptable because the technologies identified in these public comments are commercially available today. The FEIR should include an implementation, purchase and delivery schedule.

The number of 7,028 average daily truck trips and air emissions during the peak month and all other non-peak months is significantly underestimated because they do not include all truck points of origin locations, port and tenant travel destinations as identified in 2.e.

## A. Zero Emission Class 8 Electric Trucks

There are currently six (6) Zero Emission Class 8 Electric Trucks available. See Public Comments Table of Contents and Attachments:
a. TransPower - Electric Class 8 Truck - ElecTruck
b. BYD - Electric Class 8 Truck -8 TT/T9
c. US Hybrid - Electric Class 8 Truck - eTruck
d. US Hybird - Electric Class 8 Truck - H2Truck
e. Toyota - Electric Class 8 Truck - Hydrogen Fuel Cell
f. Nikola - Nikola One - Electric Class 8 Truck

## B. Zero Emission Class 8 Electric Tractors

There are currently four (4) Zero Emission Class 8 Electric Tractors available. See Public Comments Table of Contents and Attachments:
a. TransPower - Electric Class 8 Electric Yard Tractor
b. Orange EV - Electric Class 8 Electric Yard Tractor - T-Series
c. BYD - Electric Class 8 Tractor - 8 Y
d. Terberg - Electric Class 8 Yard Tractor - Terberg YT202-EV

## C. Near Zero Emission Class 8 Electric Trucks

There are currently fourteen (14) Near Zero Emission Class 8 Electric Tractors available. See Public Comments Table of Contents and Attachments:
a. TransPower - Class 8 Truck - Natural Gas Plug-In Hybrid Drive System
b. Peterbilt - Class 8 Truck - Model 579 ISX 12 G - LNG
c. Peterbilt - Class 8 Truck - Model 567 ISX 12 G - LNG
d. Freightliner - Class 8 Truck - Cascadia 113 Natural Gas - CNG Fuel Tank
e. Freightliner - Class 8 Truck - Cascadia 113 Natural Gas - LNG Fuel Tank
f. Freightliner - Class 8 Truck - M2 112 Natural Gas - CNG
g. Freightliner - Class 8 Truck - M2 112 Natural Gas - LNG
h. Volvo - Class 8 Truck - Model VNM 200 ISL G - Natural Gas
i. Volvo - Class 8 Truck - Models VNL 300 ISX12 G - Natural Gas
j. Volvo - Class 8 Truck - Models VNL 670 ISX12 G - Natural Gas
k. TranStar - Class 8 Truck - ISL G - CNG
I. Mack - Class 8 Truck - Pinnacle ISX12 G - CNG
m. Mack - Class 8 Truck - Pinnacle ISX12 G - LNG
n. Mack - Class 8 Truck - Pinnacle ISX12 G - RNG

## D. Near Zero Emission Class 8 Electric Tractors

There are currently eleven (11) Near Zero Emission Class 8 Electric Tractors available. See Public Comments Table of Contents and Attachments:
a. Kenworth - Class 8 Tractor - T680 ISL G
b. Kenworth - Class 8 Tractor - T880 ISL G NZ - Near Zero - CNG
c. Kalmar T 2-4×2 On Road Terminal Tractor ISL G - CNG
d. Kalmar T 2-4×2 On Road Terminal Tractor ISL G - LNG
e. Kalmar T 2-4×2 On Road Terminal Tractor ISL G-RNG
f. Kalmar T 2-4×2 Off Road Terminal Tractor ISL G - CNG
g. Kalmar T 2-4×2 Off Road Terminal Tractor ISL G - LNG
h. Kalmar T 2-4×2 Off Road Terminal Tractor ISL G - RNG
i. Autocar - ACTT - $4 \times 2$ DOT/EPA Terminal Tractor ISL G - CNG
j. Autocar - ACTT - $4 \times 2$ DOT/EPA Terminal Tractor ISL G - LNG
k. Capacity - Sabre $4 \times 2$ DOT Terminal Tractor ISL G - CNG

## E. Ship Emission Capture Technologies

There is currently only one (1) ship emissions capture technology company that can service the Everport shipping line. See Public Comments Table of Contents and Attachments:
a. Advanced Environmental Group(AEG)/ACTI- Advanced Maritime Emissions Control Systems (AMECS) Fact Sheet
b. Introduction to AMECS
c. AMECS / Shore Power Cost Comparison
d. California Air Resources Board - Letter

## 4. Green House Gas Emissions Unavoidable Significant Impacts Determination

We disagree with your determination because there are numerous feasible technologies that can reduce Greenhouse Gases significant impacts that you are not including in the project or as proposed Mitigation Measures. These include Zero Emission Technologies, Near Zero Emission Technologies, Best Available Control Technologies (BACT) and Emission Capture Technologies. All referenced technologies are commercially available today and can be ordered with delivery within one year depending on the quantity ordered.

The DEIR does not identify, assess or mitigate all Greenhouse Gas Impacts on Climate Change and Public Health as identified in these public comments and referenced CFASE Bibliographies. See Public Comments Table of Contents and Attachments.

LM AQ-1 and LM AQ-2 are unacceptable because the technologies identified in these public comments are commercially available today. The FEIR should include an implementation, purchase and delivery schedule.

LM GHG-1 is unacceptable because the identified Greenhouse Gas amounts are significantly underestimated as identified in these public comments. We object that any GHG funds be used to purchase credits from an approved GHG offset registry, we demand that all funds be used to support mitigation projects on-port property and off-port property which impact bordering port Environmental Justice Communities, transportation corridor and warehouse/distribution communities. We do not support any Carbon Offset Fund MOU Agreements especially with the California Air Resources Board who has historically cut backroom deals which negatively and significantly impact Environmental justice Community's. We do not approve of the Port arbitrarily setting a cap for the Carbon Offset Fund to \$250,000 when the cost of credits or environmental impacts mitigation may be significantly larger. If the Tenant disagrees to fund GHG mitigation then the Everport Project and EIR are cancelled.

The number of 7,028 average daily truck trips and greenhouse gas emissions during the peak month and all other non-peak months is significantly underestimated because they do not include all truck points of origin locations, port and tenant travel destinations as identified in 2.e.

## A. Zero Emission Class 8 Electric Trucks

There are currently six (6) Zero Emission Class 8 Electric Trucks available. See Public Comments Table of Contents and Attachments:
g. TransPower - Electric Class 8 Truck - ElecTruck
h. BYD - Electric Class 8 Truck - 8 TT/T9
i. US Hybrid - Electric Class 8 Truck - eTruck
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t. Freightliner - Class 8 Truck - M2 112 Natural Gas - CNG
u. Freightliner - Class 8 Truck - M2 112 Natural Gas - LNG
v. Volvo - Class 8 Truck - Model VNM 200 ISL G - Natural Gas
w. Volvo - Class 8 Truck - Models VNL 300 ISX12 G - Natural Gas
x. Volvo - Class 8 Truck - Models VNL 670 ISX12 G - Natural Gas
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bb. Mack - Class 8 Truck - Pinnacle ISX12 G - RNG
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m. Kenworth - Class 8 Tractor - T880 ISL G NZ - Near Zero - CNG
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p. Kalmar T 2-4×2 On Road Terminal Tractor ISL G-RNG
q. Kalmar T 2-4×2 Off Road Terminal Tractor ISL G - CNG
r. Kalmar T 2-4×2 Off Road Terminal Tractor ISL G - LNG
s. Kalmar T 2-4×2 Off Road Terminal Tractor ISL G - RNG
t. Autocar - ACTT - 4x2 DOT/EPA Terminal Tractor ISL G - CNG
u. Autocar - ACTT - 4x2 DOT/EPA Terminal Tractor ISL G - LNG
v. Capacity - Sabre 4x2 DOT Terminal Tractor ISL G - CNG

## 5. Zero, Near Zero \& Best Available Control Technologies For Construction \& Dredging Equipment

We request that the EIR include the identification and assessment of Zero, Near Zero \& Best Available Control Technologies (BACT) for all categories of Construction \& Dredging Equipment that can be included as Project Mitigation Measures. Such as what we researched for Zero and Near Zero Class 8 Trucks in these public comments but did not have sufficient time to do for all areas of project concern.

## 6. Cumulative Impacts

The Cumulative Impacts Assessments are significantly underestimated due to the underestimation of Air Emissions and Greenhouse Gas Emissions, Noise, Traffic Impacts as described in 2, 3 and 4. Any proposed Port Mitigation Measures are unacceptable. The identified Alternative Technologies in these public comments are currently feasible to reduce all Project Cumulative Impacts to less than significant. Increasing ship calls is also depriving residents and boat owners of the their boat recreational use as they have to limit their decreasing boating areas and time have to wait for ship passage. The CFASE Cumulative Impact Bibliography and other referenced CFSASE Bibliographies also provide detailed scientific and medical research studies that validate our public comments and need for mitigation. See Public Comments Table of Contents and Attachments:

## 7. Project \& Tenant Business Operations Noise

The DEIR assessment of noise impacts is inadequate because it fails to acknowledge that pile driving noise can be heard for more than 1-mile away. The DEIR assessment fails to include noise from the 7,028 average daily truck trips (peak Month), 5.5 Average Daily Train Trips (peak Month) and non-peak months is significantly underestimated because they do not include all truck points of origin locations, port and tenant travel destinations in adjacent Port Environmental Justice Communities, transportation corridor and warehouse/distribution communities. The CFASE Public Health Bibliography, Port \& Goods Movement, Railroad Industry Public Health Bibliography and others also provide detailed scientific and medical research studies that validate our public comments and need for mitigation. See Public Comments Table of Contents and Attachments:

The DEIR does not contain the noise information and noise data from the sources identified in these public comments in 2. Ground Traffic Transportation Unavoidable Significant Impacts Determination section.

The DEIR failed to consider information and Mitigation Measures contained in the Harbor Community Benefit Foundation Four Wilmington Noise Reports. See Public Comments Table of Contents and Attachments.

## 8. Environmental Justice

The Draft EIR failed to include a comprehensive identification and assessment of Environmental Justice Community Impacts and as a result fails to include appropriate Mitigation Measures.

We claim that the following as a minimum are not all identified, not all assessed and are underestimated:
a. Truck \& Train Air Emissions
b. Truck \& Train Greenhouse Gas Emissions
c. Truck \& Train Noise \& Vibration
d. Truck \& Train Traffic Congestion
e. Socio-Economic Impacts
f. Ship, Truck, Train, Construction, Terminal Operations Public Health Impacts
g. Ship, Truck, Train, Construction, Terminal Operations Cumulative Impacts

Public Comments \#'s 2, 3, 4, 5, 6, 7 provide detail information on what was not identified, assessed and mitigated. The CFASE Environmental Justice Bibliography and other referenced CFSASE Bibliographies also provide detailed scientific and medical research studies that validate our public comments and need for mitigation. They additionally provide EJ Community identified feasible Alternative Technologies and Mitigation Measures. See Public Comments Table of Contents and Attachments.

## 9. Whale Strikes

The DEIR Biological Resources fails to identify, assess and mitigate potential ship Whale Strikes from the 208 Annual Ship Calls. Whale strikes have already occurred in the San Pedro Bay outer harbor as evidenced by a dead whale carcass photographed on the bow of a ship. The Port failed to research potential Whale Strike Prevention Mitigation Measures from marine biologist experts. Reference Whale Ship Strikes Bibliography. See Public Comments Table of Contents and Attachments:

## 10. Container Tariff To Support Harbor Community Benefit Foundation Mitigate Off-Port Community Impacts

We request an annual $\$ 5.00$ per Container Tariff or equivalent to support the Harbor Community Benefit Foundation to Mitigate Everport Project and Operations Off-Port Community Impacts until the end of the new lease in 2038.

A USB Memory Drive which contains a Table of Contents and numerous documents referenced is submitted as part of the public comments. All documents contained in the USB Memory Drive in the Addendums are submitted as part of the public comments. All documents referenced as citations in documents are submitted as part of the public comments, the Port of Los Angeles and U.S. Army Corp Of Engineers are requested to read, review and consider all citations information as part of the public comments in their decision making process.

Respectfully Submitted,


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# Coalition For A Safe Environment 

Port of Los Angeles<br>Berths 226-236 [Everport] Container Terminal Improvements Project<br>Draft Environmental Impact Report (DEIR)/Draft Environmental Impact Statement (DEIS)

6.5.2017

## Public Comment Documents

## Table of Contents

## 1. CFASE et al Public Comments

2. Appendix - $1 \quad$ Public Health Impacts Assessment
a. Dr. Jonathan C. Heller-HIA Expert Letter
b. Dr. Jonathan C. Heller CV
c. Minimum Elements \& Practice Standards for HIA -North American HIA Professionals Association
d. US EPA Los Angeles \& Long Beach Maritime Port HIA SCope
e. CFASE HIA Bibliography
f. CAFSE Mini-Newsletter \# 2 Health Impact Assessment Bibliography

## 3. Appendix - 2 Wilmington Container Storage Yards

a. Wilmington Container Storage Yards List

## 4. Appendix-3 Wilmington Noise Studies

a. HCBF Report \# 1 Noise Measurement Report
b. HCBF Report \# 2 Criteria and Prioritization Recommendations Report
c. HCBF Report \# 3 Noise Contour Development Methodology Report
d. HCBF Report \# 4 Property Inventory and Mitigation Recommendations Report

## 5. Appendix - 4 CFASE Bibliographies

a. Health Impact Assessment (HIA) Bibliography
b. Port \& Goods Movement Public Health Bibliography
c. Environmental Justice Bibliography
d. Public Health Studies A1 - A 13 Bibliography
e. Railroad Industry Public Health Impacts Bibliography
f. Whale Ship Strikes Bibliography

## 6. Appendix - 5 Truck-Freight Reports

## a. Freight Efficiency Strategies

## 7. Appendix - 6 Ship Emissions Capture Technology

a. Advanced Maritime Emissions Control Technology (AMECS) Fact Sheet
b. Introduction to AMECS
c. AMECS / Shorepower Cost Comparison
d. California Air Resources Board - Letter

## 8. Appendix - 7 Zero Emissions Class 8 Drayage Trucks

A. Transportation Power, Inc. (TransPower)
a. TransPower - Electric Class 8 Truck Data Sheet
b. TransPower - Electric Class 8 Truck Product Description
c. University of California Riverside College of Engineering-Center for Environmental Research \& Technology

- Performance Evaluation of TransPower All-Electric Class 8 On-Road Truck Report
d. TransPower - Electric Class 8 Electric Yard Tractor Data Sheet
e. TransPower - Electric Class 8 Electric Yard Tractor Product Description


## B. Orange EV, LLC (OrangeEV)

a. Orange EV - Electric Class 8 Electric Yard Tractor - T-Series Fact Sheet
b. Orange EV - Electric Class 8 Electric Yard Tractor - Grow Revenue \& Operate Less

- Cost-Benefit Analysis
c. California Air Resources Board - Executive Order - On-Road T-Series Electric Terminal

Truck
Reference Number: A-2016-298
d. California Air Resources Board - Executive Order - Off-Road T-Series Electric Terminal

Truck
Reference Number: A-2016-325
e. California Air Resources Board - Executive Order - Off-Road T-Series Electric Terminal Truck

Reference Number: A-2016-263
f. California Air Resources Board - Letter of Approval - On-Road T-Series Electric Terminal Truck - Reference Number: CIHD-2016-044
g. California Air Resources Board - Letter of Approval - Off-Road T-Series Electric Terminal Truck - Reference Number: CIHD-2016-043
h. OrangeEV Press Release - Rail Management Services Re-Orders Orange EV T-Series

## C. BYD North America

a. BYD - Electric Class 8 Truck - 8 TT/T9 Fact Sheet
b. BYD - Electric Class 8 Tractor - 8 Y Fact Sheet
c. California Air Resources Board - Letter of Approval - Off-Road T-Series Electric Terminal Truck - Reference Number: CIHD-2015-059 (See BYD Information)
d. California Air Resources Board - Letter of Approval - Off-Road T-Series Electric Terminal Truck - Reference Number: CIHD-2016-063 (See BYD Information)
e. BYD Electric Vehicles
f. BYD Information

## D. US Hybrid

a. US Hybrid - Electric Class 8 Truck - eTruck Specifications
b. US Hybrid - Electric Class 8 Truck - H2Truck Hydrogen Fuel Cell Specifications
E. Toyota Motor North America
a. Toyota - Electric Class 8 Truck - Hydrogen Fuel Cell
b. Toyota Heavy Duty Trucking Concept Press Release
c. 2017 Project Portal Announcement Bob Carter
F. Nikola Motor Company
a. Nikola - Nikola One - Electric Class 8 Truck
b. Nikola - Nikola Two - Electric Class 8 Terminal Tractor

## 9. Appendix - 8 Near Zero Emissions Class 8 Drayage Trucks

A. Transportation Power, Inc. (TransPower)
a. TransPower - Class 8 Truck - Natural Gas Plug-In Hybrid Drive System

## B. Peterbilt Motors Company (Peterbilt)

a. Peterbilt - Class 8 Truck - Model 579 ISX 12 G - LNG - Specifications Sheet
b. Peterbilt - Class 8 Truck - Model 567 ISX 12 G - LNG - Specifications Sheet
c. Peterbilt - Cummins Westport CWI ISL G Fact Sheet 2017
d. Peterbilt - Cummins Westport CWI ISL G Near Zero Fact Sheet 2017
e. Peterbilt - Cummins Westport CWI ISL. G Benefits Bulletin 2017
C. Freightliner Trucks/Daimler Trucks North America
a. Freightliner - Class 8 Truck - Cascadia 113 Natural Gas - CNG Fuel Tank
b. Freightliner - Class 8 Truck - Cascadia 113 Natural Gas - LNG Fuel Tank
c. Freightliner - Class 8 Truck - M2 112 Natural Gas - CNG - Freightliner Natural Gas Brochure
d. Freightliner - Class 8 Truck - M2 112 Natural Gas - LNG - Freightliner Natural Gas Brochure
e. Freightliner - Cummins Westport CWI ISL G Fact Sheet 2017
f. Freightliner - Cummins Westport CWI ISL G Near Zero Fact Sheet 2017
g. Freightliner - Cummins Westport CWI ISL G Benefits Bulletin 2017
h. Freightliner - Cummins Westport ISX12 G Fact Sheet

## D. Volvo Trucks USA (Volvo)

a. Volvo - Class 8 Truck - Model VNM 200 ISL G - Natural Gas - VNM Series Brochure
b. Volvo - Cummins Westport CWI ISL G Fact Sheet 2017
c. Volvo - Cummins Westport CWI ISL G Near Zero Fact Sheet 2017
d. Volvo - Cummins Westport CWI ISL G Benefits Bulletin 2017
e. Volvo - Class 8 Truck - Models VNL 300 ISX12 G - Natural Gas - VNL Series Brochure
f. Volvo - Class 8 Truck - Models VNL 670 ISX12 G - Natural Gas - VNL Series Brochure
g. Volvo - Cummins Westport ISX12 G Fact Sheet

## E. International/NavStar

a. TranStar - Class 8 Truck - ISL G - CNG
b. International - Cummins Westport CWI ISL G Fact Sheet 2017
c. International - Cummins Westport CWI ISL G Near Zero Fact Sheet 2017
d. International - Cummins Westport CWI ISL G Benefits Bulletin 2017
F. Kenworth
a. Kenworth - Class 8 Tractor-T680 ISL G
b. Kenworth - Class 8 Tractor - T880 ISL G NZ - Near Zero - CNG Fuel Tank
c. Kenworth - Class 8 Tractor - T880 ISL G NZ - Near Zero - LNG Fuel Tank
d. Kenworth - Class 8 Tractor - T880 ISL G NZ - Near Zero - RNG
e. Kenworth - Cummins Westport CWI ISL G Zero Fact Sheet 2017
f. Kenworth - Cummins Westport CWI ISL G Near Zero Fact Sheet 2017
g. Kenworth - Cummins Westport CWI ISL G Near Zero Benefits Bulletin Fact Sheet 2017
h. Kenworth - Cummins Westport ISX12 G Fact Sheet
G. Mack
a. Mack - Class 8 Truck - Pinnacle ISX12 G - CNG Fuel Tank
b. Mack - Class 8 Truck - Pinnacle ISX12 G - LNG Fuel Tank
c. Mack - Class 8 Truck - Pinnacle ISX12 G - RNG
d. Mack-Cummins Westport Engine ISX12-G Fact Sheet
H. Kalmar USA Inc.
a. Kalmar T 2-4×2 On Road Terminal Tractor ISL G - CNG
b. Kalmar T $2-4 \times 2$ On Road Terminal Tractor ISL G - LNG
c. Kalmar T $2-4 \times 2$ On Road Terminal Tractor ISL G - RNG
d. Kalmar T 2-4×2 Off Road Terminal Tractor ISL G - CNG
e. Kalmar T 2-4×2 Off Road Terminal Tractor ISL G - LNG
f. Kalmar T 2-4×2 Off Road Terminal Tractor ISL G - RNG
g. Kalmar - Cummins Westport CWI ISL G Fact Sheet
h. Kalmar - Cummins Westport CWI ISL G Near Zero Fact Sheet
i. Kalmar - Cummins Westport CWI ISL G Near Zero Benefits Bulletin
I. Autocar
a. Autocar - ACTT - 4×2 DOT/EPA Terminal Tractor ISL G - CNG
b. Autocar - ACTT - 4×2 DOT/EPA Terminal Tractor ISL G - LNG
c. Autocar - Cummins Westport CWI ISL G Fact Sheet
d. Autocar - Cummins Westport CWI ISL G Near Zero Fact Sheet
e. Autocar - Cummins Westport CWI ISL G Benefits Bulletin
J. Capacity REV Group
a. Capacity - Sabre $4 \times 2$ DOT Terminal Tractor ISL G - CNG
b. Capacity - Sabre $4 \times 2$ DOT Terminal Tractor ISL G - LNG
c. Capacity - Cummins Westport CWI ISL G Fact Sheet
d. Capacity - Cummins Westport CWI ISL G Near Zero Fact Sheet
e. Capacity - Cummins Westport CWI ISL G Benefits Bulletin

Note: 1. A USB Memory Drive which contains a Table of Contents and numerous documents is submitted as part of the public comments.
2. All documents contained in the USB Memory Drive in the Addendums are submitted as part of the public comments.
3. All documents referenced as citations in documents are submitted as part of the public comments, the Port of Los Angeles and U.S. Army Corp Of Engineers are requested to read, review and consider all citations information as part of the public comments in their decision making process.

### 2.3.5.3 Coalition for a Safe Environment (CFSE)

## Response to Comment CFSE-1

The commenter's opinion that the Purpose, Need and Objectives contained within the Project Description of the EIS/EIR may not be entirely accurate or true is noted. The EIS/EIR, however, considers all of the reasonably foreseeable significant adverse impacts of the proposed project (or action) as required by NEPA/CEQA. The applicant/tenant serves numerous markets across the globe, and currently has 33 vessels to be used worldwide on order. Of these, 11 are for 18,000 TEU vessels. The largest vessels in Everport's fleet primarily serve the Asia/Europe market (Asia to/from Europe). Because the largest ships (i.e. 18,000 TEU) do not typically serve North America, it is speculative at this time to assume that one or more of the 11 future 18,000 TEU vessels would be incorporated into the vessel strings serving the Project site. The Draft EIS/EIR evaluates vessels up to 16,000 TEUs, which is believed to be the vessel size most likely used on the transpacific trade and what the terminal improvements have been designed for.
Regarding the request to prohibit 18,000 TEU vessels from berthing at the Everport Container Terminal, as stated above, it is unknown and speculative at this time if the facility will receive 18,000 TEU vessels. If such a scenario were to occur in the future, however, the Port would not prohibit 18,000 TEU vessels as requested by the commenter. This is because the use of such vessels is expected to improve overall impacts. Larger and newer vessels have cleaner engines compared to the older smaller vessels, and they can result in fewer ship calls due to their ability to accommodate higher capacities.
Regarding the commenter's request that a new (or revised) Draft EIS/EIR be prepared to address the speculative impacts of 18,000 TEU vessels which could, as assumed by the commenter, frequent the Project site at some point in the future, CEQA and NEPA do not require such an analysis. (See CEQA Guidelines, Sections 15144, 15145 [indicating that while drafting an EIR necessarily involves some degree of forecasting, EIRs should not rely on speculation in evaluating impacts].) The proposed Project has been designed to accommodate 16,000 TEU vessels and related reasonably foreseeable activities. The EIS/EIR considers the reasonably foreseeable significant impacts of the proposed Project.
Regarding the request that a new Draft EIS/EIR be prepared to include the contracting schedule for purchasing new trucks, chassis, truck staging areas, and container storage yards, the Port respectfully declines this request for the following reasons:

1. the Everport Container Terminal does not maintain its own truck fleet, rather, relies on independent owners and operators for container hauling;
2. the Everport Container Terminal does not own or control truck chassis;
3. the Draft EIS/EIR evaluation of the proposed Project includes the expansion of backlands for terminal operations such as container and container-related storage; and
4. the proposed Project and alternatives do not include off-site yards for storing containers other than peel-off yards, of which a portion of their capacity have been assigned to the Everport Container Terminal and included in the proposed Project's throughput capacity evaluated in the Draft EIS/EIR.
Regarding the request that a new Draft EIS/EIR be prepared that will include a schedule for the recruitment and training of drivers, the Port respectfully declines this request because the Everport Container Terminal does not maintain its own truck fleet, rather, the trucks that serve the terminal are controlled by independent owners and operators. Recruitment and training of truck drivers is the responsibility of the independent owner/operators and trucking companies and is therefore outside the scope of the Port's ability to require.

## Response to Comment CFSE-2

The comment is noted. The comment does not identify any specific feasible alternatives or mitigation measures that would avoid or substantially lessen the significant adverse impacts of the Project and which are not included in the Draft EIR/EIS. The comment also does not specify which impacts the commenter believes are understated. Please see responses for CFSE-3 through CFSE-10 for specific responses to the suggested mitigation measures.

## Response to Comment CFSE-3

The comment is noted. The term "peel-off yard" is consistent with the Port's press release from 2015 (https://www.portoflosangeles.org/newsroom/2015_releases/news_030915_peel_off_program.asp) regarding the topic, and there is no equivalent standard industry term identified. Therefore, the term "PeelOff Yards" is appropriate to use in this EIS/EIR. The three peel-off yard locations that were included in the analysis are all on Terminal Island; one was assumed to be at Navy Way and Reeves Avenue, another was assumed to be at the LAXT Loop and adjacent Customs House building, and the third was assumed to be at Pier S in the Port of Long Beach. The traffic analysis considered all of the Project's transportation impacts, including trucks attributed to the Everport Container Terminal at the peel-off yards. The peel-off yards themselves are outside the scope of this EIS/EIR, and therefore, truck trips and containers utilizing each of the peel-off yards cannot be attributable to the proposed Project and alternatives are exclusively identified. They are, however, assumed to occur as part of the cumulative impact analysis.

## Response to Comment CFSE-4

The comment is noted. The EIS/EIR assumes maximized use of Everport's on-dock railyard, and therefore maximizes the use of the Alameda Corridor. In addition, neither the Port nor the applicant/tenant has any jurisdiction over the use of the Alameda Corridor.

## Response to Comment CFSE-5

The comment is noted. The implementation of large-scale alternative rail transportation systems at the ports, such as Maglev, is not feasible for consideration as mitigation for the impacts of the proposed Project. These systems generally require very large capital investments, have extensive geographical coverage, fall under the purview of the rail companies, and are disproportionate to the impacts of an individual project. In 2008, EMMI Logistics estimated the building cost for a complete MagLev system at 4.4 billion dollars (by 2013), which is likely underestimated at this point in time (American Maglev Inc., 2008). Although LAHD can authorize additional loading tracks at on-dock yards within the Port boundaries, the alternative rail transportation system would have to extend well beyond the on-dock yards to areas beyond the Port. Additionally, the project applicant/tenant has no means to implement such system-wide transportation improvements nor does the applicant/tenant or Port have any jurisdiction over rail transportation systems.

Although the commenter states that several firms have designed a goods movement system for containers, the Port issued a Request of Concepts and Solutions for a Zero Emission Container Movement System in 2010, and although numerous submittals were received, including one from one of the referenced firms, none of the submittals were found to be in full compliance with the request. In some instances, the costs were found to be underestimated, and in others, proof of concept was not demonstrated. [July, 2010 Zero Emission Container Movement System Evaluation results]. As a consequence, the use of an alternative rail technology as mitigation is not considered feasible at this time due to the prohibitive cost and because the Port and the applicant/tenant does not have jurisdiction over the rail transportation system to ensure implementation in a successful manner and within a reasonable period of time.

## Response to Comment CFSE-6

The comment is noted. Please see Response to Comment CFSE-5 above.

## Response to Comment CFSE-7

The comment is noted. The commenter states that the Draft EIS/EIR underestimated truck trips because it did not account for trips to the various facilities listed in bullet form in the comment and referenced attachment. The average daily truck trips under the proposed Project $(7,028)$ represent the number of truck trips between the terminal and the first point of destination. The first point of destination is typically a neardock rail yard, off-dock rail yard, or transloading facility. To the extent that the list of facilities in the comment is a transloading facility or a peel-off yard on Terminal Island, the number of daily truck trips listed in the Draft EIS/EIR include visits to those facilities. However, the other facilities in the list represent facilities that are owned and operated by non-affiliated third parties, that have been issued respective project approvals, and that have undergone respective environmental evaluations and documentation. Because those facilities are not a part of the proposed Project, and are owned and operated by third parties, the specific truck trips generated by those operations are not evaluated as part of the proposed project or Project Alternative in the Draft EIS/EIR.

## Response to Comment CFSE-8

The recommendation that the Port provide dedicated freeway and highway truck lanes is acknowledged. The proposed Project would result in a significant impact at the freeway ramp intersection of Ferry Street and the SR47 intersection; however, the recommended mitigation would not address this impact. In addition, the Port does not have jurisdiction over the freeway or highway system.

## Response to Comment CFSE-9

The comment is noted. A new underground truck tunnel from the Ports to various rail transportation yards would not be appropriate mitigation to include for a single terminal redevelopment project (such as Everport). In addition, this recommendation is not economically, logistically or technologically feasible to design and build (especially in an environment with very shallow groundwater, intervening Harbor channels, underground utilities, and right-of-way considerations). An underground truck tunnel would also likely result in numerous significant adverse environmental impacts, including groundwater impacts and air quality impacts, associated with constructing and operating the tunnel, and would require a separate environmental document, which would be, at a minimum, an EIR.

## Response to Comment CFSE-10

LAHD is unclear what the correlation is between a multi-story parking lot and the Everport Container Terminal. The proposed Project seeks to provide facility improvements to allow for larger and cleaner vessels to visit the site. The associated trucks to accommodate the increased throughput do not park longterm at the site; but rather, pick up containers for transport. It is unclear how this parking structure would serve as mitigation at the site or mitigate this project in any way. It's further unclear how a parking structure would assist Environmental Justice Communities. Construction and operation of any such structure would also pose potentially significant adverse environmental impacts that would need to be addressed in a separate environmental assessment, such as an EIR.

## Response to Comment CFSE-11

The comment is noted. As stated in lease measure LM AQ-1, the best feasible emission reducing equipment shall be implemented as it is determined to be feasible for work at the port. Feasibility for equipment is based on the ability for the equipment to perform consistently in the port environment, and takes into account technical feasibility; infrastructure availability for electric grid connections, fuel cell and/or natural gas equipment; operational feasibility for marine port conditions; and economic feasibility. LAHD disagrees with the claim that the commenter's suggested equipment and systems are commercially available today. For more information, see Master Response 2: Zero-Emission Technologies. Please also see Response to Comment CARB-8 with regards to increased compliance with Alternative Maritime Power (AMP) in 2020.

## Response to Comment CFSE-12

The comment is noted. The Draft EIS/EIR assessed greenhouse gas emissions and identified those impacts that are significant in Section 3.5 - Greenhouse Gas Emissions. The Draft EIS/EIR also evaluated cancer and non-cancer risk in Section 3.2 - Air Quality and Appendix B3, and determined that individual cancer and non-cancer risks would be less than significant under CEQA without mitigation. Note that CEQA does not require all impacts from a project be fully mitigated in order to be approved, only that feasible mitigation measures be applied (CEQA Statute Section 21002).

## Response to Comment CFSE-13

The comment is noted. LM AQ-1 and LM AQ-2 provide mechanisms for incorporating into terminal operations those technologies that become feasible in the future. No credit is taken for these lease measures in the mitigated scenarios. In addition, these measures are acceptable as commitments by LAHD. LAHD disagrees with the assertion that the commenter's suggested equipment and systems are commercially available today. For details on the feasibility assessment process for the Port of Los Angeles, see Master Response 1: Feasible Mitigation - Guidance and Applicability, Master Response 2: Zero-Emission Technologies, and Master Response 3: Port-wide Emission Reduction Programs. Please also see Response to Comment CFSE-11, above. In addition, the status in the development phase of Zero Emission technologies is provided in Master Response 2.

## Response to Comment CFSE-14

The comment is noted. Please see Response to Comment CFSE-7, above.

## Response to Comment CFSE-15

The comment is noted. Long term feasibility assessments are underway at both Everport Container Terminal and other terminals located at the port and across the state of California. For more details, please see Master Response 2: Zero-Emission Technologies. The Evergreen vessels calling at the Everport Container Terminal are designed to use AMP, thus can achieve virtually 100 percent AMP usage. Alternative ship capture technologies, in the form of the Marine Exhaust Treatment System (METS-1) are currently being evaluated for feasibility at the Pasha Stevedoring terminal through the Green Omni Terminal Demonstration Project. For more information regarding the project, see the port's announcement of the project at https://www.portoflosangeles.org/environment/progress/news/pasha-port-los-angeles-california-air-resources-board-partner-green-omni-terminal-demonstration-project/. When these technologies become feasible and commercially available, LAHD will incorporate them into the lease agreements per LM AQ-1. Therefore, no emission reductions as a result of these technologies were included in the air quality impact analysis in the Draft EIS/EIR, Section 3.2.

## 1 Response to Comment CFSE-16

The comment is noted. Please see Responses to Comments CFSE-11 and CFSE-15, above. In addition, the commenter is referencing zero-emission technologies, near-zero- emission technologies and BACT, etc., but not providing specific examples of what should have been incorporated at the Project site.

## Response to Comment CFSE-17

The comment is noted. Please see Response to Comment CFSE-19, below.

## Response to Comment CFSE-18

The comment is noted. Please see Responses to Comments CFSE-13, above.

## Response to Comment CFSE-19

The comment is noted. LAHD has identified and analyzed GHG emissions from project-related sources including container ships, tug boats, cargo handling equipment, trucks and automobiles, and rail locomotives, as well as construction equipment. The GHG impact analysis is presented in the Draft EIS/EIR, Section 3.5. Also, please see Response to Comment CFSE-7 regarding the extent of projectrelated truck activity. Regarding the comment that the Port "arbitrarily" set the cap for the Carbon Offset Fund to $\$ 250,000$, the amount of financial contribution is not arbitrary. The figure will equate to one percent (1 percent) of the MAG (Minimum Annual Guarantee) in the lease based on the calendar year prior to the commencement of construction, which the Harbor Department has determined would not threaten the economic viability of the project. This figure should equate to slightly over $\$ 300,000$ based on current estimates. This is an increase in the originally projected amount of $\$ 250,000$ even though a refined analysis indicates that GHG emissions from the proposed Project will be significantly lower than previously assessed.

## Response to Comment CFSE-20

The comment is noted. Please see Response to Comment CFSE-7, above.

## Response to Comment CFSE-21

The comment is noted. Please see Response to Comment CFSE-15, above.

## Response to Comment CFSE-22

The comment is noted. Note that Best Available Control Technology (BACT) is a term reserved for air quality permitting of stationary sources, such a power plants, petroleum refineries, and chemical manufacturing facilities to name a few. The SCAQMD defines BACT under Regulation XIII - New Source Review in Rule 1302(h). Since the sources associated with the Everport Container Terminal are mobile (ships and boats, trucks, trains, and cargo handling equipment), BACT does not apply to the project. The project now includes, subject to availability, electric equipment for dredging activities, please see Response to Comment CARB-14 regarding the addition of electric dredge equipment into MM AQ-5, as well as the type of dredging equipment assumed for calculating construction emissions in the Draft EIS/EIR, and Response to Comment MCC-1 regarding the incorporation of electric equipment requirements for dredging specifications. Please also see Master Response 1: Feasible Mitigation - Guidance and Applicability, Master Response 2: Zero-Emission Technologies, and Master Response 3: Port-wide Emission Reduction Programs.

## Response to Comment CFSE-23

The comment is noted. Please refer to Responses to Comments CFSE-3, CFSE-7, CFSE-12, CFSE-14, CFSE-17, CFSE-19 and CFSE-20. The commenter asserts that cumulative impacts are underestimated; however, no specific deficiencies or examples were provided. Therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)). Regarding air quality and greenhouse gas mitigation measures, please see Master Response 1: Feasible Mitigation - Guidance and Applicability, Master Response 2: Zero-Emission Technologies, and Master Response 3: Port-wide Emission Reduction Measures. In addition, the commenter has provided no evidence that increasing ship call would deprive residents and boat owners of their boat recreational use due to decreased boating areas and increased time to wait for ship passage. The potential 42 additional vessel call a year (emphasis added) would not increase the number of vessels that could use the terminal at any one time; therefore, on any given day, it is not anticipated that boating would not be affected by the proposed Project.

## Response to Comment CFSE-24

The comment is noted. The Draft EIS/EIR evaluates construction noise impacts in Section 3.10, Noise. Table 3.10-9, Summary of Daytime Construction Noise Impact identifies the noise level from pile driving activities assuming that an impact pile driver is used and includes a decibel rating of 107 to be conservative. The analysis then evaluated various receptor locations in the vicinity, including the Cerritos Channel Marina where liveaboards are present. This receptor is located approximately 10,000 feet from the pile driving activities, and this distance is greater than one-mile from the project site. It should be noted that although pile driving noise may be discernible at a distance of one-mile, the noise level increase at this distance would not exceed the significance threshold level due to attenuation with distance. The Draft EIS/EIR also evaluated the effects of construction noise on closer receptors and identified potentially significant noise impacts at two locations, liveaboards in Fish Harbor, and the San Pedro Tourism Area. Two mitigation measures (MM NOI-1 and MM NOI-2) have been included to reduce potential noise impacts from pile-driving. With mitigation, construction-related noise impacts were found to be less than significant.

Contrary to the comment, the noise evaluation in the Draft EIS/EIR includes an evaluation of the terminal operations for the proposed Project on page 3.10-31, which includes truck trips and rail trips associated with full build out of the terminal. The evaluation determined that project operations would not result in an increase in ambient noise levels of 3 dBA or greater, and thus found operational impacts related to noise increases to be less than significant.

The evaluation of operational noise from rail and truck trips includes an analysis of the truck routes and the first point of destination. This means that the majority of trips are assumed to travel along major thoroughfares and represent the most concentrated travel activities that could occur. Thus, they reflect the maximum operational noise levels that could occur. Although there may be non-affiliated third-party operations such as warehouses throughout Southern California that ultimately accept goods that were delivered to the Port, these facilities are dispersed and located in areas and on land zoned for such activities. These associated trips would be much less than would occur along the major thoroughfares. Thus, the incremental increase in noise associated with third party activities would be less than the noise associated with trips between the Everport Container Terminal and the first point of destination. The Draft EIS/EIR thus represents a worst-case analysis.

Regarding the comment that the Draft EIS/EIR does not include noise information from the sources identified in the Commenter's second point above, those sources represent facilities owned and operated by non-affiliated third parties that have been issued respective project approvals and have undergone respective environmental evaluations and documentation in order to allow them to operate separate from this project.

They are not part of this project and are not being constructed as a result of this project. No further evaluation is necessary.

Regarding the comment that the Draft EIS/EIR failed to consider information and mitigation in the Harbor Community Benefit Foundation four Wilmington Noise Reports, the construction of the proposed Project would not result in significant noise impacts in Wilmington (which is north of the Cerritos Channel marina with Liveaboards (see Table 3.10-9 of the Draft EIS/EIR), and would not result in significant noise impacts from operations. As a consequence, noise mitigation in Wilmington was not required.

## Response to Comment CFSE-25

The comment is noted. Please refer to Responses to Comments CFSE-2 through CFSE-24 regarding mitigation measures and/or emission sources. Project-related air quality and health risk impacts were presented in the Draft EIS/EIR, Section 3.2 and Appendix B; and greenhouse gas emissions were presented in Section 3.5 and Appendix B1. Project-related noise impacts were presented in Section 3.10. Projectrelated traffic impacts were presented in Section 3.6 and Appendix E. Cumulative impacts were presented in Chapter 4, and Socioeconomic impacts were presented in Chapter 7. As with the comments above where the commenter has pointed to, and provided, bibliographies, the documents provided do not reference specific proposed Project components, but other projects and areas outside of the Project site. In addition, the commenter does not specifically call out an issue or deficiency; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

## Response to Comment CFSE-26

The comment is noted. The commenter incorrectly states that the Draft EIS/EIR Biological Resources fails to identify, assess and mitigate the potential for whale strikes from the 208 annual ship calls. Section 3.3, Biological Resources, of the Draft EIS/EIR, beginning on page 3.3-18, identifies the issue of potential vessel collisions with sea turtles and marine mammals (which includes whales) and includes a separate section about whale strikes. Under the Impact Determination section (Section 3.3.4.3), the potential for the proposed Project and each of the alternatives to impact sea turtles and marine mammals and increase whale strikes, is described under Impact BIO-1. Any increase in vessel traffic caused by the proposed Project may incrementally increase the potential for vessel strikes. However, this impact is considered less than significant under CEQA and NEPA because of the low probability of vessel strikes. Even though impacts due to vessel strikes are considered less than significant, with no mitigation required, implementation of mitigation measure MM AQ-6, Vessel Speed Reduction Program (see Section 3.2, Air Quality and Meteorology), would further reduce the potential for vessel collision with marine mammals and sea turtles.

## Response to Comment CFSE-27

The comment is noted. Please see Response to Comment USEPA-9.
The supplemental documents and information provided, and referenced, by the commenter throughout the comment letter do not constitute a comment under CEQA. In addition, the supplemental documents/information do not identify specific proposed Project components, but other projects and areas outside of the Project site; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)). Due to the large file sizes and voluminous nature of the documented provided, copies of the documents attached to the June 5, 2017 comment letter on the Draft EIS/EIR from CFSE can be viewed at the LAHD Environmental Management Division, 222 West $6^{\text {th }}$ Street, Suite 900, San Pedro, CA 90731, or on the Port's website at http://www.portoflosangeles.org under the Environmental tab, as part of the Final EIS/EIR, so that members of the public wishing to view this information may do so.

From: Adrian Martinez [mailto:amartinez@earthjustice.org]
Sent: Monday, June 5, 2017 11:48 PM
To: Ceqacomments; 'Theresa.stevens@usace.army.mil'
Subject: Berths 226-236 [Everport] Container Terminal Improvements Project
Berths 226-236 [Everport] Container Terminal Improvements Project
On behalf of Earthjustice, I submit these comments on the Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) for the Everport Container Terminal project. At the outset, I concur generally with the comment letter submitted by the Natural Resources Defense Council and other groups. I simply write this letter to add two additional points. First, the energy analysis in the Draft EIR fails to comply with CEQA. Second, that the Draft EIR fails to comply with CEQA's energy consumption mitigation requirements articulated in Appendix F, CEQA, and the CEQA Guidelines.

## Energy Impact Analysis

CEQA creates an independent obligation to analyze the energy impacts from a proposed project. Here, the Draft EIR fails to provide sufficient information regarding the project's energy use. Recent court decisions have made clear that CEQA's obligation to do an energy analysis (see Cal. Pub. Res. Code § 21100, subd. (b)(3).) extends beyond the tangential discussion of energy in sections like the greenhouse gas analysis or air quality analysis. (See Ukiah Citizens for Safety First v. City of Ukiah, 248 Cal. App. 4th 256 (2016).) Thus, recent decisions have affirmed that agencies must take their obligations under CEQA's energy provisions seriously. To comply with this section of CEQA, the EIR must disclose energy impacts from transportation and other sources during the construction and operation of the project. This analysis is particularly important for this project because of the immense potential energy consumption related to the vehicles and other equipment operating at this site. Only a full disclosure of the energy landscape of this project will provide the necessary information for the public and decision makers to understand the scope of energy impacts.

## The EIR Must Include Energy Mitigation

Once the Draft EIR cures the problems with the energy analysis, it must examine feasible mitigation. Mitigation is the core of the energy impacts analysis. In fact, the CEQA section that creates the obligation for an energy analysis refers to it in terms of "[m]itigation measures proposed to minimize significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy." (See Cal. Pub. Res. Code § 21100, subd. (b)(3).) Importantly Appendix F of CEQA suggest the following parameters to mitigate energy use:

The means of achieving this goal include:
(1) decreasing overall per capita energy consumption,
(2) decreasing reliance on fossil fuels such as coal, natural gas and oil, and
(3) increasing reliance on renewable energy sources.
(Appendix F, CEQA.) Several mitigation options could present themselves to achieve all three goals. Increasing use of zero emission vehicles would help with decreasing reliance on fossil fuels. Moreover, integrating renewable energy into this project will also achieve the third part of achieving this goal. However, before identifying the specific mitigation, the Draft EIR must include a full assessment of energy impacts to understand what mitigation obligations exist.

Please do not hesitate to contact me if you have questions about these comments.
Sincerely,

Adrian Martinez

Adrian Martinez
Staff Attorney
Earthjustice California Office
800 Wilshire Blvd, Suite 1000
Los Angeles, California 90017
T: 415.217.2000
F: 415.217.2040
earthjustice.org

### 2.3.5.4 Earthjustice (EJ)

## Response to Comment EJ-1

Please see Master Response 4: Energy Usage and Appendix F

## Response to Comment EJ-2

Please see Master Response 4: Energy Usage and Appendix F

## Response to Comment EJ-3

Please see Master Response 4: Energy Usage and Appendix F

## Response to Comment EJ-3

Please see Master Response 2: Zero- Emission Technologies

## LOS ANGELES AREA <br> CHAMBER OF COMMERCE

June 5, 2016

Chris Cannon
Director, Environmental Management
Port of Los Angeles
P.O. Box 151

San Pedro, CA 90733

Theresa Stevens, Ph.D.
Los Angeles District, Regulatory Division
U.S. Army Corps of Engineers

2151 Alessandro Dr., Ste. 110
Ventura, CA 93001

## RE: Draft EIS/EIR - Berths 226-236 [Everport] Container Terminal Improvements Project

Dear Mr. Cannon and Dr. Stevens:
On behalf of the Los Angeles Area Chamber of Commerce, I am writing to support the Everport Container Terminal Improvements Project at the Port of Los Angeles (POLA).

This project will serve to optimize the container-handling efficiency and capacity of POLA to accommodate the projected fleet mix of larger container vessels that are anticipated to call at the Everport Container Terminal through the next two decades. Due to increased demands for goods, larger vessels are being deployed to reduce container shipping costs. As industry trends shift, continual modernization of our port infrastructure is essential.

By optimizing the use of existing land, dredging for sufficient depth, adding new cranes and raising existing ones, and increasing efficiency for container handling, the Everport Terminal improvements will ensure we are poised to compete for the benefit of our regional economy. The project will also create good jobs- both during the project and in the staffing of the modernized terminal.

With the goods movement sector contributing to nearly one-third of the regional economy, efficient transportation of cargo through our ports is vital to maintaining a thriving economy. For these reasons, the LA Chamber supports the Everport Container Terminal Improvements Project.

Sincerely,


Gary Toebben
President \& CEO
LAC -1

### 2.3.5.5 Los Angeles Area Chamber of Commerce (LAC)

## Response to Comment LAC-1

Thank you for your comment on the Draft EIS/EIR. LAHD and USACE acknowledge LAC's review and that no comments are provided; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).


June 5, 2017

Via USPS and Email
U.S. Army Corps of Engineers

Los Angeles District, Regulatory Division
Ventura Field Office
ATTN: Theresa Stevens, Ph.D.
2151 Alessandro Drive, Suite 110
Ventura CA 93001
Theresa.stevens@usace.army.mil

Port of Los Angeles
Christopher Cannon
Director of Environmental Management
P.O. Box 151

San Pedro, CA 90733-0151
ceqacomments@portla.org

Dear Dr. Stevens and Mr. Cannon:
Thank you for the opportunity to comment on the Draft Environmental Impact
Statement/Environmental Impact Report ("DEIS/DEIR) for the Everport Container Terminal Project (hereinafter the "Project"). The signatories to this letter are dedicated to reducing the Port's impacts on local communities, and have engaged in the environmental review process for numerous Port-related projects over the years.

While we appreciate the mitigation measures incorporated into the Project to date, we believe there is much more the Army Corps and Port can do to reduce the Project's impacts. Notably, the DEIS/DEIR concludes that the Project will yield "significant and unavoidable" environmental impacts, including impacts to air quality, greenhouse gas emissions, and
environmental justice, as well as cumulative impacts. These impacts will occur in a region that continually violates federal clean air standards for ozone and particulate matter, and in a State that has ambitious climate policies that need the Port's cooperation. Further, the Project's impacts will disproportionately affect environmental justice communities near the Port. It is this context in which the DEIS/DEIR must be considered. It is also within this context that we recommend that additional mitigation be adopted for the Project.

## I. The Project Should Adopt More Mitigation to Reduce Operational Ship Emissions

The DEIS/DEIR reports the following "significant and unavoidable" air quality impacts from Project operations under the California Environmental Quality Act ("CEQA") and the National Environmental Policy Act ("NEPA"):

- CEQA: Operations would be significant and unavoidable for CO and VOC in 2033 and 2038.
- NEPA: Operations would be significant and unavoidable for NOX in 2026, 2033, 2038 and CO and VOC in 2033 and 2038.
- CEQA: Operations would be significant and unavoidable for NO2 (federal 1-hour average), PM10 (24-hour and annual averages), and PM2.5 (24-hour average).
- NEPA: Operations would be significant and unavoidable for PM10 (24-hour and annual averages).

See DEIS/DEIR at ES-28 (Table ES-3). Emissions from ships (main propulsion engines, and auxiliary engines and boilers) at the largest contributor to these "significant and unavoidable" air quality impacts. Accordingly, we strongly urge the DEIS/DEIR to include more mitigation for ship emissions. Specifically, while we acknowledge that the percentage compliance rates discussed in the DEIS/DEIR for vessel speed reduction and alternative maritime power are already relatively high, the environmental study should consider the feasibility of adopting even higher rates.

For instance, the DEIS/DEIR states that:
By 2020 or upon substantial completion of construction, 85 percent of Evergreen ships calling at the Everport Terminal must use AMP. By 2026, 95 percent of all ship calls at the Everport Container terminal must be AMP or approved equivalent under the CARB Shore-Power Regulation. The equivalent alternative technology must, at a minimum, meet the emission reductions that could be achieved from AMP.

Id. at 3.2-51. The DEIS/DEIR should assess the feasibility of an above $85 \%$ compliance rate in 2020 (or upon completion of construction) including through the use of an equivalent alternative technology. Similarly, the DEIS/DEIR should assess the feasibility of requiring a $95 \%$ compliance rate before 2026, and a higher compliance rate at and after 2026.

Given the amount of ships emissions from the Project, and CEQA's mandate that the DEIR include all feasible mitigation, the Port should include this additional mitigation.

## II. The Project Should Adopt Mitigation for Trucks Used During Project Operations

Under the CEQA baseline (2013), annual throughput at the terminal was 1,240,773. During the operational phases of the Project, TEUs will increase as follows:

| YEAR | ANNUAL TEU <br> THROUGHPUT | \% INCREASE FROM <br> CEQA BASELINE |
| :---: | :---: | :---: |
| 2026 | $1,843,297$ | $49 \%$ |
| 2033 | $2,379,525$ | $92 \%$ |
| 2038 | $2,379,525$ | $92 \%$ |

Id. at App. B1 (Table 3.2-2). These additional TEUs will be moved by equipment and vehicles, including drayage trucks. Appendix B1 Table 3.2-4 depicts annual operational phase truck trips increasing from 1,112,551 in 2013 to 1,735,493 in 2033 (and holding at these rates in 2038), an increase of 622,942 truck trips annually.

Despite this increase, there is no mitigation for trucks within the DEIS/DEIR (aside from the development of a priority access program, which the DEIS/DEIR does not take credit for as mitigation). There are, however, meaningful opportunities to mitigate truck emissions. Indeed, the DEIS/DEIR indicates that in 2038, nearly 130,000 TEUs will be moved to peel-off yard(s) annually. Id. at ES-17 (Table ES-2). The DEIS/DEIR should consider requiring truck trips to/from peel-off yards to the Project site to be moved by zero emissions miles. Technologies such as battery electric trucks can accomplish these moves and are feasible today. Depending on the location of the peel-off yard, it is conceivable that some of these moves could even be performed by zero-emissions yard hostlers. In addition to reducing criteria pollutants, such mitigation would reduce the Project's significant greenhouse gas emissions.

Additionally, the Port has articulated in its Clean Air Action Plan discussion draft that it is targeting an all zero-emissions truck fleet by 2035. The DEIS/DEIR should include this CAAP goal as a requirement in the terminal lease, as well as interim deadlines to ensure ultimate compliance.

## III. The Project Should Adopt Mitigation for Rail Operations

While ship emissions are the largest contributor to the Project's operational air quality impacts, over the life of the Project, line haul rail's contribution to, e.g., total NOx emissions, increases. For example, in 2019, line haul locomotives represent $9 \%$ of total NOx emissions, but by 2038, they represent $69 \%-$-resulting in a $123 \%$ overall increase. DEIR/DEIS at 3.2-46-48 (Table 3.220). The DEIS/DEIR should consider additional mitigation for this emissions source.

In the 2010 CAAP, the Port articulated that:
By 2020, goal for $95 \%$ of Class 1 line-haul locomotives entering the ports to meet
Tier 4 standards. For a minimum performance requirement, by 2023 , Class 1 line-
haul locomotives entering the ports will meet an emissions equivalent of $40 \%$ USEPA
Tier 3 line haul locomotive standards and $50 \%$ Tier 4 line haul locomotive standards,
By 2020, goal for $95 \%$ of Class 1 line-haul locomotives entering the ports to meet
Tier 4 standards. For a minimum performance requirement, by 2023 , Class 1 line-
haul locomotives entering the ports will meet an emissions equivalent of $40 \%$ USEPA
Tier 3 line haul locomotive standards and $50 \%$ Tier 4 line haul locomotive standards,
By 2020, goal for $95 \%$ of Class 1 line-haul locomotives entering the ports to meet
Tier 4 standards. For a minimum performance requirement, by 2023 , Class 1 line-
haul locomotives entering the ports will meet an emissions equivalent of $40 \%$ USEPA
Tier 3 line haul locomotive standards and $50 \%$ Tier 4 line haul locomotive standards,
By 2020, goal for $95 \%$ of Class 1 line-haul locomotives entering the ports to meet
Tier 4 standards. For a minimum performance requirement, by 2023 , Class 1 line-
haul locomotives entering the ports will meet an emissions equivalent of $40 \%$ USEPA
Tier 3 line haul locomotive standards and $50 \%$ Tier 4 line haul locomotive standards,
which may be implemented as mitigation for an identified impact through the CEQA environmental process or as a contractual lease requirement above what would be required strictly based upon identified impacts in the environmental analysis. ${ }^{1}$

Emissions from Tier 4 line haul locomotives are over 70 percent lower than Tier 2 line-haul locomotives. Therefore, a transition to a Tier 4 fleet will provide significant emission reduction benefits. The Port must continue to pursue its 2010 CAAP commitment to work with agency partners to accelerate the turnover of the line-haul locomotive fleet so that by 2020, the statewide fleet is comprised of at least 95 percent Tier 4 line-haul locomotive engines. If the Port is committed to the goals articulated in its various Clean Air Action Plans, it should likewise make those commitments in its project documents.

## IV. The Project Should Explore Any and Every Opportunity to Advance ZeroEmissions Technologies

Governor Brown and air quality regulators have made clear that California will not meet national health-based air quality standards and state greenhouse gas reduction goals if the Ports proceed with a "business as usual" approach for moving freight. The California Air Resources Board has explained that "California must take effective, well-coordinated actions to transition to a zeroemission transportation system for both passengers and freight." ${ }^{2}$ Given the Project's "significant and unavoidable" air quality and greenhouse gas impacts, and the State's directives, the Port should explore every opportunity to advance zero emissions technologies.

Preliminarily, we acknowledge and appreciate the information shared at the May 10, 2017 public meeting, which indicates that the Project will use approximately 30 pieces of zero emissions or ultra-low NOx cargo handling equipment. However, the Port can and should be doing more. As discussed above, the Port should adopt a zero-emission truck requirement for trips to nearby peel-off yards. The DEIS/DEIR should also embody (as lease requirements) the CAAP's 2030 zero-emissions goal for all cargo handling equipment and the complimentary 2035 all zeroemissions truck goal. The DEIS/DEIR should also analyze what infrastructure is needed at the terminal to support the terminal's current and projected electricity needs given the Port and State's larger zero emissions goals.

A sustainable freight system requires a long-term wholesale transformation away from fossilfueled technologies. Such transformation starts with widespread implementation of zeroemission technologies that are already viable in applications with the potential for significant expansion. Zero-emission technology, such as drivetrains powered by batteries or hydrogen fuel cells, are available for some truck types, as well as forklifts, gantry cranes, and other types of goods movement equipment. As with the early light duty vehicle electrification market, the market faces higher per vehicle costs, vehicle availability, limited manufacturers, and other early market entry barriers including limited fleet experience with the vehicles. These, however, are barriers that can be overcome with the right policies and investments to successfully move the freight system toward zero-emission technologies. Increased deployment of these technologies

[^18]will help create economies of scale. As use of zero-emission technologies grows, prices will fall and the efficiency of those technologies will improve. ${ }^{3}$ Growing use of zero-emission technologies will also require greater investment in infrastructure that supports these technologies.

Where short-term adoption of zero-emission technologies is not yet possible, other interim strategies must be pursued to lower emissions from conventional technologies such as through programs mandating cleaner fossil fuels. But these must be viewed as short-term, interim strategies that should be designed to support the longer-term transformation away from fossil fuels altogether.

## V. The Project Should Set Aside Mitigation Funds to Offset the Project's "Significant and Unavoidable" Impacts

Residential areas closest to the Project site are predominantly communities of color and have a higher concentration of low-income residents relative to Los Angeles County. DEIS/DEIR, at 5-17-20. Further, Project operations will take place at the same time as other current and future projects at the Port and surrounding areas, which also produce air pollution. See DEIS/DEIR at 4-38-43. For these and other reasons, the DEIS/DEIR concludes that Project generated emissions will contribute to "significant and unavoidable" environmental justice and cumulative impacts.

The continual onslaught of expansion projects at the Port of Los Angeles and nearby Port of Long Beach, as well as other industrial operations in the area have -for years-contributed to a cumulative environmental health burden shouldered by environmental justice communities near the Port. To mitigate these impacts, Port and Army Corps should consider providing mitigation funds to the Harbor Community Benefit Foundation ("HCBF").

HCBF seeks to ensure that the harbor communities of San Pedro and Wilmington are safe, healthy, and beautiful places in which to live, learn, work, play. See www.hcbf.org. HCBF funds programs that address Port impacts, and has a long history of collaborating with the Port. Providing funding to HCBF should be explored as a feasible mechanism for mitigating the Project's environmental justice and cumulative impacts.

Thank you for considering our comments. If you have any questions, please contact Melissa Lin Perrella, at the Natural Resources Defense Council (NRDC), mlinperrella@ nrdc.org; (310) 4342300.

Sincerely,


Melissa Lin Perrella, Natural Resources Defense Council

[^19]Taylor Thomas,
East Yard Communities for environmental Justice

Kathleen Woodfield
Dr. John G. Miller, MD,
San Pedro and Peninsula Homeowners Coalition

Nidia Erceg
Joe Lyou,
Coalition for Clean Air

Jesse Marquez,
Coalition for a Safe Environment

Drew Wood,
California Kids IAQ
Ricardo Pulido,
Community Dreams

Pastor Alfred Carrillo, Apostolic Faith Center

Chaplin Anthony Quezeda, American Veterans (AMVETS)

Magali Sanchez-Hall, MPH, EMERGE

Anabell Romero Chavez,
Wilmington Improvement Network
Joe R. Gatlin,
NAACP

Modesta Pulido,
St. Philomena Social Justice Ministry
Laura Cortez,
Long Beach Alliance for Children with Asthma

Theral Golden,
West Long Beach Association

### 2.3.5.6 Natural Resources Defense Council (NRDC)

## Response to Comment NRDC-1

The comment is noted. Please see Responses to Comments NRDC-2 through NRDC-6 below. Also, please see Master Response 1: Feasible Mitigation: Guidance and Applicability, Master Response 2: ZeroEmission Technologies, and Master Response 3: Port-wide Emission Reduction Programs.

## Response to Comment NRDC-2

The comment is noted. The commenter notes the significant impact findings in the Draft EIS/EIR and requests that additional mitigation be applied to ship emissions. Please see Master Response 1: Feasible Mitigation: Guidance and Applicability, and Master Response 3: Port-wide Emission Reduction Programs. Also, please see Response to Comment CARB-8, which notes that LAHD will require at least 90 percent utilization of shore-based power by 2020 for vessels equipped with shore power capabilities as mandated in Proposition 1B. As also explained in Response to Comment CARB-8, LAHD encourages all tenants to strive for 100 percent utilization of shore power. However, the Everport Container Terminal does occasionally service non-Evergreen ships. These other vessels may or may not be able to utilize shore power; therefore, the air quality impact analysis reasonably assumes 90 percent utilization by 2020 and 95 percent utilization with mitigation measure MM AQ-7 by 2026 (see Chapter 3 of this Final EIS/EIR for the revised mitigation measure).

## Response to Comment NRDC-3

The comment is noted. The commenter suggests additional mitigation for trucks, including the use of zeroemission drayage trucks. Please see Master Response 1: Feasible Mitigation - Guidance and Applicability, Master Response 2: Zero-Emission Technology, and Master Response 3: Port-wide Emission Reduction Programs. Note that the Draft EIS/EIR did incorporate the effects of the port-wide Clean Truck Program into the truck emission factors under both unmitigated and mitigated scenarios, as noted in Appendix B1, Section 3.2, page B1-32. The Draft 2017 Clean Air Action Plan (CAAP) update has been released but has not yet been adopted, therefore, no emission reduction credit has been taken for any targets identified in the document. A hearing on the 2017 CAAP is anticipated to occur late 2017 and all commitments in the CAAP will be implemented regardless of the proposed Project.

## Response to Comment NRDC-4

The comment is noted. The commenter suggests that additional rail mitigation be included in the project mitigation measures, per the 2010 CAAP Update. Note that the 2010 CAAP Update relies on efforts by USEPA and CARB to reduce rail line haul locomotive emissions. LAHD is pre-empted by the federal Surface Transportation Board from requiring/mandating certain types of locomotives be operated at the Port. Please see Response to Comment CARB-7, as well as Master Response 1: Feasible Mitigation: Guidance and Applicability, and Master Response 3: Port-wide Emission Reduction Programs.

## Response to Comment NRDC-5

The comment is noted. The commenter suggests that zero-emission technologies be incorporated into project mitigation. Please see Master Response 2: Zero-Emission Technologies, as well as Master Response 1: Feasible Mitigation: Guidance and Applicability.

## Response to Comment NRDC-6

The comment is noted. Section 7.2.2.2, Port Community Programs and Redevelopment, in the Draft EIS/EIR discusses the HCBF. Note that the PCMTF which the HCBF administers ended in May 2016, and currently no mechanism exists for LAHD to contribute to the PCMTF. Refer also to Response to Comment USEPA-10 for a discussion on the mitigation trust fund.

June 5, 2017

Chris Cannon<br>Director of Environmental Planning<br>Environmental Management Division<br>Port of Los Angeles<br>P.O. Box 151<br>San Pedro, California 90731

U.S. Army Corps of Engineers, Los Angeles District<br>Regulatory Division<br>ATTN: Theresa Stevens, Ph.D.<br>2151 Alessandro Drive, Suite 110<br>Ventura, California 93001

Submitted Electronically to ceqacomments@portla.org and theresa.stevens@usace.army.mil

Subject: Draft EIS/EIR for the Berths 226-236 [Everport] Container Terminal Improvements Project

Dear Mr. Cannon and Ms. Stevens:

The Pacific Merchant Shipping Association (PMSA) would like to express its support for the Berths 226-236 [Everport] Container Terminal Improvements Project. The project will make significant improvements to the facility that will allow Everport to effectively compete with other North American gateways. Through the proposed berth improvements larger vessels will be able to call. The ability to handle larger vessels allows both greater efficiency and reduced emissions per container handled - a needed feature to handle the Port of Los Angeles's (Port) forecast growth.

Both the Proposed Project and Alternative 5 make needed improvements to the facility. However, Alternative 5 includes important and vital improvements to the Terminal Island Container Transfer Facility (TICTF). An expanded TICTF will allow Everport to continue to grow its use of on-dock rail. This is consistent with Port proposed aspirational goal of increasing on-dock rail use to $50 \%$ of all container throughput, as discussed in the Draft Discussion Document for the Clean Air Action Plan. Expanding ondock rail facilities will reduce truck trips by 200 trips per day and eliminate the associated air quality impacts.

By approving this project, with the elements included in Alternative 5, the Port and the U.S. Army Corps of Engineers (USACE) will continue to support San Pedro Bay as the premier North American gateway for international imports and exports. The project also continues the environmental stewardship that has resulted in significant improvements in air quality for San Pedro Bay. The Port and USACE should move forward with this project as quickly as possible.

### 2.3.5.7 Pacific Merchant Shipping Association (PMSA)

## Response to Comment PMSA-1

Thank you for your comment on the Draft EIS/EIR. LAHD and USACE acknowledge PMSA's support and review and, therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)). PMSA's support of Alternative 5 is noted and will be before the decisionmakers for their consideration prior to taking any action on the proposed Project.

### 2.3.6 Individual/Company Comments

k_Draft EISEIR - Berths 226-236 Everport Container Terminal Improvements Project POLA Website Referral
From: Michelle Kosik [kosikfl@mail.com](mailto:kosikfl@mail.com)
Sent: Wednesday, May 03, 2017 5:21 PM
To: Stevens, Theresa CIV USARMY CESPL (US)
Subject: [Non-DoD Source] Draft EIS/EIR - Berths 226-236 [Everport] Container
Terminal Improvements Project/POLA Website Referral
No you can not force me and now l have it documented
Michelle Kosik
MK-1
561-215-8253

Sent from my iPhone

### 2.3.6.1 Michelle Kosik (MK)

## Response to Comment MK-1

The comment is noted. The comment does not specifically deal with the proposed Project or the information presented in the Draft EIS-EIR. Therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

```
From: ibrahimaadji1 [mailto:ibrahimaadji1@gmail.com]
Sent: Sunday, May 07, 2017 3:55 AM
To: Ceqacomments
Subject: Draft EIS/EIR - Berths 226-236 [Everport] Container Terminal Improvements Project/POLA Website Referral
```

Hi to every one how was your pola i'm so happy to see the informations about pola

IB-1

### 2.3.6.2 ibrahimaadji1 (IB)

## Response to Comment IB-1

Thank you for your comment on the Draft EIS/EIR. The comment does not specifically deal with the proposed Project or the information presented in the Draft EIS-EIR. Therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).
-----Original Message-----
From: Stephane de Bord [mailto:stephane.debord@gmail.com]
Sent: Monday, May 15, 2017 3:27 PM
To: Ceqacomments
Subject: Berths 212-224 [YTI] Container Terminal Improvements Project

Dear Mr. Cannon,
I am writing regarding the Everport Container Terminal Project at the Port of Los Angeles. I am trying to get a sense of the impact to coastal wetlands/marshlands of this project and whether it will require the port to acquire mitigation credits in order to offset any potential impact. I am with Hellman Properties LLC, an independent oil operator in Orange County, we are considering a mitigation land bank project in the area. I am trying to understand how much demand there is for such credits in the marketplace. Presumably the Port of Los Angeles would be one of the large purchasers of mitigation credits given the volume of projects they are undertaking. In case the Everport project does not require any credits, but you know of other projects who would, I would be interested in learning about those as well. If you are not the right person to talk to about this, could you possibly steer me to the right person at the Port of Los Angeles. Thank you.

Best,

Stephane
Manager
Hellman Properties LLC
415-225-5456
Best,

Stephane
415-225-5456

### 2.3.6.3 Hellman Properties (HP)

## Response to Comment HP-1

The questions and comments are noted. The USACE has reviewed the various mitigation banks and available credits that occur in the Los Angeles District area of responsibility. The USACE has concluded the proposed Project's biological and aquatic resource mitigation requirements cannot be covered by any existing USACE-approved mitigation bank. Further, the LAHD is not required to establish a mitigation bank (or purchase mitigation bank credits) to address aquatic resource impacts (refer to Section 3.3, Biological Resources, of the Draft EIS/EIR for a detailed analysis of biological resources). The comments do not identify any specific deficiencies or contest the adequacy of the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

June 1, 2017

Chris Cannon
Director, Environmental Management
Port of Los Angeles
P.O. Box 151

San Pedro, CA 90733

Theresa Stevens, Ph.D.
Los Angeles District, Regulatory Division
U.S. Army Corps of Engineers

2151 Alessandro Dr., Ste. 110
Ventura, CA 93001

## SUBJECT: Berths 226-236 [Everport] Container Terminal Improvements Project

Dear Mr. Cannon \& Dr. Stevens,
The Valley Industry and Commerce Association (VICA) supports the proposed Berths 226-236 [Everport] Container Terminal Improvements Project, which would improve conditions of Berths 226-236 on Terminal Island in the Port of Los Angeles.

The Port of Los Angeles has the highest total two-way trade value of any port in the United States and is one of the world's largest trade gateways. The economic contributions the Port brings at the local, state, and national levels are significant and improvements are necessary to ensure the safety and efficacy of Port operations.

Due to increased demands for goods, larger vessels are being deployed to reduce container shipping costs. The improvements proposed by the Everport Project will help ensure that the Port is well-equipped to handle these larger vessels. The Everport Project will also spur economic growth by creating new jobs - both in the execution of the project and staffing of the expanded terminals.

The movement of goods is a major economic driver in California. The Port of Los Angeles already facilitates significant international trade and domestic goods movement demands. The Everport Project will help strengthen our region's economic standing and promote business growth throughout Southern California. For these reasons, VICA supports the Everport Container Terminal Improvements Project.

Sincerely,


Kevin Tamaki
VICA Chair


Stuart Waldman
VICA President

3 Thank you for your comment on the Draft EIS/EIR. LAHD and USACE acknowledge VICA's support and

### 2.3.6.4 Valley Industry and Commerce Association (VICA)

## Response to Comment VICA-1

 review; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).340 GOLDEN SHORE, SUITE 310, •LONG BEACH, CALIFORNIA 90802 (562) 983-2340
CALIFORNIA CONTRACTOR'S LICENSE \#A-220319 • FAX (562) 436-2156

June 5, 2017

BY EMAIL
U.S. Army Corps of Engineers

Los Angeles District, Regulatory Division, Ventura Field Office
2151 Alessandro Drive, Suite 110
Ventura, CA 93001
Attention: Ms. Theresa Stevens, Ph. D.

Port of Los Angeles
P.O. Box 151

San Pedro, CA 90733-0151
Attention: Mr. Christopher Cannon, Director of Environmental Management

Subject: Berths 226 to $\mathbf{2 3 6}$ [Everport] Container Terminal Improvements Project Draft EIS/EIR

Dear Ms. Stevens and Mr. Cannon,

Manson Construction Co. ("Manson") has reviewed with interest the subject Draft EIS/EIR and offers its comments for public consideration.

The project sponsors are not seeking to take advantage of air emissions reductions from electric powered dredges despite the statement on page ES-62 that
"Construction emissions would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact for NOx and VOC emissions under CEQA and under NEPA"
and
"Construction would also result in cumulatively considerable and unavoidable contribution to a significant cumulative impact related to ambient NO2 levels under CEQA and NEPA"

June 5, 2017
Page 2

Electric powered dredges are now-established practice in the Ports of Los Angeles and Long Beach however this project does not require the use of an electric powered dredge. For the proposed project, "Marine Source Exhaust", which we assume would include dredges, are indicated to be a significant contributor to air emissions (see for example Table 3.2-10A, page 3.2-25). Electric dredges will reduce Marine Source Exhaust emissions and alleviate the "considerable and unavoidable" impacts to air emissions noted in the Draft EIS/EIR.

The dredge industry, and Manson in particular, has made considerable capital investment in electric dredge equipment to meet customer needs to lower construction air emissions. Electric dredge equipment capable of performing the proposed work exists and is immediately available. Back sliding on requirements for electric dredging and creation of uncertainty for demand for electric dredge equipment reduces incentives to industry to make this equipment available to its customers at competitive rates. Continued commitment to this technology by project sponsors will encourage capital investment and betterment of available technology to lower the cost of its air emission benefits.

Manson suggests the project sponsors evaluate the potential to mitigate construction air emissions from this project by use of electric dredges. We are available to provide to you information we might have to

MAC- 1 cont. assist in your review.

Sincerely,
MANSON CONSTRUCTION CO.


Vice President and Southern California Area Manager

## 1 2.3.6.5 Manson Construction Company (MCC) <br> 2 Response to Comment MCC-1

3 The comment is noted. LAHD has considered the use of the electric dredge and will be including it into the 4 bid specifications for this project. The use of the electric dredge is subject to availability. The air quality 5 analysis was not changed to account for this inclusion and is therefore conservative in terms of 6 construction-related emissions.

### 2.3.7 Draft EIS/EIR Public Hearing

IN RE THE MATTER OF THE PORT OF ) LOS ANGELES BERTHS 226-236 (EVERPORT)) CONTAINER TERMINAL IMPROVEMENTS ) PROJECT NOTICE OF AVAILABILITY OF ) DRAFT ENVIRONMENTAL IMPACT STATEMENT/) ENVIRONMENTAL IMPACT REPORT HEARING. ) )

Transcript of Port of Los Angeles Berths 226-236 (EVERPORT) Container Terminal Improvements Project Hearing Wednesday, May 10, 2017
San Pedro, California

SNYDER HEATHCOTE INC.
reported by Jamie L. Apodaca CSR 10990
OUR FILE NO.
OFFICIAL COURT REPORTERS
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IN RE THE MATTER OF THE PORT OF (
LOS ANGELES BERTHS 226-236 (EVERPORT))
CONTAINER TERMINAL IMPROVEMENTS )
PROJECT NOTICE OF AVAILABILITY OF )
DRAFT ENVIRONMENTAL IMPACT STATEMENT/)
ENVIRONMENTAL IMPACT REPORT HEARING. )
)
Transcript of the Port of Los Angeles Berths
226-236 (EVERPORT) Container Terminal Improvements
Project Notice of Availability of a Draft
Environmental Impact Statement/Environmental Impact
Report hearing held at 6:07 P.M. on Wednesday, May
10, 2017, at 425 South Palos Verdes Street,
Second Floor, San Pedro, California, before
Jamie L. Apodaca, CSR \#10990.


WEDNESDAY, MAY 10, 2017; SAN PEDRO, CALIFORNIA

MR. CANNON: Okay. We might as well get started since we have a rousing audience tonight. We are nevertheless going to go through our process that we go through. We'll describe the project, and you'll be able to offer any public comments if you have any.

So, but my job is really to welcome everybody and to remind everyone that this is a public hearing for the CEQA process. Its purpose is for people to give comments on the E.I.S./E.I.R. So it's both the NEPA and CEQA process. That's the Federal and State process.

The purpose of this type of meeting is for people to, number one, hear about the project; and, number two, if they have any comments, to provide them. We are not going to answer any questions nor will we provide any dialogue, but we will take notes.

I want to also note that there's Spanish translation available tonight if it's necessary, and we also have a court reporter, or a recorder, here. So if anybody is going to be providing comments, say your name clearly and speak slowly so that the person who is doing the recording can get your comments and get what you have to say clearly. And so as I say, I leave it with that. I think we'll move on to our process.

I'm Chris Cannon, the Directer of Environmental Management for the Port of Los Angeles. The two people who are going to be doing presentations tonight are Theresa Stevens with the United States Army Corps of Engineers and Terry Tisopulos, who is the project manager for the Harbor Department.

So with that, I'd like to turn it over to Theresa Stevens with the Army Corps of Engineers to begin our presentation tonight.

Theresa?
MS. STEVENS: Good evening, everybody. My name is Theresa Stevens. I'm the U.S. Army Corps of Engineers project manager for this project. On behalf of the corps of Engineers, Los Angeles District, I'd like to welcome you to this meeting.

In 2013, the Los Angeles Harbor Department applied to the Corps for permits to construct wharf and terminal improvements at the berths 226 to 236, Everport Container terminal, which is located adjacent to the main channel.

Because the Federal permits qualify as Federal actions, the Corps must also comply with the National Environmental Policy Act, also known as NEPA. Due to the nature and scope of the proposed activities in waters of the United States, the Corps has determined the proposed project could result in significant direct, indirect, or cumulative
impacts. As such, we were required to prepare an environmental impact statement, or an E.I.S.

On October 24th, 2014, we published a Notice of Intent to Prepare an E.I.S. in the Federal Register. At tonight's meeting, the Corps and the Los Angeles Harbor Department will accept comments on the draft E.I.S./E.I.R. whose comment period started on April 5th -- sorry -April 21st. Whoopsie.

Under our Federal permit program, the Corps of Engineers is responsible for regulating discharges of dredged and fill material in waters of the United States, as well as any activities such as dredging or structures that may affect navigation. The proposed in-water and over-water activities at the Berths 226 to 236 area are regulated under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.

The Harbor Department is also considering transporting and discharging dredged material at the EPA-approved ocean disposal site known as LA-2. This action must comply with the regulations of Section 103 of the Marine Protection Research and Sanctuaries Acts.

To this end, the Harbor Department has tested the sediment that would be dredged, and an inter-agency team has reviewed the sediment test results. As a result of the testing, the interagency team has found the dredged material
is suitable for ocean disposal.
Federal actions such as Corps permit decisions are subject to compliance with a variety of Federal environmental law in addition to NEPA. Consequently, the Corps has the responsibility to evaluate the direct, indirect, and cumulative environmental impacts that would result from the proposed project prior to making a permit decision. In meeting its regulatory responsibility, the Corps is neither a project proponent nor an opponent.

In addition to evaluating the impacts, the Corps must determine whether the proposed project is in the public interest. No permit can be granted if we find that the proposal is contrary to the public interest. The public-interest determination requires a careful weighing of factors relevant to the particular project. The public interest is satisfied in part by public comments on the E.I.S.

Public-interest review requires evaluation of short-term and long-term project benefits, and the Corps is required to balance these benefits against a project's reasonably foreseeable detriments.

The Corps would like to emphasize that we will accept and carefully consider all comments that we receive tonight, and they will be given full consideration as we prepare the final E.I.S.

Following tonight's meeting, all parties will be given until June 5th, 2017, to provide written comments on the environmental analysis of the proposed project and project alternatives.

Now, I have a little statement here about the logistics of taking testimony. So if you know you would like to speak tonight, please fill out a speaker card, and you can hand it to me or to one of the staff at the front desk or back where the sign-in sheets are. This will help us to transition to the public input session after the slide presentation.

All oral or written testimony will become part of the administrative record for this permit application, and as you make your comments, I'll just note that there's a timer on the stage here. So please respect the time limits so that everyone who would like to speak would have time to do so. The timer is a three-minute timer. The green light goes on; three minutes, you have; and by the time the red light comes on, you need to wrap it up. So following the presentation by port staff, we'll take comments from anyone who would like to speak.

Thank you.
MS. TISOPULOS: Okay. Thank you for being here. We're a small group, but we are mighty.

My name is Tara Tisopulos. I actually am the
project manager. Happy to be part of the environmental management team here at the port.

Chris touched on quite a bit of this in his opening remarks, but the purpose of why you're here -- although if you're here, you probably know why you're here -- is to provide information to you on the berth 226-236 improvement project; to provide an overview of our analysis and the findings made on the draft E.I.R./E.I.S.; and we of course want to hear your public comments. As Chris mentioned, we do have a Spanish translator if anyone needs it.

So here is our location, right across from us here in the main channel; so the site is in the main channel on Terminal Island. As you can see, you can look out the door and see it quite clearly. Its surrounding facilities are the Y.T.I. Container terminal; P.B.F. Energy, which you may probably know better as the former ExxonMobil facility; and Tri-Marine.

So this is what the facility looks like barring any improvements right now. This is what it looks like in its current, existing condition. It has two operating berths, eight operating cranes. It encompasses a footprint of approximately 205 acres, including about 25 acres that are currently being used at the site, not within their leasehold but on a temporary basis. And it also includes the Terminal Island Container Transfer facility, which as you can see is
the rail yard behind the Y.T.I. facility, which is Berths 217 to 220 .

So currently in terms of amp, we have three amp vaults at the site. We have a permit that will allow them to operate a lease through 2028. Their capacity at the existing condition is about 8,000 TEU vessels. They're through-put in the year 2013, which is the year that we used as our baseline year in this analysis, was approximately 1.2 million TEUs. But with no change to the existing condition at the site, they would have been able to operate up to about 1.8 million TEUs.

So the overall purpose of the project, the global purpose, is of course to be able to optimize the infrastructure to accommodate future cargo volumes and particularly to accommodate the larger container ships expected to call.

So the way we achieve this project purpose is to provide the depth necessary at the berths to accommodate the ships, provide the adequate-sized cranes to accommodate the ships, increase the container terminal backland capacity, and increase the amp vaults so that the facility has a greater potential for plug-in.

Here is our project description. I just want to go over briefly all the colored areas, because they may be -for me with my vision, they're very hard to read. So I just
want to go over them in case they are for you.
The red area is the terminal's -- what the terminal's footprint would look like under the proposed project. The green shading, which of course is in the main channel, would be the dredging that will occur at 226 to 229; and the bright-pink shading, also in the water, would occur at 230 to 232. The yellow indicates an area currently being used by the facility under a temporary lease that will be subsumed into this lease amendment, and the blue shading is your backland improvements that will occur along with the street improvements that are necessary in that area.

So with the increase in backland, we will end up with a facility footprint of approximately 229 acres. There would be -- in terms of also improvements to the site, we would have a modified new gate complex, and the development would require the demolition of some existing structures, some street closures, and improvements to Cannery Street.

So along with that development, more specifically on the street improvement, we may be closing portions of Terminal Way, Barracuda, Tuna, and Ways Street, just within that project area, and rerouteing Terminal Way traffic to Cannery Street.

Further on the project components, we have the installation of five new amp vaults which would make a total of eight at the site.

The amendment to the lease -- as we've said, we'll extend it out to -- the amendment -- the lease would currently close in 2028. We would be extending it out to 2038, including the 25 acres that are being used at the site on a temporary basis, as well as the 23.5 acres that constitute the new backlands.

So obviously the ultimate goal, again, is to be able to be ready and accommodate larger vessels that call -- that are expected to call in the future.

So at full build-out of the project, the project will be able to accommodate approximately just short of 2.4 million TEUs per year, which is an increase of about 5 -a little over 579,000 TEUs per year. In order to accommodate that, we will have five new cranes, and we will potentially need to raise five existing cranes.

So here we are in the environmental review process, which I'm sure many of you are familiar with. But just to go over it briefly, this slide highlights where we are -- Notice of Intent; Notice of Preparation was released in 2014 with a scoping meeting held in November of 2014. The draft E.I.R./E.I.S. was released on April 20th.

And where we stand today -- on May 10 th -- this is our public hearing where we are soliciting your input on the project. A tentative time frame has been set for September of 2017 to bring this document to our Harbor Commission for
final consideration.
So project alternatives. CEQA and NEPA do require an analysis of a reasonable range of alternatives to the project that could meet the objectives of the project while potentially having less significant impacts or, even less, avoiding any impacts. So we have evaluated the following five alternatives.

We have the "No Project," and we have the "No Federal Action," which basically allow the public and decision-makers to assess the effects of approving the project versus the effects of not going forward with any project at all, where the facility would basically be left at its existing setting/condition;

The "Reduced Wharf Alternative," which is -- which would still allow for two operating berths, which is what they have now, but would leave Berth 230 to 232 and not allow for any dredging. It would remain at its existing depth; so this alternative would actually result in a lower through-put capacity than what we have with the proposed project. The "Reduced Wharf Alternative" would still allow for two operating berths but would leave 230 and --

I'm sorry. The "Backland Alternative" would not improve or relocate the gate complex and would not allow the addition of the backlands expansion area; so as a result of that, this alternative would also result in lower through-put
capacity than what could be achieved with the proposed project.

And our last alternative is an "Expanded On-Dock Rail," which includes all of the identical components of the project and can still achieve the same capacity of the project with very similar environmental effects.

So in order to assess -- and this room may understand this, but just to clarify -- before we discuss an environmental impact associated with the project, it's important to understand how environmental impacts are characterized.

So a designation of "No Impact" is what we say when we have absolutely no adverse change to an environmental resource that is identified or expected from the project.

We have a "Less-than-Significant Impact" would be identified when the project would not cause a substantial effect to the environment with or without mitigation.
"Potentially Significant" is really more of an N.O.P. term that we use to identify when we are doing an assessment of an environmental resource to determine what needs to be further analyzed.

MR. CANNON: "Notice of Preparation."
MS. TISOPULOS: I'm sorry. It's a notice of the Notice
of Preparation Initial Study. So a "Significant and Unavoidable Impact" represents an impact that will remain above a set, significant threshold, even if mitigation is imposed.

So what is a threshold of mitigation for the Harbor Department? And the U.S. Army Corps of Engineers, I should say, has also accepted the thresholds of "significant" adopted by the Harbor Department.

The threshold of significance for most of our resource areas are set and determined and utilized by the City of Los Angeles CEQA guidelines. Other thresholds, however, are established by regulatory agencies that have an expertise in a particular field, such as L.A.D.O.T. or S.C.A.Q.M.D., and in that case, we do defer to their expertise.

So through the initial study and notice of preparation process, it was determined that a number of resource areas in the draft E.I.R. would not be significantly impacted by the proposed project. So these were the environmental areas assessed but deemed less-than-significant, either with or without mitigation, and that would be esthetics, groundwater and soils, hazards, marine transportation, noise, socioeconomics, and water quality.

So this is where we stand with environmental impacts that do remain significant and unavoidable as a result of the proposed project. We identified significant impacts in the
areas of air quality, biological resources, cultural resources, greenhouse gases, and transportation. However, I would like to note that under "Air Quality," a full health-risk assessment was performed for the project and found that the cancer risk associated is less than 10 in 1 million under both our CEQA and NEPA analyses, and 10 in 1 million is the significance threshold that we use.

So environmental justice -- which for our purposes is an environmental category, but it's important to note it was found to be significant and unavoidable under NEPA. So this item is really more for your information, but there's some exiting things that are going on at the Everport Container terminal, or will be in the near future.

The terminal, along with the Harbor Department, has recently been awarded two separate grants through the California Energy Commission for demonstration projects that will test thirty pieces of equipment, including twenty zero-emission-equivalent yard tractors, eight battery-electric yard tractors, and two battery-electric top picks.

So what's exciting about this is that depending on the results of these demonstration projects, this equipment really may prove to be a feasible option in the future. Testing won't begin probably for the next 18 months, and it will last at least a 12 -month period.

So here is where we get to our submittal of public comments. As we've already stated, the public comments should be postmarked into the port or the Harbor Commission by June 5th. Written responses, as you may know, will be prepared for all comments or questions received either this evening or as well as any comments received subsequent to the hearing, and they will be included for your review in the final E.I.R./E.I.S.

And with that, I'm going to open it to public testimony. Do we have any public speakers?

Do we have one speaker?
UNIDENTIFIED VOICE: We have a few. Actually, three. MS. TISOPULOS: Okay. Can you state your name for the record.

MS. PERRELLA: Good evening. Melissa Lin Perrella with the Natural Resources Defense Counsel.

Thank you to the Port of L.A. and for the Army Corps of Engineers for having the public hearing tonight and providing a few slides. I particularly appreciated the update on some of the zero-emission technologies that will be featured at the port.

One comment that I wanted to make -- and I'm still reviewing the E.I.R. -- is I notice that there will be --

And I think one of your slides featured it.
-- an approximate increase of about 580,000
additional TEUs from the project, and, relatedly, approximately 2,200 additional daily truck trips.

I didn't see a discussion of mitigation for trucks within the E.I.R., at least upon my preliminary review, and would like the Army Corps and the Port of L.A. to provide some mitigation for trucks -- at least have a thorough consideration of it in the environmental document.

In addition, I noticed that there was, in one of the charts, a listing of approximately 130,000 TEUs that could go to peel-off yards. I know I personally have had some discussions with the Port of L.A. -- I think others have as well -- in terms of trying to create some kind of zero-emission fleet that could travel to these nearby peel-off yards. So I'm hoping that the port and the Army Corps can consider that as well. Thank you.

MS. TISOPULOS: Thank you so much.
Jesse Marquez?
MR. MARQUEZ: Hello. Jesse Marquez with the Coalition for a Safe Environment, an environmental justice organization headquartered here in Wilmington and the Harbor.

I haven't had a chance to review everything, but I did want to also suggest that we are expecting to see that there is a commitment by the port for zero-emission trucks that would be servicing the facility, and this would be the on-road trucks and fleets that could be dedicated towards
this.
Also, is there going to be a mitigation fund set up for TEU that would be able to address the off-port mitigations that would go towards the Harbor Community Benefit Foundation? So we'd like to see a commitment for that.

In terms of the environmental justice, I didn't really see or catch at this point any type of environmental justice analysis or an opportunity for environmental justice organizations and representatives to speak as to what type of mitigation could be proposed that would address environmental justice commitments.

The other thing is that there are many off-port and off-project activities that take place, such as container storage yards. Well, since the port has gone in the direction of expanding that type of business, then it forces the tenants to have to use off-port facilities, and in the last assessment that we did in Wilmington, we counted over 100 container storage yards.

Now, we don't know if some of them are legitimate because of fact that they're also a warehouse facility doing that, but we do need to have an assessment of off-port container storage yards, off-port chassis storage yards, off-port yards that also handle the true refrigeration units. I do see some where you can see them literally being stacked
there. It also appears that there is maintenance of containers going on, maintenance of trucks going on, and maintenance of the true units at these container storage yards.

Because what's happening is the fact that, you know, we have the typical truck transportation routes and destinations, but we don't have all these other off-road activities which are contributing to an underestimation of, you know, the emissions and of the environmental and community impacts.

Also, when things go into a container storage yard, some of these are the reefer types, which means that, you know, sometimes they're going to be stored there indefinitely, which is why we call them container graveyards, which means that they'll also not be evacuated of any of the HFCs, which means these are additional greenhouse gases that go.

In addition, as trucks gets older that are A.C., well, they also start emitting more greenhouse gases as they release. So we'd like to see that taken care of.

And then we'd like to also identify other types of service, like are there off-port inspection going on in Wilmington and San Pedro-Harbor City that we should be aware of. Thank you.

MS. TISOPULOS: Thank you so much.

Kathleen Woodfield.
MS. WOODFIELD: Thank you. I'm Kathleen, with a "K," Woodfield from San Pedro Peninsula Homeowners Coalition. I came here to learn about the project. I have not read it, but I found the presentation to be so skeletal and so fast that I didn't actually learn a whole lot for me to be able to comment in a meaningful manner, which I find personally to be a disappointment.

What I do -- one thing that stands out to me is that this is a project that is right along the view shed of the community. So it spreads out here in front of Ports $0^{\prime}$ Call, basically. And I don't agree that you can find an "insignificant" impact to esthetics when you are doubling the amount of cranes and raising cranes. So I would ask you to look at that again, because I don't think that's possible to have the "insignificant" impact when it's such a significant change. And even one crane is huge, never mind five.

So -- well, so to increase the backlands, I don't know if we would be able to see that really much from the community side, but that is a tourist area -- the Ports o' Call -- and so any esthetic impact would be significant, and so I don't want that to be underrated.

And as far as adding anything additional, that has already been said. That's about it, but I would like to say again that $I$ was expecting more substantive information, and
then the information that was substantive, it went by so fast that I couldn't take notes on it or really take it in.

But I'm -- for instance, I don't even know how much increase in acres you're -- is it a 23-acre increase? I'm not sure. But, anyway --

MR. CANNON: 23.5
MS. WHITFIELD: Okay. And the other thing I don't understand is how if you're doubling the cranes, how come you're not doubling the capacity, the through-put capacity. So that's a mathematical question I have. It doesn't really make sense to me. Thank you.

MS. TISOPULOS: Thank you.
Okay. I don't know where he went.
I might say your last name wrong. David Therrien? I'm sorry if $I$ just ruined your last name.

MR. THERRIEN: My name is David Therrien. I live at 111 North Harbor Boulevard, directly across the street from -from the Evergreen terminal. I'm concerned about a few things.

I guess the first is sound that comes out. I live down -- my art studio is right across the street, like I said. I hear container activity all night long -- trucking activity; backup -- kind of backup alarms -- things like that -- constantly. I actually can hear them all the way from the China Shipping terminal, but a lot of them are
directly from the Evergreen terminal. For me to hear them where I'm at, they're over the decibel limit that's allowable under the regular code.

And so I would like to see something to kind of mitigate some of that sound, whether the back-up alarms and things like that are minimized at night, say after 10:00 or 11:00 o'clock at night and then don't start again until the morning.

They drop quite a few containers. They're smashing them as they're either loading or unloading. I'm not sure if there's anything that they can do to change that, but I'm concerned about that becoming absolutely constant at night.

Number two, I've been taking dust samples from my yard, which is right across the street. I have an incredibly high diesel-particulate dust and fumes where I'm at, which is -- I mean, it's, again, like I'm saying, right across the street. But the Projects are right behind me, and so they also are breathing in all that dust, and it's depositing on everybody in the neighborhood.

So I want to know how that can be mitigated, whether that's being tested at all in the areas that people are living right across the street and also would like to hear more about how they can change the trucking that's going on over there.

There's no reason -- I mean, in Europe in a lot of
the ports now, all of the vehicles are electric, and why we have diesel trucks still running at our port escapes me. It just seems that if we want to show that we really do have the best port in America, we have to switch over to electric trucks. Thank you.

MS. TISOPULOS: Thank you so much.
Do we have any other public testimony?
Well, seeing none, I would really truly like to thank you all for being here and taking time out of your evening, and I would like to now then officially close the hearing. Thank you.
(Whereupon the hearing was adjourned at 6:33 P.M.)

SS.
CALIFORNIA )

I, Jamie L. Apodaca, Certified Shorthand Reporter in and for the State of California, do hereby certify:

That the above hearing was taken down by me in stenographic form and thereafter reduced to computerized transcription. I further certify the foregoing hearing is a full, true, and correct transcript of my stenographic notes and that dismantling, unsealing, or unbinding of this transcript will render this certificate null and void.

I further certify that I am neither counsel for nor related to nor employed by any of the parties in said action; and furthermore that I am not a relative or employee of any attorney or counsel employed by the parties hereto or in anywise interested in the outcome thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this 19th day of May, 2017.


### 2.3.7.1 Everport Public Hearing Transcript (PH)

## Response to Comment PH1-1

The comment is noted. Please see Response to Comment NRDC-3 for information responding to this comment.

## Response to Comment PH1-2

The comment is noted. Please see Response to Comment NRDC-3 for information responding to this comment.

## Response to Comment PH2-1

The comment is noted. Please see Master Response 2: Zero-Emission Technologies and Response to Comments CFSE-11, CFSE-15, CFSE-21, and CFSE-22 for information responding to this comment.

## Response to Comment PH2-2

The comment is noted. Please see Response to Comments CFSE-19 and CFSE-27 for information responding to this comment.

## Response to Comment PH2-3

The comment is noted. Chapter 5, Environmental Justice, of the Draft EIS/EIR, evaluates whether the proposed Project and its alternatives would result in disproportionately high and adverse human health or environmental impacts on minority populations and/or low-income populations in the local communities surrounding the Port. The environmental justice analysis complies with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, and the Council on Environmental Quality's (CEQ) Guidance for Environmental Justice Under NEPA (CEQ, 1997), which requires federal agencies to assess the potential for their actions to have disproportionately high and adverse environmental and health impacts on minority populations and/or low-income populations. The environmental assessment in Chapter 5 is also consistent with California state law regarding environmental justice. In addition, please see Response to Comments CFSE-19, CFSE-24, and CFSE-25 for information responding to this comment.

## Response to Comment PH2-4

The comment is noted. Please see Response to Comment CFSE-7 for information responding to this comment.

## Response to Comment PH2-5

The comment is noted. The Everport Container Terminal does not operate off-site container storage yards in the Wilmington Community, and would not store refrigerated containers at such yards under any of the project alternatives. There may be third-party facilities that purchase or rent used shipping containers and refrigerated containers, and if so, they would be responsible for properly managing refrigerants and conducting their business in accordance with local ordinances.

## 1 Response to Comment PH2-6

The comment is noted. The Ports of Los Angeles and Long Beach have implemented the Clean Truck Program to address the issue of higher emission trucks, including mobile coolant emissions, hauling containers through the Port Complex. The Port will be advancing the Clean Truck Program (per the 2017 CAAP update) to further phase out older trucks and transition to clean trucks and zero-emission trucks. The 2017 Draft CAAP Update indicates that starting in 2018, new trucks entering the Port's drayage truck registry must have a 2014 model year engine or newer, starting when the State's near-zero-emission heavyduty engine standard takes effect new truck entering the terminal must meet this standard and all other trucks will be charged a rate to enter except those that meet the near-zero standard. Note that these requirements will be applied port-wide. Further, the 2017 Draft CAAP update establishes GHG reduction target from port-related sources of 80 percent below 1990 levels by 2050. Since the 2017 CAAP Update has not yet been formally adopted, no reduction credits are taken for the policies and goals included in the update (POLA and POLB, 2017).

## Response to Comment PH2-7

The comment is noted. Regarding identifying other types of services, such as off-port inspections, because those sources are not Project components, they are not included in the Draft EIS/EIR.

## Response to Comment PH3-1

The comment is noted. As detailed in Section 3.1.4.1 (beginning on page 3.1-14) in Chapter 3.1, Aesthetics, of the Draft EIS/EIR, an assessment of visual and aesthetic changes under the proposed Project was conducted using federal, state, and local guidance, and visual simulations. Federal Highway Administration guidance was used to assess and analyze the character, quality, and sensitivity of views under existing and proposed Project conditions in consideration of the CEQA and NEPA requirements and the City of Los Angeles CEQA Thresholds Guide, which are further described below. A visual survey was conducted of the Port and neighboring areas to establish baseline (existing) visual and aesthetic conditions at three viewpoints to represent views from the adjacent community and Port's O'Call area. Existing and simulated images of the Project site and surrounding areas from these viewpoints are depicted in Figures 3.1-2 through 3.1-4. The simulated images illustrate how the Project site would appear after adding and modifying (raising) cranes at the Everport Container Terminal. The simulations involved the creation of crane models, which were based on the existing dimensions and color of the existing cranes at the Everport Container Terminal. The visual analysis determined that neither the proposed Project nor any of the alternatives would result in a significant impact on aesthetic resources (please refer to Section 3.1 for the detailed analysis). The comment does not identify any specific deficiencies or contest the adequacy of the Draft EIS/EIR; therefore, no further response is required (PRC 21091(d); State CEQA Guidelines Section 15204(a); 40 CFR 1503.4 (a)(5)).

## Response to Comment PH3-2

The comment is noted. The commenter is incorrect that the proposed Project would double the number of cranes. As described throughout the Draft EIS/EIR, the existing terminal operates with eight 100 -foot gauge wharf gantry cranes. The proposed Project proposes to add five new 100 -foot gauge wharf gantry cranes and the raising of up to five of the existing operating cranes, for a total of 13 cranes (refer to Table 3.1-1 in Section 3.1 of the Draft EIS/IR for details on the existing and proposed cranes. The terminal's capacity under the proposed Project would increase from 1,818,000 TEUs per year to 2,379,525 TEUs per year (see Chapter 2 of the Draft EIS/EIR), or an increase of 561,525 TEUs (an approximately 31 percent increase). Several key factors play a role in determining a container terminal's capacity, including the amount of backlands (contributes to a terminal's ability to store and transfer containers), the wharf length (limits the
length of vessels that can berth), the berth depths (limits the draft of the vessels that can berth), crane numbers (contributes to the loading and unloading of vessels), and crane size (contributes to the vessel size limits that can be accommodated). Other factors that also contribute to a terminal's throughput capacity include the performance rating of the cranes (such as lifts per hour). Because there are many different combinations of these factors, the number or cranes is not a sole determiner of a terminal's capacity.

## Response to Comment PH4-1

The comment is noted. Receptor location LT-3 is representative of the commenter's studio due to proximity, and the Draft EIS/EIR describes the existing ambient noise levels at this receptor in Section 3.10 (page 3.10-14 and 3.10-15). The evaluation of operational noise from the proposed Project under Impact NOI-3 starting on page 3.10-30 of the Draft EIS/EIR evaluates the anticipated noise increase at receptor LT-3 and determined that the increase would not exceed the significance threshold level, in part due to attenuation with distance (the terminal is approximately 1,800 feet from the commenter's studio) and given the existing ambient noise levels at the receptor location. It should be noted that although the terminal sounds can be heard at the commenter's location, the resulting sound level at the receptor location would not exceed the significance threshold level and would not require mitigation.

## Response to Comment PH4-2

The comment is noted. Regarding the comment about diesel particulates in samples, the receptor location is adjacent to Harbor Boulevard, which is a main roadway in the Port area that is used by diesel powered vehicles, and in close proximity to the Main Channel, which is used by diesel powered marine vessels. Because of this and the nature of Port area and vicinity, diesel particulate matter present in the area. The Port is implementing the 2010 CAAP. The Port, in conjunction with the Port of Long Beach, has implemented the Clean Truck Program to improve air quality in the area and region, and will continue efforts to improve air quality through the 2017 CAAP Update, which was released recently and is scheduled for a public hearing in late 2017. In addition, please see Master Response 1 - Feasible Mitigation Guidance and Applicability, Master Response 2: Zero-Emission Technologies, and the response to PH2-6 above.

Regarding the comment that the ports in Europe use electric trucks, the Port is not aware of any widely used heavy duty electric truck that services marine terminals in Europe. There have been activities seeking to develop electric on-road trucks using catenary systems in Europe
(https://www.scania.com/group/en/worlds-first-electric-road-opens-in-sweden/); however, these activities would qualify more as demonstration projects due to the short length of electric-powered roadway. Further, such activities would require development and demonstration within the Port area before such a system can be considered. In addition, please see Master Response 2: Zero- Emission Technologies.

### 2.4 References

Following are additional materials referenced in the Section 2.3, Response to Comments, above:

- American Maglev Technology, Inc. 2008 Presentation to Port of Los Angeles. January 17. Available:
https://www.portoflosangeles.org/Board/2008/January/011708_pres_maglev.pdfhttps:// www.portoflosangeles.org/Board/2008/January/011708_pres_maglev.pdf. Accessed August 22, 2017.
- Council on Environmental Quality (CEQ). 1997. Environmental Justice; Guidance under the National Environmental Policy Act. Executive Office of the President, Washington, DC. December 10, 1997 (released July 1998).
- Los Angeles Department of Water and Power (LADWP). 2016. Power Integrated Resources Plan. December. Available:
https://www.ladwp.com/ladwp/faces/wcnav_externalId/a-p-doc?_adf.ctrlstate=zf4mf87i4_4\&_afrLoop=204372440300269. Accessed August 21, 2017.
- Los Angeles City Harbor Department (LAHD). 2016. Any soil import will adhere to LAHD's 2016. Environmental Guidance for Import Soil Requirements. June.
- —_ 2016. Final Initial Study/Negative Declaration Pasha Stevedoring and Terminals Lease Renewal Project. March.
- 2010. Zero Emission Container Mover System Request for Concepts and Solutions: Evaluation Results. July 29
- 2008. Port of Los Angeles. Sustainability Assessment and Plan Formation. June. Available: https://www.portoflosangeles.org/DOC/REPORT_Sustainability_Assessment_Plan_Fo rmulation.pdf. Accessed August 21, 2017.
- Mercator International LLC and Oxford Economics. 2016. San Pedro Bay Long-term Unconstrained Cargo Forecast - Final Report for the Port of Los Angeles and Port of Long Beach. February.
- Ports of Los Angeles and Port of Long Beach (POLA and POLB). 2017. San Pedro Bay Ports Clean Air Action Plan 2017 DRAFT Final, July 2017. Available at: https://www.portoflosangeles.org/pdf/CAAP_2017_Draft_Document-Final.pdf. Accessed August 15, 2017.
- POLA and POLB. 2017. San Pedro Bay Ports Clean Air Action Plan Fact Sheet. July 12. Available: http://www.cleanairactionplan.org/documents/clean-air-action-plan-2017-factsheet-7-12-
17.pdfhttp://www.cleanairactionplan.org/documents/clean-air-action-plan-2017-factsheet-7-12-17.pdf. Accessed August 22, 2017.
- _ 2011. Roadmap for Moving Forward with Zero Emission Strategies at the Ports of Long Beach and Los Angeles. August. Available:
http://www.cleanairactionplan.org/documents/zero-emissions-roadmap-technicalreport.pdf. Accessed August 21, 2017.
- Ramboll Environ. 2015. DRAFT Sampling and Analysis Report for Berths 226-232 in Support of the Everport Container Terminal Improvements Project, Los Angeles Harbor. Prepared for the Port of Los Angeles, San Pedro, CA. July 2015.
- SCAQMD. 2016. Personal communication, Philip M. Fine, Ph.D., Deputy Executive Direct, August 24, 2016. Letter to Mr. Chris Cannon, Director of
- Starcrest Consulting Group. 2015. - POLA CEQA Terminal Leve Container Ship Forecast for Tier 3 Engines - Final. August. 2015 Everport Container Terminal Data.
- TIAX LLC. 2011. Technology Status Report - Zero Emission Drayage Trucks. Prepared for the Port of Long Beach and Port of Los Angeles. June.
- UCR, Center for Environmental Research and Technology. 2017. TSR Current Research webpage. Available:
http://www.cert.ucr.edu/research/tsr/cr.htmlhttp://www.cert.ucr.edu/research/tsr/cr.html . Accessed August 21, 2017.
- U.S. Department of Transportation (USDOT). 2016. Freight Advanced Traveler Information System (FRATIS) Impact Assessment - Final Report. January 26. Available: https://ntl.bts.gov/lib/57000/57000/57031/FHWA-JPO-16-225.pdf. Accessed August 30, 2017.
- U.S. Environmental Protection Agency (USEPA). 2017. Revisions to the Guideline on Air Quality Models: Enhancements to the AERMOD Dispersion Modeling System and Incorporation of Approaches to Address Ozone and Fine Particulate Matter. 40 CFR Part 51. January 17.
- _ Region IX and U.S. Army Corps of Engineers (USACE) Los Angeles District. 2005. Final Environmental Impact Statement (EIS) Site Designation of the LA-3 Ocean Dredged Material Disposal Site off Newport Bay, Orange County, California. With the Assistance of RECON Environmental. July.
- —_ 1988. Final Environmental Impact Statement for the Los Angeles/Long Beach (LA-2) Ocean Dredged Material Disposal Site Designation. July.


### 3.1 Introduction

This chapter of the document addresses modifications to the Draft EIS/EIR for the Berths 226-232 [Everport] Container Terminal Project (proposed Project) at the Port of Los Angeles (Port). It presents all revisions related to public comments, as determined necessary by the lead agencies, for the following areas of the document:

- Executive Summary
- Section 3.2, Air Quality and Meteorology
- Section 3.5, Greenhouse Gas Emissions
- Section 3.6, Ground Transportation
- Section 3.10, Noise
- Chapter 4, Cumulative Analysis
- Chapter 6, Comparison of Alternatives
- Appendix B1, Air Quality Regulations/Methodology and Air Quality and GHG Emission
- Appendix B.4, Draft General Conformity Determination
- Appendix F2, Evaluation of Dredged Material Disposal Option
- Additional Appendix - Investigation of 2033 HRA Start Year for the Everport Container Terminal Improvements Project
Any revisions to supporting documentation are also presented. The numbering format from the Draft EIS/EIR is maintained in the sections presented here. Only sections that have revisions based on public comment are included, and sections that have no revisions are not included. Readers are referred to the Draft EIS/EIR to view complete sections.

It should be noted that most of the changes were editorial in nature. Some mitigation measures were revised in response to agency requests. None of the edits result in changes to significance findings.

As provided in Section 15088(c) of the State CEQA Guidelines, responses to comments may take the form of a revision to a Draft EIR or may be separate section in the Final EIR. As provided in 40 CFR 1503.4(c), to comply with NEPA, responses to comments may take the form of revisions to a Draft EIS, or if changes to the EIS in responses to comments are minor, then changes may be provided on errata sheets attached to the Draft

EIS. This chapter complies with the latter of these two guidelines and provides changes to the Draft EIS/EIR in revision-mode text (i.e., deletions are shown with strikethrough and additions are shown with underline). These notations are meant to provide clarification, corrections, or minor revisions as needed as a result of public comments or because of changes in the proposed Project since the release of the Draft EIS/EIR.

### 3.2 Changes to the Draft EISIEIR

The following changes to the text as presented below are incorporated into the Final EIS/EIR:

### 3.2.1 Changes Made to the Executive Summary Section ES.5.2, Pages ES-27 to 37, Table ES-3

The rows under 3.2 Air Quality and Meteorology are revised, as follows:

## Table ES-3: Summary of Potential Significant Impacts and Mitigation for the Proposed Project and Alternatives

### 3.2 Air Quality and Meteorology

|  | AQ-1: The proposed Project would result in constructionrelated emissions that exceed an SCAQMD threshold of significance in Table 3.2-6. | CEQA: Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. Overlapping construction and operations would be significant for $\mathrm{NO}_{x}$ in 2019. <br> NEPA: Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. Overlapping construction and operations would be significant for $\mathrm{PM}_{2.5}$, NOx, and VOC in 2019. | MM AQ-1: Harbor Craft Used During Construction. <br> MM AQ-2: On-Road Trucks Used during Construction. <br> MM AQ-3: Non-Road Construction Equipment. <br> MM AQ-4: Cargo Ships Used During Construction. <br> MM AQ-5: General Mitigation Measure. | CEQA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. <br> Overlapping construction and operations would be significant and unavoidable for NOx in 2019. <br> NEPA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. <br> Overlapping construction and operations would be significant and unavoidable for NOx and VOC in 2019. |
| :---: | :---: | :---: | :---: | :---: |
|  | AQ-2: Proposed Project construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7. | CEQA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{NO}_{2}$ (federal 1-hour average) and PM10 (24-hour and annual average). | MM AQ-1 through MM AQ-5 | CEQA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average) and $\mathrm{PM}_{10}$ (24-hour and annual average). |
|  |  | NEPA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{NO}_{2}$ (federal 1-hour average). |  | NEPA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). |


|  | AQ-3: The proposed Project would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.2-8. | CEQA: Operations would be significant for NOx in 2019, 2033, and 2038 and CO and VOC in 2033 and 2038. <br> NEPA: Operations would be significant for NOx in 2019, 2026, 2033, and 2038; VOC in 2026, 2033, and 2038; and CO and $\mathrm{PM}_{2.5}$ in 2033 and 2038. | MM AQ-6: Vessel Speed Reduction Program (VSRP). <br> MM AQ-7: Alternative Maritime Power (AMP). <br> LM AQ-1: Replacement of Equipment and Review of New Technology and Regulations. <br> LM AQ-2: Priority Access System. | CEQA: Operations would be significant and unavoidable for CO and VOC in 2033 and 2038. <br> NEPA: Operations would be significant and unavoidable for NOx in 2026, 2033, 2038 and CO and VOC in 2033 and 2038. |
| :---: | :---: | :---: | :---: | :---: |
|  | AQ-4: Proposed project operations would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-9. | CEQA: Operations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24-hour average). | MM AQ-6 and MM AQ-7 | CEQA: Operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24-hour average). |
|  |  | NEPA: Operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual averages). |  | NEPA: Operations would be significant and unavoidable for $\mathrm{PM}_{10}$ (24-hour and annual averages). |
|  | AQ-5: The proposed Project would not generate on-road traffic that would contribute to an exceedance of the 1-hour or 8-hour CO standards. | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant |  | NEPA: Less than significant |
|  | AQ-6: The proposed Project would not create an objectionable odor at the nearest sensitive receptor. | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant |  | NEPA: Less than significant |
|  | AQ-7: The proposed Project would expose receptors to significant levels of TACs. | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Construction and operation would be significant for individual cancer risk and population cancer burden. | MM AQ-1 through MM AQ-7, LM AQ-1, and LM AQ-2 | NEPA: Less than significant |
|  | AQ-8: The proposed Project would not conflict with or obstruct implementation of an applicable AQMP. | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant. |
|  |  | NEPA: Less than significant |  | NEPA: Less than significant |


|  | AQ-1: Alternative 1 would result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.2-6. | CEQA: Construction would be significant for NOx in 2018. Overlapping construction and operations would be significant for NOx in 2018 and 2019. | MM AQ-1 through MM AQ-5 | CEQA: Less than significant. |
| :---: | :---: | :---: | :---: | :---: |
|  |  | NEPA: No impact | Mitigation is not applicable | NEPA: No impact |
|  | AQ-2: Alternative 1 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7. | CEQA: Construction would be significant for construction $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant for $\mathrm{PM}_{10}$ (annual average). | MM AQ-1 through MM AQ-5 | CEQA: Construction would be significant and unavoidable for construction $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{PM}_{10}$ (annual average). |
|  |  | NEPA: No impact. | Mitigation is not applicable | NEPA: No impact. |
|  | AQ-3: Alternative 1 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.2-8. | CEQA: Operations would be significant for $\mathrm{NO}_{x}$ in 2019, 2033, and 2038 and CO and VOC in 2033 and 2038. | MM AQ-6 and MM AQ-7 | CEQA: Operations would be significant and unavoidable for CO and VOC in 2033 and 2038. |
|  |  | NEPA: No impact | Mitigation is not applicable | NEPA: No impact. |
|  | AQ-4: Alternative 1 operations would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-9. | CEQA: Operations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and PM 2.5 (24-hour average). | MM AQ-6 and MM AQ-7 | CEQA: Operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24-hour average). |
|  |  | NEPA: No impact | Mitigation is not applicable | NEPA: No impact |
|  | AQ-5: Alternative 1 would not generate on-road traffic that would contribute to an exceedance of the 1-hour or 8-hour CO standards. | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: No impact | Mitigation is not applicable | NEPA: No impact |
|  | AQ-6: Alternative 1 would not create an objectionable odor at the nearest sensitive receptor. | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: No impact | Mitigation is not applicable | NEPA: No impact |
|  | AQ-7: Alternative 1 would not expose receptors to significant levels of TACs. | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: No impact | Mitigation is not applicable | NEPA: No impact |
|  | AQ-8: Alternative 1 would not conflict with or obstruct implementation of an applicable AQMP. | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant | Mitigation is not applicable | NEPA: Less than significant |


|  | AQ-1: Alternative 2 would not result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.2-6. | CEQA: No impact | CEQA: No mitigation is required | CEQA: No impact |
| :---: | :---: | :---: | :---: | :---: |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-2: Alternative 2 construction would not result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7. | CEQA: No impact | CEQA: No mitigation is required | CEQA: No impact |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-3: Alternative 2 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.2-8. | CEQA: Operations would be significant for NOx in 2019, 2033, and 2038 and CO and VOC in 2033 and 2038. | CEQA: Mitigation is not applicable | CEQA: Operations would be significant and unavoidable for $\mathrm{NO} x$ in 2019,2033, and 2038 and CO and VOC in 2033 and 2038. |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-4: Alternative 2 operations would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-9. | CEQA: Operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual averages). | CEQA: Mitigation is not applicable | CEQA: Operations would be significant and unavoidable for $\mathrm{PM}_{10}$ (24-hour and annual averages). |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-5: Alternative 2 would not generate on-road traffic that would contribute to an exceedance of the 1-hour or 8-hour CO standards. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-6: Alternative 2 would not create an objectionable odor at the nearest sensitive receptor. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-7: Alternative 2 would not expose receptors to significant levels of TACs. | CEQA: Less than significant | CEQA: Mitigation is not applicable | CEQA: Less than significant |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-8: Alternative 2 would not conflict with or obstruct implementation of an applicable AQMP. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |


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|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
| :---: | :---: | :---: | :---: | :---: |
|  | AQ-1: Alternative 3 would result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.2-6. | CEQA: Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. Overlapping construction and operations would be significant for $\mathrm{NO}_{x}$ in 2019. | MM AQ-1 through MM AQ-5 | CEQA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. Overlapping construction and operations would be significant and unavoidable for NOx in 2019. |
|  |  | NEPA: Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. Overlapping construction and operations would be significant for NOx and VOC in 2019. |  | NEPA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. <br> Overlapping construction and operations would be significant and unavoidable for NOx and VOC in 2019. |
|  | AQ-2: Alternative 3 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7. | CEQA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual average). | MM AQ-1 through MM AQ-5 | CEQA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{PM}_{10}$ (24hour and annual average). |
|  |  | NEPA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{NO}_{2}$ (federal 1-hour average). |  | NEPA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). |
|  | AQ-3: Alternative 3 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.2-8. | CEQA: Operations would be significant for $\mathrm{NO}_{x_{-}} \mathrm{CO}$ and VOC in 2033 and 2038. | MM AQ-6, MM AQ-7, LM AQ-1, and LM AQ-2 | CEQA: Operations would be significant and unavoidable for CO and VOC in 2033 and 2038. |


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|  |  | NEPA: Operations would be significant for NOx in 2019, 2026, 2033, and 2038; PM2.5, CO, and VOC in 2033 and 2038. |  | NEPA: Operations would be significant and unavoidable for NOx in 2026, 2033, and 2038 and CO in 2033 and 2038. |
| :---: | :---: | :---: | :---: | :---: |
|  | AQ-4: Alternative 3 operations would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-9. | CEQA: Operations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24-hour average). | MM AQ-6 and MM AQ-7 | CEQA: Operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24-hour average). |
|  |  | NEPA: Operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual averages). |  | NEPA: Operations would be significant and unavoidable for $\mathrm{PM}_{10}$ (24-hour and annual averages). |
|  |  | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant |
|  | CO standards. | NEPA: Less than significant |  | NEPA: Less than significant |
|  | ot create an objectionable odor at | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant |  | NEPA: Less than significant |
|  | AQ-7: Alternative 3 would expose receptors to significant | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Construction and operation would be significant for individual cancer risk. | MM AQ-1 through MM AQ-5, LM AQ-1, and LM AQ-2 | NEPA: Less than significant |
|  | AQ-8: Alternative 3 would not conflict with or obstruct | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant. |
|  | pid | NEPA: Less than significant |  | NEPA: Less than significant |
|  | AQ-1: Alternative 4 would result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.2-6. | CEQA: Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. Overlapping construction and operations would be significant for NO x in 2019. | MM AQ-1 through MM AQ-5 | CEQA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. Overlapping construction and operations would be significant and unavoidable for NOx in 2019. |


|  |  | NEPA: Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. Overlapping construction and operations would be significant for $\mathrm{NO} \times$ and VOC in 2019 |  | NEPA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. Overlapping construction and operations would be significant and unavoidable for NOx in 2019. |
| :---: | :---: | :---: | :---: | :---: |
|  | AQ-2: Alternative 4 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7. | CEQA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{PM}_{10}$ (annual average). | MM AQ-1 through MM AQ-5 | CEQA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{PM}_{10}$ (annual average). |
|  |  | NEPA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{NO}_{2}$ (federal 1-hour average). |  | NEPA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). |
|  | AQ-3: Alternative 4 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.2-8. | CEQA: Operations would be significant for $\mathrm{NO}_{x}$-and CO in 2033 and 2038. | MM AQ-6, MM AQ-7, LM AQ-1, and LM AQ-2 | CEQA: Operations would be significant and unavoidable for CO in 2033 and 2038. |
|  |  | NEPA: Operations would be significant for NOx in 2019, 2026, 2033, and 2038. |  | NEPA: Operations would be significant and unavoidable for NOx in 2026, 2033, and 2038. |
|  | AQ-4: Alternative 4 operations would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-9. | CEQA: Operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual averages). | MM AQ-6 and MM AQ-7 | CEQA: Operations would be significant and unavoidable for $\mathrm{PM}_{10}$ (24-hour and annual averages). |



|  | AQ-2: Alternative 5 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7. | CEQA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal and state 1-hour average). Overlapping construction and operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual average). <br> NEPA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{NO}_{2}$ (federal 1-hour average). | MM AQ-1 through MM AQ-5 | CEQA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{PM}_{10}$ (24hour and annual average). <br> NEPA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). |
| :---: | :---: | :---: | :---: | :---: |
|  | AQ-3: Alternative 5 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.2-8. | CEQA: Operations would be significant for NO x in 2019, 2033, and 2038 and CO and VOC in 2033 and 2038. | MM AQ-6, MM AQ-7, LM AQ-1, and LM AQ-2 | CEQA: Operations would be significant and unavoidable for CO and VOC in 2033 and 2038. |
|  |  | NEPA: Operations would be significant for NOx in 2019, 2026, 2033, and 2038; VOC in 2026, 2033, and 2038; and $\mathrm{PM}_{2.5}$ and CO in 2033 and 2038. |  | NEPA: Operations would be significant and unavoidable for NOx in 2026, 2033, 2038 and CO and VOC in 2033 and 2038. |
|  | AQ-4: Alternative 5 operations would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-9. | CEQA: Operations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average), PM10 (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24-hour average). | MM AQ-6 and MM AQ-7 | CEQA: Operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24-hour average). |
|  |  | NEPA: Operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual averages). |  | NEPA: Operations would be significant and unavoidable for $\mathrm{PM}_{10}$ (24-hour and annual averages). |
|  | AQ-5: Alternative 5 would not generate on-road traffic that | CEQA: Less than significant | No mitigation is required | CEQA: Less than significant |



## Section ES.5.2.4, Pages ES-58 to ES-59

Revise mitigation measures MM AQ-2, MM AQ-3, MM AQ-5, and MM AQ-7 as follows:

MM AQ-2: On-road Trucks Used during Construction. On-road trucks shall comply with EPA 2010 on-road emission standards or better, unless the contractor ean reasomably demonstrate provides a written finding consistent with project contract or lease management requirements and obtains written approval from the Lead Agency that such equipment is unavailable to the satisfaction of LAHD.

MM AQ-3: Non-Road Construction Equipment (except vessels, harbor craft, on-road trucks, and dredging equipment). All non-road construction equipment greater than 50 hp must meet EPA Tier 4 emission standards, unless the contractor ean reasonably demonstrate provides a written finding consistent with project contract or lease management requirements and obtains written approval from the Lead Agency that such equipment is unavailable to the satisfaction of LAHB.

MM AQ-5: General Construction Mitigation Measure. All dredging equipment must be electric; however, this is subject to availability of the equipment. For MM AQ-1 through MM AQ-4, if a CARB-certified technology becomes available that is as good as or better than the existing measure in terms of emissions performance, the technology could replace the existing technology if approved by LAHD.

MM AQ-7: Alternative Maritime Power (AMP). By 2020 or upon substantial completion of construction, $85 \underline{90}$ percent of Evergreen ships calling at the Everport Terminal must use AMP. By 2026, 95 percent of all ship calls at the Everport Container Terminal must use AMP or approved equivalent under the CARB Shore-Power Regulation. The equivalent alternative technology must, at a minimum, meet the emissions reductions that would be achieved from AMP.

## Section ES.5.2.4, Page ES-59

Revise the footnote for mitigation measure MM BIO-1, as follows:
MM BIO-1: Protect Marine Mammals. Although it is expected that marine mammals will voluntarily move away from the area at the commencement of the vibratory or "soft start" of pile driving activities, as a precautionary measure, pile driving activities occurring as part of the sheet pile and king pile installation will include establishment of level B (harassment) and level A (injury) safety zones by a qualified marine mammal professional, and the area surrounding the operations (including the safety zones) will be monitored for marine mammals by a qualified marine mammal observer. ${ }^{21}$

The pile driving site will move with each new pile; therefore, the safety zones will move accordingly.

[^20]
## Section ES.5.2.4, Page ES-60

Revise mitigation measure MM NOI-2, as follows:
MM NOI-2: Utilize Temporary Noise Attenuation Curtain Adjacent to Pile Driving Equipment. If under MM NOI-1 the reduced pile driving noise exceeds 103 dBA at 50 feet from the pile driver, uUtilize temporary noise attenuation curtain suitable for pile driving equipment as needed. This noise attenuation device should be installed directly between the equipment and the nearest noise sensitive receptor to the construction site.

## Section ES.5.2.5, Page ES-61

Revise lease measure LM GHG-1, as follows:
LM GHG-1: GHG Credit Fund. Proposed Project GHG emissions are 278,70899,812 metric tons of CO2e above the CEQA Baseline in the peak year of operations in 2038. They exceed the 10,000 metric ton CO2e significance threshold by 268,70899,856 metric tons. Because operational GHG emissions exceed the significance threshold with the incorporation of all feasible mitigation measures, LAHD shall establish a carbon offset fund, which may be accomplished through a Memorandum of Understanding with the California Air Resources Board or another appropriate entity, to mitigate project GHG impacts to the maximum extent feasible. The fund shall be used for GHG-reducing projects and programs on Port of Los Angeles property. It shall be the responsibility of the Tenant to contribute to the fund. Fund contribution shall be the equivalent of 1 percent of the minimum annual guarantee (MAG) at the time that project construction will commence. This amount will be approximately $\$ 300,000 \$ 250,000$, payable upon substantial completion of Project construction. This amount is appropriate because it takes into account the tenant's actual container throughput and assesses a fee in correlation with the facility's GHG $\$ 250,000$ has been identified as the maximum feasible-contribution level. taking into account the cost of the proposed Project, including en-site GHG reducing mitigation measures that the tenant will be required to implement (LED high mast lighting and solar panels over the employee parking lot). If LAHD is unable to establish the fund within a reasonable period of time, the Tenant shall instead purchase credits from an approved GHG offset registry in the amount of approximately $\$ 300,000 \$ 250,000$.

## Section ES.5.2.6, Page ES-64

Revise the first bullet under "Air Quality", as follows

## Air Quality

- Although Alternative 2 does not include construction, operational emissions would exceed SCAQMD significance thresholds for NO $_{x}$ in 2019, 2033, and 2038; and for CO and VOC in 2033 and 2038 under CEQA. Operational emissions from Alternative 2 would also result in the exceedance of ambient threshold $\mathrm{PM}_{10}$. These impacts would combine with impacts from concurrent related projects, which would already be cumulatively significant. As a result, after mitigation, Alternative 2 would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact for $\mathrm{NO}_{\mathrm{x}}, \mathrm{CO}, \mathrm{VOC}$ and $\mathrm{PM}_{10}$ under CEQA.


## Section ES.5.2.6, Pages ES-64 to ES-65

Add the following between the second bullet and third bullet under "Air Quality", as follows:

- Alternative 3 would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact for CO and VOC emissions in 2033 and 2038 under CEQA, and for $\mathrm{NO}_{\underline{x}}$ in 2026, 2033, and 2038 and CO in 2033 and 2038 under NEPA.


### 3.2.2 Changes Made to Section 3.2, Air Quality and Meteorology

## Section 3.2.4.5, Pages 3.2-32 to 3.2-33

Revise mitigation measures MM AQ-2, MM AQ-3, and MM AQ-5, as follows:
MM AQ-2: On-road Trucks Used during Construction. On-road trucks shall comply with EPA 2010 on-road emission standards or better, unless the contractor ean reasenably demenstrate provides a written finding consistent with project contract or lease management requirements and obtains written approval from the Lead Agency that such equipment is unavailable to the satisfaction of LAHD.

MM AQ-3: Non-Road Construction Equipment (except vessels, harbor craft, on-road trucks, and dredging equipment). All non-road construction equipment greater than 50 hp must meet EPA Tier 4 emission standards, unless contractor ean reasonably demonstrate provides a written finding consistent with project contract or lease management requirements and obtains written approval from the Lead Agency that such equipment is unavailable to the satisfaction of LAHB.

MM AQ-5: General Construction Mitigation Measure. All dredging equipment must be electric; however, this is subject to availability of the equipment. For MM AQ-1 through MM AQ4, if a CARB-certified technology becomes available that is as good as or better than the existing measure in terms of emissions performance, the technology could replace the existing technology if approved by LAHD.

Section 3.2.4.5, Pages 3.2-46 to 3.2-49, Table 3.2-20
Revise Table 3.2-20, as follows:

Table 3.2-20: Peak Daily Operational Emissions — Proposed Project (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM 10 | PM 2.5 | NOx | SOx | CO | VOC | PM 10 | PM 2.5 | NOx | SOx | CO | VOC |
| Year 2019 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 127 | 119 | 7,113 | 146 | 834 | 480 | 111 | 105 | 6,068 | 118 | 779 | 460 |
| Ships: Aux Engines and Boilers | 42 | 40 | 1,695 | 101 | 154 | 61 | 35 | 33 | 1,345 | 90 | 123 | 49 |
| AMP Electricity Use | 1 | 1 | 10 | 4 | 5 | 0 | 2 | 2 | 17 | 7 | 8 | 0 |
| Tugboats | 2 | 2 | 63 | 0 | 134 | 10 | 2 | 2 | 63 | 0 | 134 | 10 |
| Trucks | 164 | 53 | 2,664 | 5 | 235 | 73 | 164 | 53 | 2,664 | 5 | 235 | 73 |
| Line Haul Locomotives | 27 | 25 | 1,099 | 1 | 284 | 44 | 27 | 25 | 1,099 | 1 | 284 | 44 |
| Switch Locomotives | 0 | 0 | 16 | 0 | 5 | 1 | 0 | 0 | 16 | 0 | 5 | 1 |
| Cargo Handling Equipment | 4 | 3 | 306 | 2 | 393 | 34 | 4 | 3 | 306 | 2 | 393 | 34 |
| Worker Vehicles | 17 | 5 | 8 | 0 | 88 | 3 | 17 | 5 | 8 | 0 | 88 | 3 |
| Total Operational Year 2019 | 383 | 247 | 12,976 | 260 | 2,131 | 706 | 361 | 227 | 11,586 | 224 | 2,049 | 675 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | -81 | -56 | 217 | -822 | 163 | -59 | -102 | -76 | -1,172 | -859 | 80 | -91 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | No | No | No | No | No | No | No |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 367 | 234 | 11,841 | 244 | 2,006 | 687 | 367 | 234 | 11,841 | 244 | 2,006 | 687 |
| Project Minus NEPA Baseline | 16 | 13 | 1,135 | 17 | 126 | 19 | -6 | -7 | -254 | -20 | 43 | -12 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | No | No | No | No | No | No | No |
| Year 2026 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 132 | 124 | $\begin{aligned} & 7,148 \\ & \underline{6,293} \\ & \hline \end{aligned}$ | 150 | 876 | 506 | 117 | 110 | 5,576 | 122 | 822 | 487 |
| Ships: Aux Engines and Boilers | 50 | 47 | 1,942 | 117 | 185 | 73 | 43 | 41 | 1,487 | 107 | 154 | 61 |
| AMP Electricity Use | 2 | 2 | 23 | 10 | 11 | 1 | 3 | 3 | 29 | 12 | 14 | 1 |
| Tugboats | 2 | 1 | 60 | 0 | 143 | 10 | 2 | 1 | 60 | 0 | 143 | 10 |
| Trucks | 191 | 54 | 1,231 | 6 | 198 | 42 | 191 | 54 | 1,231 | 6 | 198 | 42 |
| Line Haul Locomotives | 26 | 24 | 1,191 | 2 | 459 | 45 | 26 | 24 | 1,191 | 2 | 459 | 45 |
| Switch Locomotives | 0 | 0 | 18 | 0 | 7 | 1 | 0 | 0 | 18 | 0 | 7 | 1 |
| Cargo Handling Equipment | 5 | 4 | 158 | 3 | 552 | 38 | 5 | 4 | 158 | 3 | 552 | 38 |
| Worker Vehicles | 20 | 6 | 5 | 0 | 68 | 3 | 20 | 6 | 5 | 0 | 68 | 3 |
| Total Operational Year 2026 | 427 | 263 | 11,777 | 288 | 2,500 | 719 | 406 | 243 | 9,756 | 252 | 2,418 | 688 |

Table 3.2-20: Peak Daily Operational Emissions — Proposed Project (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM ${ }_{10}$ | PM ${ }_{2.5}$ | NOx | SOx | CO | VOC | PM ${ }_{10}$ | PM ${ }^{\text {. } 5}$ | NOx | SOx | CO | VOC |
|  |  |  | 10,922 |  |  |  |  |  |  |  |  |  |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | -36 | -40 | $\begin{array}{r} -982 \\ -1,837 \end{array}$ | -794 | 531 | -46 | -58 | -60 | -3,002 | -831 | 449 | -77 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | No | No | No | No | No | No | No | No | No | No |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 344 | 215 | 8,523 | 236 | 2,058 | 641 | 344 | 215 | 8,523 | 236 | 2,058 | 641 |
| Project Minus NEPA Baseline | 83 | 48 | $\begin{aligned} & 3,255 \\ & 2,400 \\ & \hline \end{aligned}$ | 53 | 442 | 79 | 62 | 28 | 1,234 | 16 | 360 | 48 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | Yes | No | No | Yes | No | No | No |
| Year 2033 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 190 | 178 | $\begin{gathered} 10,544 \\ 5,862 \\ \hline \end{gathered}$ | 226 | 1,216 | 692 | 156 | 146 | 4,915 | 162 | 1,095 | 649 |
| Ships: Aux Engines and Boilers | 46 | 43 | 1,854 | 102 | 176 | 69 | 43 | 41 | 1,093 | 100 | 162 | 64 |
| AMP Electricity Use | 1 | 1 | 12 | 5 | 6 | 0 | 2 | 2 | 17 | 7 | 8 | 0 |
| Tugboats | 2 | 2 | 85 | 0 | 204 | 15 | 2 | 2 | 85 | 0 | 204 | 15 |
| Trucks | 209 | 58 | 1,030 | 6 | 224 | 40 | 209 | 58 | 1,030 | 6 | 224 | 40 |
| Line Haul Locomotives | 58 | 53 | 3,125 | 8 | 1,935 | 115 | 58 | 53 | 3,125 | 8 | 1,935 | 115 |
| Switch Locomotives | 1 | 1 | 41 | 0 | 16 | 2 | 1 | 1 | 41 | 0 | 16 | 2 |
| Cargo Handling Equipment | 6 | 5 | 172 | 4 | 713 | 48 | 6 | 5 | 172 | 4 | 713 | 48 |
| Worker Vehicles | 24 | 7 | 4 | 0 | 64 | 3 | 24 | 7 | 4 | 0 | 64 | 3 |
| Total Operational Year 2033 | 537 | 349 | $\begin{aligned} & 16,869 \\ & 12,187 \\ & \hline \end{aligned}$ | 351 | 4,554 | 985 | 500 | 315 | 10,483 | 288 | 4,421 | 936 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | 73 | 46 | $\begin{gathered} 4,110 \\ -572 \end{gathered}$ | -731 | 2,585 | 220 | 37 | 12 | -2,276 | -795 | 2,452 | 171 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | $\begin{aligned} & \text { Yes } \\ & \text { No } \end{aligned}$ | No | Yes | Yes | No | No | No | No | Yes | Yes |

Table 3.2-20: Peak Daily Operational Emissions — Proposed Project (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM 10 | PM 2.5 | NOx | SOx | CO | voc | PM 10 | PM 2.5 | NOx | SOx | CO | VOC |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 405 | 270 | 7,729 | 279 | 3,437 | 852 | 405 | 270 | 7,729 | 279 | 3,437 | 852 |
| Project Minus NEPA Baseline | 132 | 79 | $\begin{aligned} & 9,140 \\ & \underline{4,458} \\ & \hline \end{aligned}$ | 72 | 1,117 | 133 | 96 | 45 | 2,753 | 9 | 984 | 85 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | Yes | Yes | No | Yes | Yes | No | No | Yes | No | Yes | Yes |
| Year 2038 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 190 | 178 | $\begin{gathered} 10,544 \\ \underline{3,541} \end{gathered}$ | 226 | 1,216 | 692 | 156 | 146 | 3,042 | 162 | 1,095 | 649 |
| Ships: Aux Engines and Boilers | 46 | 43 | 1,854 | 102 | 176 | 69 | 43 | 41 | 745 | 100 | 162 | 64 |
| AMP Electricity Use | 1 | 1 | 12 | 5 | 6 | 0 | 2 | 2 | 17 | 7 | 8 | 0 |
| Tugboats | 2 | 2 | 77 | 0 | 176 | 13 | 2 | 2 | 77 | 0 | 176 | 13 |
| Trucks | 209 | 58 | 929 | 6 | 216 | 37 | 209 | 58 | 929 | 6 | 216 | 37 |
| Line Haul Locomotives | 36 | 33 | 2,253 | 8 | 1,935 | 84 | 36 | 33 | 2,253 | 8 | 1,935 | 84 |
| Switch Locomotives | 0 | 0 | 23 | 0 | 16 | 1 | 0 | 0 | 23 | 0 | 16 | 1 |
| Cargo Handling Equipment | 6 | 5 | 166 | 4 | 713 | 48 | 6 | 5 | 166 | 4 | 713 | 48 |
| Worker Vehicles | 24 | 7 | 4 | 0 | 56 | 3 | 24 | 7 | 4 | 0 | 56 | 3 |
| Total Operational Year 2038 | 514 | 328 | $\begin{gathered} 15,862 \\ \mathbf{8 , 8 5 9} \end{gathered}$ | 351 | 4,511 | 948 | 477 | 294 | 7,255 | 288 | 4,377 | 899 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | 50 | 25 | $\begin{array}{r} \hline 3,103 \\ -3,900 \\ \hline \end{array}$ | -732 | 2,542 | 183 | 14 | -9 | -5,504 | -795 | 2,409 | 134 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes <br> No | No | Yes | Yes | No | No | No | No | Yes | Yes |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 390 | 257 | 4,524 | 279 | 3,397 | 827 | 390 | 257 | 4,524 | 279 | 3,397 | 827 |
| Project Minus NEPA Baseline | 124 | 71 | $\begin{gathered} 11,338 \\ 4,335 \\ \hline \end{gathered}$ | 72 | 1,114 | 121 | 87 | 37 | 2,731 | 9 | 980 | 72 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | Yes | Yes | No | Yes | Yes | No | No | Yes | No | Yes | Yes |

Table 3.2-20: Peak Daily Operational Emissions — Proposed Project (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC |

Notes:
Emissions assume the simultaneous occurrence of peak daily equipment activity levels. Such levels would rarely occur during day-to-day terminal operations.
Truck, train, ship, and worker commute emissions include transport within the South Coast Air Basin
AMP electricity use reflects indirect emissions from regional power generation.
NEPA baseline emissions reflect the NEPA baseline operational, presented in Table 3.2-5.
Emissions might not precisely add due to rounding.
The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

| Berths 226-236 [Everport] Container | SCH\# 2014101050 |
| :--- | ---: |
| Terminal Improvements Project Final EIS/EIR | September 2017 |

## Section 3.2.4.5, Page 3.2-50

Revise CEQA Impact Determination first paragraph, as follows:
Table 3.2-20 shows that unmitigated peak daily operational emissions would exceed the SCAQMD daily emission thresholds and would be significant for $\mathrm{NO}_{\mathrm{X}}$ in 2019 and $\mathrm{NO}_{\mathrm{X}}$; CO, and VOC under CEQA in years 2033 and 2038.

## Section 3.2.4.5, Page 3.2-51

Revise mitigation measures MM AQ-7, as follows:
MM AQ-7: Alternative Maritime Power (AMP). By 2020 or upon substantial completion of construction, 8590 percent of Evergreen ships calling at the Everport Terminal must use AMP. By 2026, 95 percent of all ship calls at the Everport Container Terminal must use AMP or approved equivalent under the CARB Shore-Power Regulation. The equivalent alternative technology must, at a minimum, meet the emissions reductions that would be achieved from AMP.

## Section 3.2.4.5, Page 3.2-52

Revise Residual Impacts first paragraph, as follows:
Table 3.2-20 shows that emissions from operation of the proposed Project would be reduced with mitigation. Emissions of $\mathrm{NO}_{x}$ in 2019, 2033 and 2038 would be reduced to levels that are less than significant under CEQA. However, CO and VOC emissions in 2033 and 2038 would remain significant and unavoidable under CEQA.

Section 3.2.4.5, Page 3.2-54, Table 3.2-21
Revise MM AQ-7 in Table 3.2-21, as follows:

Table 3.2-21: Comparison between San Pedro Bay Ports 2010 CAAP Update Control Measures and Proposed Project Mitigation Measures

| CAAP Measure \# | CAAP Measure Name | CAAP Measure Description | EIS/EIR Mitigation Measure (MM) | Discussion |
| :---: | :---: | :---: | :---: | :---: |
| SPBP-OGV2 | Reduction of AtBerth OGV Emissions | The use of shore power to reduce hoteling emissions implemented at all container and cruise terminals and one liquid bulk terminal at the Port of Los Angeles | MM AQ-7: By 2019, 8590 percent of Evergreen ships calling at the Everport Terminal must use AMP. By 2026, 95 percent of all ship calls at the Everport Container Terminal must use AMP or approved equivalent under the CARB Shore-Power Regulation. The equivalent alternative technology must, at a minimum, meet the emissions reductions that would be achieved from AMP. | MM AQ-7 complies with CAAP OGV2. OGV2 is preempted by CARB regulation. |

## Section 3.2.4.5, Pages 3.2-95 to 3.2-97, Table 3.2-35

Revise Table 3.2-35, as follows:

Table 3.2-35: Peak Daily Operational Emissions—Alternative 1 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM 10 | PM 2.5 | NOx | SOx | CO | voc | PM 10 | PM ${ }_{2}$. 5 | NOx | SOx | CO | VOC |
| Year 2019 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 131 | 123 | 7,359 | 151 | 859 | 494 | 113 | 106 | 6,121 | 118 | 794 | 471 |
| Ships: Aux Engines and Boilers | 43 | 41 | 1,689 | 108 | 154 | 61 | 44 | 41 | 1,687 | 110 | 154 | 61 |
| AMP Electricity Use | 2 | 2 | 17 | 7 | 8 | 0 | 2 | 2 | 18 | 8 | 9 | 0 |
| Tugboats | 2 | 2 | 63 | 0 | 134 | 10 | 2 | 2 | 63 | 0 | 134 | 10 |
| Trucks | 162 | 52 | 2,646 | 5 | 234 | 73 | 162 | 52 | 2,646 | 5 | 234 | 73 |
| Line Haul Locomotives | 25 | 23 | 1,046 | 1 | 270 | 42 | 25 | 23 | 1,046 | 1 | 270 | 42 |
| Switch Locomotives | 0 | 0 | 16 | 0 | 5 | 1 | 0 | 0 | 16 | 0 | 5 | 1 |
| Cargo Handling Equipment | 3 | 3 | 236 | 2 | 318 | 26 | 3 | 3 | 236 | 2 | 318 | 26 |
| Worker Vehicles | 17 | 5 | 8 | 0 | 87 | 3 | 17 | 5 | 8 | 0 | 87 | 3 |
| Total Operational Year 2019 | 385 | 250 | 13,079 | 275 | 2,070 | 710 | 367 | 234 | 11,841 | 244 | 2,006 | 687 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Alternative Minus CEQA Baseline | -79 | -53 | 321 | -808 | 101 | -56 | -97 | -69 | -918 | -839 | 37 | -79 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | No | No | No | No | No | No | No |
| Year 2026 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 134 | 126 | $\begin{aligned} & 7,508 \\ & 6,326 \\ & \hline \end{aligned}$ | 154 | 876 | 504 | 115 | 108 | 5,262 | 120 | 811 | 481 |
| Ships: Aux Engines and Boilers | 47 | 44 | 1,896 | 112 | 173 | 68 | 39 | 37 | 1,300 | 100 | 138 | 55 |
| AMP Electricity Use | 1 | 1 | 10 | 4 | 5 | 0 | 2 | 2 | 17 | 7 | 8 | 0 |
| Tugboats | 2 | 1 | 60 | 0 | 143 | 10 | 2 | 1 | 60 | 0 | 143 | 10 |
| Trucks | 148 | 42 | 959 | 4 | 154 | 32 | 148 | 42 | 959 | 4 | 154 | 32 |
| Line Haul Locomotives | 17 | 16 | 785 | 1 | 303 | 30 | 17 | 16 | 785 | 1 | 303 | 30 |
| Switch Locomotives | 0 | 0 | 14 | 0 | 6 | 1 | 0 | 0 | 14 | 0 | 6 | 1 |
| Cargo Handling Equipment | 4 | 3 | 121 | 3 | 437 | 29 | 4 | 3 | 121 | 3 | 437 | 29 |
| Worker Vehicles | 17 | 5 | 5 | 0 | 58 | 2 | 17 | 5 | 5 | 0 | 58 | 2 |
| Total Operational Year 2026 | 370 | 239 | $\begin{aligned} & 11,357 \\ & 10,175 \\ & \hline \end{aligned}$ | 279 | 2,154 | 677 | 344 | 215 | 8,523 | 236 | 2,058 | 641 |

Table 3.2-35: Peak Daily Operational Emissions—Alternative 1 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM 10 | PM 2.5 | NOx | SOx | CO | voc | PM 10 | PM ${ }_{2} .5$ | NOx | SOx | CO | VOC |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Alternative Minus CEQA Baseline | -94 | -64 | $\begin{aligned} & -1,402 \\ & -2,584 \\ & \hline \end{aligned}$ | -803 | 185 | -88 | -119 | -88 | -4,236 | -847 | 89 | -125 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | No | No | No | No | No | No | No | No | No | No |
| Year 2033 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 189 | 178 | $\begin{gathered} 10,812 \\ \underline{5,139} \\ \hline \end{gathered}$ | 228 | 1,206 | 684 | 153 | 144 | 3,938 | 159 | 1,076 | 638 |
| Ships: Aux Engines and Boilers | 53 | 50 | 2,226 | 119 | 202 | 79 | 41 | 38 | 843 | 100 | 147 | 58 |
| AMP Electricity Use | 0 | 0 | 4 | 2 | 2 | 0 | 2 | 2 | 16 | 7 | 8 | 0 |
| Tugboats | 2 | 2 | 85 | 0 | 204 | 15 | 2 | 2 | 85 | 0 | 204 | 15 |
| Trucks | 146 | 41 | 718 | 4 | 157 | 28 | 146 | 41 | 718 | 4 | 157 | 28 |
| Line Haul Locomotives | 37 | 34 | 1,964 | 5 | 1,216 | 72 | 37 | 34 | 1,964 | 5 | 1,216 | 72 |
| Switch Locomotives | 0 | 0 | 27 | 0 | 12 | 2 | 0 | 0 | 27 | 0 | 12 | 2 |
| Cargo Handling Equipment | 5 | 4 | 133 | 3 | 563 | 36 | 5 | 4 | 133 | 3 | 563 | 36 |
| Worker Vehicles | 20 | 6 | 4 | 0 | 54 | 2 | 20 | 6 | 4 | 0 | 54 | 2 |
| Total Operational Year 2033 | 452 | 315 | $\begin{aligned} & 15,975 \\ & 10,302 \\ & \hline \end{aligned}$ | 362 | 3,617 | 919 | 405 | 270 | 7,729 | 279 | 3,437 | 852 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Alternative Minus CEQA Baseline | -11 | 12 | $\begin{aligned} & \hline 3,216 \\ & -2,457 \\ & \hline \end{aligned}$ | -721 | 1,649 | 154 | -59 | -33 | -5,029 | -804 | 1,468 | 86 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | $\begin{aligned} & \text { Yes } \\ & \text { No } \\ & \hline \end{aligned}$ | No | Yes | Yes | No | No | No | No | Yes | Yes |
| Year 2038 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 189 | 178 | $\begin{gathered} 10,812 \\ 2,302 \\ \hline \end{gathered}$ | 228 | 1,206 | 684 | 153 | 144 | 1,765 | 159 | 1,076 | 638 |
| Ships: Aux Engines and Boilers | 53 | 50 | 2,226 | 119 | 202 | 79 | 41 | 38 | 459 | 100 | 147 | 58 |
| AMP Electricity Use | 0 | 0 | 4 | 2 | 2 | 0 | 2 | 2 | 16 | 7 | 8 | 0 |
| Tugboats | 2 | 2 | 77 | 0 | 176 | 13 | 2 | 2 | 77 | 0 | 176 | 13 |
| Trucks | 145 | 40 | 646 | 4 | 152 | 26 | 145 | 40 | 646 | 4 | 152 | 26 |
| Line Haul Locomotives | 23 | 21 | 1,416 | 5 | 1,216 | 53 | 23 | 21 | 1,416 | 5 | 1,216 | 53 |

Table 3.2-35: Peak Daily Operational Emissions—Alternative 1 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM 10 | PM 2.5 | NOx | SOx | CO | VOC | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC |
| Switch Locomotives | 0 | 0 | 13 | 0 | 12 | 1 | 0 | 0 | 13 | 0 | 12 | 1 |
| Cargo Handling Equipment | 5 | 4 | 129 | 3 | 563 | 36 | 5 | 4 | 129 | 3 | 563 | 36 |
| Worker Vehicles | 20 | 6 | 3 | 0 | 47 | 2 | 20 | 6 | 3 | 0 | 47 | 2 |
| Total Operational Year 2038 | 438 | 302 | $\begin{array}{r} 15,327 \\ 6,817 \\ \hline \end{array}$ | 362 | 3,577 | 895 | 390 | 257 | 4,524 | 279 | 3,397 | 827 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Alternative Minus CEQA Baseline | -26 | -1 | $\begin{gathered} 2,569 \\ -5,941 \\ \hline \end{gathered}$ | -721 | 1,609 | 129 | -74 | -46 | -8,234 | -804 | 1,429 | 62 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes <br> No | No | Yes | Yes | No | No | No | No | Yes | Yes |

Notes:
Emissions assume the simultaneous occurrence of peak daily equipment activity levels. Such levels would rarely occur during day-to-day terminal operations.
Truck, train, ship, and worker commute emissions include transport within the South Coast Air Basin.
AMP electricity use reflects indirect emissions from regional power generation.
NEPA does not require analysis of the No Project Alternative.
Emissions might not precisely add due to rounding.
The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

## Section 3.2.4.5, Page 3.2-98

Revise CEQA Impact Determination first paragraph, as follows:
Table 3.2-35 shows that peak daily operational emissions would exceed the SCAQMD daily emission thresholds and would be significant under CEQA for $\mathrm{NO}_{\mathrm{x}}$ in 2019,2033, and 2038 and CO and VOC in 2033 and 2038. Therefore, emissions of $\mathrm{NO}_{\mathrm{x}}, \mathrm{CO}$, and VOC associated with the operation of Alternative 1 would be significant under CEQA before mitigation.

## Section 3.2.4.5, Page 3.2-98

Revise Residual Impacts first paragraph, as follows:
Table 3.2-35 shows that emissions from operation of Alternative 1 would be reduced with mitigation. Emissions for $\mathrm{NO}_{x}$ in 2019, 2033, and 2038 would be reduced to levels that are less than significant under CEQA. However, CO and VOC emissions in 2033 and 2038 would remain significant and unavoidable under CEQA.

## Section 3.2.4.5, Page 3.2-110

Revise CEQA Impact Determination first paragraph, as follows:
Table 3.2-35, presented under Alternative 1, shows that peak daily operational emissions from Alternative 2 would exceed the SCAQMD daily emission thresholds and would be significant under CEQA for $\mathrm{NO}_{\mathrm{x}}$ in 2019,2033, and 2038 and CO and VOC in 2033 and 2038. Therefore, emissions of $\mathrm{NO}_{\mathrm{x}}, \mathrm{CO}$, and VOC associated with the operation of Alternative 2 would be significant under CEQA.

## Section 3.2.4.5, Pages 3.2-141 to 3.2-143, Table 3.2-52

Revise Table 3.2-52, as follows:

Table 3.2-52: Peak Daily Operational Emissions - Alternative 3 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC |
| Year 2019 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 124 | 117 | 6,978 | 142 | 823 | 475 | 109 | 103 | 5,932 | 114 | 769 | 455 |
| Ships: Aux Engines and Boilers | 30 | 28 | 1,220 | 68 | 111 | 44 | 27 | 26 | 1,102 | 66 | 100 | 40 |
| AMP Electricity Use | 1 | 1 | 5 | 2 | 3 | 0 | 1 | 1 | 8 | 4 | 4 | 0 |
| Tugboats | 2 | 2 | 63 | 0 | 134 | 10 | 2 | 2 | 63 | 0 | 134 | 10 |
| Trucks | 159 | 51 | 2,592 | 5 | 229 | 71 | 159 | 51 | 2,592 | 5 | 229 | 71 |
| Line Haul Locomotives | 23 | 22 | 966 | 1 | 250 | 39 | 23 | 22 | 966 | 1 | 250 | 39 |
| Switch Locomotives | 0 | 0 | 16 | 0 | 5 | 1 | 0 | 0 | 16 | 0 | 5 | 1 |
| Cargo Handling Equipment | 4 | 3 | 286 | 2 | 371 | 32 | 4 | 3 | 286 | 2 | 371 | 32 |
| Worker Vehicles | 17 | 5 | 8 | 0 | 86 | 3 | 17 | 5 | 8 | 0 | 86 | 3 |
| Total Operational Year 2019 | 360 | 228 | 12,134 | 221 | 2,011 | 674 | 342 | 212 | 10,974 | 192 | 1,947 | 650 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | -104 | -75 | -625 | -861 | 42 | -91 | -121 | -91 | -1,785 | -891 | -21 | -115 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | No | No | No | No | No | No | No | No | No | No |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 367 | 234 | 11,841 | 244 | 2,006 | 687 | 367 | 234 | 11,841 | 244 | 2,006 | 687 |
| Project Minus NEPA Baseline | -7 | -6 | 293 | -22 | 5 | -13 | -24 | -22 | -867 | -52 | -59 | -36 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | No | No | No | No | No | No | No |
| Year 2026 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 129 | 121 | $\begin{aligned} & 6,968 \\ & 5,782 \end{aligned}$ | 147 | 853 | 493 | 113 | 107 | 5,065 | 118 | 799 | 474 |
| Ships: Aux Engines and Boilers | 44 | 42 | 1,691 | 107 | 162 | 64 | 40 | 38 | 1,289 | 100 | 142 | 57 |
| AMP Electricity Use | 3 | 3 | 26 | 11 | 13 | 1 | 3 | 3 | 31 | 13 | 15 | 1 |
| Tugboats | 2 | 1 | 60 | 0 | 143 | 10 | 2 | 1 | 60 | 0 | 143 | 10 |
| Trucks | 181 | 51 | 1,168 | 5 | 188 | 40 | 181 | 51 | 1,168 | 5 | 188 | 40 |
| Line Haul Locomotives | 24 | 22 | 1,104 | 2 | 426 | 42 | 24 | 22 | 1,104 | 2 | 426 | 42 |
| Switch Locomotives | 0 | 0 | 17 | 0 | 7 | 1 | 0 | 0 | 17 | 0 | 7 | 1 |
| Cargo Handling Equipment | 4 | 4 | 147 | 3 | 519 | 36 | 4 | 4 | 147 | 3 | 519 | 36 |
| Worker Vehicles | 20 | 6 | 5 | 0 | 66 | 3 | 20 | 6 | 5 | 0 | 66 | 3 |
| Total Operational Year 2026 | 406 | 250 | 11,186 | 275 | 2,377 | 689 | 387 | 232 | 8,887 | 242 | 2,304 | 662 |

Table 3.2-52: Peak Daily Operational Emissions — Alternative 3 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC |
|  |  |  | 10,000 |  |  |  |  |  |  |  |  |  |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | -57 | -53 | $\begin{aligned} & \hline-1,573 \\ & -2,759 \end{aligned}$ | -808 | 408 | -76 | -76 | -71 | -3,872 | -840 | 336 | -104 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | No | No | No | No | No | No | No | No | No | No |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 344 | 215 | 8,523 | 236 | 2,058 | 641 | 344 | 215 | 8,523 | 236 | 2,058 | 641 |
| Project Minus NEPA Baseline | 62 | 35 | $\begin{aligned} & \hline \text { 2,664 } \\ & 1,478 \end{aligned}$ | 39 | 319 | 48 | 43 | 17 | 364 | 7 | 247 | 21 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | No | No | No | Yes | No | No | No |
| Year 2033 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 187 | 176 | $\begin{gathered} 10,432 \\ 5,330 \end{gathered}$ | 225 | 1,195 | 679 | 153 | 144 | 4,382 | 161 | 1,074 | 635 |
| Ships: Aux Engines and Boilers | 47 | 44 | 1,926 | 105 | 182 | 71 | 42 | 39 | 975 | 98 | 155 | 61 |
| AMP Electricity Use | 1 | 1 | 9 | 4 | 5 | 0 | 2 | 2 | 16 | 7 | 8 | 0 |
| Tugboats | 2 | 2 | 85 | 0 | 204 | 15 | 2 | 2 | 85 | 0 | 204 | 15 |
| Trucks | 194 | 54 | 957 | 5 | 208 | 37 | 194 | 54 | 957 | 5 | 208 | 37 |
| Line Haul Locomotives | 53 | 49 | 2,836 | 7 | 1,756 | 104 | 53 | 49 | 2,836 | 7 | 1,756 | 104 |
| Switch Locomotives | 1 | 1 | 38 | 0 | 15 | 2 | 1 | 1 | 38 | 0 | 15 | 2 |
| Cargo Handling Equipment | 6 | 5 | 161 | 4 | 670 | 45 | 6 | 5 | 161 | 4 | 670 | 45 |
| Worker Vehicles | 23 | 7 | 4 | 0 | 62 | 3 | 23 | 7 | 4 | 0 | 62 | 3 |
| Total Operational Year 2033 | 514 | 339 | $\begin{aligned} & 16,448 \\ & 11,346 \end{aligned}$ | 350 | 4,298 | 957 | 475 | 302 | 9,455 | 282 | 4,153 | 903 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | 51 | 36 | $\begin{gathered} \hline 3,689 \\ -1,413 \\ \hline \end{gathered}$ | -733 | 2,330 | 191 | 12 | -1 | -3,303 | -800 | 2,184 | 138 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | $\begin{aligned} & \hline \text { Yes } \\ & \text { No } \end{aligned}$ | No | Yes | Yes | No | No | No | No | Yes | Yes |

Table 3.2-52: Peak Daily Operational Emissions - Alternative 3 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC | PM 10 | PM 2.5 | NOx | SOx | CO | VOC |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 405 | 270 | 7,729 | 279 | 3,437 | 852 | 405 | 270 | 7,729 | 279 | 3,437 | 852 |
| Project Minus NEPA Baseline | 109 | 68 | $\begin{aligned} & \hline 8,719 \\ & 3,617 \end{aligned}$ | 71 | 861 | 105 | 70 | 32 | 1,726 | 3 | 716 | 52 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | Yes | Yes | No | Yes | Yes | No | No | Yes | No | Yes | No |
| Year 2038 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 187 | 176 | $\begin{gathered} \hline 10,432 \\ 3,038 \end{gathered}$ | 225 | 1,195 | 679 | 153 | 144 | 2,539 | 161 | 1,074 | 635 |
| Ships: Aux Engines and Boilers | 47 | 44 | 1,926 | 105 | 182 | 71 | 42 | 39 | 648 | 98 | 155 | 61 |
| AMP Electricity Use | 1 | 1 | 9 | 4 | 5 | 0 | 2 | 2 | 16 | 7 | 8 | 0 |
| Tugboats | 2 | 2 | 77 | 0 | 176 | 13 | 2 | 2 | 77 | 0 | 176 | 13 |
| Trucks | 194 | 54 | 862 | 5 | 201 | 35 | 194 | 54 | 862 | 5 | 201 | 35 |
| Line Haul Locomotives | 33 | 30 | 2,045 | 7 | 1,756 | 76 | 33 | 30 | 2,045 | 7 | 1,756 | 76 |
| Switch Locomotives | 0 | 0 | 20 | 0 | 15 | 1 | 0 | 0 | 20 | 0 | 15 | 1 |
| Cargo Handling Equipment | 6 | 5 | 155 | 4 | 670 | 44 | 6 | 5 | 155 | 4 | 670 | 44 |
| Worker Vehicles | 23 | 7 | 4 | 0 | 54 | 2 | 23 | 7 | 4 | 0 | 54 | 2 |
| Total Operational Year 2038 | 493 | 319 | $\begin{gathered} 15,530 \\ 8,136 \\ \hline \end{gathered}$ | 350 | 4,256 | 923 | 454 | 283 | 6,367 | 282 | 4,110 | 869 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | 30 | 16 | $\begin{aligned} & 2,772 \\ & -4,622 \end{aligned}$ | -733 | 2,287 | 158 | -9 | -20 | -6,392 | -800 | 2,142 | 104 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | $\begin{aligned} & \hline \text { Yes } \\ & \text { No } \end{aligned}$ | No | Yes | Yes | No | No | No | No | Yes | Yes |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 390 | 257 | 4,524 | 279 | 3,397 | 827 | 390 | 257 | 4,524 | 279 | 3,397 | 827 |
| Project Minus NEPA Baseline | 103 | 62 | $\begin{gathered} 11,006 \\ 3,612 \end{gathered}$ | 71 | 859 | 96 | 64 | 26 | 1,843 | 3 | 713 | 42 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | Yes | Yes | No | Yes | Yes | No | No | Yes | No | Yes | No |

Notes:
Emissions assume the simultaneous occurrence of peak daily equipment activity levels. Such levels would rarely occur during day-to-day terminal operations.

Table 3.2-52: Peak Daily Operational Emissions — Alternative 3 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM10 | PM2.5 | NOx | SOx | CO | VOC | PM10 | PM 2.5 | NOx | SOx | CO | VOC |

Truck, train, ship, and worker commute emissions include transport within the South Coast Air Basin
AMP electricity use reflects indirect emissions from regional power generation.
Emissions might not precisely add due to rounding.
The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available

## Section 3.2.4.5, Page 3.2-144

Revise CEQA Impact Determination first paragraph, as follows:
Table 3.2-52 shows that peak daily operational emissions would exceed the SCAQMD daily emission thresholds and would be significant under CEQA for $\mathrm{NO}_{x}$; CO , and VOC in 2033 and 2038.

## Section 3.2.4.5, Page 3.2-144

Revise Residual Impacts first paragraph, as follows:
Table 3.2-52 shows that emissions from operation of Alternative 3 would be reduced with mitigation. Emissions of $\mathrm{NO}_{x}$ in 2033 and 2038 would be reduced to levels that are less than significant under CEQA. However, emissions of CO and VOC in 2033 and 2038 would remain significant and unavoidable under CEQA.

Section 3.2.4.5, Pages 3.2-184 to 3.2-187, Table 3.2-69
Revise Table 3.2-69, as follows:

Table 3.2-69: Peak Daily Operational Emissions - Alternative 4 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC | PM ${ }_{10}$ | PM $\mathbf{2 . 5}$ | NOx | SOx | CO | VOC |
| Year 2019 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 122 | 115 | 6,865 | 141 | 802 | 462 | 107 | 100 | 5,819 | 113 | 748 | 442 |
| Ships: Aux Engines and Boilers | 38 | 36 | 1,518 | 91 | 138 | 55 | 31 | 29 | 1,167 | 80 | 107 | 43 |
| AMP Electricity Use | 1 | 1 | 9 | 4 | 4 | 0 | 2 | 2 | 15 | 6 | 8 | 0 |
| Tugboats | 2 | 2 | 63 | 0 | 134 | 10 | 2 | 2 | 63 | 0 | 134 | 10 |
| Trucks | 155 | 50 | 2,515 | 5 | 222 | 69 | 155 | 50 | 2,515 | 5 | 222 | 69 |
| Line Haul Locomotives | 23 | 21 | 948 | 1 | 245 | 38 | 23 | 21 | 948 | 1 | 245 | 38 |
| Switch Locomotives | 0 | 0 | 15 | 0 | 5 | 1 | 0 | 0 | 15 | 0 | 5 | 1 |
| Cargo Handling Equipment | 3 | 3 | 277 | 2 | 373 | 31 | 3 | 3 | 277 | 2 | 373 | 31 |
| Worker Vehicles | 16 | 5 | 8 | 0 | 85 | 3 | 16 | 5 | 8 | 0 | 85 | 3 |
| Total Operational Year 2019 | 360 | 232 | 12,218 | 244 | 2,008 | 668 | 339 | 212 | 10,827 | 207 | 1,926 | 636 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | -103 | -71 | -541 | -839 | 40 | -98 | -125 | -91 | -1,931 | -875 | -43 | -129 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | No | No | No | No | No | No | No | No | No | No |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 367 | 234 | 11,841 | 244 | 2,006 | 687 | 367 | 234 | 11,841 | 244 | 2,006 | 687 |
| Project Minus NEPA Baseline | -7 | -2 | 377 | 0 | 2 | -19 | -28 | -22 | -1,013 | -36 | -80 | -50 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | No | No | No | No | No | No | No |
| Year 2026 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 131 | 123 | $\begin{aligned} & 7,382 \\ & \underline{6,192} \\ & \hline \end{aligned}$ | 152 | 857 | 492 | 116 | 109 | 5,476 | 124 | 803 | 472 |
| Ships: Aux Engines and Boilers | 37 | 35 | 1,465 | 94 | 134 | 53 | 38 | 36 | 1,315 | 96 | 135 | 54 |
| AMP Electricity Use | 3 | 3 | 29 | 12 | 15 | 1 | 3 | 3 | 30 | 13 | 15 | 1 |
| Tugboats | 2 | 1 | 60 | 0 | 143 | 10 | 2 | 1 | 60 | 0 | 143 | 10 |
| Trucks | 171 | 48 | 1,100 | 5 | 176 | 37 | 171 | 48 | 1,100 | 5 | 176 | 37 |
| Line Haul Locomotives | 21 | 20 | 988 | 1 | 381 | 38 | 21 | 20 | 988 | 1 | 381 | 38 |

Table 3.2-69: Peak Daily Operational Emissions - Alternative 4 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC |
| Switch Locomotives | 0 | 0 | 16 | 0 | 6 | 1 | 0 | 0 | 16 | 0 | 6 | 1 |
| Cargo Handling Equipment | 4 | 4 | 147 | 3 | 521 | 34 | 4 | 4 | 147 | 3 | 521 | 34 |
| Worker Vehicles | 19 | 5 | 5 | 0 | 63 | 2 | 19 | 5 | 5 | 0 | 63 | 2 |
| Total Operational Year 2026 | 388 | 241 | $\begin{aligned} & 11,193 \\ & 10,003 \\ & \hline \end{aligned}$ | 268 | 2,297 | 669 | 374 | 227 | 9,137 | 243 | 2,244 | 650 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | -75 | -62 | $\begin{aligned} & -1,565 \\ & -2,755 \\ & \hline \end{aligned}$ | -814 | 329 | -97 | -90 | -76 | -3,621 | -840 | 275 | -116 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | No | No | No | No | No | No | No | No | No | No |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 344 | 215 | 8,523 | 236 | 2,058 | 641 | 344 | 215 | 8,523 | 236 | 2,058 | 641 |
| Project Minus NEPA Baseline | 44 | 26 | $\begin{aligned} & \frac{2,671}{1,481} \\ & \hline \end{aligned}$ | 32 | 239 | 28 | 30 | 12 | 615 | 7 | 186 | 9 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | No | No | No | Yes | No | No | No |
| Year 2033 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 137 | 129 | $\begin{array}{r} 7,467 \\ \underline{3,842} \\ \hline \end{array}$ | 158 | 903 | 520 | 104 | 98 | 3,117 | 96 | 784 | 477 |
| Ships: Aux Engines and Boilers | 62 | 59 | 2,485 | 146 | 233 | 92 | 56 | 52 | 1,128 | 137 | 200 | 80 |
| AMP Electricity Use | 1 | 1 | 8 | 3 | 4 | 0 | 2 | 2 | 16 | 7 | 8 | 0 |
| Tugboats | 2 | 2 | 64 | 0 | 153 | 11 | 2 | 2 | 64 | 0 | 153 | 11 |
| Trucks | 179 | 50 | 877 | 5 | 190 | 34 | 179 | 50 | 877 | 5 | 190 | 34 |
| Line Haul Locomotives | 47 | 44 | 2,551 | 6 | 1,580 | 94 | 47 | 44 | 2,551 | 6 | 1,580 | 94 |
| Switch Locomotives | 0 | 0 | 35 | 0 | 14 | 2 | 0 | 0 | 35 | 0 | 14 | 2 |
| Cargo Handling Equipment | 6 | 5 | 160 | 4 | 672 | 43 | 6 | 5 | 160 | 4 | 672 | 43 |
| Worker Vehicles | 22 | 6 | 4 | 0 | 59 | 3 | 22 | 6 | 4 | 0 | 59 | 3 |
| Total Operational Year 2033 | 457 | 296 | $\begin{aligned} & 13,651 \\ & 10,026 \\ & \hline \end{aligned}$ | 323 | 3,810 | 800 | 418 | 259 | 7,951 | 255 | 3,662 | 745 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |

Table 3.2-69: Peak Daily Operational Emissions - Alternative 4 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC | PM ${ }_{10}$ | PM $\mathbf{2 . 5}^{\text {S }}$ | NOx | SOx | CO | VOC |
| Project Minus CEQA Baseline | -7 | -7 | $\begin{gathered} 893 \\ -2,732 \\ \hline \end{gathered}$ | -760 | 1,841 | 34 | -46 | -44 | -4,808 | -828 | 1,693 | -21 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | $\begin{aligned} & \text { Yes } \\ & \text { No } \end{aligned}$ | No | Yes | No | No | No | No | No | Yes | No |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 405 | 270 | 7,729 | 279 | 3,437 | 852 | 405 | 270 | 7,729 | 279 | 3,437 | 852 |
| Project Minus NEPA Baseline | 52 | 25 | $\begin{aligned} & 5,922 \\ & 2,297 \\ & \hline \end{aligned}$ | 44 | 373 | -52 | 13 | -12 | 222 | -24 | 225 | -107 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | No | No | No | Yes | No | No | No |
| Year 2038 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 137 | 129 | $\begin{aligned} & 7,467 \\ & 2,406 \\ & \hline \end{aligned}$ | 158 | 903 | 520 | 104 | 98 | 1,920 | 96 | 784 | 477 |
| Ships: Aux Engines and Boilers | 62 | 59 | 2,485 | 146 | 233 | 92 | 56 | 52 | 803 | 137 | 200 | 80 |
| AMP Electricity Use | 1 | 1 | 8 | 3 | 4 | 0 | 1.543 | 1.543 | 15.6 | 6.6 | 7.7 | 0.4 |
| Tugboats | 1 | 1 | 58 | 0 | 132 | 10 | 1.38 | 1.23 | 57.94 | 0.26 | 132.11 | 9.59 |
| Trucks | 179 | 50 | 790 | 5 | 184 | 32 | 179 | 50 | 790 | 5 | 184 | 32 |
| Line Haul Locomotives | 30 | 27 | 1,839 | 6 | 1,580 | 69 | 30 | 27 | 1,839 | 6 | 1,580 | 69 |
| Switch Locomotives | 0 | 0 | 18 | 0 | 14 | 1 | 0 | 0 | 18 | 0 | 14 | 1 |
| Cargo Handling Equipment | 6 | 5 | 155 | 4 | 672 | 43 | 6 | 5 | 155 | 4 | 672 | 43 |
| Worker Vehicles | 22 | 6 | 3 | 0 | 52 | 2 | 22 | 6 | 3 | 0 | 52 | 2 |
| Total Operational Year 2038 | 438 | 279 | $\begin{gathered} \hline \mathbf{1 2 , 8 2 3} \\ \mathbf{7 , 7 6 2} \\ \hline \end{gathered}$ | 323 | 3,775 | 769 | 399 | 241 | 5,603 | 255 | 3,627 | 714 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | -25 | -24 | $\begin{array}{r} 65 \\ -4,996 \\ \hline \end{array}$ | -760 | 1,807 | 4 | -65 | -62 | -7,156 | -828 | 1,658 | -51 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | $\begin{aligned} & \text { Yes } \\ & \text { No } \\ & \hline \end{aligned}$ | No | Yes | No | No | No | No | No | Yes | No |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |

Table 3.2-69: Peak Daily Operational Emissions — Alternative 4 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC |
| NEPA Baseline Emissions | 390 | 257 | 4,524 | 279 | 3,397 | 827 | 390 | 257 | 4,524 | 279 | 3,397 | 827 |
| Project Minus NEPA Baseline | 48 | 22 | $\begin{gathered} \hline 8,299 \\ \underline{3,238} \\ \hline \end{gathered}$ | 44 | 378 | -58 | 9 | -15 | 1,078 | -24 | 230 | -113 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | No | No | No | Yes | No | No | No |

Notes:
Emissions assume the simultaneous occurrence of peak daily equipment activity levels. Such levels would rarely occur during day-to-day terminal operations.
Truck, train, ship, and worker commute emissions include transport within the South Coast Air Basin.
AMP electricity use reflects indirect emissions from regional power generation.
NEPA baseline emissions reflect the NEPA baseline operational, presented in Table 3.2-5
Emissions might not precisely add due to rounding.
The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

## Section 3.2.4.5, Page 3.2-188

Revise CEQA Impact Determination first paragraph, as follows:
Table 3.2-63 shows that peak daily operational emissions would exceed the SCAQMD daily emission thresholds and would be significant for $\mathrm{NO}_{\mathrm{x}}$ and CO in 2033 and 2038 under CEQA.

## Section 3.2.4.5, Page 3.2-188

Revise Residual Impacts paragraph, as follows:
Table 3.2-69 shows that emissions from operation of Alternative 4 would be reduced with mitigation. Emissions of $\mathrm{NO}_{x}$ in 2033 and 2038 would be reduced tolevels that are less than significant memer GEQA. However, emissions of CO in 2033 and 2038 would remain significant and unavoidable under CEQA.

Section 3.2.4.5, Pages 3.2-225 to 3.2-227, Table 3.2-86
Revise Table 3.2-86, as follows:

Table 3.2-86: Peak Daily Operational Emissions - Alternative 5 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM 10 | PM 2.5 | NOx | SOx | CO | voc | PM 10 | PM 2.5 | NOx | SOx | CO | voc |
| Year 2019 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 127 | 119 | 7,113 | 146 | 834 | 480 | 111 | 105 | 6,068 | 118 | 779 | 460 |
| Ships: Aux Engines and Boilers | 42 | 40 | 1,695 | 101 | 154 | 61 | 35 | 33 | 1,345 | 90 | 123 | 49 |
| AMP Electricity Use | 1 | 1 | 10 | 4 | 5 | 0 | 2 | 2 | 17 | 7 | 8 | 0 |
| Tugboats | 2 | 2 | 63 | 0 | 134 | 10 | 2 | 2 | 63 | 0 | 134 | 10 |
| Trucks | 164 | 53 | 2,664 | 5 | 235 | 73 | 164 | 53 | 2,664 | 5 | 235 | 73 |
| Line Haul Locomotives | 27 | 25 | 1,099 | 1 | 284 | 44 | 27 | 25 | 1,099 | 1 | 284 | 44 |
| Switch Locomotives | 0 | 0 | 16 | 0 | 5 | 1 | 0 | 0 | 16 | 0 | 5 | 1 |
| Cargo Handling Equipment | 4 | 3 | 306 | 2 | 393 | 34 | 4 | 3 | 306 | 2 | 393 | 34 |
| Worker Vehicles | 17 | 5 | 8 | 0 | 88 | 3 | 17 | 5 | 8 | 0 | 88 | 3 |
| Total Operational Year 2019 | 383 | 247 | 12,976 | 260 | 2,131 | 706 | 361 | 227 | 11,586 | 224 | 2,049 | 675 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | -81 | -56 | 217 | -822 | 163 | -59 | -102 | -76 | -1,172 | -859 | 80 | -91 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | No | No | No | No | No | No | No |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 367 | 234 | 11,841 | 244 | 2,006 | 687 | 367 | 234 | 11,841 | 244 | 2,006 | 687 |
| Project Minus NEPA Baseline | 16 | 13 | 1,135 | 17 | 126 | 19 | -6 | -7 | -254 | -20 | 43 | -12 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | No | No | No | No | No | No | No |
| Year 2026 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 132 | 124 | $\begin{array}{r} 7,148 \\ 6,293 \\ \hline \end{array}$ | 150 | 876 | 506 | 117 | 110 | 5,576 | 122 | 822 | 487 |
| Ships: Aux Engines and Boilers | 50 | 47 | 1,942 | 117 | 185 | 73 | 43 | 41 | 1,487 | 107 | 154 | 61 |
| AMP Electricity Use | 2 | 2 | 23 | 10 | 11 | 1 | 3 | 3 | 29 | 12 | 14 | 1 |
| Tugboats | 2 | 1 | 60 | 0 | 143 | 10 | 2 | 1 | 60 | 0 | 143 | 10 |
| Trucks | 191 | 54 | 1,231 | 6 | 198 | 42 | 191 | 54 | 1,231 | 6 | 198 | 42 |
| Line Haul Locomotives | 26 | 24 | 1,191 | 2 | 459 | 45 | 26 | 24 | 1,191 | 2 | 459 | 45 |
| Switch Locomotives | 0 | 0 | 18 | 0 | 7 | 1 | 0 | 0 | 18 | 0 | 7 | 1 |
| Cargo Handling Equipment | 5 | 4 | 158 | 3 | 552 | 38 | 5 | 4 | 158 | 3 | 552 | 38 |
| Worker Vehicles | 20 | 6 | 5 | 0 | 68 | 3 | 20 | 6 | 5 | 0 | 68 | 3 |
| Total Operational Year 2026 | 427 | 263 | 11,777 | 288 | 2,500 | 719 | 406 | 243 | 9,756 | 252 | 2,418 | 688 |

Table 3.2-86: Peak Daily Operational Emissions — Alternative 5 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC | PM ${ }_{10}$ | PM ${ }_{2.5}$ | NOx | SOx | CO | VOC |
|  |  |  | 10,922 |  |  |  |  |  |  |  |  |  |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | -36 | -40 | $\begin{gathered} -982 \\ -1,837 \\ \hline \end{gathered}$ | -794 | 531 | -46 | -58 | -60 | -3,002 | -831 | 449 | -77 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | No | No | No | No | No | No | No | No | No | No |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 344 | 215 | 8,523 | 236 | 2,058 | 641 | 344 | 215 | 8,523 | 236 | 2,058 | 641 |
| Project Minus NEPA Baseline | 83 | 48 | $\begin{aligned} & 3,255 \\ & \underline{2,400} \\ & \hline \end{aligned}$ | 53 | 442 | 79 | 62 | 28 | 1,234 | 16 | 360 | 48 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | Yes | No | No | Yes | No | No | Yes | No | No | No |
| Year 2033 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 190 | 178 | $\begin{gathered} 10,544 \\ 5,862 \\ \hline \end{gathered}$ | 226 | 1,216 | 692 | 156 | 146 | 4,915 | 162 | 1,095 | 649 |
| Ships: Aux Engines and Boilers | 46 | 43 | 1,854 | 102 | 176 | 69 | 43 | 41 | 1,093 | 100 | 162 | 64 |
| AMP Electricity Use | 1 | 1 | 12 | 5 | 6 | 0 | 2 | 2 | 17 | 7 | 8 | 0 |
| Tugboats | 2 | 2 | 85 | 0 | 204 | 15 | 2 | 2 | 85 | 0 | 204 | 15 |
| Trucks | 203 | 57 | 1,007 | 6 | 219 | 39 | 203 | 57 | 1,007 | 6 | 219 | 39 |
| Line Haul Locomotives | 59 | 54 | 3,150 | 8 | 1,950 | 116 | 59 | 54 | 3,150 | 8 | 1,950 | 116 |
| Switch Locomotives | 1 | 1 | 39 | 0 | 16 | 2 | 1 | 1 | 39 | 0 | 16 | 2 |
| Cargo Handling Equipment | 6 | 5 | 170 | 4 | 707 | 48 | 6 | 5 | 170 | 4 | 707 | 48 |
| Worker Vehicles | 24 | 7 | 4 | 0 | 64 | 3 | 24 | 7 | 4 | 0 | 64 | 3 |
| Total Operational Year 2033 | 531 | 348 | $\begin{aligned} & 16,867 \\ & 12,185 \\ & \hline \end{aligned}$ | 351 | 4,559 | 985 | 495 | 314 | 10,481 | 288 | 4,425 | 936 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | 68 | 45 | $\begin{aligned} & 4,109 \\ & -573 \\ & \hline \end{aligned}$ | -732 | 2,590 | 219 | 32 | 11 | -2,277 | -795 | 2,457 | 171 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | $\begin{aligned} & \text { Yes } \\ & \text { No } \\ & \hline \end{aligned}$ | No | Yes | Yes | No | No | No | No | Yes | Yes |

Table 3.2-86: Peak Daily Operational Emissions — Alternative 5 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM 10 | PM 2.5 | NOx | SOx | CO | VOC | PM ${ }_{10}$ | PM 2.5 | NOx | SOx | CO | VOC |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 405 | 270 | 7,729 | 279 | 3,437 | 852 | 405 | 270 | 7,729 | 279 | 3,437 | 852 |
| Project Minus NEPA Baseline | 127 | 78 | $\begin{aligned} & 9,138 \\ & 4,456 \\ & \hline \end{aligned}$ | 72 | 1,122 | 133 | 91 | 44 | 2,752 | 9 | 988 | 84 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | Yes | Yes | No | Yes | Yes | No | No | Yes | No | Yes | Yes |
| Year 2038 |  |  |  |  |  |  |  |  |  |  |  |  |
| Ships: Main Propulsion Engines | 190 | 178 | $\begin{gathered} 10,544 \\ 3,541 \\ \hline \end{gathered}$ | 226 | 1,216 | 692 | 156 | 146 | 3,042 | 162 | 1,095 | 649 |
| Ships: Aux Engines and Boilers | 46 | 43 | 1,854 | 102 | 176 | 69 | 43 | 41 | 745 | 100 | 162 | 64 |
| AMP Electricity Use | 1 | 1 | 12 | 5 | 6 | 0 | 2 | 2 | 17 | 7 | 8 | 0 |
| Tugboats | 2 | 2 | 77 | 0 | 176 | 13 | 2 | 2 | 77 | 0 | 176 | 13 |
| Trucks | 203 | 56 | 907 | 6 | 212 | 37 | 203 | 56 | 907 | 6 | 212 | 37 |
| Line Haul Locomotives | 37 | 34 | 2,271 | 8 | 1,950 | 85 | 37 | 34 | 2,271 | 8 | 1,950 | 85 |
| Switch Locomotives | 0 | 0 | 21 | 0 | 16 | 1 | 0 | 0 | 21 | 0 | 16 | 1 |
| Cargo Handling Equipment | 6 | 5 | 164 | 4 | 707 | 48 | 6 | 5 | 164 | 4 | 707 | 48 |
| Worker Vehicles | 24 | 7 | 4 | 0 | 56 | 3 | 24 | 7 | 4 | 0 | 56 | 3 |
| Total Operational Year 2038 | 508 | 327 | $\begin{gathered} 15,856 \\ 8,853 \end{gathered}$ | 351 | 4,516 | 947 | 472 | 293 | 7,249 | 288 | 4,382 | 899 |
| CEQA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| CEQA Baseline Emissions | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 | 464 | 303 | 12,759 | 1,083 | 1,969 | 765 |
| Project Minus CEQA Baseline | 45 | 24 | $\begin{array}{r} 3,097 \\ -3,906 \\ \hline \end{array}$ | -732 | 2,547 | 182 | 8 | -10 | -5,510 | -795 | 2,414 | 133 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | No | $\begin{aligned} & \text { Yes } \\ & \text { No } \\ & \hline \end{aligned}$ | No | Yes | Yes | No | No | No | No | Yes | Yes |
| NEPA Impacts |  |  |  |  |  |  |  |  |  |  |  |  |
| NEPA Baseline Emissions | 390 | 257 | 4,524 | 279 | 3,397 | 827 | 390 | 257 | 4,524 | 279 | 3,397 | 827 |
| Project Minus NEPA Baseline | 118 | 70 | $\begin{gathered} 11,332 \\ 4,329 \\ \hline \end{gathered}$ | 72 | 1,119 | 120 | 82 | 36 | 2,724 | 9 | 985 | 72 |
| Significance Threshold | 150 | 55 | 55 | 150 | 550 | 55 | 150 | 55 | 55 | 150 | 550 | 55 |
| Significant? | No | Yes | Yes | No | Yes | Yes | No | No | Yes | No | Yes | Yes |

Notes:

Table 3.2-86: Peak Daily Operational Emissions - Alternative 5 (Ibs/day)

|  | Without Mitigation |  |  |  |  |  | With Mitigation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Source Category | PM10 | PM2.5 | NOx | SOx | CO | VOC | PM10 | PM 2.5 | NOx | SOx | CO | VOC |

Emissions assume the simultaneous occurrence of peak daily equipment activity levels. Such levels would rarely occur during day-to-day terminal operations.
Truck, train, ship, and worker commute emissions include transport within the South Coast Air Basin.
AMP electricity use reflects indirect emissions from regional power generation.
Emissions might not precisely add due to rounding.
The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

## Section 3.2.4.5, Page 3.2-228

Revise CEQA Impact Determination first paragraph, as follows:
Table 3.2-86 shows that unmitigated peak daily operational emissions would exceed the SCAQMD daily emission thresholds and would be significant for $\mathrm{NO}_{\mathrm{x}}$ under CEQA in years 2019,2033, and 2038. Emissions of CO and VOC would alsoexceed the SCAQMD daily emission thresholds in 2033 and 2038.

Section 3.2.4.6, Pages 3.2-247 to 3.2-259, Table 3.2-93
Revise Table 3.2-93, as follows:

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
| Proposed Project | AQ-1: The proposed Project would result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.2-6. | CEQA: Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. <br> Overlapping construction and operations would be significant for NOx in 2019. | CEQA: MM AQ-1: Harbor Craft Used During Construction. <br> MM AQ-2: On-Road Trucks Used during Construction. MM AQ-3: Non-Road Construction Equipment. MM AQ-4: Cargo Ships Used During Construction. MM AQ-5: General Construction Mitigation Measure. | CEQA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. Overlapping construction and operations would be significant and unavoidable for NO x in 2019. |
|  |  | NEPA: Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. <br> Overlapping construction and operations would be significant for $\mathrm{PM}_{2.5}, \mathrm{NO}_{\mathrm{x}}$, and VOC in 2019. | NEPA: MM AQ-1 through MM AQ-5 | NEPA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. Overlapping construction and operations would be significant and unavoidable for $\mathrm{NO}_{x}$ and VOC in 2019. |
|  | AQ-2: Proposed Project construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7. | CEQA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average) and $\mathrm{PM}_{10}$ (24-hour and annual average). | CEQA: MM AQ-1 through MM AQ-5 | CEQA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average) and $\mathrm{PM}_{10}$ (24-hour and annual average). |
|  |  | NEPA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1- | NEPA: MM AQ-1 through MM AQ-5 | NEPA: Maximum off-site ambient air pollutant concentrations would be |

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
|  |  | hour average). Overlapping construction and operations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). |  | significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). |
|  | AQ-3: The proposed Project would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.2-8. | CEQA: Operations would be significant for NOx in 2019, 2033, and 2038 and CO and VOC in 2033 and 2038. | CEQA: MM AQ-6: Vessel Speed Reduction Program (VSRP). <br> MM AQ-7: Alternative Maritime Power (AMP). <br> LM AQ-1: Replacement of Equipment and Review of New Technology. <br> LM AQ-2: Priority Access System. | CEQA: Operations would be significant and unavoidable for CO and VOC in 2033 and 2038. |
|  |  | NEPA: Operations would be significant for NOx in 2019, 2026, 2033, and 2038; VOC in 2026, 2033, and 2038; and CO and $\mathrm{PM}_{2.5}$ in 2033 and 2038. | NEPA: MM AQ-6, MM AQ-7, LM AQ-1, and LM AQ-2 | NEPA: Operations would be significant and unavoidable for NOx in 2026, 2033, 2038 and CO and VOC in 2033 and 2038. |
|  | AQ-4: Proposed project operations would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-9. | CEQA: Operations would be significant for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24hour average). | CEQA: MM AQ-6 and MM AQ-7 | CEQA: Operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and PM2.5 (24-hour average). |
|  |  | NEPA: Operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual averages). | NEPA: MM AQ-6 and MM AQ-7 | NEPA: Operations would be significant and unavoidable for PM 10 (24-hour and annual averages). |

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
|  | AQ-5: The proposed Project would not generate on-road traffic that would contribute to an exceedance of the 1-hour or 8-hour CO standards. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant | NEPA: No mitigation is required | NEPA: Less than significant |
|  | AQ-6: The proposed Project would not create an objectionable odor at the nearest sensitive receptor. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant | NEPA: No mitigation is required | NEPA: Less than significant |
|  | AQ-7: The proposed Project would expose receptors to significant levels of TACs. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Construction and operation would be significant for individual cancer risk and population cancer burden. | NEPA: MM AQ-1 through MM AQ-7, LM AQ-1, and LM AQ-2 | NEPA: Less than significant |
|  | AQ-8: The proposed Project would not conflict with or obstruct implementation of an applicable AQMP. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant. |
|  |  | NEPA: Less than significant | NEPA: No mitigation is required | NEPA: Less than significant |
| Alternative 1 - No Federal Action | AQ-1: Alternative 1 would not result in constructionrelated emissions that exceed an SCAQMD threshold of significance in Table 3.2-6. | CEQA: Construction would be significant for NOx in 2018. Overlapping construction and operations would be significant for NOx in 2018 and 2019. | CEQA: MM AQ-1 through MM AQ-5 | CEQA: Less than significant. |
|  |  | NEPA: No impact | NEPA: Mitigation is not applicable | NEPA: No impact |
|  | AQ-2: Alternative 1 | CEQA: Construction would be | CEQA: MM AQ-1 through | CEQA: Construction would be |

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
|  | construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7. | significant for construction $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant for $\mathrm{PM}_{10}$ (annual average). | MM AQ-5 | significant and unavoidable for construction $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{PM}_{10}$ (annual average). |
|  |  | NEPA: No impact. | NEPA: Mitigation is not applicable | NEPA: No impact. |
|  | AQ-3: Alternative 1 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.2-8. | CEQA: Operations would be significant for NOx in 2019, 2033, and 2038 and CO and VOC in 2033 and 2038. | CEQA: MM AQ-6 and MM AQ-7 | CEQA: Operations would be significant and unavoidable for CO and VOC in 2033 and 2038. |
|  |  | NEPA: No impact | NEPA: Mitigation is not applicable | NEPA: No impact. |
|  | AQ-4: Alternative 1 operations would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-9. | CEQA: Operations would be significant for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24hour average). | CEQA: MM AQ-6 and MM AQ-7 | CEQA: Operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average), PM 10 (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24-hour average). |
|  |  | NEPA: No impact | NEPA: Mitigation is not applicable | NEPA: No impact |
|  | AQ-5: Alternative 1 would not generate on-road traffic that would contribute to an exceedance of the 1-hour or 8-hour CO standards. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: No impact | NEPA: Mitigation is not applicable | NEPA: No impact |
|  | AQ-6: Alternative 1 would not create an objectionable odor at the nearest sensitive receptor. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: No impact | NEPA: Mitigation is not applicable | NEPA: No impact |

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
|  | AQ-7: Alternative 1 would not expose receptors to significant levels of TACs. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: No impact | NEPA: Mitigation is not applicable | NEPA: No impact |
|  | AQ-8: Alternative 1 would not conflict with or obstruct implementation of an applicable AQMP. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant | NEPA: Mitigation is not applicable | NEPA: Less than significant |
| Alternative 2 <br> - No Project | AQ-1: Alternative 2 would not result in constructionrelated emissions that exceed an SCAQMD threshold of significance in Table 3.2-6. | CEQA: No impact | CEQA: No mitigation is required | CEQA: No impact |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-2: Alternative 2 construction would not result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7. | CEQA: No impact | CEQA: No mitigation is required | CEQA: No impact |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-3: Alternative 2 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.2-8. | CEQA: Operations would be significant for $\mathrm{NO} x$ in 2019, 2033, and 2038 and CO and VOC in 2033 and 2038. | CEQA: Mitigation is not applicable | CEQA: Operations would be significant and unavoidable for NOx in 2019, 2033, and 2038 and CO and VOC in 2033 and 2038. |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-4: Alternative 2 operations would result in off-site ambient air pollutant concentrations | CEQA: Operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual averages). | CEQA: Mitigation is not applicable | CEQA: Operations would be significant and unavoidable for PM 10 (24-hour and annual averages). |

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
|  | that exceed a SCAQMD threshold of significance in Table 3.2-9. | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-5: Alternative 2 would not generate on-road traffic that would contribute to an exceedance of the 1-hour or 8-hour CO standards. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-6: Alternative 2 would not create an objectionable odor at the nearest sensitive receptor. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-7: Alternative 2 would not expose receptors to significant levels of TACs. | CEQA: Less than significant | CEQA: Mitigation is not applicable | CEQA: Less than significant |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
|  | AQ-8: Alternative 2 would not conflict with or obstruct implementation of an applicable AQMP. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Not applicable | NEPA: Mitigation is not applicable | NEPA: Not applicable |
| Alternative 3 <br> - Reduced <br> Project: <br> Reduced <br> Wharf <br> Improvements | AQ-1: Alternative 3 would result in constructionrelated emissions that exceed an SCAQMD threshold of significance in Table 3.2-6. | CEQA: Construction would be significant for NO in 2018 and 2019 and for VOC in 2019. Overlapping construction and operations would be significant for NOx in 2019. | CEQA: MM AQ-1 through MM AQ-5 | CEQA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. Overlapping construction and operations would be significant and unavoidable for NOx in 2019. |
|  |  | NEPA: Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. Overlapping construction and operations would be significant for | NEPA: MM AQ-1 through MM AQ-5 | NEPA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. Overlapping construction and operations |

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
|  |  | NOx and VOC in 2019. |  | would be significant and unavoidable for $\mathrm{NO}_{x}$ and VOC in 2019. |
|  | AQ-2: Alternative 3 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7. | CEQA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual average). | CEQA: MM AQ-1 through MM AQ-5 | CEQA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for PM 10 (24-hour and annual average). |
|  |  | NEPA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). | NEPA: MM AQ-1 through MM AQ-5 | NEPA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). |
|  | AQ-3: Alternative 3 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.2-8. | CEQA: Operations would be significant for $\mathrm{NO}_{x_{-}} \mathrm{CO}$ and VOC in 2033 and 2038. | CEQA: MM AQ-6, MM AQ-7, LM AQ-1, and LM AQ-2 | CEQA: Operations would be significant and unavoidable for CO and VOC in 2033 and 2038. |
|  |  | NEPA: Operations would be significant for NOx in 2019, 2026, 2033, and 2038; $\mathrm{PM}_{2.5}, \mathrm{CO}$, and VOC in 2033 and 2038. | NEPA: MM AQ-6, MM AQ-7, LM AQ-1, and LM AQ-2 | NEPA: Operations would be significant and unavoidable for NOx in 2026, 2033, and 2038 and CO in 2033 and 2038. |
|  | AQ-4: Alternative 3 operations would result in off-site ambient air pollutant concentrations | CEQA: Operations would be significant for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24- | CEQA: MM AQ-6 and MM AQ-7 | CEQA: Operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual |

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
|  | that exceed a SCAQMD threshold of significance in Table 3.2-9. | hour average). |  | averages), and $\mathrm{PM}_{2.5}$ (24-hour average). |
|  |  | NEPA: Operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual averages). | NEPA: MM AQ-6 and MM AQ-7 | NEPA: Operations would be significant and unavoidable for PM 10 (24-hour and annual averages). |
|  | AQ-5: Alternative 3 would <br> not generate on-road <br> traffic that would <br> contribute to an <br> exceedance of the 1-hour or 8-hour CO standards. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant | CEQA: No mitigation is required | NEPA: Less than significant |
|  | AQ-6: Alternative 3 would not create an objectionable odor at the nearest sensitive receptor. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant | NEPA: No mitigation is required | NEPA: Less than significant |
|  | AQ-7: Alternative 3 would expose receptors to significant levels of TACs. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Construction and operation would be significant for individual cancer risk. | NEPA: MM AQ-1 through MM AQ-7, LM AQ-1, and LM AQ-2 | NEPA: Less than significant |
|  | AQ-8: Alternative 3 would not conflict with or obstruct implementation of an applicable AQMP. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant. |
|  |  | NEPA: Less than significant | NEPA: No mitigation is required | NEPA: Less than significant |
| Alternative 4 Reduced <br> Project: No Backland Improvements | AQ-1: Alternative 4 would result in constructionrelated emissions that exceed an SCAQMD threshold of significance in | CEQA: Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. Overlapping construction and operations would be significant for | CEQA: MM AQ-1 through MM AQ-5 | CEQA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. Overlapping construction and operations |

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
|  | Table 3.2-6. | NOx in 2019. |  | would be significant and unavoidable for NO x in 2019. |
|  |  | NEPA: Construction would be significant for $\mathrm{NO}_{x}$ in 2018 and 2019 and for VOC in 2019. <br> Overlapping construction and operations would be significant for NOx and VOC in 2019. | NEPA: MM AQ-1 through MM AQ-5 | NEPA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. Overlapping construction and operations would be significant and unavoidable for $\mathrm{NO}_{x}$ in 2019. |
|  | AQ-2: Alternative 4 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7. | CEQA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{PM}_{10}$ (annual average). | CEQA: MM AQ-1 through MM AQ-5 | CEQA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for PM 10 (annual average). |
|  |  | NEPA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). | NEPA: MM AQ-1 through MM AQ-5 | NEPA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). |
|  | AQ-3: Alternative 4 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.2-8. | CEQA: Operations would be significant for $\mathrm{NO}_{*}$-and CO in 2033 and 2038. | CEQA: MM AQ-6, MM AQ-7, LM AQ-1, and LM AQ-2 | CEQA: Operations would be significant and unavoidable for CO in 2033 and 2038. |
|  |  | NEPA: Operations would be significant for NOx in 2019, 2026, 2033, and 2038. | NEPA: MM AQ-6, MM AQ-7, LM AQ-1, and LM AQ-2 | NEPA: Operations would be significant and unavoidable for NOx in 2026, 2033, and 2038. |

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
|  | AQ-4: Alternative 4 operations would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-9. | CEQA: Operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual averages). | CEQA: MM AQ-6 and MM AQ-7 | CEQA: Operations would be significant and unavoidable for PM 10 (24-hour and annual averages). |
|  |  | NEPA: Operations would be significant for $\mathrm{NO}_{2}$ (federal 1-hour and state annual average) and $\mathrm{PM}_{10}$ (24-hour and annual averages). | NEPA: MM AQ-6 and MM AQ-7 | NEPA: Operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour and state annual average) and $\mathrm{PM}_{10}$ (24-hour and annual averages). |
|  | AQ-5: Alternative 4 would not generate on-road traffic that would contribute to an exceedance of the 1-hour or 8-hour CO standards. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant | NEPA: No mitigation is required | NEPA: Less than significant |
|  | AQ-6: Alternative 4 would not create an objectionable odor at the nearest sensitive receptor. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant | NEPA: No mitigation is required | NEPA: Less than significant |
|  | AQ-7: Alternative 4 would not expose receptors to significant levels of TACs. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant | NEPA: No mitigation is required | NEPA: Less than significant |
|  | AQ-8: Alternative 4 would not conflict with or obstruct implementation of an applicable AQMP. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant. |
|  |  | NEPA: Less than significant | NEPA: No mitigation is required | NEPA: Less than significant |

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
| Alternative 5 - <br> Expanded <br> On-Dock <br> Railyard: <br> Wharf and <br> Backland <br> Improvements <br> with an <br> Expanded <br> TICTF | AQ-1: Alternative 5 would result in constructionrelated emissions that exceed an SCAQMD threshold of significance in Table 3.2-6. | CEQA: Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. <br> Overlapping construction and operations would be significant for NOx in 2019. | CEQA: MM AQ-1 through MM AQ-5 | CEQA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. Overlapping construction and operations would be significant and unavoidable for NOx in 2019. |
|  |  | NEPA: Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. <br> Overlapping construction and operations would be significant for $\mathrm{PM}_{2.5}, \mathrm{NOx}_{\mathrm{x}}$, and VOC in 2019. | NEPA: MM AQ-1 through MM AQ-5 | NEPA: Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. Overlapping construction and operations would be significant and unavoidable for NO x and VOC in 2019. |
|  | AQ-2: Alternative 5 construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7. | CEQA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal and state 1-hour average). <br> Overlapping construction and operations would be significant for PM 10 (24-hour and annual average). | CEQA: MM AQ-1 through MM AQ-5 | CEQA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{PM}_{10}$ (24-hour and annual average). |
|  |  | NEPA: Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant for $\mathrm{NO}_{2}$ (federal 1hour average). | NEPA: MM AQ-1 through MM AQ-5 | NEPA: Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). |

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
|  | AQ-3: Alternative 5 would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.2-8. | CEQA: Operations would be significant for NOx in 2019, 2033, and 2038 and CO and VOC in 2033 and 2038. | CEQA: MM AQ-6, MM AQ-7, LM AQ-1, and LM AQ-2 | CEQA: Operations would be significant and unavoidable for CO and VOC in 2033 and 2038. |
|  |  | NEPA: Operations would be significant for NOx in 2019, 2026, 2033, and 2038; VOC in 2026, 2033, and 2038; and $\mathrm{PM}_{2.5}$ and CO in 2033 and 2038. | NEPA: MM AQ-6, MM AQ-7, LM AQ-1, and LM AQ-2 | NEPA: Operations would be significant and unavoidable for NOx in 2026, 2033, 2038 and CO and VOC in 2033 and 2038. |
|  | AQ-4: Alternative 5 operations would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-9. | CEQA: Operations would be significant for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24hour average). | CEQA: MM AQ-6 and MM AQ-7 | CEQA: Operations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24-hour average). |
|  |  | NEPA: Operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual averages). | NEPA: MM AQ-6 and MM AQ-7 | NEPA: Operations would be significant and unavoidable for PM 10 (24-hour and annual averages). |
|  | AQ-5: Alternative 5 would not generate on-road traffic that would contribute to an exceedance of the 1-hour or 8-hour CO standards. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant | NEPA: No mitigation is required | NEPA: Less than significant |
|  | AQ-6: Alternative 5 would not create an objectionable odor at the nearest sensitive receptor. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant |
|  |  | NEPA: Less than significant | NEPA: No mitigation is required | NEPA: Less than significant |
|  | AQ-7: Alternative 5 would | CEQA: Less than significant | CEQA: No mitigation is | CEQA: Less than significant |

Table 3.2-93: Summary Matrix of Potential Impacts and Mitigation Measures for Air Quality Associated with the Proposed Project and Alternatives

| Alternative | Environmental Impacts | Impact Determination | Mitigation Measures | Residual Impacts after Mitigation |
| :---: | :---: | :---: | :---: | :---: |
|  | expose receptors to significant levels of TACs. |  | required |  |
|  |  | NEPA: Construction and operation would be significant for individual cancer risk and population cancer burden. | NEPA: MM AQ-1 through MM AQ-7, LM AQ-1, and LM AQ-2 | NEPA: Less than significant |
|  | AQ-8: Alternative 5 would not conflict with or obstruct implementation of an applicable AQMP. | CEQA: Less than significant | CEQA: No mitigation is required | CEQA: Less than significant. |
|  |  | NEPA: Less than significant | NEPA: No mitigation is required | NEPA: Less than significant |

## Section 3.2.4.7, Pages 3.2-360 to 3.2-362

Under Impacts AQ-1, AQ-2 and AQ-7 revise mitigation measures MM AQ-2, MM AQ3, MM AQ-5, and MM AQ-7, as follows:

| Mitigation Measure | MM AQ-2. On-Road Trucks Used during Construction. On-road trucks shall comply with EPA 2010 on-road emission standards or better, unless the contractor can reasonably demonstrate provides a written finding consistent with project contract or lease management requirements and obtains written approval from the Lead Agency that such equipment is unavailable to the satisfaction of LAHD. |
| :---: | :---: |
| Timing | During specified construction phases. |
| Methodology | LAHD will include MM AQ-2 in the contract specifications for construction. LAHD will monitor implementation of mitigation measures during construction. |
| Responsible Parties | LAHD. |
| Residual Impacts | Significant and unavoidable |
| Mitigation Measure | MM AQ-3. Non-Road Construction Equipment (except vessels, harbor craft, onroad trucks, and dredging equipment). All non-road construction equipment greater than 50 hp must meet EPA Tier 4 emission standards, unless the contractor ean reasonably demonstrate provides a written finding consistent with project contract or lease management requirements and obtains written approval from the Lead Agency that such equipment is unavailable to the satisfaction of LAHD. |
| Timing | During specified construction phases. |
| Methodology | LAHD will include MM AQ-3 in the contract specifications for construction. LAHD will monitor implementation of mitigation measures during construction. |
| Responsible Parties | LAHD. |
| Mitigation Measure | MM AQ-4. Cargo Ships Used During Construction. All ships and barges used primarily to deliver construction-related materials or cranes shall comply with the expanded Vessel Speed Reduction Program (VSRP) of 12 knots between 40 nautical miles ( nm ) from Point Fermin and the Precautionary Area. |
| Timing | During specified construction phases or crane deliveries. |
| Methodology | LAHD will include MM AQ-4 in the contract specifications for construction. LAHD will monitor implementation of mitigation measures during construction. <br> For crane deliveries, LAHD will include this mitigation measure in lease agreements with tenants. |
| Responsible Parties | Everport, LAHD. |
| Residual Impacts | Significant and unavoidable |
| Mitigation Measure | MM AQ-5. General Construction Mitigation Measure. All dredging equipment must be electric; however, this is subject to availability of the equipment. For MM AQ1 through MM AQ-4, if a CARB-certified technology becomes available that is as good as or better than the existing measure in terms of emissions performance, the technology could replace the existing technology if approved by LAHD. |
| Timing | During specified construction phases. |
| Methodology | LAHD will include MM AQ-5 in the contract specifications for construction. LAHD will monitor implementation of mitigation measures during construction. |


| Responsible <br> Parties | LAHD |
| :--- | :--- |
| Residual <br> Impacts | Significant and unavoidable |
| Impact AQ-3: The proposed Project would result in operational emissions that exceed an SCAQMD <br> threshold of significance in Table 3.2-8. <br> (Also applies to Impact AQ-3 for Alternatives 1 and 3 through 5) <br> Impact AQ-7: The proposed Project would expose receptors to significant levels of TACs. <br> (Also applies to Impact AQ-7 for Alternatives 3 and 5) |  |
| Mitigation <br> Measure | MM AQ-6. Vessel Speed Reduction Program (VSRP). Starting January 1, 2019 <br> and thereafter, 95 percent of Evergreen ships calling at the Everport Container <br> Terminal shall be required to comply with the expanded VSRP at 12 knots between 40 <br> nm from Point Fermin and the Precautionary Area. Starting January 1, 2026, 95 <br> percent of all ships calling at the Everport Container Terminal will follow this <br> requirement. Alternative Compliance Plans will be considered where a different speed <br> that would result in fewer emissions compared to the current speed limits. <br> Any alternative compliance plan shall be submitted to LAHD at least 90 days in <br> advance for approval and shall be supported by data that demonstrates the ability of <br> the alternative compliance plan for the specific vessel and type to achieve emissions <br> reductions comparable to or greater than those achievable by compliance with VSRP. <br> The alternative compliance plan shall be implemented once written notice of approval <br> is granted by the LAHD. |
| Timing | During operation. |
| Methodology | LAHD will include this mitigation measure in lease agreements with tenants. |
| Responsible <br> Parties | Everport, LAHD. |
| Residual <br> Impacts | Significant and unavoidable. <br> Mitigation <br> Measure <br> MM AQ-7. Alternative Maritime Power (AMP). By 2020 or upon substantial <br> completion of construction, 8590 percent of Evergreen ships calling at the Everport <br> Terminal must use AMP. By 2026, 95 percent of all ship calls at the Everport <br> Container Terminal must use AMP or approved equivalent under the CARB Shore- <br> Power Regulation. The equivalent alternative technology must, at a minimum, meet <br> the emissions reductions that would be achieved from AMP. <br> Timing During operation. |
| Methodology | LAHD will include this mitigation measure in lease agreements with tenants. |
| Responsible <br> Parties | Everport, LAHD. |
| Residual <br> Impacts | Significant and unavoidable. |

## Section 3.2.5.2, Page 3.2-264

Revise the first four paragraphs as follows:
Emissions from proposed project operation would exceed significance thresholds for NOX in 2019, 2033, and 2038 and CO and VOC in 2033 and 2038 under CEQA; after mitigation, emissions would remain significant and unavoidable for CO and VOC in 2033 and 2038. Emissions from proposed project operation would exceed significance thresholds for NOX in 2019, 2026, 2033, and 2038, for VOC in 2026, 2033, and 2038, and for CO and $\mathrm{PM}_{2.5}$ in 2033 and 2038 under NEPA; after mitigation, emissions would
remain significant and unavoidable for $\mathrm{NO}_{\mathrm{x}}$ in 2026, 2033, and 2038 and for CO and VOC in 2033 and 2038. Impact determinations would be the same for Alternative 5 as for the proposed Project. Impact determinations under CEQA would be the same for Alternative 1 as for the proposed Project. Alternative 1 would have the same conditions as the NEPA baseline; therefore, there would be no impacts under NEPA.

Emissions from Alternative 2 operation would exceed significance thresholds for $\mathrm{NO}_{\mathrm{x}}$ in 2019,2033, and 2038 and for CO and VOC in 2033 and 2038 under CEQA. Mitigation is not required because there would be no discretionary action under CEQA for Alternative 2. Emissions would remain significant and unavoidable for $\mathrm{NO}_{\mathrm{x}}$ in 2019, 2033, and 2038 and for CO and VOC in 2033 and 2038 under CEQA. Alternative 2 is not analyzed under NEPA.

Emissions from Alternative 3 operation would exceed significance thresholds for $\mathrm{NO}_{\mathrm{x}}$; CO, and VOC in 2033 and 2038 under CEQA; after mitigation, emissions would remain significant and unavoidable for CO and VOC in 2033 and 2038. Emissions from Alternative 3 operation would exceed significance thresholds for $\mathrm{NO}_{\mathrm{x}}$ in 2019, 2026, 2033, and 2038 and for $\mathrm{PM}_{2.5}$, CO, and VOC in 2033, and 2038 under NEPA; after mitigation, emissions would remain significant and unavoidable for $\mathrm{NO}_{\mathrm{x}}$ in 2026, 2033, and 2038 and for CO in 2033 and 2038.

Emissions from Alternative 4 operation would exceed significance thresholds for $\mathrm{NO}_{*}$ and-CO in 2033 and 2038 under CEQA; after mitigation, emissions would remain significant and unavoidable for CO in 2033 and 2038. Emissions from Alternative 4 operation would exceed significance thresholds for $\mathrm{NO}_{x}$ in 2019, 2026, 2033, and 2038 under NEPA; after mitigation, emissions would remain significant and unavoidable for $\mathrm{NO}_{\mathrm{x}}$ in 2026, 2033, and 2038.

### 3.2.3 Changes Made to Section 3.3, Biological Resources Section 3.3.4.3, Page 3.3-36

Revise the footnote to mitigation measure MM BIO-1, as follows:
MM BIO-1 Protect Marine Mammals. Although it is expected that marine mammals will voluntarily move away from the area at the commencement of the vibratory or "soft start" of pile driving activities, as a precautionary measure, pile driving activities occurring as part of the sheet pile and king pile installation will include establishment of a safety zone, by a qualified marine mammal professional, and the area surrounding the operations (including the safety zones) will be monitored for marine mammals by a qualified marine mammal observer. ${ }^{1}$

The pile driving site will move with each new pile; therefore, the safety zones will move accordingly.

[^21]Paper prepared for this purpose by LAHD (LAHD 2017). Final pile driving safety zone requirements developed by the selected marine mammal professional shall be submitted to LAHD Construction and Environmental Management Divisions-prior to commencement of pile driving.

## Section 3.3.4.5, Page 3.3-90

Under Impact BIO-1 revise the footnote to mitigation measure MM BIO-1, as follows:
 Measure

MM BIO-1: Protect Marine Mammals. Although it is expected that marine mammals will voluntarily move away from the area at the commencement of the vibratory or "soft start" of pile-driving activities, as a precautionary measure, pile-driving activities occurring as part of the sheet pile and king pile installation will include establishment of level B (harassment) and level A (injury) safety zones by a qualified marine mammal professional, and the area surrounding the operations (including the safety zones) will be monitored for marine mammals by a qualified marine mammal observer. ${ }^{1}$
The pile-driving site will move with each new pile; therefore, the safety zones will move accordingly.
${ }^{1}$ Marine mammal professional qualifications shall be identified based on criteria established by LAHD during the construction bid specification process. Upon selection as part of the construction award winning team, the qualified marine mammal professional shall develop site specific pile-driving safety zone requirements, which shall follow NOAA Fisheries Technical Guidance Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NOAA Fisheries 2016) in consultation with the Acoustic Threshold White Paper prepared for this purpose by LAHD (LAHD 2017). Final pile-driving safety zone requirements developed by the selected marine mammal professional shall be submitted to LAHD Construction and Environmental Management Divisions prior to commencement of piledriving.

### 3.2.4 Changes Made to Section 3.5, Greenhouse Gas Emissions

Section 3.5.5.2, Page 3.5-17, Table 3.5-1

Revise Table 3.5-1, as follows:
Table 3.5-1: Annual Operational GHG Emissions-CEQA Baseline 2013 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}^{\mathbf{1}}$ |
| :--- | :---: | :---: | :---: | :---: |
| Ships—transit and anchoring | 49,200 | 1 | 3 | 49,906 |
| Ships—hoteling | 7,488 | 1 | 22 | 13,443 |
| AMP electricity use | 2,436 | $<1$ | $<1$ | 2,441 |
| Tugboats | 617 | $<1$ | $<1$ | 625 |
| Trucks | 55,872 | $<1$ | 2 | 56,418 |
|  | 27,731 |  |  | 27,987 |
| Line haul locomotives | 19,200 | 2 | 1 | 19,378 |
| Switch locomotives | 267 | $<1$ | $<1$ | 269 |
| Cargo handling equipment | 18,398 | 1 | $<1$ | 18,523 |
| On-terminal electricity use | 4,469 | $<1$ | $<1$ | 4,479 |

Table 3.5-1: Annual Operational GHG Emissions—CEQA Baseline 2013 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}^{\mathbf{1}}$ |
| :--- | :---: | :---: | :---: | :---: |
| Worker vehicles | 1,902 | $<1$ | $<1$ | 1,986 |
|  | 168,382 |  |  | 176,076 |
| 2013 Baseline Total | $\underline{159,849}$ | 5 | 28 | $\underline{167,468}$ |

Notes:
Emissions might not add precisely due to rounding. For more explanation, refer to the discussion in Section 3.2.4.1 in Section 3.2, Air Quality and Meteorology. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
On-terminal electricity use includes crane operation and high mast poles.

## Section 3.5.5.2, Pages $3.5-20$ to $3.5-21$, Table 3.5-3

Revise Table 3.5-3, as follows:
Table 3.5-3: Annual Operational GHG Emissions - NEPA Baseline (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Amortized Construction |  |  |  | 47 |
| Year 2018 |  |  |  |  |
| Ships - Transit and Anchoring | 53,821 | 1 | 3 | 54,591 |
| Ships - Hoteling | 8,780 | <1 | 1 | 8,921 |
| AMP Electricity Use | 2,436 | <1 | <1 | 2,441 |
| Tugboats | 784 | <1 | <1 | 793 |
| Trucks | 51,656 | <1 | 2 | 52,135 |
| Line Haul Locomotives | $\begin{aligned} & 30,064 \\ & 20,123 \\ & \hline \end{aligned}$ | 2 | 1 | $\begin{aligned} & 30,342 \\ & \underline{20,309} \\ & \hline \end{aligned}$ |
| Switch Locomotives | 272 | <1 | <1 | 274 |
| Cargo Handling Equipment | 15,262 | <1 | <1 | 15,361 |
| On-terminal Electricity Use | 4,509 | <1 | <1 | 4,519 |
| Worker Vehicles | 3,412 | <1 | 1 | 3,565 |
| Total Operational Year 2018 | $\begin{aligned} & 170,996 \\ & 161,055 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{aligned} & 172,942 \\ & 162,909 \\ & \hline \end{aligned}$ |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{aligned} & 172,989 \\ & 162,956 \\ & \hline \end{aligned}$ |
| Year 2019 |  |  |  |  |
| Ships - Transit and Anchoring | 53,906 | 1 | 3 | 54,679 |
| Ships - Hoteling | 8,707 | <1 | 1 | 8,848 |
| AMP Electricity Use | 2,639 | <1 | <1 | 2,645 |
| Tugboats | 793 | <1 | <1 | 802 |

Table 3.5-3: Annual Operational GHG Emissions - NEPA Baseline (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Trucks | 56,315 | <1 | 2 | 56,836 |
| Line Haul Locomotives | $\begin{aligned} & 30,693 \\ & 20,181 \\ & \hline \end{aligned}$ | 2 | 1 | $\begin{aligned} & 30,977 \\ & 20,367 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 275 | <1 | <1 | 277 |
| Cargo Handling Equipment | 15,611 | 1 | <1 | 15,712 |
| On-terminal Electricity Use | 3,276 | <1 | <1 | 3,283 |
| Worker Vehicles | 3,176 | <1 | 1 | 3,329 |
| Total Operational Year 2019 | $\begin{aligned} & 175,392 \\ & 164,879 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{aligned} & 177,388 \\ & 166,778 \\ & \hline \end{aligned}$ |
| Total Construction and Operations Year 2019 |  |  |  | $\begin{aligned} & 177,435 \\ & 166,825 \\ & \hline \end{aligned}$ |
| Year 2026 |  |  |  |  |
| Ships - Transit and Anchoring | 54,909 | 1 | 3 | 55,697 |
| Ships - Hoteling | 8,460 | <1 | 1 | 8,599 |
| AMP Electricity Use | 3,046 | <1 | <1 | 3,052 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 50,297 | <1 | 2 | 50,753 |
| Line Haul Locomotives | $\begin{aligned} & 32,958 \\ & 21,533 \\ & \hline \end{aligned}$ | $\begin{aligned} & 3 \\ & \underline{2} \end{aligned}$ | 1 | $\begin{aligned} & 33,263 \\ & 21,732 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 318 | <1 | <1 | 321 |
| Cargo Handling Equipment | 17,464 | 1 | <1 | 17,577 |
| On-terminal Electricity Use | 3,536 | <1 | <1 | 3,544 |
| Worker Vehicles | 2,703 | $<1$ | 1 | 2,865 |
| Total Operational Year 2026 | $\begin{array}{r} 174,484 \\ 163,059 \\ \hline \end{array}$ | $\begin{aligned} & 5 \\ & \underline{6} \end{aligned}$ | 7 | $\begin{aligned} & 176,472 \\ & 164,942 \\ & \hline \end{aligned}$ |
| Total Construction and Operations Year 2026 |  |  |  | $\begin{aligned} & 176,519 \\ & 164,989 \\ & \hline \end{aligned}$ |

Year 2033

| Ships - Transit and Anchoring | 72,858 | 2 | 4 | 73,903 |
| :--- | :---: | :---: | :---: | :---: |
| Ships - Hoteling | 11,667 | $<1$ | 1 | 11,858 |
| AMP Electricity Use | 4,402 | $<1$ | $<1$ | 4,412 |
| Tugboats | 1,057 | $<1$ | $<1$ | 1,070 |
| Trucks | 48,181 | $<1$ | 2 | 48,617 |
|  | 148,712 | 12 | 4 | 150,087 |
| Line Haul Locomotives | $\underline{47,878}$ | $\underline{4}$ | $\underline{1}$ | $\underline{48,320}$ |
| Switch Locomotives | 706 | $<1$ | $<1$ | 712 |

Table 3.5-3: Annual Operational GHG Emissions - NEPA Baseline (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{2} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| Cargo Handling Equipment | 22,206 | 1 | $<1$ | 22,349 |
| On-terminal Electricity Use | 4,203 | $<1$ | $<1$ | 4,212 |
| Worker Vehicles | 2,790 | $<1$ | 1 | 2,979 |
|  | 316,783 | 15 | 11 | 320,199 |
| Total Operational Year 2033 | $\underline{215,948}$ | $\underline{7}$ | $\underline{9}$ | $\underline{218,432}$ |
| Total Construction and Operations Year 2033 |  |  |  | 320,246 |
| Year 2038 |  |  |  | $\underline{218,479}$ |
| Ships - Transit and Anchoring | 72,858 | 2 | 4 | 73,903 |
| Ships - Hoteling | 11,667 | $<1$ | 1 | 11,858 |
| AMP Electricity Use | 4,402 | $<1$ | $<1$ | 4,412 |
| Tugboats | 1,057 | $<1$ | $<1$ | 1,070 |
| Trucks | 47,477 | $<1$ | 2 | 47,907 |
| Line Haul Locomotives | 148,712 | 12 | 4 | 150,087 |
| Switch Locomotives | $\underline{47,878}$ | $\underline{4}$ | $\underline{1}$ | $\underline{48,320}$ |
| Cargo Handling Equipment | 706 | $<1$ | $<1$ | 712 |
| On-terminal Electricity Use | 22,206 | 1 | $<1$ | 22,349 |
| Worker Vehicles | 4,203 | $<1$ | $<1$ | 4,212 |
| Total Operational Year 2038 | 2,648 | $<1$ | 1 | 2,837 |
| Total Construction and Operations Year 2038 |  |  |  |  |

Notes: Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available. On-terminal electricity use includes crane operation and high mast poles.

## Section 3.5.5.4, Pages 3.5-27 to 3.5-32, Table 3.5-5

Revise Table 3.5-5, as follows:
Table 3.5-5: Construction and Operational GHG Emissions without Mitigation - Proposed Project (mty)

| Source Category |  |  |  |  |  | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{2} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Amortized Construction |  |  |  | 158 |  |  |  |  |  |
| Ocean Disposal |  |  |  | 201 |  |  |  |  |  |
| Upland Disposal |  |  |  |  |  |  |  |  |  |

Table 3.5-5: Construction and Operational GHG Emissions without Mitigation - Proposed Project (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Year 2018 |  |  |  |  |
| Ships - Transit and Anchoring | 51,596 | 1 | 3 | 52,335 |
| Ships - Hoteling | 8,417 | <1 | 1 | 8,552 |
| AMP Electricity Use | 2,335 | <1 | <1 | 2,340 |
| Tugboats | 751 | <1 | <1 | 761 |
| Trucks | 51,656 | <1 | 2 | 52,135 |
| Line Haul Locomotives | $\begin{aligned} & 27,833 \\ & 20,141 \\ & \hline \end{aligned}$ | 2 | 1 | $\begin{aligned} & \hline 28,090 \\ & \underline{20,327} \end{aligned}$ |
| Switch Locomotives | 261 | <1 | <1 | 263 |
| Cargo Handling Equipment | 14,798 | <1 | <1 | 14,893 |
| On-terminal Electricity Use | 4,420 | <1 | <1 | 4,429 |
| Worker Vehicles | 3,412 | <1 | 1 | 3,565 |
| Total Operational Year 2018 | $\begin{aligned} & 163,140 \\ & 157,787 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{array}{r} 167,362 \\ 159,600 \\ \hline \end{array}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{array}{r} 167,520 \\ 159,758 \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Proposed Project Minus CEQA Baseline |  |  |  | $\begin{array}{r} -8,556 \\ -7,710 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 172,989 \\ & 162,956 \\ & \hline \end{aligned}$ |
| Proposed Project Minus NEPA Baseline |  |  |  | $\begin{aligned} & -5,469 \\ & -3,198 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{aligned} & 167,563 \\ & 159,801 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{array}{r} 176,076 \\ 167,468 \\ \hline \end{array}$ |
| Proposed Project Minus CEQA Baseline |  |  |  | -8,513 |

Table 3.5-5: Construction and Operational GHG Emissions without Mitigation - Proposed Project (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  | $\underline{-7,667}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  | 172,989 |
|  |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\underline{162,956}$ |
|  |  |  |  | $-5,426$ |
| Proposed Project Minus NEPA Baseline |  |  |  | $\underline{-3,155}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |

Year 2019

| Ships - Transit and Anchoring | 53,919 | 1 | 3 | 54,690 |
| :--- | :---: | :---: | :---: | :---: |
| Ships - Hoteling | 9,557 | $<1$ | 1 | 9,707 |
| AMP Electricity Use | 2,517 | $<1$ | $<1$ | 2,523 |
| Tugboats | 793 | $<1$ | $<1$ | 802 |
| Trucks | 56,690 | $<1$ | 2 | 57,215 |
| Line Haul Locomotives | 30,846 | 3 |  | 31,131 |
|  | $\underline{20,261}$ | $\underline{2}$ | 1 | $\underline{20,449}$ |
|  | 279 | $<1$ | $<1$ | 282 |
| On-terminal Electricity Use | 18,475 | 1 | $<1$ | 18,601 |
| Worker Vehicles | 4,568 | $<1$ | $<1$ | 4,578 |
|  | 3,198 | $<1$ | 1 | 3,351 |
| Total Operational Year 2019 | $\mathbf{1 8 0 , 8 4 2}$ | 5 |  | 182,880 |
|  | $\underline{170,257}$ | $\underline{4}$ | 7 | $\underline{172,198}$ |

With Ocean Disposal

|  |  |  |  | $\mathbf{1 8 3 , 0 3 9}$ |
| :--- | :--- | :--- | :--- | :--- |
| Total Construction and Operations Year 2019 |  |  |  | $\underline{172,356}$ |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | 167,468 |
|  |  |  |  | 6,962 |
| Proposed Project Minus CEQA Baseline |  |  |  | 4,888 |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |

NEPA Impacts

|  |  |  |  | 177,435 <br> 166,825 |
| :--- | :--- | :--- | :--- | :---: |
| NEPA Baseline Emissions |  |  |  | 5,603 |

Table 3.5-5: Construction and Operational GHG Emissions without Mitigation - Proposed Project (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  | $\underline{5,531}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |

With Upland Disposal

|  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  | 183,082 |  |  |  |
| Total Construction and Operations Year 2019 |  |  |  | $\underline{172,399}$ |


| CEQA Impacts |  |  |  | 176,076 |
| :--- | :--- | :--- | :--- | :---: |
|  |  |  |  | 167,468 |
| CEQA Baseline Emissions |  |  |  | 7,005 |
|  |  |  |  | 4,931 |
| Proposed Project Minus CEQA Baseline |  |  |  | 10,000 |
| Significance Threshold |  |  |  | No |
| Significant? |  |  |  |  |


| NEPA Impacts |  |  |  |  |
| :--- | :--- | :--- | :---: | :---: |
|  |  |  | 177,435 |  |
| NEPA Baseline Emissions |  |  |  | $\underline{166,825}$ |
|  |  |  |  | 5,646 |
| Proposed Project Minus NEPA Baseline |  |  |  | 5,574 |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| Yer |  |  |  |  |

Year 2026

| Ships - Transit and Anchoring | 56,488 | 1 | 3 | 57,297 |
| :--- | :---: | :---: | :---: | :---: |
| Ships - Hoteling | 13,532 | $<1$ | 1 | 13,740 |
| AMP Electricity Use | 5,310 | $<1$ | $<1$ | 5,321 |
| Tugboats | 793 | $<1$ | $<1$ | 802 |
| Trucks | 64,509 | $<1$ | 2 | 65,094 |
|  | 52,835 | 4 |  | 53,324 |
| Line Haul Locomotives | $\underline{27,759}$ | $\underline{2}$ | 1 | $\underline{28,015}$ |
| Switch Locomotives | 410 | $<1$ | $<1$ | 413 |
| Cargo Handling Equipment | 26,244 | 1 | 1 | 26,424 |
| On-terminal Electricity Use | 5,506 | $<1$ | $<1$ | 5,518 |
| Worker Vehicles | 3,176 | $<1$ | 1 | 3,365 |
|  | $\mathbf{2 2 8 , 8 0 2}$ | 7 |  | 231,297 |
| Total Operational Year 2026 | $\underline{203,727}$ | $\underline{5}$ | 9 | $\underline{205,989}$ |

With Ocean Disposal
Total Construction and Operations Year 2026
231,456

CEQA Impacts

Table 3.5-5: Construction and Operational GHG Emissions without Mitigation - Proposed Project (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Proposed Project Minus CEQA Baseline |  |  |  | $\begin{aligned} & 55,379 \\ & 38,679 \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 176,519 \\ 164,989 \\ \hline \end{array}$ |
| Proposed Project Minus NEPA Baseline |  |  |  | $\begin{aligned} & 54,937 \\ & 41,158 \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2026 |  |  |  | $\begin{aligned} & 231,499 \\ & \underline{206,190} \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Proposed Project Minus CEQA Baseline |  |  |  | $\begin{aligned} & 55,422 \\ & 38,679 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 176,519 \\ 164,989 \\ \hline \end{array}$ |
| Proposed Project Minus NEPA Baseline |  |  |  | $\begin{array}{r} 54,980 \\ 41,989 \\ \hline \end{array}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2033 |  |  |  |  |
| Ships - Transit and Anchoring | 75,206 | 2 | 4 | 76,283 |
| Ships - Hoteling | 16,741 | $<1$ | 1 | 17,003 |
| AMP Electricity Use | 6,201 | <1 | <1 | 6,214 |
| Tugboats | 1,057 | $<1$ | <1 | 1,070 |
| Trucks | 67,734 | <1 | 2 | 68,345 |
| Line Haul Locomotives | $\begin{gathered} 247,324 \\ \underline{62,105} \\ \hline \end{gathered}$ | $\begin{gathered} 20 \\ \underline{5} \\ \hline \end{gathered}$ | $\begin{aligned} & \hline 7 \\ & \underline{2} \\ & \hline \end{aligned}$ | $\begin{gathered} 249,609 \\ \underline{62,679} \\ \hline \end{gathered}$ |

Table 3.5-5: Construction and Operational GHG Emissions without Mitigation - Proposed Project (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Switch Locomotives | 924 | <1 | <1 | 932 |
| Cargo Handling Equipment | 33,878 | 1 | 1 | 34,111 |
| On-terminal Electricity Use | 6,426 | <1 | <1 | 6,439 |
| Worker Vehicles | 3,331 | $<1$ | 1 | 3,555 |
| Total Operational Year 2033 | $\begin{aligned} & 458,823 \\ & 273,603 \\ & \hline \end{aligned}$ | $\begin{gathered} 24 \\ \underline{9} \end{gathered}$ | $\begin{aligned} & 15 \\ & 10 \\ & \hline \end{aligned}$ | $\begin{aligned} & 463,561 \\ & 276,631 \\ & \hline \end{aligned}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2033 |  |  |  | $\begin{aligned} & 463,720 \\ & \underline{276,789} \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Proposed Project Minus CEQA Baseline |  |  |  | $\begin{aligned} & 287,643 \\ & 109,321 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 320,246 \\ & 218,479 \\ & \hline \end{aligned}$ |
| Proposed Project Minus NEPA Baseline |  |  |  | $\begin{gathered} 143,474 \\ 58,310 \\ \hline \end{gathered}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2033 |  |  |  | $\begin{aligned} & 463,763 \\ & \underline{276,832} \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Proposed Project Minus CEQA Baseline |  |  |  | $\begin{aligned} & 287,686 \\ & 109,364 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 320,246 \\ & 218,479 \\ & \hline \end{aligned}$ |
| Proposed Project Minus NEPA Baseline |  |  |  | $\begin{gathered} 143,517 \\ 58,353 \\ \hline \end{gathered}$ |

Table 3.5-5: Construction and Operational GHG Emissions without Mitigation - Proposed Project (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2038 |  |  |  |  |
| Ships - Transit and Anchoring | 75,206 | 2 | 4 | 76,283 |
| Ships - Hoteling | 16,741 | $<1$ | 1 | 17,003 |
| AMP Electricity Use | 6,201 | $<1$ | $<1$ | 6,214 |
| Tugboats | 1,057 | $<1$ | $<1$ | 1,070 |
| Trucks | 66,747 | $<1$ | 2 | 67,351 |
|  | 247,324 | 20 | 7 | 249,609 |
| Line Haul Locomotives | $\underline{62,105}$ | $\underline{5}$ | $\underline{2}$ | $\underline{62,679}$ |
| Switch Locomotives | 924 | $<1$ | $<1$ | 932 |
| Cargo Handling Equipment | 33,878 | 1 | 1 | 34,111 |
| On-terminal Electricity Use | 6,426 | $<1$ | $<1$ | 6,439 |
| Worker Vehicles | 3,162 | $<1$ | 1 | 3,386 |
|  | 457,666 | 24 | 15 | 462,398 |
| Total Operational Year 2038 | $\underline{272,447}$ | $\underline{9}$ | $\underline{10}$ | $\underline{275,468}$ |

With Ocean Disposal

|  |  |  |  | 462,556 <br> Total Construction and Operations Year 2038 |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  | $\underline{75,468}$ |  |


| CEQA Impacts |  |  |  |  |  |  |  |  | 176,076 |
| :--- | :--- | :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $\underline{167,468}$ |  |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | 286,480 |  |  |  |  |  |
|  |  |  |  | 108,158 |  |  |  |  |  |
| Proposed Project Minus CEQA Baseline |  |  |  | 10,000 |  |  |  |  |  |
| Significance Threshold |  |  |  | Yes |  |  |  |  |  |
| Significant? |  |  |  |  |  |  |  |  |  |

NEPA Impacts

|  |  |  |  | 319,394 |
| :--- | :--- | :--- | :--- | :---: |
| NEPA Baseline Emissions |  |  |  | $\underline{217,627}$ |
|  |  |  |  | 143,161 |
| Proposed Project Minus NEPA Baseline |  |  |  | $\underline{57,999}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |

With Upland Disposal

| Total Construction and Operations Year 2038 |  |  |  | 462,599 |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{2 7 5 , 6 6 9}$ |  |  |  |  |$|$| CEQA Impacts |  |  |  |
| :--- | :--- | :--- | :--- |
| CEQA Baseline Emissions |  |  |  |

Table 3.5-5: Construction and Operational GHG Emissions without Mitigation - Proposed Project (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  | $\mathbf{1 6 7 , 4 6 8}$ |
| Proposed Project Minus CEQA Baseline |  |  |  | $\mathbf{2 8 6 , 5 2 3}$ |
| Significance Threshold |  |  |  | $\mathbf{1 0 8 , 2 0 1}$ |
| Significant? |  |  |  | 10,000 |
| NEPA Impacts |  |  |  | Yes |
|  |  |  | 319,394 |  |
| NEPA Baseline Emissions |  |  | $\mathbf{2 1 7 , 6 2 7}$ |  |
|  |  |  | 58,204 |  |
| Proposed Project Minus NEPA Baseline |  |  |  | 25,000 |
| CEQ Reference Level |  |  |  | Yes |
| Exceeds CEQ Reference Level? |  |  |  |  |

Notes:
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
Construction emissions are amortized over the life of the proposed Project ( 30 years) and added to each year of operational emissions.
On-terminal electricity use includes crane operation and high mast poles.

## Section 3.5.5.4, Page 3.5-33

Revise lease measure LM GHG-1, as follows:
LM GHG-1: GHG Credit Fund. Proposed Project GHG emissions are 278,70899,812 metric tons of CO2e above the CEQA Baseline in the peak year of operations in 2038. They exceed the 10,000 metric ton CO2e significance threshold by 268,70899,856 metric tons. Because operational GHG emissions exceed the significance threshold with the incorporation of all feasible mitigation measures, LAHD shall establish a carbon offset fund, which may be accomplished through a Memorandum of Understanding with the California Air Resources Board or another appropriate entity, to mitigate project GHG impacts to the maximum extent feasible. The fund shall be used for GHG-reducing projects and programs on Port of Los Angeles property. It shall be the responsibility of the Tenant to contribute to the fund. Fund contribution shall be the equivalent of 1 percent of the minimum annual guarantee (MAG) at the time that project construction will commence. This amount will be approximately $\$ 300,000 \$ 250,000$, payable upon substantial completion of Project construction. This amount is appropriate because it takes into account the tenant's actual container throughput and assesses a fee in correlation with the facility's GHG $\$ 250,000$ has been identified as the maximum feasible-contribution level. taking into account the cost of the
proposed Project, including on-site GHG reducing mitigation meastres that the tenant will be required to implement (LED high mast lighting and solar panels over the employee parking lot). If LAHD is unable to establish the fund within a reasonable period of time, the Tenant shall instead purchase credits from an approved GHG offset registry in the amount of approximately \$300,000\$250,000.

## Section 3.5.5.4, Pages 3.5-36 to 3.5-41, Table 3.5-7

Revise Table 3.5-7, as follows:
Table 3.5-7: Construction and Operational GHG Emissions with Mitigation - Proposed Project (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Amortized Construction |  |  |  |  |
| Ocean Disposal |  |  |  | 159 |
| Upland Disposal |  |  |  | 203 |
| Year 2018 |  |  |  |  |
| Ships - Transit and Anchoring | 51,596 | 1 | 3 | 52,335 |
| Ships - Hoteling | 8,417 | <1 | 1 | 8,552 |
| AMP Electricity Use | 2,335 | <1 | <1 | 2,340 |
| Tugboats | 751 | <1 | <1 | 761 |
| Trucks | 51,656 | <1 | 2 | 52,135 |
| Line Haul Locomotives | $\begin{aligned} & 27,833 \\ & 20,141 \\ & \hline \end{aligned}$ | 2 | 1 | $\begin{aligned} & 28,090 \\ & 20,327 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 261 | <1 | <1 | 263 |
| Cargo Handling Equipment | 14,798 | <1 | <1 | 14,893 |
| On-terminal Electricity Use | 4,420 | <1 | <1 | 4,429 |
| Worker Vehicles | 3,412 | <1 | 1 | 3,565 |
| Total Operational Year 2018 | $\begin{aligned} & 163,140 \\ & 157,787 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{aligned} & 167,362 \\ & 159,600 \\ & \hline \end{aligned}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{aligned} & 167,521 \\ & 159,759 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Proposed Project Minus CEQA Baseline |  |  |  | $\begin{array}{r} -8,556 \\ -7,709 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |

Table 3.5-7: Construction and Operational GHG Emissions with Mitigation - Proposed Project (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 172,989 \\ 162,956 \\ \hline \end{array}$ |
| Proposed Project Minus NEPA Baseline |  |  |  | $\begin{aligned} & -5,469 \\ & -3,197 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{aligned} & 167,564 \\ & 159,803 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Proposed Project Minus CEQA Baseline |  |  |  | $\begin{aligned} & -8,512 \\ & -7,665 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |

NEPA Impacts

| NEPA Baseline Emissions |  |  |  | 172,989 <br> 162,956 |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  | $-5,425$ <br> $-3,153$ |
| Proposed Project Minus NEPA Baseline |  |  |  | $\underline{\underline{l}}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| Year 2019 | 53,398 | 1 | 3 | 54,163 |
| Ships - Transit and Anchoring | 9,408 | $<1$ | 1 | 9,556 |
| Ships - Hoteling | 2,682 | $<1$ | $<1$ | 2,687 |
| AMP Electricity Use | 793 | $<1$ | $<1$ | 802 |
| Tugboats | 56,690 | $<1$ | 2 | 57,215 |
| Trucks | 30,846 | 3 |  | 31,131 |
|  | $\underline{20,261}$ | $\underline{2}$ | 1 | $\underline{20,449}$ |
| Line Haul Locomotives | 279 | $<1$ | $<1$ | 282 |
| Switch Locomotives | 18,475 | 1 | $<1$ | 18,601 |
| Cargo Handling Equipment | 3,311 | $<1$ | $<1$ | 3,318 |
| On-terminal Electricity Use | 3,198 | $<1$ | 1 | 3,351 |
| Worker Vehicles | 179,079 | 5 |  | 181,107 |
| Total Operational Year 2019 | $\underline{168,495}$ | $\underline{4}$ | 7 | 170,424 |

Table 3.5-7: Construction and Operational GHG Emissions with Mitigation - Proposed Project (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2019 |  |  |  | $\begin{aligned} & 181,266 \\ & 170,583 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Proposed Project Minus CEQA Baseline |  |  |  | $\begin{array}{r} 5,190 \\ 3,115 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |


| NEPA Impacts |  |  |  |  |
| :--- | :--- | :--- | :--- | :---: |
| NEPA Baseline Emissions |  |  |  | 177,435 |
|  |  |  |  | $\underline{3,831}$ |
|  |  |  |  | $\underline{3,758}$ |
| Proposed Project Minus NEPA Baseline |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |

With Upland Disposal

|  |  |  |  | 181,310 <br> Total Construction and Operations Year 2019 |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  | $\underline{170,627}$ |  |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | $\underline{167,468}$ |
|  |  |  |  | 5,233 |
| Proposed Project Minus CEQA Baseline |  |  |  | $\underline{3,159}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |

NEPA Impacts

| NEPA Baseline Emissions |  |  |  | 177,435 <br> 166,825 |
| :--- | :---: | :---: | :---: | :---: |
| Proposed Project Minus NEPA Baseline |  |  |  | 3,874 <br> 3,802 |
| CEQ Reference Level |  |  |  | $\underline{2}$ |
| Exceeds CEQ Reference Level? |  |  |  | 25,000 |
| Year 2026 |  |  |  | No |
| Ships - Transit and Anchoring | 55,974 | 1 | 3 | 56,777 |
| Ships - Hoteling | 12,292 | $<1$ | 1 | 12,487 |
| AMP Electricity Use | 6,291 | $<1$ | $<1$ | 6,304 |

Table 3.5-7: Construction and Operational GHG Emissions with Mitigation - Proposed Project (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| Tugboats | 793 | $<1$ | $<1$ | 802 |
| Trucks | 64,509 | $<1$ | 2 | 65,094 |
|  | 52,835 | 4 |  | 53,324 |
| Line Haul Locomotives | $\underline{27,759}$ | $\underline{2}$ | 1 | $\underline{28,015}$ |
| Switch Locomotives | 410 | $<1$ | $<1$ | 413 |
| Cargo Handling Equipment | 26,244 | 1 | 1 | 26,424 |
| On-terminal Electricity Use | 4,248 | $<1$ | $<1$ | 4,257 |
| Worker Vehicles | 3,176 | $<1$ | 1 | 3,365 |
|  | 226,772 | 7 |  | 229,247 |
| Total Operational Year 2026 | $\underline{201,696}$ | $\underline{5}$ | 9 | $\underline{203,938}$ |

With Ocean Disposal

| Total Construction and Operations Year 2026 |  |  |  | 229,406 <br> 204,097 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Impacts |  |  |  | 176,076 |
|  |  |  | 167,468 |  |
| CEQA Baseline Emissions |  |  | 53,330 |  |
|  |  |  | $\underline{36,629}$ |  |
| Proposed Project Minus CEQA Baseline |  |  |  | 10,000 |
| Significance Threshold |  |  |  | Yes |
| Significant? |  |  |  |  |

NEPA Impacts

|  |  |  |  | 176,519 |
| :--- | :--- | :--- | :--- | :---: |
| NEPA Baseline Emissions |  |  |  | $\mathbf{1 6 4 , 9 8 9}$ |
|  |  |  |  | 52,887 |
| Proposed Project Minus NEPA Baseline |  |  | $\mathbf{3 9 , 1 0 8}$ |  |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |

With Upland Disposal

|  |  |  |  | 229,449 <br> 204,141 |
| :--- | :--- | :--- | :--- | :--- |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | $\underline{167,468}$ |
|  |  |  |  | 53,373 |
| Proposed Project Minus CEQA Baseline |  |  |  | $\underline{36,673}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |

Table 3.5-7: Construction and Operational GHG Emissions with Mitigation - Proposed Project (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| NEPA Baseline Emissions |  |  |  | 176,519 <br> 164,989 |
|  |  |  |  | $\underline{52,930}$ |
| Proposed Project Minus NEPA Baseline |  |  |  | $\underline{39,152}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2033 | 74,454 | 2 | 4 | 75,522 |
| Ships - Transit and Anchoring | 15,316 | $<1$ | 1 | 15,561 |
| Ships - Hoteling | 7,344 | $<1$ | $<1$ | 7,359 |
| AMP Electricity Use | 1,057 | $<1$ | $<1$ | 1,070 |
| Tugboats | 67,734 | $<1$ | 2 | 68,345 |
| Trucks | 247,324 | 20 | 7 | 249,609 |
|  | $\underline{62,105}$ | $\underline{5}$ | $\underline{2}$ | $\underline{62,679}$ |
| Line Haul Locomotives | 924 | $<1$ | $<1$ | 932 |
| Switch Locomotives | 33,878 | 1 | 1 | 34,111 |
| Cargo Handling Equipment | 5,168 | $<1$ | $<1$ | 5,179 |
| On-terminal Electricity Use | 3,331 | $<1$ | 1 | 3,555 |
| Worker Vehicles | 456,531 | 24 | 15 | 461,244 |
|  | $\underline{271,311}$ | $\underline{9}$ | $\underline{10}$ | $\underline{274,313}$ |
| Total Operational Year 2033 |  |  |  |  |

With Ocean Disposal

| Total Construction and Operations Year 2033 |  |  |  | 461,403 <br> 274,472 |
| :--- | :--- | :--- | :---: | :---: |
| CEQA Impacts |  |  |  | 176,076 |
| CEQA Baseline Emissions |  |  |  | $\underline{167,468}$ |
|  |  |  |  | 285,327 |
| Proposed Project Minus CEQA Baseline |  |  | $\underline{107,004}$ |  |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |

NEPA Impacts

|  |  |  |  | 320,246 |
| :--- | :--- | :--- | :---: | :---: |
| NEPA Baseline Emissions |  |  |  | $\underline{218,479}$ |
|  |  |  |  | 141,157 |
| Proposed Project Minus NEPA Baseline |  |  |  | $\underline{55,993}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| With Upland Disposal |  |  |  |  |

Table 3.5-7: Construction and Operational GHG Emissions with Mitigation - Proposed Project (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Total Construction and Operations Year 2033 |  |  |  | $\begin{array}{r} 461,447 \\ \underline{274,516} \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Proposed Project Minus CEQA Baseline |  |  |  | $\begin{aligned} & 285,370 \\ & 107,048 \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 320,246 \\ & \underline{218,479} \\ & \hline \end{aligned}$ |
| Proposed Project Minus NEPA Baseline |  |  |  | $\begin{gathered} 141,201 \\ \underline{56,037} \\ \hline \end{gathered}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2038 |  |  |  |  |
| Ships - Transit and Anchoring | 69,260 | 2 | 4 | 70,327 |
| Ships - Hoteling | 15,056 | <1 | 1 | 15,301 |
| AMP Electricity Use | 7,344 | <1 | <1 | 7,359 |
| Tugboats | 1,057 | <1 | <1 | 1,070 |
| Trucks | 66,747 | <1 | 2 | 67,351 |
| Line Haul Locomotives | $\begin{gathered} 247,324 \\ \underline{62,105} \\ \hline \end{gathered}$ | $\begin{gathered} 20 \\ \underline{5} \end{gathered}$ | $\begin{aligned} & 7 \\ & \underline{2} \end{aligned}$ | $\begin{gathered} 249,609 \\ \underline{62,105} \end{gathered}$ |
| Switch Locomotives | 924 | <1 | <1 | 932 |
| Cargo Handling Equipment | 33,878 | 1 | 1 | 34,111 |
| On-terminal Electricity Use | 5,168 | <1 | <1 | 5,179 |
| Worker Vehicles | 3,162 | <1 | 1 | 3,386 |
| Total Operational Year 2038 | $\begin{aligned} & 449,919 \\ & \underline{264,701} \\ & \hline \end{aligned}$ | $\begin{gathered} 24 \\ \underline{9} \end{gathered}$ | $\begin{aligned} & 15 \\ & 10 \\ & \hline \end{aligned}$ | $\begin{array}{r} 454,626 \\ \underline{267,121} \\ \hline \end{array}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2038 |  |  |  | $\begin{array}{r} 454,784 \\ \underline{267,280} \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & \underline{167,468} \\ & \hline \end{aligned}$ |
| Proposed Project Minus CEQA Baseline |  |  |  | $\begin{gathered} 278,708 \\ \underline{99,812} \\ \hline \end{gathered}$ |

Table 3.5-7: Construction and Operational GHG Emissions with Mitigation - Proposed Project (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Significance Threshold |  |  |  | 10,000 |  |  |
| Significant? |  |  |  | Yes |  |  |
| NEPA Impacts |  |  |  | 319,394 |  |  |
|  |  |  |  | $\underline{217,627}$ |  |  |
| NEPA Baseline Emissions |  |  |  | 135,390 |  |  |
|  |  |  |  | $\underline{49,653}$ |  |  |
| Proposed Project Minus NEPA Baseline |  |  |  | 25,000 |  |  |
| CEQ Reference Level |  |  |  | Yes |  |  |
| Exceeds CEQ Reference Level? |  |  |  |  |  |  |
| With Upland Disposal |  |  |  | 454,828 |  |  |
| Total Construction and Operations Year 2038 |  |  | $\underline{267,324}$ |  |  |  |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Baseline Emissions |  |  |  | $\underline{167,468}$ |
|  |  |  |  | 278,752 |
| Proposed Project Minus CEQA Baseline |  |  |  | $\underline{99,856}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |

NEPA Impacts

|  |  |  |  | 319,394 |
| :--- | :--- | :--- | :---: | :---: |
| NEPA Baseline Emissions |  |  |  | $\underline{217,627}$ |
|  |  |  |  | 135,434 |
| Proposed Project Minus NEPA Baseline |  |  |  | $\underline{49,697}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |

Notes:
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
Construction emissions are amortized over the life of the proposed Project ( 30 years) and added to each year of operational emissions.
On-terminal electricity use includes crane operation and high mast poles.

## Section 3.5.5.4, Pages 3.5-53 to 3.5-56, Table 3.5-10

Revise Table 3.5-10, as follows:

Table 3.5-10: Construction and Operational GHG Emissions without Mitigation Alternative 1 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Amortized Construction |  |  |  | 47 |
| Year 2018 |  |  |  |  |
| Ships - Transit and Anchoring | 53,821 | 1 | 3 | 54,591 |
| Ships - Hoteling | 8,780 | $<1$ | 1 | 8,921 |
| AMP Electricity Use | 2,436 | <1 | <1 | 2,441 |
| Tugboats | 784 | $<1$ | $<1$ | 793 |
| Trucks | 51,656 | $<1$ | 2 | 52,135 |
| Line Haul Locomotives | $\begin{array}{r} 30,064 \\ 20,123 \\ \hline \end{array}$ | 2 | 1 | $\begin{array}{r} 30,342 \\ 20,309 \\ \hline \end{array}$ |
| Switch Locomotives | 272 | $<1$ | $<1$ | 274 |
| Cargo Handling Equipment | 15,262 | <1 | $<1$ | 15,361 |
| On-terminal Electricity Use | 4,509 | $<1$ | $<1$ | 4,519 |
| Worker Vehicles | 3,412 | <1 | 1 | 3,565 |
| Total Operational Year 2018 | $\begin{aligned} & 170,996 \\ & 161,055 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{aligned} & 172,942 \\ & 162,909 \\ & \hline \end{aligned}$ |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{aligned} & 172,989 \\ & 162,956 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 1 Minus CEQA Baseline |  |  |  | $\begin{array}{r} -3,087 \\ -4,512 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| Year 2019 |  |  |  |  |

Table 3.5-10: Construction and Operational GHG Emissions without Mitigation Alternative 1 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Ships - Transit and Anchoring | 54,433 | 1 | 3 | 55,212 |
| Ships - Hoteling | 8,880 | <1 | 1 | 9,022 |
| AMP Electricity Use | 2,464 | <1 | <1 | 2,469 |
| Tugboats | 793 | <1 | $<1$ | 802 |
| Trucks | 56,315 | <1 | 2 | 56,836 |
| Line Haul Locomotives | $\begin{array}{r} 30,693 \\ 20,181 \\ \hline \end{array}$ | 2 | 1 | $\begin{array}{r} 30,977 \\ 20,367 \\ \hline \end{array}$ |
| Switch Locomotives | 275 | <1 | $<1$ | 277 |
| Cargo Handling Equipment | 15,611 | 1 | $<1$ | 15,712 |
| On-terminal Electricity Use | 4,534 | $<1$ | <1 | 4,544 |
| Worker Vehicles | 3,176 | <1 | 1 | 3,329 |
| Total Operational Year 2019 | $\begin{aligned} & 177,173 \\ & 166,662 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{aligned} & 179,179 \\ & 168,570 \\ & \hline \end{aligned}$ |
| Total Construction and Operations Year 2019 |  |  |  | $\begin{aligned} & 179,226 \\ & 168,617 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{array}{r} 176,076 \\ 167,468 \\ \hline \end{array}$ |
| Alternative 1 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 3,150 \\ & 1,149 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| Year 2026 |  |  |  |  |

Table 3.5-10: Construction and Operational GHG Emissions without Mitigation Alternative 1 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Ships - Transit and Anchoring | 55,448 | 1 | 3 | 56,242 |
| Ships - Hoteling | 9,074 | <1 | 1 | 9,219 |
| AMP Electricity Use | 2,545 | <1 | <1 | 2,550 |
| Tugboats | 793 | <1 | $<1$ | 802 |
| Trucks | 50,297 | <1 | 2 | 50,753 |
| Line Haul Locomotives | $\begin{array}{r} 32,958 \\ 21,533 \\ \hline \end{array}$ | $\begin{aligned} & 3 \\ & 2 \\ & \hline \end{aligned}$ | 1 | $\begin{aligned} & 33,263 \\ & \underline{21,732} \\ & \hline \end{aligned}$ |
| Switch Locomotives | 318 | <1 | $<1$ | 321 |
| Cargo Handling Equipment | 17,464 | 1 | $<1$ | 17,577 |
| On-terminal Electricity Use | 4,794 | <1 | $<1$ | 4,804 |
| Worker Vehicles | 2,703 | $<1$ | 1 | 2,865 |
| Total Operational Year 2026 | $\begin{aligned} & 176,394 \\ & 164,969 \\ & \hline \end{aligned}$ | $\begin{aligned} & 5 \\ & 4 \end{aligned}$ | 7 | $\begin{aligned} & 178,397 \\ & 166,865 \\ & \hline \end{aligned}$ |
| Total Construction and Operations Year 2026 |  |  |  | $\begin{aligned} & 178,443 \\ & 166,912 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 1 Minus CEQA Baseline |  |  |  | $\begin{array}{r} 2,367 \\ -556 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| Year 2033 |  |  |  |  |

Table 3.5-10: Construction and Operational GHG Emissions without Mitigation Alternative 1 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Ships - Transit and Anchoring | 73,567 | 2 | 4 | 74,621 |
| Ships - Hoteling | 12,535 | <1 | 1 | 12,736 |
| AMP Electricity Use | 3,698 | <1 | $<1$ | 3,706 |
| Tugboats | 1,057 | <1 | $<1$ | 1,070 |
| Trucks | 48,181 | <1 | 2 | 48,617 |
| Line Haul Locomotives | $\begin{gathered} 148,712 \\ 47,878 \\ \hline \end{gathered}$ | $\begin{gathered} 12 \\ \underline{4} \\ \hline \end{gathered}$ | $\begin{aligned} & 4 \\ & 1 \\ & \hline \end{aligned}$ | $\begin{array}{r} 150,087 \\ 48,320 \\ \hline \end{array}$ |
| Switch Locomotives | 706 | $<1$ | $<1$ | 712 |
| Cargo Handling Equipment | 22,206 | 1 | $<1$ | 22,349 |
| On-terminal Electricity Use | 5,461 | $<1$ | $<1$ | 5,472 |
| Worker Vehicles | 2,790 | $<1$ | 1 | 2,979 |
| Total Operational Year 2033 | $\begin{aligned} & 318,915 \\ & \underline{218,079} \\ & \hline \end{aligned}$ | $\begin{gathered} 15 \\ \underline{7} \end{gathered}$ | $\begin{gathered} 11 \\ \underline{8} \end{gathered}$ | $\begin{array}{r} \hline 322,350 \\ 220,582 \\ \hline \end{array}$ |
| Total Construction and Operations Year 2033 |  |  |  | $\begin{array}{r} 322,396 \\ 220,629 \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{array}{r} 176,076 \\ 167,468 \\ \hline \end{array}$ |
| Alternative 1 Minus CEQA Baseline |  |  |  | $\begin{gathered} 146,320 \\ 53,161 \\ \hline \end{gathered}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| Year 2038 |  |  |  |  |

Table 3.5-10: Construction and Operational GHG Emissions without Mitigation Alternative 1 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Ships - Transit and Anchoring | 73,567 | 2 | 4 | 74,621 |
| Ships - Hoteling | 12,535 | <1 | 1 | 12,736 |
| AMP Electricity Use | 3,698 | <1 | <1 | 3,706 |
| Tugboats | 1,057 | <1 | <1 | 1,070 |
| Trucks | 47,477 | <1 | 2 | 47,907 |
| Line Haul Locomotives | $\begin{aligned} & 148,712 \\ & \underline{47,878} \\ & \hline \end{aligned}$ | $\begin{gathered} 12 \\ \underline{4} \\ \hline \end{gathered}$ | $\begin{aligned} & 4 \\ & \underline{1} \\ & \hline \end{aligned}$ | $\begin{aligned} & \hline 150,087 \\ & 48,320 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 706 | <1 | <1 | 712 |
| Cargo Handling Equipment | 22,206 | 1 | <1 | 22,349 |
| On-terminal Electricity Use | 5,461 | <1 | <1 | 5,472 |
| Worker Vehicles | 2,648 | <1 | 1 | 2,837 |
| Total Operational Year 2038 | $\begin{array}{r} 318,068 \\ \underline{217,233} \\ \hline \end{array}$ | $\begin{gathered} 15 \\ \underline{7} \\ \hline \end{gathered}$ | $\begin{gathered} 11 \\ \underline{8} \\ \hline \end{gathered}$ | $\begin{array}{r} 321,498 \\ \underline{219,730} \\ \hline \end{array}$ |
| Total Construction and Operations Year 2038 |  |  |  | $\begin{aligned} & 321,545 \\ & \underline{219,777} \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{array}{r} 176,076 \\ 167,468 \\ \hline \end{array}$ |
| Alternative 1 Minus CEQA Baseline |  |  |  | $\begin{gathered} 145,468 \\ \underline{52,309} \\ \hline \end{gathered}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |

Notes:
Alternative 1 is the same as the NEPA baseline; amortized construction emissions are the same as those presented for the NEPA baseline in Section 3.5.5.2, per Table 3.5-2.
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in
Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
Construction emissions are amortized over the life of the proposed Project (30 years) and added to each year of operational emissions.
On-terminal electricity use includes crane operation and high mast poles.

## Section 3.5.5.4, Pages 3.5-56 to 3.5-59, Table 3.5-11

Revise Table 3.5-11, as follows:

Table 3.5-11: Construction and Operational GHG Emissions with Mitigation Alternative 1 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{4}$ | $\mathbf{N}_{2} \mathbf{O}$ | $\mathbf{C O}_{2} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| Amortized Construction |  |  |  | 47 |
| Year 2018 | 53,821 | 1 | 3 | 54,591 |
| Ships - Transit and Anchoring | 8,780 | $<1$ | 1 | 8,921 |
| Ships - Hoteling | 2,436 | $<1$ | $<1$ | 2,441 |
| AMP Electricity Use | 784 | $<1$ | $<1$ | 793 |
| Tugboats | 51,656 | $<1$ | 2 | 52,135 |
| Trucks | 30,064 |  |  | 30,342 |
|  | 20,123 | 2 | 1 | 20,309 |
| Line Haul Locomotives | 272 | $<1$ | $<1$ | 274 |
| Switch Locomotives | 15,262 | $<1$ | $<1$ | 15,361 |
| Cargo Handling Equipment | 4,509 | $<1$ | $<1$ | 4,519 |
| On-terminal Electricity Use | 3,412 | $<1$ | 1 | 3,565 |
| Worker Vehicles | 170,996 |  |  | 172,942 |
|  | $\underline{161,055}$ | 5 | 7 | 162,909 |
| Total Operational Year 2018 |  |  |  | 172,989 |
|  |  |  |  | 162,956 |
| Total Construction and Operations Year 2018 |  |  |  |  |

CEQA Impacts

| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,075 \\ & 167,468 \\ & \hline \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
| Alternative 1 Minus CEQA Baseline |  |  |  | $\begin{aligned} & -3,088 \\ & -4,512 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| Year 2019 |  |  |  |  |
| Ships - Transit and Anchoring | 53,906 | 1 | 3 | 54,679 |
| Ships - Hoteling | 8,707 | <1 | 1 | 8,848 |
| AMP Electricity Use | 2,639 | <1 | <1 | 2,645 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 56,315 | <1 | 2 | 56,836 |
| Line Haul Locomotives | $\begin{aligned} & 30,693 \\ & 20,181 \\ & \hline \end{aligned}$ | 2 | 1 | $\begin{array}{r} 30,977 \\ 20,367 \\ \hline \end{array}$ |
| Switch Locomotives | 275 | <1 | <1 | 277 |
| Cargo Handling Equipment | 15,611 | 1 | <1 | 15,712 |
| On-terminal Electricity Use | 3,276 | <1 | <1 | 3,283 |
| Worker Vehicles | 3,176 | <1 | 1 | 3,329 |
| Total Operational Year 2019 | $\begin{aligned} & 175,392 \\ & 164,879 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{aligned} & 177,388 \\ & 166,778 \\ & \hline \end{aligned}$ |
| Total Construction and Operations Year 2019 |  |  |  | $\begin{aligned} & 177,435 \\ & 166,825 \\ & \hline \end{aligned}$ |

Table 3.5-11: Construction and Operational GHG Emissions with Mitigation Alternative 1 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \end{aligned}$ |
| Alternative 1 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 1,359 \\ & -643 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| Year 2026 |  |  |  |  |
| Ships - Transit and Anchoring | 54,909 | 1 | 3 | 55,697 |
| Ships - Hoteling | 8,460 | <1 | 1 | 8,599 |
| AMP Electricity Use | 3,046 | <1 | <1 | 3,052 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 50,297 | <1 | 2 | 50,753 |
| Line Haul Locomotives | $\begin{array}{r} \hline 32,958 \\ \underline{21,533} \\ \hline \end{array}$ | $\begin{aligned} & \hline 3 \\ & \underline{2} \\ & \hline \end{aligned}$ | 1 | $\begin{aligned} & \hline 33,263 \\ & \underline{21,732} \\ & \hline \end{aligned}$ |
| Switch Locomotives | 318 | <1 | <1 | 321 |
| Cargo Handling Equipment | 17,464 | 1 | <1 | 17,577 |
| On-terminal Electricity Use | 3,536 | <1 | <1 | 3,544 |
| Worker Vehicles | 2,703 | <1 | 1 | 2,865 |
| Total Operational Year 2026 | $\begin{aligned} & 174,484 \\ & 163,059 \end{aligned}$ | $\begin{aligned} & \hline 5 \\ & 4 \\ & \hline \end{aligned}$ | 7 | $\begin{aligned} & 176,472 \\ & 164,942 \end{aligned}$ |
| Total Construction and Operations Year 2026 |  |  |  | $\begin{aligned} & 176,519 \\ & \underline{164,989} \\ & \hline \end{aligned}$ |

CEQA Impacts

|  |  |  |  | 176,076 <br> 167,468 |
| :--- | :---: | :---: | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | 443 <br> $-2,479$ |
| Alternative 1 Minus CEQA Baseline |  |  |  | 10,000 |
| Significance Threshold |  |  |  | No |
| Significant? |  |  |  |  |
| Year 2033 | 72,858 | 2 | 4 | 73,903 |
| Ships - Transit and Anchoring | 11,667 | $<1$ | 1 | 11,858 |
| Ships - Hoteling | 4,402 | $<1$ | $<1$ | 4,412 |
| AMP Electricity Use | 1,057 | $<1$ | $<1$ | 1,070 |
| Tugboats | 48,181 | $<1$ | 2 | 48,617 |
| Trucks | 148,712 | 12 | 4 | 150,087 |
|  | $\underline{47,878}$ | $\underline{4}$ | $\underline{1}$ | $\underline{48,320}$ |
| Line Haul Locomotives | 706 | $<1$ | $<1$ | 712 |
| Switch Locomotives | 22,206 | 1 | $<1$ | 22,349 |
| Cargo Handling Equipment |  |  |  |  |

Table 3.5-11: Construction and Operational GHG Emissions with Mitigation Alternative 1 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{4}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| On-terminal Electricity Use | 4,203 | $<1$ | $<1$ | 4,212 |
| Worker Vehicles | 2,790 | $<1$ | 1 | 2,979 |
|  | 316,783 | 15 | 11 | 320,199 |
| Total Operational Year 2033 | $\underline{215,948}$ | $\underline{7}$ | $\underline{8}$ | $\underline{218,432}$ |
|  |  |  |  | 320,246 |
| Total Construction and Operations Year 2033 |  |  |  | $\underline{218,479}$ |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Baseline Emissions |  |  |  | 167,468 |
|  |  |  |  | 144,170 |
| Alternative 1 Minus CEQA Baseline |  |  |  | 10,011 |
| Significance Threshold |  |  |  | Yes |
| Significant? |  |  |  |  |

Year 2038

| Ships - Transit and Anchoring | 72,858 | 2 | 4 | 73,903 |
| :--- | :---: | :---: | :---: | :---: |
| Ships - Hoteling | 11,667 | $<1$ | 1 | 11,858 |
| AMP Electricity Use | 4,402 | $<1$ | $<1$ | 4,412 |
| Tugboats | 1,057 | $<1$ | $<1$ | 1,070 |
| Trucks | 47,477 | $<1$ | 2 | 47,907 |
|  | 148,712 | 12 | 4 | 150,087 |
| Line Haul Locomotives | $\underline{47,878}$ | $\underline{4}$ | $\underline{1}$ | $\underline{48,320}$ |
| Switch Locomotives | 706 | $<1$ | $<1$ | 712 |
| Cargo Handling Equipment | 22,206 | 1 | $<1$ | 22,349 |
| On-terminal Electricity Use | 4,203 | $<1$ | $<1$ | 4,212 |
| Worker Vehicles | 2,648 | $<1$ | 1 | 2,837 |
|  | 315,937 | 15 | 11 | 319,348 |
| Total Operational Year 2038 | $\underline{215,102}$ | $\underline{7}$ | $\underline{8}$ | $\underline{217,580}$ |
| Total Construction and Operations Year 2038 |  |  |  | 319,394 |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Baseline Emissions |  |  |  | 167,468 |
|  |  |  |  | 143,318 |
| Alternative 1 Minus CEQA Baseline |  |  |  | $\underline{50,159}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |

Notes:
Alternative 1 is the same as the NEPA baseline; amortized construction emissions are the same as those presented for the NEPA baseline in Section 3.5.5.2, per Table 3.5-2.
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data,

Table 3.5-11: Construction and Operational GHG Emissions with Mitigation Alternative 1 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available. |  |  |  |  |
| Construction emissions are amortized over the life of the proposed Project ( 30 years) and added to each year of operational emissions. |  |  |  |  |
|  |  |  |  |  |

## Section 3.5.5.4, Pages 3.5-60 to 3.5-62, Table 3.5-12

Revise Table 3.5-12, as follows:
Table 3.5-12: Operational GHG Emissions - Alternative 2 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Year 2018 |  |  |  |  |
| Ships - Transit and Anchoring | 53,821 | 1 | 3 | 54,591 |
| Ships - Hoteling | 8,780 | <1 | 1 | 8,921 |
| AMP Electricity Use | 2,436 | <1 | <1 | 2,441 |
| Tugboats | 784 | <1 | <1 | 793 |
| Trucks | 51,656 | <1 | 2 | 52,135 |
| Line Haul Locomotives | $\begin{array}{r} 30,064 \\ 20,123 \\ \hline \end{array}$ | 2 | 1 | $\begin{aligned} & 30,342 \\ & 20,309 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 272 | <1 | <1 | 274 |
| Cargo Handling Equipment | 15,262 | 1 | <1 | 15,361 |
| On-terminal Electricity Use | 4,509 | <1 | <1 | 4,519 |
| Worker Vehicles | 3,412 | <1 | 1 | 3,565 |
| Total Operational Year 2018 | $\begin{aligned} & 170,996 \\ & 161,055 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{aligned} & 172,942 \\ & 162,909 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 2 Minus CEQA Baseline |  |  |  | $\begin{aligned} & -3,134 \\ & -4,559 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| Year 2019 |  |  |  |  |
| Ships - Transit and Anchoring | 54,433 | 1 | 3 | 55,212 |
| Ships - Hoteling | 8,880 | <1 | 1 | 9,022 |
| AMP Electricity Use | 2,464 | <1 | $<1$ | 2,469 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 56,315 | <1 | 1 | 56,836 |
| Line Haul Locomotives | $\begin{aligned} & 30,693 \\ & 20,181 \\ & \hline \end{aligned}$ | 2 | 1 | $\begin{aligned} & 30,977 \\ & 20,367 \\ & \hline \end{aligned}$ |

Table 3.5-12: Operational GHG Emissions - Alternative 2 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Switch Locomotives | 275 | <1 | <1 | 277 |
| Cargo Handling Equipment | 15,611 | 1 | <1 | 15,712 |
| On-terminal Electricity Use | 4,534 | <1 | <1 | 4,544 |
| Worker Vehicles | 3,176 | <1 | 1 | 3,329 |
| Total Operational Year 2019 | $\begin{aligned} & 177,173 \\ & 166,662 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{aligned} & 179,179 \\ & 168,570 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 2 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 3,103 \\ & 1,102 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| Year 2026 |  |  |  |  |
| Ships - Transit and Anchoring | 55,448 | 1 | 3 | 56,242 |
| Ships - Hoteling | 9,074 | <1 | 1 | 9,219 |
| AMP Electricity Use | 2,545 | <1 | <1 | 2,550 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 50,297 | <1 | 2 | 50,753 |
| Line Haul Locomotives | $\begin{aligned} & 32,958 \\ & 21,533 \\ & \hline \end{aligned}$ | $\begin{aligned} & 3 \\ & \underline{2} \end{aligned}$ | 1 | $\begin{aligned} & 33,263 \\ & 21,732 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 318 | <1 | <1 | 321 |
| Cargo Handling Equipment | 17,464 | 1 | <1 | 17,577 |
| On-terminal Electricity Use | 4,794 | <1 | <1 | 4,804 |
| Worker Vehicles | 2,703 | <1 | 1 | 2,865 |
| Total Operational Year 2026 | $\begin{aligned} & 176,394 \\ & 164,969 \\ & \hline \end{aligned}$ | $\begin{aligned} & 5 \\ & 4 \end{aligned}$ | 7 | $\begin{aligned} & 178,397 \\ & 166,865 \\ & \hline \end{aligned}$ |

CEQA Impacts

| CEQA Baseline Emissions |  |  |  | 176,076 <br> 167,468 |
| :--- | :---: | :---: | :---: | :---: |
| Alternative 2 Minus CEQA Baseline |  |  |  | 2,320 <br> -603 |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| Year 2033 | 73,567 | 2 | 4 | 74,621 |
| Ships - Transit and Anchoring | 12,535 | $<1$ | 1 | 12,736 |
| Ships - Hoteling | 3,698 | $<1$ | $<1$ | 3,706 |
| AMP Electricity Use | 1,057 | $<1$ | $<1$ | 1,070 |
| Tugboats | 48,181 | $<1$ | 2 | 48,617 |
| Trucks | 148,712 | 12 | 4 | 150,087 |
| Line Haul Locomotives |  |  |  |  |

Table 3.5-12: Operational GHG Emissions - Alternative 2 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
|  | $\underline{47,878}$ | $\underline{4}$ | $\underline{1}$ | $\underline{48,320}$ |
| Switch Locomotives | 706 | $<1$ | $<1$ | 712 |
| Cargo Handling Equipment | 22,206 | 1 | $<1$ | 22,349 |
| On-terminal Electricity Use | 5,461 | $<1$ | $<1$ | 5,472 |
| Worker Vehicles | 2,790 | $<1$ | 1 | 2,979 |
|  | 318,915 | 15 | 11 | 322,350 |
| Total Operational Year 2033 | $\underline{218,079}$ | $\underline{7}$ | $\underline{8}$ | $\underline{220,582}$ |

CEQA Impacts

|  |  |  |  | 176,076 <br> 167,468 |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | 146,274 <br> 53,114 |  |
| Alternative 2 Minus CEQA Baseline |  |  |  | 10,000 |  |
| Significance Threshold |  |  |  | Yes |  |
| Significant? |  |  |  |  |  |
| Year 2038 | 73,567 | 2 | 4 | 74,621 |  |
| Ships - Transit and Anchoring | 12,535 | $<1$ | 1 | 12,736 |  |
| Ships - Hoteling | 3,698 | $<1$ | $<1$ | 3,706 |  |
| AMP Electricity Use | 1,057 | $<1$ | $<1$ | 1,070 |  |
| Tugboats | 47,477 | $<1$ | 2 | 47,907 |  |
| Trucks | 148,712 | 12 | 4 | 150,087 |  |
|  |  |  |  |  |  |
| Line Haul Locomotives | $\underline{47,878}$ | $\underline{4}$ | $\underline{1}$ | $\underline{48,320}$ |  |
| Switch Locomotives | 706 | $<1$ | $<1$ | 712 |  |
| Cargo Handling Equipment | 22,206 | 1 | $<1$ | 22,349 |  |
| On-terminal Electricity Use | 5,461 | $<1$ | $<1$ | 5,472 |  |
| Worker Vehicles | 2,648 | $<1$ | 1 | 2,837 |  |
|  | 318,068 | 15 | 11 | 321,498 |  |
| Total Operational Year 2038 | $\underline{217,233}$ | $\underline{7}$ | $\underline{8}$ | $\underline{219,730}$ |  |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Baseline Emissions |  |  |  | 167,468 |
| Alternative 2 Minus CEQA Baseline |  |  |  | 145,422 |
| Significance Threshold |  |  |  | $\underline{52,262}$ |
| Significant? |  |  |  | 10,000 |

Notes:
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
On-terminal electricity use includes crane operation and high mast poles.

## Section 3.5.5.4, Pages 3.5-65 to 3.5-70, Table 3.5-14

Revise Table 3.5-14, as follows:
Table 3.5-14: Construction and Operational GHG Emissions without Mitigation - Alternative 3 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Amortized Construction |  |  |  |  |
| Ocean Disposal |  |  |  | 137 |
| Upland Disposal |  |  |  | 167 |
| Year 2018 |  |  |  |  |
| Ships - Transit and Anchoring | 51,596 | 1 | 3 | 52,335 |
| Ships - Hoteling | 8,417 | <1 | 1 | 8,552 |
| AMP Electricity Use | 2,335 | <1 | <1 | 2,340 |
| Tugboats | 751 | <1 | <1 | 761 |
| Trucks | 51,656 | <1 | 2 | 52,135 |
| Line Haul Locomotives | $\begin{aligned} & 27,833 \\ & 19,746 \\ & \hline \end{aligned}$ | 2 | 1 | $\begin{aligned} & 28,090 \\ & 19,929 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 261 | <1 | <1 | 263 |
| Cargo Handling Equipment | 14,798 | <1 | <1 | 14,893 |
| On-terminal Electricity Use | 2,082 | <1 | <1 | 2,091 |
| Worker Vehicles | 3,412 | <1 | 1 | 3,565 |
| Total Operational Year 2018 | $\begin{aligned} & 163,140 \\ & 155,054 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{array}{r} 165,024 \\ 156,864 \\ \hline \end{array}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{array}{r} 165,160 \\ 157,001 \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{array}{r} 176,076 \\ 167,468 \\ \hline \end{array}$ |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\begin{array}{r} -10,916 \\ -10,467 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 172,989 \\ 162,956 \\ \hline \end{array}$ |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\begin{aligned} & -7,829 \\ & -5,955 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| With Upland Disposal |  |  |  |  |

Table 3.5-14: Construction and Operational GHG Emissions without Mitigation - Alternative 3 (mty)

| Source Category | $\mathrm{CO}_{2}$ | CH4 | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{array}{r} 165,191 \\ 157,031 \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\begin{array}{r} -10,886 \\ -10,437 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 172,989 \\ \underline{162,956} \\ \hline \end{array}$ |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\begin{aligned} & -7,799 \\ & -5,925 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| Year 2019 |  |  |  |  |
| Ships - Transit and Anchoring | 49,182 | 1 | 3 | 49,889 |
| Ships - Hoteling | 9,575 | <1 | 1 | 9,728 |
| AMP Electricity Use | 2,411 | <1 | <1 | 2,416 |
| Tugboats | 793 | $<1$ | <1 | 802 |
| Trucks | 55,131 | <1 | 2 | 55,642 |
| Line Haul Locomotives | $\begin{array}{r} 29,341 \\ 19,254 \\ \hline \end{array}$ | $\begin{aligned} & 3 \\ & \underline{2} \end{aligned}$ | 1 | $\begin{aligned} & 29,612 \\ & 19,432 \end{aligned}$ |
| Switch Locomotives | 272 | <1 | <1 | 274 |
| Cargo Handling Equipment | 17,059 | 1 | <1 | 17,173 |
| On-terminal Electricity Use | 4,509 | $<1$ | <1 | 4,519 |
| Worker Vehicles | 3,151 | <1 | 1 | 3,303 |
| Total Operational Year 2019 | $\begin{aligned} & 171,424 \\ & \mathbf{1 6 1 , 3 3 7} \\ & \hline \end{aligned}$ | $\begin{aligned} & 5 \\ & 4 \end{aligned}$ | 7 | $\begin{array}{r} 173,357 \\ \underline{163,178} \\ \hline \end{array}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2019 |  |  |  | $\begin{aligned} & 173,494 \\ & \mathbf{1 6 3 , 3 1 5} \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{array}{r} 176,076 \\ 167,468 \\ \hline \end{array}$ |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\begin{aligned} & -2,583 \\ & -4,153 \end{aligned}$ |

Table 3.5-14: Construction and Operational GHG Emissions without Mitigation - Alternative 3 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |

NEPA Impacts


CEQA Impacts


Year 2026

| Ships - Transit and Anchoring | 51,047 | 1 | 3 | 51,780 |
| :--- | :---: | :---: | :---: | :---: |
| Ships - Hoteling | 12,045 | $<1$ | 1 | 12,232 |
| AMP Electricity Use | 4,920 | $<1$ | $<1$ | 4,930 |
| Tugboats | 793 | $<1$ | $<1$ | 802 |
| Trucks | 61,173 | $<1$ | 2 | 61,727 |
|  | 47,895 | 4 |  | 48,337 |
| Line Haul Locomotives | $\underline{26,339}$ | $\underline{2}$ | 1 | $\underline{26,583}$ |
| Switch Locomotives | 389 | $<1$ | $<1$ | 392 |
| Cargo Handling Equipment | 23,604 | 1 | 1 | 23,763 |
| On-terminal Electricity Use | 5,343 | $<1$ | $<1$ | 5,354 |
| Worker Vehicles | 3,066 | $<1$ | 1 | 3,248 |

Table 3.5-14: Construction and Operational GHG Emissions without Mitigation - Alternative 3 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
|  | 210,274 | 7 |  | 212,567 |
| Total Operational Year 2026 | $\underline{188,719}$ | $\underline{5}$ | 8 | $\underline{190,811}$ |

With Ocean Disposal

|  |  |  |  | 212,704 |
| :--- | :--- | :--- | :--- | :--- |
| Total Construction and Operations Year 2026 |  |  |  | $\underline{190,948}$ |

## CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | 167,468 |
|  |  |  |  | 36,628 |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\underline{23,480}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |

NEPA Impacts

|  |  |  |  | 176,519 |
| :--- | :--- | :--- | :--- | :---: |
| NEPA Baseline Emissions |  |  |  | $\mathbf{1 6 4 , 9 8 9}$ |
|  |  |  |  | 36,185 |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\underline{25,959}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  | Yes |  |

With Upland Disposal

|  |  |  |  | 212,734 |
| :--- | :--- | :--- | :--- | :--- |
| Total Construction and Operations Year 2026 |  |  |  | $\underline{190,978}$ |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Baseline Emissions |  |  |  | $\underline{167,468}$ |
|  |  |  |  | 36,658 |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\underline{23,510}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |

NEPA Impacts

| NEPA Baseline Emissions |  |  |  | 176,519 <br> 164,989 |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  | 36,215 |
| Alternative 3 Minus NEPA Baseline |  |  |  | 35,989 |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2033 |  |  |  |  |
| Ships - Transit and Anchoring | 68,912 | 2 | 4 | 69,901 |
| Ships - Hoteling | 15,094 | $<1$ | 1 | 15,328 |

Table 3.5-14: Construction and Operational GHG Emissions without Mitigation - Alternative 3 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| AMP Electricity Use | 5,728 | $<1$ | $<1$ | 5,740 |
| Tugboats | 1,057 | $<1$ | $<1$ | 1,070 |
| Trucks | 63,246 | $<1$ | 2 | 63,817 |
|  | 222,374 | 18 | 6 | 224,429 |
| Line Haul Locomotives | $\underline{58,824}$ | $\underline{5}$ | $\underline{2}$ | $\underline{59,367}$ |
| Switch Locomotives | 874 | $<1$ | $<1$ | 882 |
| Cargo Handling Equipment | 30,365 | 1 | 1 | 30,570 |
| On-terminal Electricity Use | 6,204 | $<1$ | $<1$ | 6,217 |
| Worker Vehicles | 3,213 | $<1$ | 1 | 3,429 |
| Total Operational Year 2033 | 417,067 | 22 | 14 | 421,383 |

With Ocean Disposal

|  |  |  |  | 421,520 <br> 256,458 |
| :--- | :--- | :--- | :--- | :--- |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Baseline Emissions |  |  |  | 167,468 |
|  |  |  |  | 245,444 |
| Alternative 3 Minus CEQA Baseline |  |  |  | 88,990 |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |

NEPA Impacts


Table 3.5-14: Construction and Operational GHG Emissions without Mitigation - Alternative 3 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 320,246 \\ & 218,479 \\ & \hline \end{aligned}$ |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\begin{gathered} 101,304 \\ 38,009 \\ \hline \end{gathered}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2038 |  |  |  |  |
| Ships - Transit and Anchoring | 68,912 | 2 | 4 | 69,901 |
| Ships - Hoteling | 15,094 | <1 | 1 | 15,328 |
| AMP Electricity Use | 5,728 | <1 | <1 | 5,740 |
| Tugboats | 1,057 | <1 | <1 | 1,070 |
| Trucks | 62,324 | <1 | 2 | 62,888 |
| Line Haul Locomotives | $\begin{gathered} 222,374 \\ 58,824 \\ \hline \end{gathered}$ | $\begin{gathered} 18 \\ \underline{5} \end{gathered}$ | $\begin{aligned} & 6 \\ & \underline{2} \end{aligned}$ | $\begin{array}{r} 224,429 \\ 59,367 \\ \hline \end{array}$ |
| Switch Locomotives | 874 | <1 | <1 | 882 |
| Cargo Handling Equipment | 30,365 | 1 | 1 | 30,570 |
| On-terminal Electricity Use | 6,204 | <1 | <1 | 6,217 |
| Worker Vehicles | 3,049 | <1 | 1 | 3,266 |
| Total Operational Year 2038 | $\begin{array}{r} 415,982 \\ \underline{252,431} \\ \hline \end{array}$ | $\begin{gathered} 22 \\ \underline{9} \\ \hline \end{gathered}$ | $\begin{aligned} & 14 \\ & 10 \\ & \hline \end{aligned}$ | $\begin{array}{r} 420,291 \\ \underline{255,229} \\ \hline \end{array}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2038 |  |  |  | $\begin{array}{r} 420,428 \\ \underline{255,366} \\ \hline \end{array}$ |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Baseline Emissions |  |  |  | $\underline{267,468}$ |
| Alternative 3 Minus CEQA Baseline |  |  |  | 244,351 |
| Significance Threshold |  |  |  | 87,898 |
| Significant? |  |  |  | 10,000 |
| NEPA Impacts |  |  | Yes |  |
|  |  |  |  |  |
| NEPA Baseline Emissions |  |  | 319,394 |  |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\underline{1017,627}$ |
| CEQ Reference Level |  |  |  | $\underline{37,739}$ |
| Exceeds CEQ Reference Level? |  |  |  | 25,000 |

Table 3.5-14: Construction and Operational GHG Emissions without Mitigation - Alternative 3 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2038 |  |  |  | $\begin{array}{r} 420,458 \\ 255,396 \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{array}{r} 176,076 \\ 167,468 \\ \hline \end{array}$ |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\begin{gathered} \hline 244,381 \\ 87,928 \\ \hline \end{gathered}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 319,394 \\ & 217,627 \\ & \hline \end{aligned}$ |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\begin{gathered} 101,063 \\ 37,769 \\ \hline \end{gathered}$ |
| Significance Threshold |  |  |  | 25,000 |
| Significant? |  |  |  | Yes |

## Section 3.5.5.4, Pages 3.5-71 to 3.5-77, Table 3.5-16

Revise Table 3.5-16, as follows:
Table 3.5-16: Construction and Operational GHG Emissions with Mitigation - Alternative 3 (mty)

| Source Category |  |  |  | $\mathbf{C O}_{\mathbf{2}}$ |
| :--- | :---: | :---: | :---: | :---: |
| $\mathbf{C H}_{\mathbf{4}}$ |  |  |  | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ |
| Amortized Construction |  | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |  |  |
| Ocean Disposal |  |  |  | 137 |
| Upland Disposal | 51,596 | 1 | 3 | 52,335 |
| Year 2018 | 8,417 | $<1$ | 1 | 8,552 |
| Ships - Transit and Anchoring | 2,335 | $<1$ | $<1$ | 2,340 |
| Ships - Hoteling | 751 | $<1$ | $<1$ | 761 |
| AMP Electricity Use | 51,656 | $<1$ | 2 | 52,135 |
| Tugboats | 27,833 |  |  | 28,090 |
| Trucks | $\underline{y y y y y}$ |  |  |  |
|  | 29,746 | 2 | 1 | 19,929 |
| Line Haul Locomotives | 261 | $<1$ | $<1$ | 263 |
| Switch Locomotives |  |  |  |  |

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation - Alternative 3 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Cargo Handling Equipment | 14,798 | <1 | <1 | 14,893 |
| On-terminal Electricity Use | 2,082 | <1 | <1 | 2,091 |
| Worker Vehicles | 3,412 | <1 | 1 | 3,565 |
| Total Operational Year 2018 | $\begin{aligned} & 163,140 \\ & 155,054 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{array}{r} 165,024 \\ 156,864 \\ \hline \end{array}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{aligned} & 165,161 \\ & 157,001 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\begin{array}{r} -10,915 \\ -10,467 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 172,989 \\ 162,956 \\ \hline \end{array}$ |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\begin{aligned} & -7,828 \\ & -5,955 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{aligned} & 165,192 \\ & 157,032 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{array}{r} 176,076 \\ 167,468 \\ \hline \end{array}$ |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\begin{array}{r} -10,885 \\ -10,436 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 172,989 \\ \underline{162,956} \\ \hline \end{array}$ |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\begin{aligned} & \hline-7,798 \\ & -5,924 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation - Alternative 3 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Exceeds CEQ Reference Level? |  |  |  | No |
| Year 2019 |  |  |  |  |
| Ships - Transit and Anchoring | 48,704 | 1 | 3 | 49,405 |
| Ships - Hoteling | 9,426 | <1 | 1 | 9,577 |
| AMP Electricity Use | 2,571 | <1 | <1 | 2,576 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 55,131 | <1 | 2 | 55,642 |
| Line Haul Locomotives | $\begin{aligned} & 29,341 \\ & 19,254 \\ & \hline \end{aligned}$ | $\begin{aligned} & 3 \\ & \underline{2} \\ & \hline \end{aligned}$ | 1 | $\begin{aligned} & z 9,612 \\ & 19,432 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 272 | <1 | <1 | 274 |
| Cargo Handling Equipment | 17,059 | 1 | <1 | 17,173 |
| On-terminal Electricity Use | 3,252 | <1 | <1 | 3,258 |
| Worker Vehicles | 3,151 | <1 | 1 | 3,303 |
| Total Operational Year 2019 | $\begin{array}{r} 169,699 \\ 159,613 \\ \hline \end{array}$ | $\begin{aligned} & \hline 5 \\ & 4 \end{aligned}$ | 7 | $\begin{aligned} & 171,623 \\ & 161,442 \\ & \hline \end{aligned}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2019 |  |  |  | $\begin{aligned} & 171,760 \\ & 161,579 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\begin{aligned} & -4,316 \\ & -5,889 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 177,435 \\ & 166,825 \\ & \hline \end{aligned}$ |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\begin{array}{r} -5,675 \\ -5,246 \\ \hline \end{array}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2019 |  |  |  | $\begin{aligned} & 171,791 \\ & 161,610 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{array}{r} 176,076 \\ 167,468 \\ \hline \end{array}$ |

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation - Alternative 3 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\begin{aligned} & -4,285 \\ & -5,858 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 177,435 \\ & 166,825 \\ & \hline \end{aligned}$ |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\begin{array}{r} -5,644 \\ -5,215 \\ \hline \end{array}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |

Year 2026

| Ships - Transit and Anchoring | 50,547 | 1 | 3 | 51,275 |
| :--- | :---: | :---: | :---: | :---: |
| Ships - Hoteling | 10,907 | $<1$ | 1 | 11,081 |
| AMP Electricity Use | 5,820 | $<1$ | $<1$ | 5,833 |
| Tugboats | 793 | $<1$ | $<1$ | 802 |
| Trucks | 61,173 | $<1$ | 2 | 61,727 |
|  | 47,895 | 4 |  | 48,337 |
| Line Haul Locomotives | $\underline{26,339}$ | $\underline{2}$ | 1 | $\underline{26,583}$ |
| Switch Locomotives | 389 | $<1$ | $<1$ | 392 |
| Cargo Handling Equipment | 23,604 | 1 | 1 | 23,763 |
| On-terminal Electricity Use | 4,085 | $<1$ | $<1$ | 4,094 |
| Worker Vehicles | 3,066 | $<1$ | 1 | 3,248 |
|  | 208,279 | 7 |  | 210,553 |
| Total Operational Year 2026 | $\underline{186,723}$ | $\underline{5}$ | 8 | $\underline{188,798}$ |
|  |  |  |  |  |

With Ocean Disposal

|  |  |  |  | 210,690 <br> Total Construction and Operations Year 2026 |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  | $\underline{188,935}$ |  |

## CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :---: | :---: | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | 167,468 |
|  |  |  |  | 34,614 |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\underline{21,467}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  | Yes |  |
| NEPA Impacts |  |  |  | 176,519 |
|  |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | 164,989 |

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation - Alternative 3 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{4}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| Alternative 3 Minus NEPA Baseline |  |  |  | 34,171 |
| CEQ Reference Level |  |  |  | $\underline{23,946}$ |
| Exceeds CEQ Reference Level? |  |  |  | 25,000 |

With Upland Disposal

|  |  |  |  | 210,721 <br> 188,966 |
| :--- | :--- | :--- | :--- | :--- |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | $\underline{167,468}$ |
|  |  |  |  | 34,645 |
| Alternative 3 Minus CEQA Baseline |  |  |  | 10,000 |
| Significance Threshold |  |  |  | Yes |
| Significant? |  |  |  |  |

NEPA Impacts

|  |  |  |  | 176,519 |
| :--- | :--- | :--- | :---: | :---: |
| NEPA Baseline Emissions |  |  |  | 164,989 |
|  |  |  |  | 34,202 |
| Alternative 3 Minus NEPA Baseline |  |  |  | 23,977 |
| CEQ Reference Level |  |  |  | Yes |
| Exceeds CEQ Reference Level? |  |  |  |  |

Year 2033

| Ships - Transit and Anchoring | 68,173 | 2 | 4 | 69,153 |
| :--- | :---: | :---: | :---: | :---: |
| Ships - Hoteling | 13,786 | $<1$ | 1 | 14,006 |
| AMP Electricity Use | 6,773 | $<1$ | $<1$ | 6,788 |
| Tugboats | 1,057 | $<1$ | $<1$ | 1,070 |
| Trucks | 63,246 | $<1$ | 2 | 63,817 |
|  | 222,374 | 18 | 6 | 224,429 |
| Line Haul Locomotives | $\underline{58,824}$ | $\underline{5}$ | $\underline{2}$ | $\underline{59,367}$ |
| Switch Locomotives | 874 | $<1$ | $<1$ | 882 |
| Cargo Handling Equipment | 30,365 | 1 | 1 | 30,570 |
| On-terminal Electricity Use | 4,946 | $<1$ | $<1$ | 4,957 |
| Worker Vehicles | 3,213 | $<1$ | 1 | 3,429 |
|  | 414,808 | 22 | 14 | 419,100 |
| Total Operational Year 2033 | $\underline{251,257}$ | $\underline{9}$ | $\underline{10}$ | $\underline{254,039}$ |

With Ocean Disposal

|  |  |  |  | 419,237 |
| :--- | :--- | :--- | :--- | :--- |
| Total Construction and Operations Year 2033 |  |  | $\underline{254,176}$ |  |

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation - Alternative 3 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\begin{array}{r} 243,161 \\ 86,708 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 320,246 \\ & \underline{218,479} \\ & \hline \end{aligned}$ |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 98,991 \\ & 35,697 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2033 |  |  |  | $\begin{aligned} & 419,268 \\ & 254,207 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\begin{gathered} 243,191 \\ 86,739 \\ \hline \end{gathered}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 320,246 \\ & \underline{218,479} \\ & \hline \end{aligned}$ |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\begin{array}{r} 99,022 \\ 35,728 \\ \hline \end{array}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2038 |  |  |  |  |
| Ships - Transit and Anchoring | 68,173 | 2 | 4 | 69,153 |
| Ships - Hoteling | 13,786 | <1 | 1 | 14,006 |
| AMP Electricity Use | 6,773 | <1 | <1 | 6,788 |
| Tugboats | 1,057 | <1 | <1 | 1,070 |
| Trucks | 62,324 | <1 | 2 | 62,888 |
| Line Haul Locomotives | 222,374 | 18 | 6 | 224,429 |

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation - Alternative 3 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | 58,824 | $\underline{5}$ | $\underline{2}$ | 59,367 |
| Switch Locomotives | 874 | <1 | <1 | 882 |
| Cargo Handling Equipment | 30,365 | 1 | 1 | 30,570 |
| On-terminal Electricity Use | 4,946 | <1 | <1 | 4,957 |
| Worker Vehicles | 3,049 | <1 | 1 | 3,266 |
| Total Operational Year 2038 | $\begin{array}{r} 413,722 \\ \underline{250,171} \\ \hline \end{array}$ | $\begin{gathered} 21 \\ \underline{8} \\ \hline \end{gathered}$ | $\begin{aligned} & 14 \\ & \underline{10} \\ & \hline \end{aligned}$ | $\begin{array}{r} 418,007 \\ \underline{252,947} \\ \hline \end{array}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2038 |  |  |  | $\begin{array}{r} 418,145 \\ \underline{253,084} \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\begin{gathered} 242,068 \\ 85,616 \\ \hline \end{gathered}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 319,394 \\ \underline{217,627} \\ \hline \end{array}$ |
| Alternative 3 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 98,750 \\ & 35,457 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2038 |  |  |  | $\begin{array}{r} 418,175 \\ \underline{253,115} \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 3 Minus CEQA Baseline |  |  |  | $\begin{aligned} & \hline 242,099 \\ & 85,647 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 319,394 \\ 217,627 \\ \hline \end{array}$ |
| Alternative 3 Minus NEPA Baseline |  |  |  | 98,781 |

Table 3.5-16: Construction and Operational GHG Emissions with Mitigation - Alternative 3 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{2} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  | 35,488 |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |

Notes:
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
Construction emissions are amortized over the life of the proposed Project ( 30 years) and added to each year of operational emissions.
On-terminal electricity use includes crane operation and high mast poles.

## Section 3.5.5.4, Pages 3.5-79 to 3.5-84, Table 3.5-18

Revise Table 3.5-18, as follows:
Table 3.5-18: Construction and Operational GHG Emissions without Mitigation - Alternative 4 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Amortized Construction |  |  |  |  |
| Ocean Disposal |  |  |  | 112 |
| Upland Disposal |  |  |  | 155 |
| Year 2018 |  |  |  |  |
| Ships - Transit and Anchoring | 51,596 | 1 | 3 | 52,335 |
| Ships - Hoteling | 8,417 | <1 | 1 | 8,552 |
| AMP Electricity Use | 2,335 | <1 | <1 | 2,340 |
| Tugboats | 751 | <1 | <1 | 761 |
| Trucks | 51,656 | <1 | 2 | 52,135 |
| Line Haul Locomotives | $\begin{aligned} & 27,833 \\ & 19,318 \end{aligned}$ | 2 | 1 | $\begin{aligned} & 28,090 \\ & 19,496 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 261 | <1 | <1 | 263 |
| Cargo Handling Equipment | 14,798 | <1 | <1 | 14,893 |
| On-terminal Electricity Use | 2,082 | <1 | <1 | 2,091 |
| Worker Vehicles | 3,412 | <1 | 1 | 3,565 |
| Total Operational Year 2018 | $\begin{array}{r} 163,140 \\ 154,626 \\ \hline \end{array}$ | 5 | 7 | $\begin{aligned} & 165,024 \\ & 156,431 \\ & \hline \end{aligned}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{aligned} & 165,135 \\ & 156,543 \\ & \hline \end{aligned}$ |

Table 3.5-18: Construction and Operational GHG Emissions without Mitigation - Alternative 4 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | $\begin{aligned} & -10,941 \\ & -10,925 \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 172,989 \\ & 162,956 \\ & \hline \end{aligned}$ |
| Alternative 4 Minus NEPA Baseline |  |  |  | $\begin{aligned} & -7,854 \\ & -6,413 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{array}{r} 165,178 \\ 156,586 \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | $\begin{aligned} & -10,898 \\ & -10,882 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 172,989 \\ 162,956 \\ \hline \end{array}$ |
| Alternative 4 Minus NEPA Baseline |  |  |  | $\begin{aligned} & -7,811 \\ & -6,370 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| Year 2019 |  |  |  |  |
| Ships - Transit and Anchoring | 51,644 | 1 | 3 | 52,403 |
| Ships - Hoteling | 8,755 | <1 | 1 | 8,894 |
| AMP Electricity Use | 2,190 | <1 | <1 | 2,195 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 53,496 | <1 | 2 | 53,992 |
| Line Haul Locomotives | 27,654 | 2 | 1 | 27,910 |

Table 3.5-18: Construction and Operational GHG Emissions without Mitigation - Alternative 4 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | $\underline{19,067}$ |  |  | $\underline{19,244}$ |  |
| Switch Locomotives | 264 | $<1$ | $<1$ | 266 |  |
| Cargo Handling Equipment | 16,298 | 1 | $<1$ | 16,406 |  |
| On-terminal Electricity Use | 4,447 | $<1$ | $<1$ | 4,456 |  |
| Worker Vehicles | 3,108 | $<1$ | 1 | 3,257 |  |
|  | 168,669 |  |  | 170,581 |  |
| Total Operational Year 2019 | $\underline{160,062}$ | 5 | 7 | $\underline{161,915}$ |  |
| With Ocean Disposal |  |  |  |  |  |
|  |  |  |  |  |  |
| Total Construction and Operations Year 2019 |  |  |  | 170,693 |  |

CEQA Impacts

|  |  |  |  | 176,076 <br> CEQA Baseline Emissions |
| :--- | :--- | :--- | :---: | :---: |
|  |  |  |  | $-5,383$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | $\underline{-5,441}$ |
| Significance Threshold |  |  |  | No |
| Significant? |  |  |  |  |

NEPA Impacts

| NEPA Baseline Emissions |  |  |  | 177,435 |
| :--- | :--- | :--- | :---: | :---: |
| Alternative 4 Minus NEPA Baseline |  |  |  | $-6,742$ |
| CEQ Reference Level |  |  |  |  |
| Exceeds CEQ Reference Level? |  |  |  | 25,000 |
| With Upland Disposal |  |  | No |  |
|  |  |  |  |  |
| Total Construction and Operations Year 2019 |  |  |  | 170,736 |

CEQA Impacts

|  |  |  |  | 176,076 <br> 167,468 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Baseline Emissions |  |  |  |  |
| Alternative 4 Minus CEQA Baseline |  |  |  | $-5,340$ |
| $-5,398$ |  |  |  |  |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |

NEPA Impacts

|  |  |  |  |  |
| :--- | :--- | :--- | :--- | :---: |
| NEPA Baseline Emissions |  |  |  | $\underline{177,435}$ |
|  |  |  |  | $-\mathbf{- 6 , 6 9 9}$ |
|  |  |  |  | $\underline{-4,755}$ |

Table 3.5-18: Construction and Operational GHG Emissions without Mitigation - Alternative 4 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| Year 2026 |  |  |  |  |
| Ships - Transit and Anchoring | 56,112 | 1 | 3 | 56,914 |
| Ships - Hoteling | 11,447 | <1 | 1 | 11,623 |
| AMP Electricity Use | 3,637 | <1 | <1 | 3,645 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 57,658 | <1 | 2 | 58,180 |
| Line Haul Locomotives | $\begin{aligned} & 42,942 \\ & \underline{24,841} \\ & \hline \end{aligned}$ | $\begin{aligned} & 4 \\ & \underline{2} \\ & \hline \end{aligned}$ | 1 | $\begin{aligned} & 43,338 \\ & \underline{25,070} \\ & \hline \end{aligned}$ |
| Switch Locomotives | 367 | <1 | <1 | 370 |
| Cargo Handling Equipment | 21,900 | 1 | <1 | 22,047 |
| On-terminal Electricity Use | 5,172 | <1 | <1 | 5,183 |
| Worker Vehicles | 2,955 | <1 | 1 | 3,131 |
| Total Operational Year 2026 | $\begin{aligned} & 202,982 \\ & 184,882 \\ & \hline \end{aligned}$ | $\begin{aligned} & \hline 6 \\ & 4 \\ & \hline \end{aligned}$ | 8 | $\begin{aligned} & 205,233 \\ & 186,965 \\ & \hline \end{aligned}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2026 |  |  |  | $\begin{array}{r} 205,345 \\ 187,077 \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | $\begin{array}{r} 29,269 \\ 19,609 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 176,519 \\ \underline{164,989} \\ \hline \end{array}$ |
| Alternative 4 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 28,826 \\ & \underline{22,088} \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | $\begin{aligned} & \text { Yes } \\ & \text { No } \end{aligned}$ |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2026 |  |  |  | $\begin{array}{r} 205,388 \\ 187,120 \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |

Table 3.5-18: Construction and Operational GHG Emissions without Mitigation - Alternative 4 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 29,312 \\ & 19,652 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 176,519 \\ 164,989 \\ \hline \end{array}$ |
| Alternative 4 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 28,869 \\ & \underline{22,131} \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | $\begin{aligned} & \text { Yes } \\ & \text { No } \end{aligned}$ |
| Year 2033 |  |  |  |  |
| Ships - Transit and Anchoring | 72,526 | 2 | 4 | 73,565 |
| Ships - Hoteling | 15,534 | <1 | 1 | 15,777 |
| AMP Electricity Use | 5,695 | <1 | <1 | 5,707 |
| Tugboats | 1,057 | <1 | <1 | 1,070 |
| Trucks | 58,245 | <1 | 2 | 58,771 |
| Line Haul Locomotives | $\begin{array}{r} 197,798 \\ 55,406 \\ \hline \end{array}$ | $\begin{gathered} 16 \\ \underline{5} \\ \hline \end{gathered}$ | $\begin{aligned} & 5 \\ & \underline{2} \\ & \hline \end{aligned}$ | $\begin{gathered} 199,626 \\ \underline{55,918} \\ \hline \end{gathered}$ |
| Switch Locomotives | 822 | <1 | <1 | 829 |
| Cargo Handling Equipment | 28,082 | 1 | 1 | 28,270 |
| On-terminal Electricity Use | 5,971 | <1 | <1 | 5,984 |
| Worker Vehicles | 3,078 | <1 | 1 | 3,285 |
| Total Operational Year 2033 | $\begin{array}{r} 388,809 \\ \underline{246,416} \\ \hline \end{array}$ | $\begin{gathered} 20 \\ \underline{9} \end{gathered}$ | $\begin{aligned} & 13 \\ & 10 \\ & \hline \end{aligned}$ | $\begin{array}{r} 392,883 \\ \underline{249,176} \\ \hline \end{array}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2033 |  |  |  | $\begin{array}{r} 392,995 \\ \underline{249,288} \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{array}{r} 176,076 \\ \underline{167,468} \\ \hline \end{array}$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | $\begin{gathered} 216,918 \\ 81,820 \\ \hline \end{gathered}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |

Table 3.5-18: Construction and Operational GHG Emissions without Mitigation - Alternative 4 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 320,246 \\ 218,479 \\ \hline \end{array}$ |
| Alternative 4 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 72,749 \\ & 30,809 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2033 |  |  |  | $\begin{aligned} & 393,038 \\ & \underline{249,331} \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | $\begin{gathered} \text { 216,961 } \\ 81,863 \end{gathered}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 320,246 \\ & \underline{218,479} \\ & \hline \end{aligned}$ |
| Alternative 4 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 72,792 \\ & 30,852 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2038 |  |  |  |  |
| Ships - Transit and Anchoring | 72,526 | 2 | 4 | 73,565 |
| Ships - Hoteling | 15,534 | <1 | 1 | 15,777 |
| AMP Electricity Use | 5,695 | <1 | <1 | 5,707 |
| Tugboats | 1,057 | <1 | <1 | 1,070 |
| Trucks | 57,395 | <1 | 2 | 57,915 |
| Line Haul Locomotives | $\begin{gathered} 197,798 \\ 55,406 \\ \hline \end{gathered}$ | $\begin{gathered} 16 \\ \underline{5} \end{gathered}$ | $\begin{aligned} & 5 \\ & \underline{2} \end{aligned}$ | $\begin{gathered} 199,626 \\ 55,918 \\ \hline \end{gathered}$ |
| Switch Locomotives | 822 | <1 | <1 | 829 |
| Cargo Handling Equipment | 28,082 | 1 | 1 | 28,270 |
| On-terminal Electricity Use | 5,971 | <1 | <1 | 5,984 |
| Worker Vehicles | 2,921 | <1 | 1 | 3,129 |
| Total Operational Year 2038 | $\begin{array}{r} 387,803 \\ \underline{245,409} \\ \hline \end{array}$ | $\begin{gathered} 20 \\ \underline{9} \end{gathered}$ | 13 <br> 10 | $\begin{array}{r} 391,871 \\ \underline{248,164} \\ \hline \end{array}$ |

Table 3.5-18: Construction and Operational GHG Emissions without Mitigation - Alternative 4 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{2} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| With Ocean Disposal |  |  |  |  |
|  |  |  |  | 391,983 |
| Total Construction and Operations Year 2038 |  |  |  | $\underline{y y y}$ |
| CEQA Impacts |  |  |  | 176,076 |
|  |  |  |  | $\underline{\|c\|}$ |
| CEQA Baseline Emissions |  |  |  | 215,908 |
|  |  |  |  | $\underline{80,808}$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | 10,000 |
| Significance Threshold |  |  |  | Yes |
| Significant? |  |  |  |  |

NEPA Impacts

|  |  |  |  | 319,394 |
| :--- | :--- | :--- | :--- | :---: |
| NEPA Baseline Emissions |  |  |  | 217,627 |
|  |  |  |  | 72,588 |
| Alternative 4 Minus NEPA Baseline |  |  |  | $\underline{30,649}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  | Yes |  |
| With Upland Disposal |  |  |  |  |


|  |  |  |  | 392,026 <br> Total Construction and Operations Year 2038 |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  | $\underline{48,319}$ |  |

## CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | 167,468 |
|  |  |  |  | 215,950 |
| Alternative 4 Minus CEQA Baseline |  |  |  | $\underline{80,851}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  | Yes |  |

NEPA Impacts

|  |  |  |  | 319,394 |
| :--- | :--- | :--- | :--- | :---: |
| NEPA Baseline Emissions |  |  |  | 217,627 |
|  |  |  |  | 72,631 |
| Alternative 4 Minus NEPA Baseline |  |  |  | 30,692 |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |

Notes: Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
Construction emissions are amortized over the life of the proposed Project ( 30 years) and added to each year of operational emissions.
On-terminal electricity use includes crane operation and high mast poles.

## Section 3.5.5.4, Pages 3.5-86 to 3.5-91, Table 3.5-20

Revise Table 3.5-20, as follows:
Table 3.5-20: Construction and Operational GHG Emissions with
Mitigation - Alternative 4 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Amortized Construction |  |  |  |  |
| Ocean Disposal |  |  |  | 112 |
| Upland Disposal |  |  |  | 156 |
| Year 2018 |  |  |  |  |
| Ships - Transit and Anchoring | 51,596 | 1 | 3 | 52,335 |
| Ships - Hoteling | 8,417 | <1 | 1 | 8,552 |
| AMP Electricity Use | 2,335 | <1 | <1 | 2,340 |
| Tugboats | 751 | <1 | <1 | 761 |
| Trucks | 51,656 | <1 | 2 | 52,135 |
| Line Haul Locomotives | $\begin{aligned} & 27,833 \\ & 19,318 \end{aligned}$ | 2 | 1 | $\begin{aligned} & 28,090 \\ & 19,496 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 261 | <1 | <1 | 263 |
| Cargo Handling Equipment | 14,798 | <1 | <1 | 14,893 |
| On-terminal Electricity Use | 2,082 | <1 | <1 | 2,091 |
| Worker Vehicles | 3,412 | <1 | 1 | 3,565 |
| Total Operational Year 2018 | $\begin{aligned} & 163,140 \\ & 154,626 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{aligned} & 165,024 \\ & 156,431 \\ & \hline \end{aligned}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{array}{r} 165,136 \\ 156,543 \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | $\begin{array}{r} -10,941 \\ -10,925 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 172,989 \\ 162,956 \\ \hline \end{array}$ |
| Alternative 4 Minus NEPA Baseline |  |  |  | $\begin{array}{r} -7,854 \\ -6,413 \\ \hline \end{array}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| With Upland Disposal |  |  |  |  |

Table 3.5-20: Construction and Operational GHG Emissions with Mitigation - Alternative 4 (mty)

| Source Category | $\mathbf{C O}_{2}$ | $\mathbf{C H}_{4}$ | $\mathbf{N}_{2} \mathbf{O}$ | $\mathbf{C O}_{2} \mathbf{e}$ |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 165,179 |
| Total Construction and Operations Year 2018 |  |  |  | $\underline{156,587}$ |


| CEQA Impacts |  |  |  |  |
| :--- | :--- | :--- | :--- | :---: |
|  |  |  |  | 176,076 |
| CEQA Baseline Emissions |  |  |  | 167,468 |
|  |  |  |  | $-10,897$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | $-10,881$ |
| Significance Threshold |  |  |  | No |
| Significant? |  |  |  |  |

NEPA Impacts

|  |  |  |  | 172,989 |
| :--- | :--- | :--- | :---: | :---: |
| NEPA Baseline Emissions |  |  |  | 162,956 |
|  |  |  |  | $-7,810$ |
| Alternative 4 Minus NEPA Baseline |  |  |  | $-6,369$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |

Year 2019

| Ships - Transit and Anchoring | 51,182 | 1 | 3 | 51,916 |
| :--- | :---: | :---: | :---: | :---: |
| Ships - Hoteling | 8,620 | $<1$ | 1 | 8,758 |
| AMP Electricity Use | 2,340 | $<1$ | $<1$ | 2,345 |
| Tugboats | 793 | $<1$ | $<1$ | 802 |
| Trucks | 53,496 | $<1$ | 2 | 53,992 |
|  | 27,654 |  |  | 27,910 |
| Line Haul Locomotives | $\underline{19,067}$ | 2 | 1 | $\underline{19,244}$ |
| Switch Locomotives | 264 | $<1$ | $<1$ | 266 |
| Cargo Handling Equipment | 16,298 | 1 | $<1$ | 16,406 |
| On-terminal Electricity Use | 3,189 | $<1$ | $<1$ | 3,196 |
| Worker Vehicles | 3,108 | $<1$ | 1 | 3,257 |
|  | 166,945 |  |  | 168,848 |
| Total Operational Year 2019 | $\underline{158,357}$ | 5 | 7 | 160,182 |

With Ocean Disposal

|  |  |  |  | 168,960 |
| :--- | :--- | :--- | :--- | :--- |
| Total Construction and Operations Year 2019 |  |  |  | 160,294 |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Baseline Emissions |  |  |  | $\underline{167,468}$ |
|  |  |  |  | $\underline{-7,116}$ |
|  |  |  |  | $\underline{-7,174}$ |

Table 3.5-20: Construction and Operational GHG Emissions with Mitigation - Alternative 4 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  | 177,435 |
|  |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\underline{l\|l\| l\|l\|}$ |
|  |  |  |  | $-8,475$ |
| Alternative 4 Minus NEPA Baseline |  |  |  | $-6,531$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |

With Upland Disposal

|  |  |  |  | 169,004 |
| :--- | :--- | :--- | :--- | :--- |
| Total Construction and Operations Year 2019 |  |  |  | $\underline{160,338}$ |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | 167,468 |
|  |  |  |  | $-7,073$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | $\underline{-7,130}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  | No |  |

NEPA Impacts

| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 177,435 \\ & 166,825 \\ & \hline \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
| Alternative 4 Minus NEPA Baseline |  |  |  | $\begin{aligned} & -8,432 \\ & -6,487 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| Year 2026 |  |  |  |  |
| Ships - Transit and Anchoring | 55,528 | 1 | 3 | 56,322 |
| Ships - Hoteling | 10,597 | <1 | 1 | 10,764 |
| AMP Electricity Use | 4,323 | <1 | <1 | 4,332 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 57,658 | <1 | 2 | 58,180 |
| Line Haul Locomotives | $\begin{aligned} & 42,942 \\ & \underline{24,841} \end{aligned}$ | $\begin{aligned} & 4 \\ & \underline{2} \end{aligned}$ | 1 | $\begin{array}{r} 43,338 \\ 25,070 \\ \hline \end{array}$ |
| Switch Locomotives | 367 | <1 | <1 | 370 |
| Cargo Handling Equipment | 21,900 | 1 | <1 | 22,047 |
| On-terminal Electricity Use | 3,914 | <1 | <1 | 3,922 |
| Worker Vehicles | 2,955 | <1 | 1 | 3,131 |

Table 3.5-20: Construction and Operational GHG Emissions with Mitigation - Alternative 4 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| Total Operational Year 2026 | 200,976 | 6 |  | 203,210 |
|  | $\underline{182,876}$ | $\underline{4}$ | 8 | $\underline{184,940}$ |

## With Ocean Disposal

|  |  |  |  | 203,322 |
| :--- | :--- | :--- | :--- | :--- |
| Total Construction and Operations Year 2026 |  |  |  | $\underline{185,052}$ |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Baseline Emissions |  |  |  | 167,468 |
|  |  |  |  | 27,245 |
| Alternative 4 Minus CEQA Baseline |  |  |  | 17,584 |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |

NEPA Impacts

|  |  |  |  | 176,519 |
| :--- | :--- | :--- | :--- | :---: |
| NEPA Baseline Emissions |  |  |  | 164,989 |
|  |  |  |  | 26,802 |
| Alternative 4 Minus NEPA Baseline |  |  |  |  |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| With Upland Disposal |  |  |  |  |
|  |  |  |  | 203,365 |
| Total Construction and Operations Year 2026 |  |  | 185,096 |  |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Baseline Emissions |  |  |  | 167,468 |
|  |  |  |  | 27,289 |
| Alternative 4 Minus CEQA Baseline |  |  | 17,628 |  |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |

NEPA Impacts

| NEPA Baseline Emissions |  |  |  | 176,519 |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Alternative 4 Minus NEPA Baseline |  | 26,846 |  |  |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| Year 2033 | 71,816 |  |  |  |
| Ships - Transit and Anchoring | 14,242 | $<1$ | 1 | 14,470 |
| Ships - Hoteling |  |  |  |  |

Table 3.5-20: Construction and Operational GHG Emissions with Mitigation - Alternative 4 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| AMP Electricity Use | 6,736 | $<1$ | $<1$ | 6,750 |
| Tugboats | 1,057 | $<1$ | $<1$ | 1,070 |
| Trucks | 58,245 | $<1$ | 2 | 58,771 |
|  | 197,798 | 16 | 5 | 199,626 |
| Line Haul Locomotives | $\underline{55,406}$ | $\underline{5}$ | $\underline{2}$ | $\underline{55,918}$ |
| Switch Locomotives | 822 | $<1$ | $<1$ | 829 |
| Cargo Handling Equipment | 28,082 | 1 | 1 | 28,270 |
| On-terminal Electricity Use | 4,714 | $<1$ | $<1$ | 4,724 |
| Worker Vehicles | 3,078 | $<1$ | 1 | 3,285 |
| Total Operational Year 2033 | 386,589 | 19 | 13 | 390,637 |
| With Ocean Disposal | $\underline{244,198}$ | $\underline{8}$ | $\underline{10}$ | $\underline{246,933}$ |
| Total Construction and Operations Year 2033 |  |  |  |  |
| CEQA Impacts |  |  |  | 390,752 |
| CEQA Baseline Emissions |  |  |  |  |
| Alternative 4 Minus CEQA Baseline |  |  |  | 176,076 |
| Significance Threshold |  |  |  | $\underline{214,075}$ |
| Significant? |  |  |  | 10,000 |

NEPA Impacts

|  |  |  |  | 320,246 |
| :--- | :--- | :--- | :--- | :---: |
| NEPA Baseline Emissions |  |  | $\underline{218,479}$ |  |
|  |  |  |  | 70,506 |
| Alternative 4 Minus NEPA Baseline |  |  |  | 28,566 |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |

With Upland Disposal

| Total Construction and Operations Year 2033 |  |  |  | 390,796 <br> 247,089 |
| :--- | :--- | :--- | :--- | :---: |
| CEQA Impacts |  |  |  | 176,076 |
|  |  |  |  | $\underline{167,468}$ |
| CEQA Baseline Emissions |  |  |  | 214,719 |
|  |  |  |  | $\underline{79,621}$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | 10,000 |
| Significance Threshold |  |  |  | Yes |
| Significant? |  |  |  |  |

Table 3.5-20: Construction and Operational GHG Emissions with Mitigation - Alternative 4 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 320,246 \\ & 218,479 \\ & \hline \end{aligned}$ |
| Alternative 4 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 70,550 \\ & \underline{28,610} \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2038 |  |  |  |  |
| Ships - Transit and Anchoring | 71,816 | 2 | 4 | 72,846 |
| Ships - Hoteling | 14,242 | <1 | 1 | 14,470 |
| AMP Electricity Use | 6,736 | <1 | <1 | 6,750 |
| Tugboats | 1,057 | <1 | <1 | 1,070 |
| Trucks | 57,395 | <1 | 2 | 57,915 |
| Line Haul Locomotives | $\begin{array}{r} \hline 197,798 \\ 55,406 \\ \hline \end{array}$ | $\begin{gathered} 16 \\ \underline{5} \end{gathered}$ | $\begin{aligned} & \hline 5 \\ & \underline{2} \\ & \hline \end{aligned}$ | $\begin{gathered} 199,626 \\ \underline{55,918} \\ \hline \end{gathered}$ |
| Switch Locomotives | 822 | <1 | <1 | 829 |
| Cargo Handling Equipment | 28,082 | 1 | 1 | 28,270 |
| On-terminal Electricity Use | 4,714 | <1 | <1 | 4,724 |
| Worker Vehicles | 2,921 | <1 | 1 | 3,129 |
| Total Operational Year 2038 | $\begin{aligned} & 385,583 \\ & \underline{243,191} \\ & \hline \end{aligned}$ | $\begin{gathered} 19 \\ \underline{8} \end{gathered}$ | $\begin{aligned} & 13 \\ & 10 \\ & \hline \end{aligned}$ | $\begin{array}{r} 389,628 \\ \underline{245,921} \\ \hline \end{array}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2038 |  |  |  | $\begin{aligned} & 389,740 \\ & \underline{246,033} \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | $\begin{gathered} 213,664 \\ \underline{78,565} \\ \hline \end{gathered}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 319,394 \\ \underline{217,627} \\ \hline \end{array}$ |
| Alternative 4 Minus NEPA Baseline |  |  |  | $\begin{array}{r} 70,346 \\ \underline{28,406} \\ \hline \end{array}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |

Table 3.5-20: Construction and Operational GHG Emissions with Mitigation - Alternative 4 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2038 |  |  |  | $\begin{aligned} & 389,784 \\ & 246,077 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 4 Minus CEQA Baseline |  |  |  | $\begin{gathered} 213,707 \\ 78,609 \\ \hline \end{gathered}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 319,394 \\ & \underline{217,627} \\ & \hline \end{aligned}$ |
| Alternative 4 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 70,389 \\ & 28,450 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |

Notes:
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
Construction emissions are amortized over the life of the proposed Project ( 30 years) and added to each year of operational emissions.
On-terminal electricity use includes crane operation and high mast poles.

## Section 3.5.5.4, Pages 3.5-93 to 3.5-99, Table 3.5-22

Revise Table 3.5-22, as follows:

Table 3.5-22: Construction and Operational GHG Emissions without Mitigation Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Amortized Construction |  |  |  |  |
| Ocean Disposal |  |  |  | 176 |
| Upland Disposal |  |  |  | 219 |
| Year 2018 |  |  |  |  |
| Ships - Transit and Anchoring | 51,596 | 1 | 3 | 52,335 |
| Ships - Hoteling | 8,417 | <1 | 1 | 8,552 |
| AMP Electricity Use | 2,335 | <1 | <1 | 2,340 |
| Tugboats | 751 | <1 | <1 | 761 |
| Trucks | 51,656 | <1 | 2 | 52,135 |
| Line Haul Locomotives | $\begin{aligned} & 27,833 \\ & 20,141 \\ & \hline \end{aligned}$ | 2 | 1 | $\begin{array}{r} 28,090 \\ 20,327 \\ \hline \end{array}$ |
| Switch Locomotives | 261 | <1 | <1 | 263 |
| Cargo Handling Equipment | 14,798 | $<1$ | <1 | 14,893 |
| On-terminal Electricity Use | 2,082 | <1 | <1 | 2,091 |
| Worker Vehicles | 3,412 | <1 | 1 | 3,565 |
| Total Operational Year 2018 | $\begin{aligned} & 163,140 \\ & 155,449 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{aligned} & 165,024 \\ & 157,262 \\ & \hline \end{aligned}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{aligned} & 165,200 \\ & 157,438 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{array}{r} -10,876 \\ -10,030 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 172,989 \\ & 162,956 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{array}{r} -7,789 \\ -5,518 \\ \hline \end{array}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{aligned} & 165,243 \\ & 157,481 \\ & \hline \end{aligned}$ |

Table 3.5-22: Construction and Operational GHG Emissions without Mitigation Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & -10,833 \\ & -9,987 \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 172,989 \\ & 162,956 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{array}{r} -7,746 \\ -5,475 \\ \hline \end{array}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| Year 2019 |  |  |  |  |
| Ships - Transit and Anchoring | 53,919 | 1 | 3 | 54,690 |
| Ships - Hoteling | 9,557 | <1 | 1 | 9,707 |
| AMP Electricity Use | 2,517 | <1 | <1 | 2,523 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 56,690 | <1 | 2 | 57,215 |
| Line Haul Locomotives | $\begin{aligned} & 30,846 \\ & 20,261 \\ & \hline \end{aligned}$ | $\begin{array}{r} 3 \\ \underline{2} \\ \hline \end{array}$ | 1 | $\begin{aligned} & 31,131 \\ & 20,449 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 279 | <1 | <1 | 282 |
| Cargo Handling Equipment | 18,475 | 1 | <1 | 18,601 |
| On-terminal Electricity Use | 4,568 | <1 | <1 | 4,578 |
| Worker Vehicles | 3,198 | <1 | 1 | 3,351 |
| Total Operational Year 2019 | $\begin{aligned} & 180,842 \\ & 170,257 \\ & \hline \end{aligned}$ | $\begin{aligned} & 5 \\ & \underline{4} \end{aligned}$ | 7 | $\begin{array}{r} 182,880 \\ 172,198 \\ \hline \end{array}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2019 |  |  |  | $\begin{array}{r} 183,057 \\ 172,374 \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{array}{r} 6,980 \\ 4,906 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |

Table 3.5-22: Construction and Operational GHG Emissions without Mitigation Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 177,435 \\ & 166,825 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 5,621 \\ & 5,549 \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2019 |  |  |  | $\begin{aligned} & 183,100 \\ & 172,417 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 7,023 \\ & 4,949 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 177,435 \\ & 166,825 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 5,664 \\ & 5,592 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| Year 2026 |  |  |  |  |
| Ships - Transit and Anchoring | 56,488 | 1 | 3 | 57,297 |
| Ships - Hoteling | 13,532 | <1 | 1 | 13,740 |
| AMP Electricity Use | 5,310 | <1 | <1 | 5,321 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 64,509 | <1 | 2 | 65,094 |
| Line Haul Locomotives | $\begin{aligned} & 52,835 \\ & 27,759 \\ & \hline \end{aligned}$ | $\begin{aligned} & 4 \\ & \underline{2} \\ & \hline \end{aligned}$ | 1 | $\begin{aligned} & 53,324 \\ & 28,015 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 410 | <1 | <1 | 413 |
| Cargo Handling Equipment | 26,244 | 1 | 1 | 26,424 |
| On-terminal Electricity Use | 5,506 | <1 | <1 | 5,518 |
| Worker Vehicles | 3,176 | <1 | 1 | 3,365 |
| Total Operational Year 2026 | $\begin{aligned} & 228,802 \\ & \underline{203,727} \\ & \hline \end{aligned}$ | $\begin{aligned} & 7 \\ & 5 \end{aligned}$ | 9 | $\begin{aligned} & 231,297 \\ & 205,989 \\ & \hline \end{aligned}$ |

Table 3.5-22: Construction and Operational GHG Emissions without Mitigation Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2026 |  |  |  | $\begin{aligned} & 231,474 \\ & 206,165 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 55,398 \\ & 38,697 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 176,519 \\ & 164,989 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 54,955 \\ & 41,176 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2026 |  |  |  | $\begin{aligned} & 231,517 \\ & 206,208 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 55,441 \\ & 38,740 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 176,519 \\ & 164,989 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 54,998 \\ & 41,219 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2033 |  |  |  |  |
| Ships - Transit and Anchoring | 75,206 | 2 | 4 | 76,283 |
| Ships - Hoteling | 16,741 | <1 | 1 | 17,003 |
| AMP Electricity Use | 6,201 | <1 | <1 | 6,214 |

Table 3.5-22: Construction and Operational GHG Emissions without Mitigation Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Tugboats | 1,057 | <1 | <1 | 1,070 |
| Trucks | 66,412 | <1 | 2 | 67,012 |
| Line Haul Locomotives | $\begin{gathered} 248,116 \\ \underline{62,265} \\ \hline \end{gathered}$ | $\begin{gathered} 20 \\ \underline{5} \end{gathered}$ | $\begin{aligned} & 7 \\ & \underline{2} \end{aligned}$ | $\begin{gathered} 250,408 \\ \underline{62,840} \end{gathered}$ |
| Switch Locomotives | 924 | <1 | <1 | 932 |
| Cargo Handling Equipment | 33,878 | 1 | 1 | 34,111 |
| On-terminal Electricity Use | 6,426 | <1 | <1 | 6,439 |
| Worker Vehicles | 3,340 | <1 | 1 | 3,564 |
| Total Operational Year 2033 | $\begin{aligned} & 458,301 \\ & 272,450 \\ & \hline \end{aligned}$ | $\begin{gathered} 24 \\ \underline{9} \end{gathered}$ | $\begin{aligned} & 15 \\ & 10 \\ & \hline \end{aligned}$ | $\begin{aligned} & 463,036 \\ & 275,468 \\ & \hline \end{aligned}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2033 |  |  |  | $\begin{aligned} & 463,213 \\ & \underline{275,644} \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{array}{r} 287,136 \\ 108,176 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 320,246 \\ & 217,627 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{gathered} 142,967 \\ 58,017 \\ \hline \end{gathered}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2033 |  |  |  | $\begin{aligned} & 463,256 \\ & \underline{275,687} \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 287,179 \\ & 108,219 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |

Table 3.5-22: Construction and Operational GHG Emissions without Mitigation Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 320,246 \\ 217,627 \\ \hline \end{array}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{gathered} 143,010 \\ 58,060 \\ \hline \end{gathered}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2038 |  |  |  |  |
| Ships - Transit and Anchoring | 75,206 | 2 | 4 | 76,283 |
| Ships - Hoteling | 16,741 | <1 | 1 | 17,003 |
| AMP Electricity Use | 6,201 | <1 | <1 | 6,214 |
| Tugboats | 1,057 | <1 | <1 | 1,070 |
| Trucks | 65,443 | <1 | 2 | 66,036 |
| Line Haul Locomotives | $\begin{gathered} 248,116 \\ 62,265 \\ \hline \end{gathered}$ | 20 | 7 | $\begin{gathered} 250,408 \\ 62,840 \\ \hline \end{gathered}$ |
| Switch Locomotives | 924 | <1 | <1 | 932 |
| Cargo Handling Equipment | 33,878 | 1 | 1 | 34,111 |
| On-terminal Electricity Use | 6,426 | <1 | <1 | 6,439 |
| Worker Vehicles | 3,170 | <1 | 1 | 3,394 |
| Total Operational Year 2038 | $\begin{aligned} & 457,163 \\ & \underline{271,311} \\ & \hline \end{aligned}$ | 24 | 15 | $\begin{array}{r} 461,891 \\ 274,322 \\ \hline \end{array}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2038 |  |  |  | $\begin{aligned} & 462,067 \\ & 274,498 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 285,991 \\ & 107,030 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 319,394 \\ & 217,627 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{gathered} 142,673 \\ 56,871 \end{gathered}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |

Table 3.5-22: Construction and Operational GHG Emissions without Mitigation Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2038 |  |  |  | $\begin{array}{r} 462,110 \\ \underline{274,541} \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 286,034 \\ & 107,073 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{array}{r} 319,394 \\ 217,627 \\ \hline \end{array}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{gathered} 142,716 \\ 56,914 \\ \hline \end{gathered}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |

Notes:
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
Construction emissions are amortized over the life of the proposed Project ( 30 years) and added to each year of operational emissions.
On-terminal electricity use includes crane operation and high mast poles.

## Section 3.5.5.4, Pages 3.5-100 to 3.5-106, Table 3.5-24

Revise Table 3.5-24, as follows:
Table 3.5-24: Construction and Operational GHG Emissions with Mitigation - Alternative 5 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| Amortized Construction |  |  |  | 177 |
| Ocean Disposal |  |  |  | 221 |
| Upland Disposal | 51,596 | 1 | 3 | 52,335 |
| Year 2018 | 8,417 | $<1$ | 1 | 8,552 |
| Ships - Transit and Anchoring | 2,335 | $<1$ | $<1$ | 2,340 |
| Ships - Hoteling | 751 | $<1$ | $<1$ | 761 |
| AMP Electricity Use |  |  |  |  |
| Tugboats |  |  |  |  |

Table 3.5-24: Construction and Operational GHG Emissions with Mitigation - Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Trucks | 51,656 | <1 | 2 | 52,135 |
| Line Haul Locomotives | $\begin{aligned} & 27,833 \\ & 20,141 \\ & \hline \end{aligned}$ | 2 | 1 | $\begin{aligned} & 28,090 \\ & 20,327 \\ & \hline \end{aligned}$ |
| Switch Locomotives | 261 | <1 | <1 | 263 |
| Cargo Handling Equipment | 14,798 | <1 | <1 | 14,893 |
| On-terminal Electricity Use | 2,082 | <1 | <1 | 2,091 |
| Worker Vehicles | 3,412 | <1 | 1 | 3,565 |
| Total Operational Year 2018 | $\begin{aligned} & 163,140 \\ & 155,449 \\ & \hline \end{aligned}$ | 5 | 7 | $\begin{aligned} & 165,024 \\ & 157,262 \\ & \hline \end{aligned}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2018 |  |  |  | $\begin{aligned} & 165,201 \\ & 157,439 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & -10,876 \\ & -10,029 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |

NEPA Impacts

|  |  |  |  | 172,989 |
| :--- | :--- | :--- | :---: | :---: |
| NEPA Baseline Emissions |  |  |  | $\underline{162,956}$ |
|  |  |  |  | $-7,789$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\underline{-5,517}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |

With Upland Disposal
Total Construction and Operations Year 2018

|  |  | 165,244 <br> 157,483 |
| :--- | :--- | :--- | :--- |

CEQA Impacts

|  |  |  |  | 176,076 |
| :--- | :--- | :--- | :---: | :---: |
| CEQA Baseline Emissions |  |  |  | $\underline{167,468}$ |
|  |  |  |  | $-10,832$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\underline{-9,985}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  | No |  |

NEPA Impacts

| NEPA Baseline Emissions |  |  |  | 172,989 |
| :--- | :--- | :--- | :--- | :--- |

Table 3.5-24: Construction and Operational GHG Emissions with Mitigation - Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 162,956 |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{aligned} & -7,745 \\ & -5,473 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| Year 2019 |  |  |  |  |
| Ships - Transit and Anchoring | 53,398 | 1 | 3 | 54,163 |
| Ships - Hoteling | 9,408 | <1 | 1 | 9,556 |
| AMP Electricity Use | 2,682 | <1 | <1 | 2,687 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 56,690 | <1 | 2 | 57,215 |
| Line Haul Locomotives | $\begin{aligned} & 30,846 \\ & 20,261 \\ & \hline \end{aligned}$ | $\begin{aligned} & 3 \\ & \underline{2} \end{aligned}$ | 1 | $\begin{array}{r} 31,131 \\ 20,449 \\ \hline \end{array}$ |
| Switch Locomotives | 279 | <1 | <1 | 282 |
| Cargo Handling Equipment | 18,475 | 1 | <1 | 18,601 |
| On-terminal Electricity Use | 3,311 | <1 | <1 | 3,318 |
| Worker Vehicles | 3,198 | <1 | 1 | 3,351 |
| Total Operational Year 2019 | $\begin{aligned} & 179,079 \\ & 168,495 \\ & \hline \end{aligned}$ | $\begin{aligned} & 5 \\ & 4 \end{aligned}$ | 7 | $\begin{aligned} & 181,107 \\ & 170,424 \\ & \hline \end{aligned}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2019 |  |  |  | $\begin{aligned} & 181,284 \\ & 170,601 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 5,208 \\ & 3,133 \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 177,435 \\ & 166,825 \\ & \hline \end{aligned}$ |
| Proposed Project Minus NEPA Baseline |  |  |  | $\begin{aligned} & 3,849 \\ & 3,776 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2019 |  |  |  | 181,328 |

Table 3.5-24: Construction and Operational GHG Emissions with Mitigation - Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 170,645 |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{array}{r} 5,251 \\ 3,177 \\ \hline \end{array}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | No |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 177,435 \\ & \underline{166,825} \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 3,892 \\ & 3,820 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | No |
| Year 2026 |  |  |  |  |
| Ships - Transit and Anchoring | 55,974 | 1 | 3 | 56,777 |
| Ships - Hoteling | 12,292 | <1 | 1 | 12,487 |
| AMP Electricity Use | 6,291 | <1 | <1 | 6,304 |
| Tugboats | 793 | <1 | <1 | 802 |
| Trucks | 64,509 | <1 | 2 | 65,094 |
| Line Haul Locomotives | $\begin{array}{r} 52,835 \\ \underline{27,759} \\ \hline \end{array}$ | 4 | 1 | $\begin{aligned} & 53,324 \\ & \underline{28,015} \\ & \hline \end{aligned}$ |
| Switch Locomotives | 410 | <1 | <1 | 413 |
| Cargo Handling Equipment | 26,244 | 1 | 1 | 26,424 |
| On-terminal Electricity Use | 4,248 | <1 | <1 | 4,257 |
| Worker Vehicles | 3,176 | <1 | 1 | 3,365 |
| Total Operational Year 2026 | $\begin{aligned} & 226,772 \\ & 201,696 \\ & \hline \end{aligned}$ | 7 | 9 | $\begin{aligned} & 229,247 \\ & \underline{203,938} \\ & \hline \end{aligned}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2026 |  |  |  | $\begin{aligned} & 229,424 \\ & \underline{204,115} \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{array}{r} 176,076 \\ 167,468 \\ \hline \end{array}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 53,348 \\ & 36,647 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |

Table 3.5-24: Construction and Operational GHG Emissions with Mitigation - Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 176,519 \\ & 164,989 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 52,905 \\ & 39,126 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2026 |  |  |  | $\begin{aligned} & 229,468 \\ & \underline{204,159} \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 53,391 \\ & 36,691 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 176,519 \\ & 164,989 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{aligned} & 52,948 \\ & 39,170 \\ & \hline \end{aligned}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2033 |  |  |  |  |
| Ships - Transit and Anchoring | 74,454 | 2 | 4 | 75,522 |
| Ships - Hoteling | 15,316 | <1 | 1 | 15,561 |
| AMP Electricity Use | 7,344 | <1 | <1 | 7,359 |
| Tugboats | 1,057 | <1 | <1 | 1,070 |
| Trucks | 66,412 | <1 | 2 | 67,012 |
| Line Haul Locomotives | $\begin{gathered} \mathbf{2 4 8 , 1 1 6} \\ \underline{62,265} \end{gathered}$ | $\begin{gathered} 20 \\ \underline{5} \end{gathered}$ | $\begin{aligned} & 7 \\ & \underline{2} \end{aligned}$ | $\begin{gathered} 250,408 \\ 62,840 \\ \hline \end{gathered}$ |
| Switch Locomotives | 924 | <1 | <1 | 932 |
| Cargo Handling Equipment | 33,878 | 1 | 1 | 34,111 |
| On-terminal Electricity Use | 5,168 | <1 | <1 | 5,179 |
| Worker Vehicles | 3,340 | <1 | 1 | 3,564 |
| Total Operational Year 2033 | 456,009 | 24 | 15 | 460,716 |

Table 3.5-24: Construction and Operational GHG Emissions with Mitigation - Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | 270,158 | 9 | 10 | 273,150 |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2033 |  |  |  | $\begin{array}{r} 460,896 \\ 273,327 \\ \hline \end{array}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 284,820 \\ & 105,859 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 320,246 \\ & 218,479 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{gathered} 140,650 \\ 54,848 \\ \hline \end{gathered}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2033 |  |  |  | $\begin{aligned} & 460,940 \\ & 273,371 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{aligned} & 284,863 \\ & 105,903 \\ & \hline \end{aligned}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 320,246 \\ & \underline{218,479} \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{gathered} 140,694 \\ 54,892 \\ \hline \end{gathered}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| Year 2038 |  |  |  |  |
| Ships - Transit and Anchoring | 69,260 | 2 | 4 | 70,327 |
| Ships - Hoteling | 15,056 | <1 | 1 | 15,301 |

Table 3.5-24: Construction and Operational GHG Emissions with Mitigation - Alternative 5 (mty)

| Source Category | $\mathrm{CO}_{2}$ | $\mathrm{CH}_{4}$ | $\mathrm{N}_{2} \mathrm{O}$ | $\mathrm{CO}_{2} \mathrm{e}$ |
| :---: | :---: | :---: | :---: | :---: |
| AMP Electricity Use | 7,344 | <1 | <1 | 7,359 |
| Tugboats | 1,057 | <1 | <1 | 1,070 |
| Trucks | 65,443 | <1 | 2 | 66,036 |
| Line Haul Locomotives | $\begin{gathered} 248,116 \\ \underline{62,265} \\ \hline \end{gathered}$ | $\begin{gathered} 20 \\ \underline{5} \end{gathered}$ | $\begin{aligned} & 7 \\ & \underline{2} \end{aligned}$ | $\begin{gathered} 250,408 \\ 62,840 \\ \hline \end{gathered}$ |
| Switch Locomotives | 924 | <1 | <1 | 932 |
| Cargo Handling Equipment | 33,878 | 1 | 1 | 34,111 |
| On-terminal Electricity Use | 5,168 | <1 | <1 | 5,179 |
| Worker Vehicles | 3,170 | <1 | 1 | 3,394 |
| Total Operational Year 2038 | $\begin{aligned} & 449,416 \\ & 263,565 \\ & \hline \end{aligned}$ | $\begin{gathered} 24 \\ \underline{9} \end{gathered}$ | $\begin{aligned} & 15 \\ & 10 \\ & \hline \end{aligned}$ | $\begin{aligned} & 454,119 \\ & \underline{266,549} \\ & \hline \end{aligned}$ |
| With Ocean Disposal |  |  |  |  |
| Total Construction and Operations Year 2038 |  |  |  | $\begin{aligned} & 454,296 \\ & 266,726 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{gathered} 278,219 \\ \underline{99,258} \end{gathered}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |
| NEPA Impacts |  |  |  |  |
| NEPA Baseline Emissions |  |  |  | $\begin{aligned} & 319,394 \\ & 217,627 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus NEPA Baseline |  |  |  | $\begin{gathered} 134,901 \\ 49,099 \\ \hline \end{gathered}$ |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |
| With Upland Disposal |  |  |  |  |
| Total Construction and Operations Year 2038 |  |  |  | $\begin{aligned} & 454,339 \\ & 266,770 \\ & \hline \end{aligned}$ |
| CEQA Impacts |  |  |  |  |
| CEQA Baseline Emissions |  |  |  | $\begin{aligned} & 176,076 \\ & 167,468 \\ & \hline \end{aligned}$ |
| Alternative 5 Minus CEQA Baseline |  |  |  | $\begin{gathered} 278,263 \\ 99,302 \\ \hline \end{gathered}$ |
| Significance Threshold |  |  |  | 10,000 |
| Significant? |  |  |  | Yes |

Table 3.5-24: Construction and Operational GHG Emissions with Mitigation - Alternative 5 (mty)

| Source Category | $\mathbf{C O}_{\mathbf{2}}$ | $\mathbf{C H}_{\mathbf{4}}$ | $\mathbf{N}_{\mathbf{2}} \mathbf{O}$ | $\mathbf{C O}_{\mathbf{2}} \mathbf{e}$ |
| :--- | :---: | :---: | :---: | :---: |
| NEPA Impacts |  |  |  | 319,394 |
| NEPA Baseline Emissions |  |  |  | $\underline{217,627}$ |
|  |  |  |  | 134,945 |
| Alternative 5 Minus NEPA Baseline |  |  |  | 49,143 |
| CEQ Reference Level |  |  |  | 25,000 |
| Exceeds CEQ Reference Level? |  |  |  | Yes |

Notes:
Emissions might not add precisely because of rounding. For more explanation, refer to the discussion in Section 3.2.4.1. The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
Construction emissions are amortized over the life of the proposed Project ( 30 years) and added to each year of operational emissions.
On-terminal electricity use includes crane operation and high mast poles.

Proposed Project GHG emissions are $278,70899,812$ metric tons of CO2e above the CEQA Baseline in the peak year of operations in 2038. They exceed the 10,000 metric ton CO2e significance threshold by 268,70899,856 metric tons. Because operational GHG emissions exceed the significance threshold with the incorporation of all feasible mitigation measures, LAHD shall establish a carbon offset fund, which may be accomplished through a Memorandum of Understanding with the California Air Resources Board or another appropriate entity, to mitigate project GHG impacts to the maximum extent feasible. The fund shall be used for GHG-reducing projects and programs on Port of Los Angeles property. It shall be the responsibility of the Tenant to contribute to the fund. Fund contribution shall be the equivalent of 1 percent of the minimum annual guarantee (MAG) at the time that project construction will commence. This amount will be approximately $\$ 300,000 \$ 250,000$, payable upon substantial completion of Project construction. This amount is appropriate because it takes into account the tenant's actual container throughput and assesses a fee in correlation with the facility's GHG $\$ 250,000$ has been identified as the maximum feasible-contribution level. taking into account the cost of the proposed Project, including on-site GHG-reducing mitigation measures that the tenant will be required to implement (LED high mast lighting-and solar panels over the employee parking lot). If LAHD is unable to establish the fund within a reasonable period of time, the Tenant shall instead purchase credits from an approved GHG offset registry in the amount of

## Section 3.5.5.6, Page 3.5-110

Revise lease measure LM GHG-1, as follows:


## LM GHG-1: GHG Credit Fund.

 approximately $\$ 300,000 \$ 250,000$.
### 3.2.5 Changes Made to Section 3.6, Ground Transportation

## Section 3.6.4.5, Page 3.6-77, Table 3.6-32

Revise Table 3.6-32, as follows:

## Table 3.6-32: CEQA Baseline Compared to 2038 With Proposed Project - Freeway Analysis-A.M. Peak

| Freeway | Location | Cap. | Northbound / Eastbound |  |  |  |  |  |  |  |  |  |  |  | Southbound / Westbound |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | CEQA Baseline |  |  |  |  | 2038 With Proposed Project |  |  |  |  | Change in D/C | Sign. Impt? | CEQA Baseline |  |  |  |  | 2038 With Proposed Project |  |  |  |  | Change | $\begin{aligned} & \text { Sign. } \\ & \text { Impt? } \end{aligned}$ |
|  |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  |
| \#1 SR-47 | Vincent Thomas Bridge ${ }^{12}$ | 4,700 | 1,876 | 18.0 | B | - |  | 1,918 | 18.4 | C | - |  | - | No | 2,235 | 21.4 | C | - |  | 2,263 | 21.7 | C | - |  | - | No |
| $\begin{aligned} & \text { \#2 SR- } \\ & 47 / S R-103 \end{aligned}$ | Commodore Schuyler Heim Bridge ${ }^{12}$ | 6,750 | 1,119 | 7.1 | A | - |  | 1,145 | 7.3 | A | - |  | - | No | 922 | 5.9 | A | - |  | 970 | 6.2 | A | - |  | - | No |
| \#3 I-110 | South of C Street (CMP monitoring station-south of C Street) | 9,400 | 3,771 | 15.3 | B | - |  | 3,792 | 15.4 | B | - |  | - | No | 5,096 | 20.6 | C | - |  | 5,113 | 20.7 | C | - |  | - | No |
| \# 4 -110 | North of 223 ${ }^{\text {rd }}$ Street ${ }^{12}$ | 9,400 | 6,352 | 26.1 | D | - |  | 6,365 | 26.2 | D | - |  | - | No | 8,422 | 28.1 | D | - |  | 8,435 | 28.2 | D | - |  | - | No |
| \#5 I-110 | North of l-405 ${ }^{\underline{12}}$ | 11,750 | 10,565 | 40.2 | E | 0.90 | D | 10,574 | 40.2 | E | 0.90 | D | 0.00 | No | 9,265 | 32.1 | D | - |  | 9,272 | 32.2 | D | - |  | - | No |
| \#6 I-710 | North of PCH (CMP monitoring station-north of the junction of SR-1 [PCH], Willow Street) | 6,750 | 6,442 | 45.4 | F | 0.95 | E | 6,487 | 46.1 | F | 0.96 | E | 0.01 | No | 6,545 | 47.0 | F | 0.97 | E | 6,591 | 47.7 | F | 0.98 | E | 0.01 | No |
| \#7 I-710 | North of I-405 (CMP monitoring station-north of the junction I-405, south of Del Amo) | 9,000 | 7,998 | 39.9 | E | 0.89 | D | 8,040 | 40.3 | E | 0.89 | D | 0.00 | No | 7,617 | 37.1 | E | 0.85 | D | 7,664 | 37.5 | E | 0.85 | D | 0.01 | No |
| \#8 1-710 | North of Alondra Boulevard ${ }^{12}$ | 11,750 | 8,025 | 26.5 | D | - |  | 8,062 | 26.6 | D | - |  | - | No | 7,631 | 24.9 | c | - |  | 7,675 | 25.1 | c | - |  | - | No |
| \#9 I-710 | North of I-105 and north of Firestone Boulevard (CMP monitoring station) | 9,400 | 7,932 | 35.8 | E | 0.84 | D | 7,960 | 36.0 | E | 0.85 | D | 0.01 | No | 7,376 | 31.9 | D | - |  | 7,411 | 32.1 | D | - |  | - | No |
| \#10 I-710 | North of Florence Avenue ${ }^{12}$ | 9,400 | 8,535 | 41.0 | E | 0.91 | D | 8,562 | 41.2 | E | 0.91 | D | 0.00 | No | 7,518 | 32.8 | D | - |  | 7,552 | 33.1 | D | - |  | - | No |
| \#11 I-405 | Between I-110 and I-710 (CMP monitoring stationSanta Fe Avenue) | 11,750 | 6,587 | 21.3 | C | - |  | 6,587 | 21.3 | C | - |  | - | No | 9,895 | 35.7 | E | 0.84 | D | 9,895 | 35.7 | E | 0.84 | D | 0.00 | No |
| \#12 SR-91 | West of I-710 (CMP monitoring station-east of Alameda Street/Santa Fe Avenue interchange) | 14,100 | 6,619 | 17.9 | B | - |  | 6,619 | 17.9 | B | - |  | - | No | 8,384 | 22.7 | C | - |  | 8,385 | 22.7 | C | - |  | - | No |

Notes: Freeway operation conditions based on the methodology in the 2010 HCM where level of service is based on dersity (pare).
${ }^{1}$ Per Caltrans traffic impact study guidelines, Caltrans targets maintaining LOS between C and D; for segments where 2010 HCM LOS is $E$ or $F, D / C$ was used to determine impact significance per CMP guidelines. ${ }^{12}$ Non-CMP location

## Section 3.6.4.5, Page 3.6-78, Table 3.6-33

Revise Table 3.6-33, as follows:

## Table 3.6-33: CEQA Baseline Compared to 2038 With Proposed Project - Freeway Analysis—P.M. Peak

| Freeway | Location | Cap. | Northbound / Eastbound |  |  |  |  |  |  |  |  |  |  |  | Southbound / Westbound |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | CEQA Baseline |  |  |  |  | 2038 With Proposed Project |  |  |  |  | Change in D/C | $\begin{aligned} & \text { Sign. } \\ & \text { Impt? } \end{aligned}$ | CEQA Baseline |  |  |  |  | 2026 With Proposed Project |  |  |  |  | Change in DIC | Sign. Impt? |
|  |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  |
| \#1 SR-47 | Vincent Thomas Bridge ${ }^{12}$ | 4,700 | 2,764 | 26.4 | D | - |  | 2,828 | 27.1 | D | - |  | - | No | 2,759 | 26.4 | D | - |  | 2,787 | 26.7 | D | - |  | - | No |
| $\begin{aligned} & \hline \text { \#2 SR- } \\ & \text { 47/SR-103 } \\ & \hline \end{aligned}$ | Commodore Schuyler Heim Bridge ${ }^{12}$ | 6,750 | 1,173 | 7.5 | A | - |  | 1,229 | 7.8 | A | - |  | - | No | 997 | 6.4 | A | - |  | 1,041 | 6.6 | A | - |  | - | No |
| \#3 I-110 | South of C Street (CMP monitoring station-south of C Street) | 9,400 | 4,678 | 18.9 | C | - |  | 4,719 | 19.1 | C | - |  | - | No | 3,302 | 13.4 | B | - |  | 3,318 | 13.4 | B | - |  | - | No |
| \# 4-110 | North of 223 ${ }^{\text {rd }}$ Street ${ }^{12}$ | 9,400 | 7,686 | 34.0 | D | - |  | 7,709 | 34.2 | D | - |  | - | No | 5,699 | 18.5 | c | - |  | 5,712 | 18.5 | c | - |  | - | No |
| \#5 I-110 | North of l-405 ${ }^{12}$ | 11,750 | 10,440 | 39.3 | E | 0.89 | D | 10,453 | 39.4 | E | 0.89 | D | 0.00 | No | 9,002 | 30.8 | D | - |  | 9,010 | 30.8 | D | - |  | - | No |
| \#6 1-710 | North of PCH (CMP monitoring station-north of the junction of SR-1 [PCH], Willow Street) | 6,750 | 5,819 | 38.1 | E | 0.86 | D | 5,893 | 38.8 | E | 0.87 | D | 0.01 | No | 5,659 | 36.7 | E | 0.84 | D | 5,719 | 37.2 | E | 0.85 | D | 0.01 | No |
| \#7 I-710 | North of I-405 (CMP monitoring station-north of the junction of I-405, south of Del Amo) | 9,000 | 6,785 | 32.5 | D | - |  | 6,857 | 32.8 | D | - |  | - | No | 7,526 | 36.5 | E | 0.84 | D | 7,585 | 36.9 | E | 0.84 | D | 0.00 | No |
| \#8 1-710 | North of Alondra Boulevard ${ }^{12}$ | 11,750 | 6,491 | 21.0 | c | - |  | 6,555 | 21.2 | c | - |  | - | No | 7,868 | 25.9 | c | - |  | 7,927 | 26.1 | D | - |  | - | No |
| \#9 1-710 | North of I-105 and north of Firestone Boulevard (CMP monitoring station) | 9,400 | 6,466 | 26.7 | D | - |  | 6,514 | 27.0 | D | - |  | - | No | 7,838 | 35.1 | E | 0.83 | D | 7,879 | 35.4 | E | 0.84 | D | 0.01 | No |
| \#10 I-710 | North of Florence Avenue ${ }^{12}$ | 9,400 | 5,550 | 22.5 | c | - |  | 5,595 | 22.7 | c | - |  | - | No | 7,824 | 35.0 | D | 0.83 | D | 7,862 | 35.3 | E | 0.84 | D | 0.01 | No |
| \#11 I-405 | Between I-110 and I-710 (CMP monitoring station-Santa Fe Avenue) | 11,750 | 10,127 | 37.1 | E | 0.86 | D | 10,127 | 37.1 | E | 0.86 | D | 0.00 | No | 8,669 | 29.2 | D | - |  | 8,669 | 29.2 | D | - |  | - | No |
| \#12 SR-91 | West of I-710 (CMP monitoring station-east of Alameda Street/Santa Fe Avenue interchange) | 14,100 | 7,780 | 21.0 | C | - |  | 7,780 | 21.0 | C | - |  | - | No | 6,032 | 22.1 | B | - |  | 6,032 | 16.3 | B | - |  | - | No | Notes: Freeway operation conditions based on the methodology in the 2010 HCM where level of service is based on density (passenger car per mile per lane).

${ }^{1}$ Per Caltrans traffic impact study guidelines, Caltrans targets maintaining LOS between C and D; for segments where 2010 HCM LOS is E or F, D/C was used to determine impact significance per CMP guidelines $1^{2}$ Non-CMP location

## Section 3.6.4.5, Page 3.6-79, Table 3.6-34

Revise Table 3.6-34, as follows:

## Table 3.6-34: 2019 NEPA Baseline Compared to 2019 With Proposed Project - Freeway Analysis—A.M. Peak

| Freeway | Location | Cap. | Northbound / Eastbound |  |  |  |  |  |  |  |  |  |  |  | Southbound / Westbound |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 2019 NEPA Baseline |  |  |  |  | 2019 With Proposed Project |  |  |  |  | Change | Sign. Impt? | 2019 NEPA Baseline |  |  |  |  | 2019 With Proposed Project |  |  |  |  | Change | Sign. Impt? |
|  |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  |
| \#1 SR-47 | Vincent Thomas Bridge ${ }^{12}$ | 4,700 | 3,508 | 33.6 | D | - |  | 3,508 | 33.6 | D | - |  | - | No | 3,199 | 30.6 | D | - |  | 3,199 | 30.6 | D | - |  | - | No |
| $\begin{aligned} & \text { \#2 SR- } \\ & \text { 47/SR-103 } \end{aligned}$ | Commodore Schuyler Heim Bridge ${ }^{12}$ | 6,750 | 642 | 4.1 | A | - |  | 642 | 4.1 | A | - |  | - | No | 1,422 | 9.1 | A | - |  | 1,422 | 9.1 | A | - |  | - | No |
| \#3 I-110 | South of C Street (CMP monitoring station-south of C Street) | 9,400 | 5,565 | 22.6 | C | - |  | 5,565 | 22.6 | C | - |  | - | No | 4,879 | 19.8 | C | - |  | 4,879 | 19.8 | C | - |  | - | No |
| \#4 I-110 | North of $223{ }^{\text {rd }}$ Street ${ }^{\underline{2}}$ | 9,400 | 8,975 | 45.5 | F | 0.95 | E | 8,975 | 45.5 | F | 0.95 | E | 0.00 | No | 7,372 | 24.0 | C | - |  | 7,372 | 24.0 | c | - |  | - | No |
| \#5 I-110 | North of 1-405 $\quad$ ² | 11,750 | 10,531 | 39.9 | E | 0.90 | D | 10,531 | 39.9 | E | 0.90 | D | 0.00 | No | 11,295 | 46.2 | F | 0.96 | E | 11,295 | 46.2 | F | 0.96 | E | 0.00 | No |
| \#6 I-710 | North of PCH (CMP monitoring station-north of the junction of SR-1 $[\mathrm{PCH}]$, Willow Street) | 6,750 | 5,555 | 35.8 | E | 0.82 | D | 5,555 | 35.8 | E | 0.82 | D | 0.00 | No | 7,020 | 55.8 | F | 1.04 | F(0) | 7,020 | 55.8 | F | 1.04 | F(0) | 0.00 | No |
| \#7 I-710 | North of I-405 (CMP monitoring station-north of the junction of I-405, south of Del Amo) | 9,000 | 8,045 | 40.3 | E | 0.89 | D | 8,045 | 40.3 | E | 0.89 | D | 0.00 | No | 8,161 | 41.3 | E | 0.91 | D | 8,161 | 41.3 | E | 0.91 | D | 0.00 | No |
| \#8 I-710 | North of Alondra Boulevard ${ }^{\text {² }}$ | 11,750 | 8,181 | 27.1 | D | - |  | 8,181 | 27.1 | D | - |  | - | No | 9,080 | 31.2 | D | - |  | 9,080 | 31.2 | D | - |  | - | No |
| \#9 I-710 | North of I-105 and north of Firestone Boulevard (CMP monitoring station) | 9,400 | 7,639 | 33.7 | D | - |  | 7,639 | 33.7 | D | - |  | - | No | 8,614 | 41.7 | E | 0.92 | D | 8,614 | 41.7 | E | 0.92 | D | 0.00 | No |
| \#10 I-710 | North of Florence Avenue ${ }^{12}$ | 9,400 | 7,940 | 35.9 | E | 0.84 | D | 7,940 | 35.9 | E | 0.84 | D | 0.00 | No | 9,771 | 56.5 | F | 1.04 | F(0) | 9,771 | 56.5 | F | 1.04 | $F(0)$ | 0.00 | No |
| \#11 I-405 | Between I-110 and I-710 (CMP monitoring stationSanta Fe Avenue) | 11,750 | 12,113 | 55.1 | F | 1.03 | F(0) | 12,113 | 55.1 | F | 1.03 | F(0) | 0.00 | No | 8,624 | 29.0 | D | - |  | 8,624 | 29.0 | D | - |  | - | No |
| \#12 SR-91 | West of I-710 (CMP monitoring station-east of Alameda Street/Santa Fe Avenue interchange) | 14,100 | 9,884 | 27.3 | D | - |  | 9,884 | 27.3 | D | - |  | - | No | 8,460 | 22.9 | C | - |  | 8,460 | 22.9 | C | - |  | - | No |

Notes: Freeway operation conditions based on the methodology in the 2010 HCM wher
${ }^{1}$ Per Caltrans traffic impact study guidelines, Caltrans targets maintaining LOS between $C$ and $D$; for segments where 2010 HCM LOS is $E$ or $F, D / C$ was used to determine impact significance per CMP guidelines. ${ }^{12}$ Non-CMP location
1
2

## Section 3.6.4.5, Page 3.6-80, Table 3.6-35

Revise Table 3.6-35, as follows:

## Table 3.6-35: 2019 NEPA Baseline Compared to 2019 With Proposed Project - Freeway Analysis-P.M. Peak

| Freeway | Location | Cap. | Northbound / Eastbound |  |  |  |  |  |  |  |  |  |  |  | Southbound / Westbound |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 2019 NEPA Baseline |  |  |  |  | 2019 With Proposed Project |  |  |  |  | Change in D/C | Sign. Impt? | 2019 NEPA Baseline |  |  |  |  | 2019 With Proposed Project |  |  |  |  | Change in D/C | Sign. Impt? |
|  |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  |
| \#1 SR-47 | Vincent Thomas Bridge ${ }^{ \pm 2}$ | $\frac{4,7004,2}{07}$ | 4,207 | 43.6 | E | 0.90 | D | 4,207 | 43.6 | E | 0.90 | D | 0.00 | No | 3,687 | 35.6 | E | 0.78 | D | 3,687 | 35.6 | E | 0.78 | D | 0.00 | No |
| $\begin{aligned} & \text { \#2 SR- } \\ & \text { 47/SR-103 } \end{aligned}$ | Commodore Schuyler Heim Bridge ${ }^{12}$ | $\frac{6,7501,4}{66}$ | 1,466 | 9.4 | A | - |  | 1,466 | 9.4 | A | - |  | - | No | 1,704 | 10.9 | A | - |  | 1,704 | 10.9 | A | - |  | - | No |
| \#3 I-110 | South of C Street (CMP monitoring station-south of C Street) | $\frac{9,4004,6}{29}$ | 4,629 | 18.7 | C | - |  | 4,629 | 18.7 | C | - |  | - | No | 5,500 | 22.3 | C | - |  | 5,500 | 22.3 | C | - |  | - | No |
| \#4 l-110 | North of 223 ${ }^{\text {rd }}$ Street ${ }^{ \pm 2}$ | $\frac{9,4006,8}{02}$ | 6,802 | 28.5 | D | - |  | 6,802 | 28.5 | D | - |  | - | No | 8,315 | 27.7 | D | - |  | 8,315 | 27.7 | D | - |  | - | No |
| \#5 -110 | North of l-405 ${ }^{ \pm 2}$ | $\frac{11,75010}{188}$ | 10,188 | 37.5 | E | 0.87 | D | 10,188 | 37.5 | E | 0.87 | D | 0.00 | No | 11,048 | 44.0 | E | 0.94 | E | 11,048 | 44.0 | E | 0.94 | E | 0.00 | No |
| \#6 I-710 | North of PCH (CMP monitoring station-north of the junction of SR-1 [PCH], Willow Street) | $\frac{6,7505,4}{41}$ | 5,441 | 34.9 | D | - |  | 5,441 | 34.9 | D | - |  | - | No | 6,136 | 41.5 | E | 0.91 | D | 6,136 | 41.5 | E | 0.91 | D | 0.00 | No |
| \#7 I-710 | North of l-405 (CMP monitoring station-north of the junction of l-405, south of Del Amo) | $\frac{9,0008,1}{02}$ | 8,102 | 40.8 | E | 0.90 | D | 8,102 | 40.8 | E | 0.90 | D | 0.00 | No | 6,782 | 32.4 | D | - |  | 6,782 | 32.4 | D | - |  | - | No |
| \#8 I-710 | North of Alondra Boulevard 12 | $\frac{11,7508}{656}$ | 8,656 | 29.2 | D | - |  | 8,656 | 29.2 | D | - |  | - | No | 7,172 | 23.3 | C | - |  | 7,172 | 23.3 | C | - |  | - | No |
| \#9 1-710 | North of I-105 and north of Firestone Boulevard (CMP monitoring station) | $\frac{9,4008,5}{67}$ | 8,567 | 41.3 | E | 0.91 | D | 8,567 | 41.3 | E | 0.91 | D | 0.00 | No | 6,870 | 28.9 | D | - |  | 6,870 | 28.9 | D | - |  | - | No |
| \#10 I-710 | North of Florence Avenue ${ }^{12}$ | $\frac{9,4008,7}{10}$ | 8,710 | 42.7 | E | 0.93 | D | 8,710 | 42.7 | E | 0.93 | D | 0.00 | No | 6,498 | 26.9 | D | - |  | 6,498 | 26.9 | D | - |  | - | No |
| \#11 I-405 | Between I-110 and I-710 (CMP monitoring stationSanta Fe Avenue) | $\frac{11,75010}{, 400}$ | 10,400 | 39.0 | E | 0.89 | D | 10,400 | 39.0 | E | 0.89 | D | 0.00 | No | 11,955 | 53.2 | F | 1.02 | F(0) | 11,955 | 53.2 | F | 1.02 | F(0) | 0.00 | No |
| \#12 SR-91 | West of I-710 (CMP monitoring station-east of Alameda Street/Santa Fe Avenue interchange) | $\frac{14,1007}{720}$ | 7,720 | 20.8 | C | - |  | 7,720 | 20.8 | C | - |  | - | No | 9,247 | 22.3 | C | - |  | 9,247 | 13.4 | C | - |  | - | No |

Notes: Freeway operation conditions based on the methodogy in the 2010 HCM where level of service is based on density (passenger car per mile per lane).
${ }^{1}$ Per Caltrans traffic impact study guidelines, Caltrans targets maintaining LOS between C and D; for segments where 2010 HCM LOS is E or F , D/C was used to determine impact significance per CMP guidelines. ${ }^{12}$ Non-CMP location

## Section 3.6.4.5, Page 3.6-81, Table 3.6-36

Revise Table 3.6-36, as follows:

| Freeway | Location | Cap. | Northbound / Eastbound |  |  |  |  |  |  |  |  |  |  |  | Southbound / Westbound |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 2026 NEPA Baseline |  |  |  |  | 2026 With Proposed Project |  |  |  |  | Change in D/C | Sign. Impt? | 2026 NEPA Baseline |  |  |  |  | 2026 With Proposed Project |  |  |  |  | Change in D/C | Sign. Impt? |
|  |  |  | Vol | Density | Los | D/C ${ }^{1}$ | Los | Vol | Density | Los | D/C ${ }^{1}$ | Los |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  |
| \#1 SR-47 | Vincent Thomas Bridge ${ }^{12}$ | $\frac{4,7004,1}{08}$ | 4,108 | 41.8 | E | 0.87 | D | 4,137 | 42.3 | E | 0.88 | D | 0.01 | No | 3,307 | 31.6 | D | - |  | 3,325 | 31.8 | D | - |  | - | No |
| $\begin{array}{\|c\|} \hline \text { \#2 SR- } \\ \text { 47/SR-103 } \\ \hline \end{array}$ | Commodore Schuyler Heim Bridge ${ }^{12}$ | $\frac{6,7501,7}{88}$ | 1,788 | 11.4 | B | - |  | 1,804 | 11.5 | B | - |  | - | No | 2,599 | 16.6 | B | - |  | 2,631 | 16.8 | B | - |  | - | No |
| \#3 l-110 | South of C Street (CMP monitoring station-south of C Street) | $\frac{9,4006,7}{46}$ | 6,746 | 28.2 | D | - |  | 6,759 | 28.2 | D | - |  | - | No | 5,653 | 22.9 | C | - |  | 5,664 | 23.0 | C | - |  | - | No |
| \#4 -110 | North of $223{ }^{\text {rd }}$ Street ${ }^{ \pm 2}$ | $\begin{array}{\|c\|} \hline \frac{9,4009,6}{88} \\ \hline \end{array}$ | 9,688 | 55.1 | F | 1.03 | F(0) | 9,696 | 55.2 | F | 1.03 | F(0) | 0.00 | No | 8,023 | 26.5 | D | - |  | 8,031 | 26.5 | D | - |  | - | No |
| \#5 -110 | North of l-405 ${ }^{12}$ | $\left\|\frac{11,7501}{0,651}\right\|$ | 10,651 | 40.8 | E | 0.91 | D | 10,656 | 40.9 | E | 0.91 | D | 0.00 | No | 11,678 | 50.1 | F | 0.99 | E | 11,682 | 50.1 | F | 0.99 | E | 0.00 | No |
| \#6 1-710 | North of PCH (CMP monitoring station-north of the junction of SR-1 [PCH], Willow Street) | $\left.\frac{6,7507,5}{07} \right\rvert\,$ | 7,507 | 69.6 | F | 1.11 | F(0) | 7,533 | 70.6 | F | 1.12 | F(0) | 0.00 | No | 8,259 | 114.8 | F | 1.22 | F(0) | 8,286 | 117.6 | F | 1.23 | F(0) | 0.01 | No |
| \#7 I-710 | North of l-405 (CMP monitoring station-north of the junction of I-405, south of Del Amo) | $\frac{9,0009,3}{96}$ | 9,396 | 56.4 | F | 1.04 | F(0) | 9,421 | 56.8 | F | 1.05 | F(0) | 0.00 | No | 9,201 | 53.3 | F | 1.02 | F(0) | 9,229 | 53.7 | F | 1.03 | F(0) | 0.00 | No |
| \#8 I-710 | North of Alondra Boulevard ${ }^{12}$ | $\frac{11,7508}{932}$ | 8,932 | 30.5 | D | - |  | 8,954 | 30.6 | D | - |  | - | No | 9,586 | 33.9 | D | - |  | 9,612 | 34.0 | D | - |  | - | No |
| \#9 I-710 | North of I-105 and north of Firestone Boulevard (CMP monitoring station) | $\frac{9,4008,0}{66}$ | 8,066 | 36.9 | E | 0.86 | D | 8,082 | 37.0 | E | 0.86 | D | 0.00 | No | 8,990 | 45.7 | F | 0.96 | E | 9,011 | 45.9 | F | 0.96 | E | 0.00 | No |
| \#10 I-710 | North of Florence Avenue ${ }^{ \pm 2}$ | $\frac{9,4008}{46}{ }^{\text {, }}$ | 8,146 | 37.5 | E | 0.87 | D | 8,162 | 37.6 | E | 0.87 | D | 0.00 | No | 9,796 | 56.9 | F | 1.04 | F(0) | 9,815 | 57.2 | F | 1.04 | F(0) | 0.00 | No |
| \#11 I-405 | Between I-110 and I-710 (CMP monitoring stationSanta Fe Avenue) | $\left\|\frac{11,7501}{1,802}\right\|$ | 11,802 | 51.4 | F | 1.00 | F(0) | 11,802 | 51.4 | F | 1.00 | F(0) | 0.00 | No | 8,221 | 27.3 | D | - |  | 8,221 | 27.3 | D | - |  | - | No |
| \#12 SR-91 | West of I-710 (CMP monitoring station-east of Alameda Street/Santa Fe Avenue interchange) | $\left\lvert\, \frac{14,1009}{515}\right. ;$ | 9,515 | 26.1 | D | - |  | 9,515 | 26.1 | D | - |  | - | No | 8,043 | 21.7 | C | - |  | 8,043 | 21.7 | C | - |  | - | No |

Notes: Freeway operation conditions based on the methodology in the 2010 HCM where level of service is based on density (passenger car per mile per lane).
Per Caltrans traffic impact study guidelines, Caltrans targets maintaining LOS between C and D; for segments where 2010 HCM LOS is E or F, D/C was used to determine impact significance per CMP guidelines.
1

## Section 3.6.4.5, Page 3.6-82, Table 3.6-37

Revise Table 3.6-37, as follows:

## Table 3.6-37: 2026 NEPA Baseline Compared to 2026 With Proposed Project - Freeway Analysis-P.M. Peak

| Freeway | Location | Cap. | Northbound / Eastbound |  |  |  |  |  |  |  |  |  |  |  | Southbound / Westbound |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 2026 NEPA Baseline |  |  |  |  | 2026 With Proposed Project |  |  |  |  | Change in D/C | Sign. Impt? | 2026 NEPA Baseline |  |  |  |  | 2026 With Proposed Project |  |  |  |  | Change in D/C | Sign. Impt? |
|  |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  |
| \#1 SR-47 | Vincent Thomas Bridge ${ }^{12}$ | 4,700 | 4,163 | 42.8 | E | 0.89 | D | 4,207 | 43.6 | E | 0.90 | D | 0.01 | No | 3,222 | 30.8 | D | - |  | 3,240 | 31.0 | D | - |  | - | No |
| $\begin{aligned} & \text { \#2 SR- } \\ & 47 / S R-103 \end{aligned}$ | Commodore Schuyler Heim Bridge ${ }^{12}$ | 6,750 | 1,706 | 10.9 | A | - |  | 1,743 | 11.1 | B | - |  | - | No | 1,605 | 10.2 | A | - |  | 1,633 | 10.4 | A | - |  | - | No |
| \#3 I-110 | South of C Street (CMP monitoring station-south of C Street) | 9,400 | 4,631 | 18.7 | C | - |  | 4,658 | 18.9 | C | - |  | - | No | 5,235 | 21.2 | C | - |  | 5,245 | 21.2 | C | - |  | - | No |
| \#4 I-110 | North of $223{ }^{\text {rd }}$ Street ${ }^{12}$ | 9,400 | 6,698 | 27.9 | D | - |  | 6,713 | 28.0 | D | - |  | - | No | 7,988 | 26.3 | D | - |  | 7,996 | 26.4 | D | - |  | - | No |
| \#5 I-110 | North of l-405 ${ }^{12}$ | 11,750 | 9,867 | 35.5 | E | 0.84 | D | 9,875 | 35.6 | E | 0.84 | D | 0.00 | No | 10,761 | 41.7 | E | 0.92 | D | 10,766 | 41.7 | E | 0.92 | D | 0.00 | No |
| \#6 I-710 | North of PCH (CMP monitoring station-north of the junction of SR-1 [PCH], Willow Street) | 6,750 | 5,434 | 34.8 | D | 0.81 | D | 5,479 | 35.2 | E | 0.81 | D | 0.00 | No | 5,839 | 38.3 | E | 0.87 | D | 5,874 | 38.7 | E | 0.87 | D | 0.01 | No |
| \#7 I-710 | North of l-405 (CMP monitoring station-north of the junction of I-405, south of Del Amo) | 9,000 | 7,826 | 38.6 | E | 0.87 | D | 7,869 | 38.9 | E | 0.87 | D | 0.00 | No | 6,457 | 30.9 | D | - |  | 6,492 | 31.1 | D | - |  | - | No |
| \#8 I-710 | North of Alondra Boulevard ${ }^{12}$ | 11,750 | 7,986 | 26.3 | D | - |  | 8,024 | 26.5 | D | - |  | - | No | 6,356 | 20.6 | c | - |  | 6,391 | 20.7 | c | - |  | - | No |
| \#9 I-710 | North of I-105 and north of Firestone Boulevard (CMP monitoring station) | 9,400 | 8,156 | 37.6 | E | 0.87 | D | 8,184 | 37.8 | E | 0.87 | D | 0.00 | No | 6,503 | 26.9 | D | - |  | 6,527 | 27.0 | D | - |  | - | No |
| \#10 -710 | North of Florence Avenue ${ }^{12}$ | 9,400 | 8,198 | 37.9 | E | 0.87 | D | 8,225 | 38.2 | E | 0.87 | D | 0.00 | No | 5,997 | 24.4 | c | - |  | 6,019 | 24.6 | c | - |  | - | No |
| \#11 l-405 | Between I-110 and I-710 (CMP monitoring station-Santa Fe Avenue) | 11,750 | 9,712 | 34.6 | D | - |  | 9,712 | 34.6 | D | - |  | - | No | 10,984 | 43.5 | E | 0.93 | E | 10,984 | 43.5 | E | 0.93 | E | 0.00 | No |
| \#12 SR-91 | West of I-710 (CMP monitoring station-east of Alameda Street/Santa Fe Avenue interchange) | 14,100 | 6,920 | 18.7 | C | - |  | 6,920 | 18.7 | C | - |  | - | No | 8,447 | 21.2 | C | - |  | 8,447 | 13.4 | C | - |  | - | No |

Notes: Freeway operation conditions based on the methodology in the 2010 HCM where level of service is based on density (passenger car per mile per lane).
Per Caltrans traffic impact study guidelines, Caltrans targets maintaining LOS between $C$ and $D$; for segments where 2010 HCM LOS is $E$ or $F, D / C$ was used to determine impact significance per CMP guidelines,
${ }^{12}{ }^{12}$ Non-CMP location

## Section 3.6.4.5, Page 3.6-83, Table 3.6-38

Revise Table 3.6-38, as follows:

Table 3.6-38: 2038 NEPA Baseline Compared to 2038 With Proposed Project - Freeway Analysis-A.M. Peak

| Freeway | Location | Cap. | Northbound / Eastbound |  |  |  |  |  |  |  |  |  |  |  | Southbound / Westbound |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 2038 NEPA Baseline |  |  |  |  | 2038 With Proposed Project |  |  |  |  | Change in D/C | Sign. Impt? | 2038 NEPA Baseline |  |  |  |  | 2038 With Proposed Project |  |  |  |  | Change in D/C | Sign. Impt? |
|  |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  |
| \#1 SR-47 | Vincent Thomas Bridge ${ }^{ \pm 2}$ | 4,700 | 4,365 | 47.0 | F | 0.93 | D | 4,407 | 48.0 | F | 0.94 | E | 0.01 | No | 3,602 | 34.6 | D | - |  | 3,630 | 34.9 | D | - |  | - | No |
| $\begin{aligned} & \hline \text { \#2 SR- } \\ & \text { 47/SR-103 } \end{aligned}$ | Commodore Schuyler Heim Bridge ${ }^{12}$ | 6,750 | 2,180 | 13.9 | B | - |  | 2,205 | 14.1 | B | - |  | - | No | 2,964 | 18.9 | C | - |  | 3,012 | 19.2 | C | - |  | - | No |
| \#3 I-110 | South of C Street (CMP monitoring station-south of $C$ Street) | 9,400 | 7,336 | 31.6 | D | - |  | 7,357 | 31.8 | D | - |  | - | No | 6,302 | 25.9 | C | - |  | 6,319 | 26.0 | C | - |  | - | No |
| \#4 I-110 | North of 223rd Street ${ }^{12}$ | 9,400 | 9,889 | 58.5 | F | 1.05 | F(0) | 9,902 | 58.7 | F | 1.05 | F(0) | 0.00 | No | 8,407 | 28.1 | D | - |  | 8,420 | 28.1 | D | - |  | - | No |
| \#5 I-110 | North of 1-405 ${ }^{ \pm 2}$ | 11,750 | 10,533 | 39.9 | E | 0.90 | D | 10,542 | 40.0 | E | 0.90 | D | 0.00 | No | 11,957 | 53.2 | F | 1.02 | F(0) | 11,964 | 53.3 | F | 1.02 | F(0) | 0.00 | No |
| \#6 I-710 | North of PCH (CMP monitoring station-north of the junction of SR-1 [PCH], Willow Street) | 6,750 | 7,865 | 85.5 | F | 1.17 | F(0) | 7,910 | 88.1 | F | 1.17 | F(0) | 0.00 | No | 8,784 | 213.8 | F | 1.30 | F(10) | 8,830 | 231.5 | F | 1.31 | F(10) | 0.01 | No |
| \#7 I-710 | North of I-405 (CMP monitoring station-north of the junction of 1-405, south of Del Amo) | 9,000 | 10,029 | 70.2 | F | 1.11 | F(0) | 10,071 | 71.3 | F | 1.12 | F(0) | 0.01 | No | 9,583 | 59.9 | F | 1.06 | F(0) | 9,630 | 60.8 | F | 1.07 | F(0) | 0.01 | No |
| \#8 I-710 | North of Alondra Boulevard ${ }^{12}$ | 11,750 | 9,556 | 33.7 | D | - |  | 9,594 | 33.9 | D | - |  | - | No | 10,226 | 37.8 | E | 0.87 | D | 10,270 | 38.1 | E | 0.87 | D | 0.00 | No |
| \#9 I-710 | North of I-105 and north of Firestone Boulevard (CMP monitoring station) | 9,400 | 8,567 | 41.3 | E | 0.91 | D | 8,595 | 41.5 | E | 0.91 | D | 0.00 | No | 9,532 | 52.7 | F | 1.01 | F(0) | 9,567 | 53.2 | F | 1.02 | F(0) | 0.01 | No |
| \#10 I-710 | North of Florence Avenue ${ }^{12}$ | 9,400 | 8,545 | 41.0 | E | 0.91 | D | 8,572 | 41.3 | E | 0.91 | D | 0.00 | No | 10,645 | 75.4 | F | 1.13 | F(0) | 10,678 | 76.3 | F | 1.14 | F(0) | 0.01 | No |
| \#11 I-405 | Between I-110 and I-710 (CMP monitoring station-Santa Fe Avenue) | 11,750 | 10,741 | 41.5 | E | 0.91 | D | 10,741 | 41.5 | E | 0.91 | D | 0.00 | No | 8,205 | 27.2 | D | - |  | 8,205 | 27.2 | D | - |  | - | No |
| \#12 SR-91 | West of I-710 (CMP monitoring station-east of Alameda Street/Santa Fe Avenue interchange) | 14,100 | 8,650 | 23.4 | C | - |  | 8,650 | 23.4 | C | - |  | - | No | 7,511 | 20.3 | C | - |  | 7,511 | 20.3 | C | - |  | - | No |

Notes: Freeway operation conditions based on the methodology in the 2010 HCM where level of service is based on density (passenger car per mile per lane).
Per Caltrans traffic impact study guidelines, Caltrans targets maintaining LOS between $C$ and $D$; for segments where 2010 HCM LOS is E or F, D/C was used to determine impact significance per CMP guidelines. ${ }^{12}$ Non-CMP location

## Section 3.6.4.5, Page 3.6-84, Table 3.6-39

Revise Table 3.6-39, as follows:

## Table 3.6-39: 2038 NEPA Baseline Compared to 2038 With Proposed Project - Freeway Analysis-P.M. Peak

| Freeway | Location | Cap. | Northbound / Eastbound |  |  |  |  |  |  |  |  |  |  |  | Southbound / Westbound |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 2038 NEPA Baseline |  |  |  |  | 2038 With Proposed Project |  |  |  |  | Change in D/C | $\begin{aligned} & \text { Sign. } \\ & \text { Impt? } \end{aligned}$ | 2038 NEPA Baseline |  |  |  |  | 2038 With Proposed Project |  |  |  |  | $\begin{gathered} \text { Change } \\ \text { in D/C } \\ \hline \end{gathered}$ | Sign. Impt? |
|  |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  | Vol | Density | LOS | D/C ${ }^{1}$ | LOS | Vol | Density | LOS | D/C ${ }^{1}$ | LOS |  |  |
| \#1 SR-47 | Vincent Thomas Bridge ${ }^{ \pm 2}$ | 4,700 | 4,585 | 52.8 | F | 0.98 | E | 4,649 | 54.8 | F | 0.99 | E | 0.01 | No | 3,277 | 31.4 | D | - |  | 3,305 | 31.6 | D | - |  | - | No |
| $\begin{array}{\|l\|} \hline \text { \#2 SR- } \\ 47 / S R-103 \end{array}$ | Commodore Schuyler Heim Bridge ${ }^{12}$ | 6,750 | 2,079 | 13.3 | B | - |  | 2,135 | 13.6 | B | - |  | - | No | 1,870 | 11.9 | B | - |  | 1,914 | 12.2 | B | - |  | - | No |
| \#3 I-110 | South of C Street (CMP monitoring station-south of $C$ Street) | 9,400 | 5,232 | 21.2 | C | - |  | 5,273 | 21.3 | C | - |  | - | No | 5,460 | 22.1 | C | - |  | 5,476 | 22.2 | C | - |  | - | No |
| \#4 I-110 | North of 223 ${ }^{\text {rd }}$ Street ${ }^{12}$ | 9,400 | 6,809 | 28.5 | D | - |  | 6,833 | 28.7 | D | - |  | - | No | 8,089 | 26.7 | D | - |  | 8,102 | 26.8 | D | - |  | - | No |
| \#5 I-110 | North of 1-405 ${ }^{ \pm 2}$ | 11,750 | 9,976 | 36.2 | E | 0.85 | D | 9,989 | 36.3 | E | 0.85 | D | 0.00 | No | 10,814 | 42.1 | E | 0.92 | D | 10,822 | 42.1 | E | 0.92 | D | 0.00 | No |
| \#6 I-710 | North of PCH (CMP monitoring station-north of the junction of SR-1 [PCH], Willow Street) | 6,750 | 5,476 | 35.2 | E | 0.81 | D | 5,550 | 35.8 | E | 0.82 | D | 0.01 | No | 6,020 | 40.2 | E | 0.89 | D | 6,080 | 40.8 | E | 0.90 | D | 0.01 | No |
| \#7 I-710 | North of l-405 (CMP monitoring station-north of the junction of I-405, south of Del Amo) | 9,000 | 8,059 | 40.4 | E | 0.90 | D | 8,131 | 41.0 | E | 0.90 | D | 0.00 | No | 6,600 | 31.6 | D | - |  | 6,659 | 31.9 | D | - |  | - | No |
| \#8 I-710 | North of Alondra Boulevard ${ }^{12}$ | 11,750 | 8,550 | 28.7 | D | - |  | 8,614 | 29.0 | D | - |  | - | No | 6,790 | 22.0 | C | - |  | 6,849 | 22.2 | C | - |  | - | No |
| \#9 I-710 | North of I-105 and north of Firestone Boulevard (CMP monitoring station) | 9,400 | 8,462 | 40.3 | E | 0.90 | D | 8,510 | 40.7 | E | 0.91 | D | 0.01 | No | 6,668 | 27.8 | D | - |  | 6,708 | 28.0 | D | - |  | - | No |
| \#10 -710 | North of Florence Avenue ${ }^{\text {² }}$ | 9,400 | 8,566 | 41.2 | E | 0.91 | D | 8,612 | 41.7 | E | 0.92 | D | 0.01 | No | 6,187 | 25.3 | c | - |  | 6,225 | 25.5 | c | - |  | - | No |
| \#11 I-405 | Between I-110 and I-710 (CMP monitoring station-Santa Fe Avenue) | 11,750 | 9,687 | 34.4 | D | - |  | 9,687 | 34.4 | D | - |  | - | No | 11,211 | 45.5 | F | 0.95 | E | 11,211 | 45.5 | F | 0.95 | E | 0.00 | No |
| \#12 SR-91 | West of I-710 (CMP monitoring station-east of Alameda Street/Santa Fe Avenue interchange) | 14,100 | 6,735 | 18.2 | C | - |  | 6,735 | 18.2 | C | - |  | - | No | 8,082 | 22.2 | C | - |  | 8,082 | 13.4 | C | - |  | - | No |

Notes: Freeway operation conditions based on the methodology in the 2010 HCM where level of service is based on density (passenger car per mile per lane).
作 ${ }^{12}$ Non-CMP location

### 3.2.6 Changes Made to Section 3.10, Noise

## Section 3.10.4.3, Page 3.10-27

Revise mitigation measure MM NOI-2, as follows:
MM NOI-2: Utilize Temporary Noise Attenuation Curtain Adjacent to PileDriving Equipment. If under MM NOI-1 the reduced pile driving noise exceeds 103 dBA at 50 feet from the pile driver, uUtilize temporary noise attenuation curtain suitable for pile driving equipment as needed. This noise attenuation device should be installed directly between the equipment and the nearest noise sensitive receptor to the construction site.

## Section 3.10.4.5, Page 3.10-59

Revise mitigation measure MM NOI-2, as follows:

| Mitigation | MM NOI-2: Utilize Temporary Noise Attenuation Curtain Adjacent to <br> Pile Driving Equipment. If under MM NOI-1 the reduced pile driving <br> noise exceeds 103 dBA at 50 feet from the pile driver, uUtilize temporary <br> Measure |
| :--- | :--- |
| noise attenuation skirt suitable for pile driving as needed. This noise <br> attenuation device should be installed directly between the equipment <br> and the nearest noise sensitive receptor to the construction site. |  |

### 3.2.7 Changes Made to Chapter 4, Cumulative Analysis Section 4.2.2.5, Page 4-38 <br> Revise paragraph under "Contribution of the Proposed Project (Prior to Mitigation)," as follows: <br> Proposed Project operational emissions would exceed SCAQMD significance thresholds for $\mathrm{NO}_{x}$ in 2019,2033, and 2038, and for CO and VOC in 2033 and 2038 under CEQA. Operational emissions would also exceed SCAQMD significance thresholds for $\mathrm{NO}_{\mathrm{x}}$ in 2019, 2026, 2033, and 2038, and for CO, VOC, and $\mathrm{PM}_{2.5}$ in 2033 and 2038 under NEPA. These impacts would combine with impacts from concurrent related projects discussed above, which would already be cumulatively significant. As a result, without mitigation, proposed Project operational emissions would make a cumulatively considerable contribution to a significant cumulative impact for $\mathrm{NO}_{\mathrm{x}}, \mathrm{CO}$, and VOC under CEQA, and for $\mathrm{NO}_{\mathrm{x}}, \mathrm{CO}$, VOC, and $\mathrm{PM}_{2.5}$ under NEPA.

## Section 4.2.2.5, Pages 4-38 to 4-39

Revise paragraphs under "Contribution of the Alternatives," as follows:
Alternative 1 operational emissions would exceed SCAQMD significance thresholds for $\mathrm{NO}_{\mathrm{x}}$ in 2019,2033, and 2038; and CO and VOC in 2033 and 2038 under CEQA. These impacts would combine with impacts from concurrent related projects, which would be cumulatively significant. As a result, without mitigation, Alternative 1 impacts would make a cumulatively considerable contribution to a significant cumulative impact for
$\mathrm{NO}_{\mathrm{x}}, \mathrm{CO}$, and VOC under CEQA. Alternative 1 would have the same conditions as the NEPA baseline, therefore there would be no impacts under NEPA.

Alternative 2 operational emissions would exceed SCAQMD significance thresholds for $\mathrm{NO}_{\mathrm{x}}$ in 2019,2033, and 2038; and CO and VOC in 2033 and 2038 under CEQA. These impacts would combine with impacts from concurrent related projects, which would be cumulatively significant. As a result, without mitigation, Alternative 2 impacts would make a cumulatively considerable contribution to a significant cumulative impact for NOx, CO, and VOC under CEQA. Since NEPA requires the evaluation of a No Federal Action Alternative and not a No Project Alternative, no cumulative impact determination under NEPA is made for Alternative 2.

Alternative 3 operational emissions would exceed SCAQMD significance thresholds for $\mathrm{NO}_{\mathrm{x}}$; CO, and VOC in 2033 and 2038 under CEQA. Operational emissions would exceed SCAQMD significance thresholds for $\mathrm{NO}_{\mathrm{x}}$ in 2019, 2026, 2033, and 2038; and for CO, VOC, and $\mathrm{PM}_{2.5}$ in 2033 and 2038 under NEPA. These impacts would combine with impacts from concurrent related projects, which would be cumulatively significant. As a result, without mitigation, Alternative 3 operational emissions would make a cumulatively considerable contribution to a significant cumulative impact for $\mathrm{NO}_{\mathrm{X}}=\mathrm{CO}$, and VOC under CEQA; and for $\mathrm{NO}_{\mathrm{x}}, \mathrm{CO}$, VOC, and $\mathrm{PM}_{2.5}$ under NEPA.

Alternative 4 operational emissions would exceed SCAQMD significance thresholds for $\mathrm{NO}_{\mathrm{x}}$ and CO in 2033 and 2038 under CEQA. Operational emissions would exceed SCAQMD significance thresholds for $\mathrm{NO}_{\mathrm{x}}$ in 2019, 2026, 2033, and 2038 under NEPA. These impacts would combine with impacts from concurrent related projects, which would be cumulatively significant. As a result, without mitigation, Alternative 4 operational emissions would make a cumulatively considerable contribution to a significant cumulative impact for $\mathrm{NO}_{\mathrm{x}}$-and CO under CEQA; and for $\mathrm{NO}_{\mathrm{x}}$ under NEPA.

Alternative 5 operational emissions would exceed SCAQMD significance thresholds for NOx $_{x}$, in 2019, 2033, and 2038; and for CO, and VOC in 2033 and 2038 under CEQA. Operational emissions would exceed SCAQMD significance thresholds for $\mathrm{NO}_{\mathrm{X}}$ in 2019, 2026, 2033, and 2038; for CO and $\mathrm{PM}_{2.5}$ in 2033 and 2038, and for VOC in 2026, 2033, and 2038 under NEPA. These impacts would combine with impacts from concurrent related projects, which would be cumulatively significant. As a result, without mitigation, Alternative 5 operational emissions would make a cumulatively considerable contribution to a significant cumulative impact for $\mathrm{NO}_{\mathrm{x}}, \mathrm{CO}$, and VOC under CEQA; and for $\mathrm{NO}_{\mathrm{x}}$, $\mathrm{CO}, \mathrm{VOC}$, and $\mathrm{PM}_{2.5}$ under NEPA.

## Section 4.2.2.5, Pages 4-39 to 4-40

Revise first three paragraphs under "Mitigation Measures and Residual Cumulative Impacts," as follows:

After mitigation (measures MM AQ-6 and MM AQ-7), proposed Project NOx emissions in 2019,2033, and 2038 would be reduced to a less than significant level; however, operational emissions would continue to exceed SCAQMD significance thresholds for CO, and VOC in 2033 and 2038 under CEQA. Proposed Project operational emissions for NOx in 2019, VOC in 2026, and $\mathrm{PM}_{2.5}$ in 2033 and 2038 would be reduced to a less than significant level; however, operational emissions would continue to exceed SCAQMD significance thresholds for $\mathrm{NO}_{\mathrm{x}}$ in 2026, 2033, and 2038; for CO and VOC in

2033 and 2038 under NEPA. These impacts would combine with impacts from concurrent related projects, which would be cumulatively significant. Therefore, after mitigation, the proposed Project would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact for CO and VOC emissions under CEQA; and for $\mathrm{NO}_{\mathrm{x}}$, CO, and VOC under NEPA.

Alternative 1 operational emissions, with mitigation measures MM AQ-6 and MM AQ-7, would continue to exceed the SCAQMD significance thresholds for CO and VOC in 2033 and 2038. These impacts would combine with impacts from concurrent related projects, which would be cumulatively significant. Therefore, after mitigation, Alternative 1 would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact for CO and VOC emissions under CEQA. Alternative 1 would have the same conditions as the NEPA baseline, therefore there would be no impacts under NEPA.

Alternative 2 operational emissions would exceed the SCAQMD significance thresholds for NOx in 2019,2033, and 2038 and CO and VOC in 2033 and 2038. These impacts would combine with impacts from concurrent related projects, which would be cumulatively significant. Therefore, Alternative 2 would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact for NOx, CO and VOC emissions under CEQA. Since NEPA requires the evaluation of a No Federal Action Alternative and not a No Project Alternative, no cumulative impact determination under NEPA is made for Alternative 2.

### 3.2.8 Changes Made to Chapter 6, Comparison of Alternatives

## Section 6.2.2, Page 6-5, Table 6-2

Revise Table 6-2, as follows:
Table 6-2: Summary of CEQA Significance Analysis by Alternative

| Environmental Resource <br> Area | Proposed <br> Project | Alternative |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |  |
| Biological Resources |  | S | S | S | S | S |
| Cultural Resources |  | S | S | S | S | S |
| Greenhouse Gas <br> Emissions |  | N | S | L | S |  |
| Groundwater and Soils |  | S | S | S | S | S |
| Noise | M | L | L | M | M | M |

Notes:
The analysis includes project-level impacts, not cumulative effects.
$\mathrm{S}=$ Unavoidable significant impacts
$M=$ Significant but mitigable impact
$\mathrm{L}=$ Less than significant impact (not significant)
$\mathrm{N}=\mathrm{No}$ impact

## Section 6.2.2, Page 6-7

Delete the first paragraph on page 6-7, as follows:


#### Abstract

For groundwater and soils, the proposed Project and Alternatives 1, 3 and 5 were determined to result in less-than-significant impacts with the incorporation of mitigation measures. The impact is associated with the potential to expose construction personnel, and potentially existing operations persomel, to previously unknown or undocumented soil and/or groundwater contamination as a result of grading, excavation, and other eonstruction-related activities occurring at the 22-acre backlands expansion area. Because no backland improvements would oceur under Alternatives 2 and 4 , these alternatives would have substantially less of an impact. Backland improvements would occur under Alternatives 1, 3 and 5, similar to the proposed Project. As such, the potential for groundwater and soils impacts under Alternatives 1,3 and 5 would be equal to those for the proposed Project. Alternatives 2 and 4 do not involve excavation in the 22 acre expansion area, and are deemed to be superior to the others.


### 3.2.9 Changes Made to Appendix B.1, Air Quality Regulations/Methodology and Air Quality and GHG Emission

## Section 3-2, Page B1-28

Revise the first paragraph under the heading Cargo-Handling Equipment (CHE) on page B1-28, as follows:

CHE includes yard tractors, RTGs, top handlers, sidepicks, forklifts, sweepers, and other miscellaneous equipment. Sweepers are also used on-site, but are classified as off-road equipment by CARB. All equipment is assumed to be diesel powered with the exception of a certain number of propane-powered forklifts. The marine terminal cranes used to lift containers on and off container ships would be electric and, therefore, would have no direct emissions. Yard tractors and top handlers would operate at both the Everport Container Terminal and the Everport portion of the TICTF.

## Emission Worksheets

Appendix B1 includes a compilation of emission worksheets that are generated from air quality modeling efforts. The following new sheets are added which account for the change in overall dispersion concentration relative to each receptor in each year in each alternative under both CEQA and NEPA.

## Adjustments to Convert Unmitigated Peak Daily Concentrations Without Tier 3 OGV Included, to With Tier 3 OGV Included

| Alt1 |  |  | NP |  |  | Alt3 |  |  | Alt4 |  |  | Alt5 |  |  | PP |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2026 | NO2 1-HR CAAQS | NO2 1-HR NAAQS | 2026 | NO2 1-HR CAAQS | NO2 1-HR NAAQS | 2026 | NO2 1-Hr casas | NO2 1-HR NAAQS | 2026 | NO2 1-HR CAAQS | NO2 1-HR NAAQS | 2026 | NO2 1-Hr CAAQS | NO2 1-Hr natas | 2026 | NO2 1-Hr casas | NO2 1-HR NAAQS |
| ceqa | -0.00036 | -0.00034 | ceas | -0.00031 | -0.00031 | CEQA | $-0.00103$ | $-0.00097$ | CEQA | -0.00033 | -0.00032 | CEQA | -0.00074 | -0.00069 | CEQA | $-0.00074$ | -0.00069 |
| NEPA | 0.00000 | 0.00000 | NEPA | 0.00005 | 0.00003 | NEPA | -0.00067 | -0.00063 | NEPA | 0.00002 | 0.00002 | NEPA | -0.00038 | -0.00035 | NEPA | -0.00038 | -0.00035 |
| 2033 | NO2 1-hr CAAQS | NO2 1-HR NAAQS | 2033 | NO2 1-HR CAAQS | NO2 1-hr naads | 2033 | no2 1-hr caad | NO2 1-hr naads | 2033 | NO2 1-HR CAAQS | NO2 1-HR NAAQS | 2033 | NO2 1-HR CAAQS | NO2 1-hr naaqs | 2033 | no2 1-hr caals | NO2 1-HR NAAQS |
| CEQA | -0.00139 | -0.00126 | CEQA | -0.00139 | -0.00126 | CEOA | -0.00399 | -0.00377 | CEOA | -0.00097 | -0.00094 | ceas | -0.00366 | -0.00345 | CEQA | -0.00366 | -0.00345 |
| NEPA | 0.00000 | 0.00000 | NEPA | 0.00000 | 0.00000 | NEPA | $-0.00260$ | -0.00252 | NEPA | 0.00042 | 0.00031 | NEPA | -0.00227 | -0.00220 | NEPA | $-0.00227$ | -0.00219 |
| 2038 | NO2 1-hr caas | NO2 1-hr naags | 2038 | NO2 1-HR CAAQS | NO2 1-hr naads | 2038 | no2 1-hr caad | NO2 1-hr naas | 2038 | no2 1-hr casas | NO2 1-HR NAAQS | 2038 | NO2 1-HR CAAQS | NO2 1-HR NAAQS | 2038 | no2 1-HR caAas | NO2 1-HR NAAQS |
| CEQA | -0.00209 | -0.00188 | CEQA | -0.00209 | -0.00188 | CEQA | -0.00579 | -0.00547 | CEQA | -0.00135 | -0.00132 | ceas | -0.00547 | -0.00517 | CEQA | $-0.00547$ | -0.00517 |
| NEPA | 0.00000 | 0.00000 | NEPA | 0.00000 | 0.00000 | NEPA | -0.00370 | -0.00359 | NEPA | 0.00074 | 0.00057 | NEPA | -0.00338 | -0.00329 | NEPA | -0.00338 | -0.00329 |
| Peak | NO2 1-HR CAAQS | NO2 1-HR NAAQS | Peak | NO2 1-Hr caalas | NO2 1-HR NAAQS | Peak | NO2 1-Hr caaqs | NO2 1-HR NAAQS | Peak | NO2 1-HR CAAQS | NO2 1-HR NAAQS | Peak | NO2 1-Hr casas | NO2 1-HR NAAQS | Peak | no2 1-Hr casas | NO2 1-HR NAAQS |
| CEQA | 0.0000 | 0.0000 | CEQA | 0.0000 | 0.0000 | CEQA | 0.0000 | 0.0000 | CEQA | -0.0010 | -0.0009 | CEQA | 0.0000 | 0.0000 | CEQA | 0.0000 | 0.0000 |
| NEPA | 0.0000 | 0.0000 | NEPA | 0.0000 | 0.0000 | NEPA | -0.0037 | -0.0036 | NEPA | 0.0000 | 0.0006 | NEPA | -0.0034 | -0.0033 | NEPA | -0.0034 | -0.0033 |


|  | CEQA |  |  | CEQA |  |  | CEQA |  |  | CEQA |  |  | CEQA |  |  | CEQA |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | CAAQS Peak Year | NAAQS Peak Year |  | CAAQS Peak Year | NAAQS Peak Year |  | CAAQS Peak Year | NAAQS Peak Year |  | CAAQS Peak Year | NAAQS Peak Year |  | CAAQS Peak Year | NAAQS Peak Year |  | CAAQS Peak Year | NAAQS Peak Year |
| Alt1 | 2019 | 2019 | Alt1 | 2019 | 2019 | Alt1 | 2019 | 2019 | Alt1 | 2019 | 2019 | Alt1 | 2019 | 2019 | Alt1 | 2019 | 2019 |
| NP | 2019 | 2019 | NP | 2019 | 2019 | NP | 2019 | 2019 | NP | 2019 | 2019 | NP | 2019 | 2019 | NP | 2019 | 2019 |
| Alt3 | 2019 | 2019 | At3 | 2019 | 2019 | Alt3 | 2019 | 2019 | At3 | 2019 | 2019 | Alt3 | 2019 | 2019 | Alt3 | 2019 | 2019 |
| Alt4 | 2033 | 2033 | Alt4 | 2033 | 2033 | Alt4 | 2033 | 2033 | Alt4 | 2033 | 2033 | Alt4 | 2033 | 2033 | Alt 4 | 2033 | 2033 |
| Alt5 | 2019 | 2019 | Alt5 | 2019 | 2019 | Alt5 | 2019 | 2019 | Alt5 | 2019 | 2019 | Alt5 | 2019 | 2019 | Alt5 | 2019 | 2019 |
| PP | 2019 | 2019 | PP | 2019 | 2019 | PP | 2019 | 2019 | PP | 2019 | 2019 | PP | 2019 | 2019 | PP | 2019 | 2019 |
|  | NEPA | NAAQS Peak Year |  | NEPACAAQS Peak Year | NAAQS Peak Year |  | NEPACAAQS Peak Year | NAAQS Peak Year |  | NEPA <br> CAAQS Peak Year |  |  | NEPA <br> CAAQS Peak Year |  |  | NEPACAAQS Peak Year |  |
|  | CAAQS Peak Year |  |  | NAAQS Peak Year |  |  |  |  |  | NAAQS Peak Year |  | NAAQS Peak Year |  |  |
| Alt1 | - | - | Alt1 |  | - | - |  | Alt1 | - |  | - | Alt1 | Alt1 | - | Alt1 | - | - |
| NP |  | - | NP | - | - | NP | - | - | NP | - | - | NP | - |  | NP | - |  |
| Alt3 | 2038 | 2038 | Alt3 | 2038 | 2038 | Alt3 | 2038 | 2038 | Alt3 | 2038 | 2038 | Alt3 | 2038 | 2038 | Alt3 | 2038 | 2038 |
| Alt4 | 2019 | 2038 | Alt4 | 2019 | 2038 | Alt4 | 2019 | 2038 | Alt4 | 2019 | 2038 | Alt4 | 2019 | 2038 | Alt4 | 2019 | 2038 |
| Alt5 | 2038 | 2038 | Alt5 | 2038 | 2038 | Alt5 | 2038 | 2038 | Alt5 | 2038 | 2038 | Alt5 | 2038 | 2038 | Alt5 | 2038 | 2038 |
| PP | 2038 | 2038 | PP | 2038 | 2038 | Pp | 2038 | 2038 | PP | 2038 | 2038 | Pp | 2038 | 2038 | Pp | 2038 | 2038 |





Y Source Scaling Factor AAQ | 380450 | 3731350 |
| :--- | :--- |
| 380950 | 3731350 |
| $67.45 \%$ |  | $380950 \quad 373135067.45 \%$ $381450 \quad 373135065.54 \%$ $381950 \quad 373135065.55 \%$ $384450 \quad 373135056.86 \%$ $380450 \quad 373185062.95 \%$ $380950 \quad 373185056.01 \%$ $381450 \quad 373185063.64 \%$ $383450 \quad 373185067.55 \%$ 383950 3731850 63.55\% $380450 \quad 373235069.13 \%$ $380950373235058.58 \%$ $381450373235059.16 \%$ $381950373235067.36 \%$ $382450 \quad 373235066.43 \%$ $383450 \quad 373235068.74 \%$ $383950 \quad 373235061.71 \%$ $384450 \quad 373235060.93 \%$ $380450 \quad 373285058.63 \%$ $380950 \quad 3732850$ 64.12\% $381450 \quad 373285056.97 \%$ $382450 \quad 3732850$ 67.70\% $383950 \quad 373285065.45 \%$ $384450 \quad 373285062.51 \%$ $384950 \quad 373285057.74 \%$ $380450 \quad 373335058.82 \%$ $380950 \quad 373335055.08 \%$ $381450373335063.32 \%$ $382450 \quad 373335067.03 \%$ $382950 \quad 373335074.30 \%$ $383450 \quad 373335071.98 \%$ $383950 \quad 373335065.22 \%$ $389450 \quad 373335051.23 \%$ $389950 \quad 373335050.80 \%$ $380450 \quad 3733850$ 44.59\% $380950 \quad 373385047.80 \%$ $381450 \quad 3733850$ 57.07\% $382450 \quad 3733850$ 57.02\% $382950 \quad 373385074.24 \%$ $383450 \quad 373385071.64 \%$ $383950 \quad 373385072.82 \%$ $384950 \quad 373385063.47 \%$ $388450 \quad 373385051.31 \%$ $388950 \quad 373385051.24 \%$ $389450 \quad 373385049.47 \%$ $389950 \quad 373385049.71 \%$ $380450 \quad 373435042.89 \%$ $380950 \quad 373435042.04 \%$ $381450 \quad 373435056.93 \%$ $382950 \quad 373435065.18 \%$ $383450 \quad 373435070.72 \%$ 3839503734350 66.74\% $384950 \quad 373435065.81 \%$ $386450 \quad 373435061.28 \%$ $387950 \quad 373435055.52 \%$ $389950 \quad 373435053.01 \%$ $380450 \quad 373485050.21 \%$ 380950 3734850 41.96\% $381450 \quad 373485054.39 \%$ $383450 \quad 373485071.71 \%$ $383950 \quad 373485068.62 \%$ $387450 \quad 373485059.71 \%$ $388450 \quad 373485058.12 \%$ $388950 \quad 373485057.47 \%$ $389450 \quad 373485057.35 \%$ $380450373535048.26 \%$ $380950 \quad 373535054.36 \%$ $381450 \quad 373535058.82 \%$ $381950 \quad 373535064.34 \%$ $382950 \quad 373535067.28 \%$ $383950 \quad 373535074.59 \%$ $384450 \quad 373535072.11 \%$ 3849503735350 69.13\% $387950373535061.18 \%$ $388450 \quad 373535059.63 \%$ $388950 \quad 373535060.09 \%$ $389450 \quad 373535058.87 \%$ $380450 \quad 373585056.14 \%$ 380950 3735850 60.07\% $381450 \quad 373585063.43 \%$ $382450 \quad 3735850$ 65.11\% 382950 3735850 69.71\% $383450 \quad 373585069.54 \%$ $383950 \quad 3735850$ 67.61\% $384450 \quad 3735850$ 70.13\% $384950 \quad 3735850$ 69.17\% $385450373585063.23 \%$

$\begin{array}{llllllllllllllllllll}4.525606 & 14.03966 & 14.52561 & 14.03966 & 14.72718 & 14.23531 & 15.51738 & 14.99939 & 14.95766 & 14.45894 & 14.95766 & 14.45894 & 19.75864 & 19.09341 & 19.75864 & 19.09341 & 19.95483 & 19.28367\end{array}$ $\begin{array}{llllllllllllllllll}16.21635 & 15.87938 & 16.21635 & 15.87938 & 16.46727 & 16.12823 & 17.34637 & 16.98883 & 16.71573 & 16.37077 & 16.71573 & 16.37077 & 22.00597 & 21.5419 & 22.00597 & 21.5419 & 22.24106 & 21.77405\end{array}$ $\begin{array}{lllllllllllllllllll}18.679038 & 17.93935 & 18.67904 & 17.93935 & 18.99641 & 18.24369 & 20.00484 & 19.21264 & 19.2706 & 18.5084 & 19.2706 & 18.5084 & 25.29541 & 24.29204 & 25.29541 & 24.29204 & 25.58336 & 24.56852\end{array}$ $\begin{array}{llllllllllllllllllll}22.110628 & 21.16056 & 22.11063 & 21.16056 & 22.51073 & 21.54202 & 23.70139 & 22.68211 & 22.82641 & 21.84581 & 22.82641 & 21.84581 & 29.89442 & 28.61028 & 29.89442 & 28.61028 & 30.2503 & 28.95024\end{array}$ $\begin{array}{llllllllllllllllll}19.303718 & 18.28066 & 19.30372 & 18.28066 & 19.53439 & 18.49111 & 20.62875 & 19.53063 & 19.98319 & 18.92597 & 19.98319 & 18.92597 & 26.05794 & 24.67811 & 26.05794 & 24.67811 & 26.32074 & 24.92338\end{array}$ $\begin{array}{lllllllllllllllllll}15.889925 & 15.53135 & 15.88993 & 15.53135 & 16.12938 & 15.76788 & 16.99078 & 16.60982 & 16.37269 & 16.00557 & 16.37269 & 16.00557 & 21.58135 & 21.08731 & 21.58135 & 21.08731 & 21.80715 & 21.30982\end{array}$ $\begin{array}{llllllllllllllllll}18.285919 & 17.81412 & 18.28592 & 17.81412 & 18.58822 & 18.10916 & 19.57608 & 19.0717 & 18.85814 & 18.37272 & 18.85814 & 18.37272 & 24.78331 & 24.14086 & 24.78331 & 24.14086 & 25.05963 & 24.41061\end{array}$ $\begin{array}{llllllllllllllllllll}20.196706 & 19.56102 & 20.19671 & 19.56102 & 20.55482 & 19.90803 & 21.64303 & 20.96198 & 20.8449 & 20.18888 & 20.8449 & 20.18888 & 27.32317 & 26.46291 & 27.32317 & 26.46291 & 27.64356 & 26.77328\end{array}$ $\begin{array}{lllllllllllllllllll}17.825878 & 17.49912 & 17.82588 & 17.49912 & 18.05613 & 17.72901 & 19.05525 & 18.7086 & 18.43379 & 18.09607 & 18.43379 & 18.09607 & 24.09342 & 23.64944 & 24.09342 & 23.64944 & 24.34078 & 23.89413\end{array}$ $\begin{array}{llllllllllllllllllllllll}16.289656 & 15.88249 & 16.28966 & 15.88249 & 16.46165 & 16.05254 & 17.38984 & 16.95702 & 16.85467 & 16.43403 & 16.85467 & 16.43403 & 22.02116 & 21.46791 & 22.02116 & 21.46791 & 22.23017 & 21.67296\end{array}$ $\begin{array}{lllllllllllllllllll}16.73045 & 15.90872 & 16.73045 & 15.90872 & 16.99474 & 16.15643 & 17.90031 & 17.01831 & 17.24679 & 16.39866 & 17.24679 & 16.39866 & 22.69802 & 21.58776 & 22.69802 & 21.58776 & 22.94341 & 21.81905\end{array}$ $\begin{array}{llllllllllllllllllll}18.797496 & 18.37339 & 18.7975 & 18.37339 & 19.11558 & 18.68386 & 20.13074 & 19.67619 & 19.39245 & 18.9544 & 19.39245 & 18.9544 & 25.45762 & 24.88463 & 25.45762 & 24.88463 & 25.7466 & 25.16686\end{array}$ $\begin{array}{llllllllllllllllllll}21.127573 & 20.6715 & 21.12757 & 20.6715 & 21.50899 & 21.04573 & 22.64674 & 22.15886 & 21.81079 & 21.34081 & 21.81079 & 21.34081 & 28.56743 & 27.94842 & 28.56743 & 27.94842 & 28.9069 & 28.28115\end{array}$ $\begin{array}{lllllllllllllllllllll}23.818136 & 21.90152 & 23.81814 & 21.90152 & 24.26384 & 22.30118 & 25.54529 & 23.48204 & 24.60065 & 22.61881 & 24.60065 & 22.61881 & 32.16936 & 29.59191 & 32.16936 & 29.59191 & 32.56219 & 29.94767\end{array}$ $\begin{array}{llllllllllllllllllll}22.269601 & 21.94784 & 22.2696 & 21.94784 & 22.65895 & 22.33437 & 23.86781 & 23.52507 & 23.00751 & 22.67583 & 23.00751 & 22.67583 & 30.08175 & 29.59982 & 30.08175 & 29.59982 & 30.43678 & 29.95054\end{array}$ $\begin{array}{llllllllllllllllllll}15.652286 & 15.34197 & 15.65229 & 15.34197 & 15.8367 & 15.52716 & 16.71804 & 16.38998 & 16.1808 & 15.86103 & 16.1808 & 15.86103 & 21.17816 & 20.75322 & 21.17816 & 20.75322 & 21.38563 & 20.95888\end{array}$ $\begin{array}{llllllllllllllllllll}14.492123 & 14.12611 & 14.49212 & 14.12611 & 14.63548 & 14.26946 & 15.46209 & 15.07418 & 14.98726 & 14.60923 & 14.98726 & 14.60923 & 19.6132 & 19.11089 & 19.6132 & 19.11089 & 19.79289 & 19.28782\end{array}$ $\begin{array}{lllllllllllllllllllll}13.627314 & 13.05291 & 13.62731 & 13.05291 & 13.74954 & 13.16873 & 14.53059 & 13.91789 & 14.09199 & 13.50003 & 14.09199 & 13.50003 & 18.45256 & 17.65226 & 18.45256 & 17.65226 & 18.61515 & 17.80745\end{array}$ $\begin{array}{llllllllllllllllllll}17.262173 & 16.71282 & 17.26217 & 16.71282 & 17.54271 & 16.98308 & 18.47615 & 17.88708 & 17.80021 & 17.23308 & 17.80021 & 17.23308 & 23.40336 & 22.6606 & 23.40336 & 22.6606 & 23.66134 & 22.90972\end{array}$ $\begin{array}{llllllllllllllllllll}19.680105 & 18.94072 & 19.68011 & 18.94072 & 20.02183 & 19.26599 & 21.08332 & 20.28844 & 20.30776 & 19.54362 & 20.30776 & 19.54362 & 26.63759 & 25.64117 & 26.63759 & 25.64117 & 26.94537 & 25.93547\end{array}$ $\begin{array}{lllllllllllllllllllll}22.886485 & 21.92436 & 22.88649 & 21.92436 & 23.31404 & 22.33178 & 24.54366 & 23.35937 & 23.63228 & 22.63819 & 23.63228 & 22.63819 & 30.9246 & 29.43938 & 30.9246 & 29.43938 & 31.3005 & 29.79537\end{array}$ $\begin{array}{llllllllllllllllll}19.736178 & 19.26893 & 19.73618 & 19.26893 & 20.06305 & 19.58958 & 21.13925 & 20.64004 & 20.38685 & 19.90498 & 20.38685 & 19.90498 & 26.67824 & 26.04378 & 26.67824 & 26.04378 & 26.98315 & 26.34254\end{array}$ $\begin{array}{lllllllllllllllll}13.062942 & 12.65886 & 13.06294 & 12.65886 & 13.1862 & 12.7809 & 13.9309 & 13.49667 & 13.5017 & 13.08059 & 13.5017 & 13.08059 & 17.698755 & 17.13845 & 17.69876 & 17.13845 & 17.8563\end{array} 17.2927$ $\begin{array}{llllllllllllllllllll}12.388664 & 11.85744 & 12.38866 & 11.85744 & 12.49444 & 11.95946 & 13.20429 & 12.63901 & 12.80487 & 12.25703 & 12.80487 & 12.25703 & 16.791973 & 16.06884 & 16.79197 & 16.06884 & 16.9359 & 16.20722\end{array}$ $\begin{array}{llllllllllllllllllll}11.857838 & 11.45635 & 11.85784 & 11.45635 & 11.95219 & 11.54912 & 12.63346 & 12.20747 & 12.25492 & 11.8422 & 12.25492 & 11.8422 & 16.079513 & 15.52941 & 16.07951 & 15.52941 & 16.21364 & 15.66021\end{array}$ $\begin{array}{llllllllllllllllllll}17.571851 & 16.89458 & 17.57185 & 16.89458 & 17.86214 & 17.17196 & 18.81169 & 18.08548 & 18.12257 & 17.42381 & 18.12257 & 17.42381 & 23.81354 & 22.89752 & 23.81354 & 22.89752 & 24.07918 & 23.15204\end{array}$ $\begin{array}{llllllllllllllllllllllll}20.483835 & 20.09697 & 20.48384 & 20.09697 & 20.84922 & 20.4576 & 21.95212 & 21.53915 & 21.14089 & 20.74195 & 21.14089 & 20.74195 & 27.60856 & 27.10444 & 27.60856 & 27.10444 & 27.9329 & 27.42405\end{array}$ $\begin{array}{lllllllllllllllllllllllll}24.093483 & 23.39956 & 24.09348 & 23.39956 & 24.55677 & 23.85107 & 25.84887 & 25.10586 & 24.88463 & 24.16901 & 24.88463 & 24.16901 & 32.534311 & 31.59408 & 32.53431 & 31.59408 & 32.93775 & 31.9869\end{array}$ $\begin{array}{lllllllllllllllllllll}9.146625 & 18.46461 & 19.14663 & 18.46461 & 19.46431 & 18.77104 & 20.50798 & 19.77772 & 19.77733 & 19.07367 & 19.77733 & 19.07367 & 25.881722 & 24.95812 & 25.88172 & 24.95812 & 26.17782 & 25.24389\end{array}$ $\begin{array}{llllllllllllllllll}15.033746 & 14.38016 & 15.03375 & 14.38016 & 15.23357 & 14.57147 & 16.0688 & 15.37061 & 15.52827 & 14.85419 & 15.52827 & 14.85419 & 20.354638 & 19.4676 & 20.35464 & 19.4676 & 20.56249 & 19.66673\end{array}$ $\begin{array}{lllllllllllllllllllll}13.428949 & 12.62787 & 13.42895 & 12.62787 & 13.57974 & 12.76618 & 14.33536 & 13.47814 & 13.87283 & 13.04622 & 13.87283 & 13.04622 & 18.194811 & 17.10961 & 18.19481 & 17.10961 & 18.36716 & 17.27021\end{array}$ $\begin{array}{llllllllllllllllllll}12.216862 & 11.6251 & 12.21686 & 11.6251 & 12.33151 & 11.73443 & 13.02659 & 12.39589 & 12.62202 & 12.01105 & 12.62202 & 12.01105 & 16.563788 & 15.76046 & 16.56379 & 15.76046 & 16.7098 & 15.89959\end{array}$ $\begin{array}{llllllllllllllllllll}8.29123 & 8.022448 & 8.29123 & 8.022448 & 8.329674 & 8.061335 & 8.811837 & 8.527696 & 8.558917 & 8.282702 & 8.558917 & 8.282702 & 11.281432 & 10.91209 & 11.28143 & 10.91209 & 11.35971 & 10.98889\end{array}$ $\begin{array}{lllllllllllllllllllll}7.889909 & 7.397348 & 7.889909 & 7.397348 & 7.925011 & 7.431348 & 8.38297 & 7.859766 & 8.140274 & 7.63011 & 8.140274 & 7.63011 & 10.745615 & 10.0783 & 10.74562 & 10.0783 & 10.81853 & 10.1468\end{array}$ $\begin{array}{lllllllllllllllllllll}18.232934 & 17.58488 & 18.23293 & 17.58488 & 18.54449 & 17.88611 & 19.52768 & 18.83422 & 18.80844 & 18.14015 & 18.80844 & 18.14015 & 24.55779 & 23.81556 & 24.55779 & 23.81556 & 24.83715 & 24.08749\end{array}$ $\begin{array}{llllllllllllllllllllllll}21.776423 & 20.89705 & 21.77642 & 20.89705 & 22.1775 & 21.28136 & 23.34802 & 22.40455 & 22.48188 & 21.57294 & 22.48188 & 21.57294 & 29.43718 & 28.25085 & 29.43718 & 28.25085 & 29.79124 & 28.59012\end{array}$ $\begin{array}{lllllllllllllllllllll}26.377714 & 25.9051 & 26.37771 & 25.9051 & 26.90504 & 26.42554 & 28.31487 & 27.80998 & 27.24951 & 26.76335 & 27.24951 & 26.76335 & 35.594175 & 34.95062 & 35.59418 & 34.95062 & 36.04691 & 35.39686\end{array}$ $\begin{array}{lllllllllllllllllll}18.027064 & 17.11186 & 18.02706 & 17.11186 & 18.32275 & 17.38872 & 19.30591 & 18.32332 & 18.61921 & 17.6743 & 18.61921 & 17.6743 & 24.374322 & 23.13863 & 24.37432 & 23.13863 & 24.65108 & 23.39954\end{array}$ $\begin{array}{llllllllllllllllll}14.448148 & 13.85591 & 14.44815 & 13.85591 & 14.64231 & 14.0407 & 15.4434 & 14.80963 & 14.92058 & 14.30948 & 14.92058 & 14.30948 & 19.566692 & 18.76425 & 19.56669 & 18.76425 & 19.76693 & 18.95572\end{array}$ $\begin{array}{llllllllllllllllll}12.741974 & 12.16172 & 12.74197 & 12.16172 & 12.88602 & 12.29932 & 13.60157 & 12.98219 & 13.15955 & 12.56007 & 13.15955 & 12.56007 & 17.271032 & 16.48492 & 17.27103 & 16.48492 & 17.43442 & 16.64091\end{array}$ $\begin{array}{llllllllllllllllll}11.57812 & 11.12345 & 11.57812 & 11.12345 & 11.68897 & 11.2301 & 12.34563 & 11.86104 & 11.9576 & 11.48843 & 11.9576 & 11.48843 & 15.70589 & 15.08823 & 15.70589 & 15.08823 & 15.8445 & 15.22154\end{array}$ $\begin{array}{lllllllllllllllllll}10.33823 & 10.00798 & 10.33823 & 10.00798 & 10.41549 & 10.08255 & 11.00894 & 10.65731 & 10.67749 & 10.33701 & 10.67749 & 10.33701 & 14.036687 & 13.58714 & 14.03669 & 13.58714 & 14.14981 & 13.69667\end{array}$ $\begin{array}{llllllllllllllllll}8.958891 & 8.407189 & 8.958891 & 8.407189 & 9.0036 & 8.450537 & 9.525474 & 8.938527 & 9.254355 & 8.680234 & 9.254355 & 8.680234 & 12.174728 & 11.43312 & 12.17473 & 11.43312 & 12.26208 & 11.51495\end{array}$ $\begin{array}{llllllllllllllllll}8.657408 & 8.253192 & 8.657408 & 8.253192 & 8.699127 & 8.293157 & 9.202907 & 8.773368 & 8.939666 & 8.522279 & 8.939666 & 8.522279 & 11.772919 & 11.22306 & 11.77292 & 11.22306 & 11.85594 & 11.30233\end{array}$ $\begin{array}{llllllllllllllllll}8.425748 & 8.008948 & 8.425748 & 8.008948 & 8.464357 & 8.045571 & 8.954914 & 8.511861 & 8.69919 & 8.268775 & 8.69919 & 8.268775 & 11.461826 & 10.89509 & 11.46183 & 10.89509 & 11.54142 & 10.97068\end{array}$ $\begin{array}{llllllllllllllllllll}7.955426 & 7.612768 & 7.955426 & 7.612768 & 7.989525 & 7.646464 & 8.452291 & 8.088945 & 8.2098 & 7.856139 & 8.2098 & 7.856139 & 10.831555 & 10.36443 & 10.83156 & 10.36443 & 10.90481 & 10.43504\end{array}$ $\begin{array}{lllllllllllllllllllll}19.153302 & 18.47509 & 19.1533 & 18.47509 & 19.49112 & 18.80208 & 20.52251 & 19.79654 & 19.76403 & 19.06418 & 19.76403 & 19.06418 & 25.92129 & 25.00251 & 25.92129 & 25.00251 & 26.22344 & 25.29457\end{array}$ $\begin{array}{lllllllllllllllllllllll}3.518485 & 22.84605 & 23.51849 & 22.84605 & 23.97105 & 23.28582 & 25.23096 & 24.50967 & 24.28682 & 23.59255 & 24.28682 & 23.59255 & 31.766367 & 30.85738 & 31.76637 & 30.85738 & 32.15951 & 31.23943\end{array}$ $\begin{array}{llllllllllllllllllll}29.094059 & 27.64372 & 29.09406 & 27.64372 & 29.69887 & 28.21458 & 31.24826 & 29.68781 & 30.06139 & 28.56262 & 30.06139 & 28.56262 & 39.233129 & 37.28031 & 39.23313 & 37.28031 & 39.74499 & 37.76468\end{array}$ $\begin{array}{llllllllllllllllllll}13.926087 & 13.32362 & 13.92609 & 13.32362 & 14.11335 & 13.49972 & 14.88506 & 14.23876 & 14.37996 & 13.75705 & 14.37996 & 13.75705 & 18.86263 & 18.05027 & 18.86263 & 18.05027 & 19.05546 & 18.23308\end{array}$ $\begin{array}{llllllllllllllllll}12.206786 & 11.85583 & 12.20679 & 11.85583 & 12.34475 & 11.98943 & 13.02921 & 12.65446 & 12.60338 & 12.24144 & 12.60338 & 12.24144 & 16.552971 & 16.07642 & 16.55297 & 16.07642 & 16.70878 & 16.22764\end{array}$ $\begin{array}{lllllllllllllllll}11.057455 & 10.71773 & 11.05746 & 10.71773 & 11.1637 & 10.82299 & 11.7898 & 11.42912 & 11.41692 & 11.06613 & 11.41692 & 11.06613 & 15.005675 & 14.54328 & 15.00568 & 14.54328 & 15.13765\end{array} 14.67231$ $\begin{array}{lllllllllllllllllll}9.962299 & 9.771561 & 9.962299 & 9.771561 & 10.03554 & 9.845442 & 10.60681 & 10.4053 & 10.28604 & 10.08968 & 10.28604 & 10.08968 & 13.533838 & 13.27222 & 13.53384 & 13.27222 & 13.64163 & 13.37906\end{array}$ $\begin{array}{llllllllllllllllllllll}9.154761 & 8.846733 & 9.154761 & 8.846733 & 9.205051 & 8.895388 & 9.735552 & 9.408124 & 9.452434 & 9.134731 & 9.452434 & 9.134731 & 12.447041 & 12.02748 & 12.44704 & 12.02748 & 12.53775 & 12.11523\end{array}$ $\begin{array}{llllllllllllllllllllll}8.804638 & 8.477679 & 8.804638 & 8.477679 & 8.846019 & 8.524995 & 9.359024 & 9.01822 & 9.092702 & 8.759769 & 9.092702 & 8.759769 & 11.971604 & 11.52257 & 11.9716 & 11.52257 & 12.05574 & 11.61055\end{array}$ $\begin{array}{lllllllllllllllllllll}7.823904 & 7.419914 & 7.823904 & 7.419914 & 7.855118 & 7.450672 & 8.311172 & 7.882476 & 8.074704 & 7.656666 & 8.074704 & 7.656666 & 10.65262 & 10.10416 & 10.65262 & 10.10416 & 10.72364 & 10.17187\end{array}$ $\begin{array}{llllllllllllllllllllll}20.148173 & 19.45832 & 20.14817 & 19.45832 & 20.51629 & 19.81432 & 21.59847 & 20.85945 & 20.795 & 20.08338 & 20.795 & 20.08338 & 27.25037 & 26.31621 & 27.25037 & 26.31621 & 27.57539 & 26.63032\end{array}$
 $\begin{array}{llllllllllllllllllllllll}27.912178 & 27.07852 & 27.91218 & 27.07852 & 28.48904 & 27.63809 & 29.97638 & 29.08091 & 28.83962 & 27.97797 & 28.83962 & 27.97797 & 37.642859 & 36.5192 & 37.64286 & 36.5192 & 38.13217 & 36.99375\end{array}$ $\begin{array}{lllllllllllllllll}11.825766 & 11.60419 & 11.82577 & 11.60419 & 11.95769 & 11.7356 & 12.62041 & 12.3853 & 12.20694 & 11.97834 & 12.20694 & 11.97834 & 16.043822 & 15.74176 & 16.04382 & 15.74176 & 16.1934\end{array} 15.88944$ $\begin{array}{lllllllllllllllllll}10.746666 & 10.36167 & 10.74667 & 10.36167 & 10.85375 & 10.46635 & 11.46013 & 11.05031 & 11.0931 & 10.69491 & 11.0931 & 10.69491 & 14.587728 & 14.0659 & 14.58773 & 14.0659 & 14.71731 & 14.1914\end{array}$ $\begin{array}{lllllllllllllllllllll}8.515066 & 8.192284 & 8.515066 & 8.192284 & 8.554409 & 8.2302 & 9.050052 & 8.707189 & 8.791323 & 8.458627 & 8.791323 & 8.458627 & 11.583269 & 11.14297 & 11.58327 & 11.14297 & 11.66384 & 11.22063\end{array}$ $\begin{array}{lllllllllllllllllll}8.141813 & 7.889122 & 8.141813 & 7.889122 & 8.176133 & 7.928775 & 8.650746 & 8.388387 & 8.404797 & 8.148983 & 8.404797 & 8.148983 & 11.080066 & 10.73709 & 11.08007 & 10.73709 & 11.15525 & 10.81152\end{array}$ $\begin{array}{llllllllllllllllll}7.976107 & 7.51516 & 7.976107 & 7.51516 & 8.008531 & 7.548025 & 8.474102 & 7.985017 & 8.234524 & 7.755603 & 8.234524 & 7.755603 & 10.853679 & 10.23139 & 10.85368 & 10.23139 & 10.92689 & 10.30094\end{array}$ $\begin{array}{lllllllllllllllllll}7.655523 & 7.328322 & 7.655523 & 7.328322 & 7.685368 & 7.357587 & 8.131836 & 7.78475 & 7.90091 & 7.563217 & 7.90091 & 7.563217 & 10.423809 & 9.977833 & 10.42381 & 9.977833 & 10.49296 & 10.04437\end{array}$ $\begin{array}{lllllllllllllllllllllll}20.131258 & 19.82853 & 20.13126 & 19.82853 & 20.50247 & 20.19832 & 21.5829 & 21.26182 & 20.77833 & 20.468 & 20.77833 & 20.468 & 27.224005 & 26.80743 & 27.22401 & 26.80743 & 27.55044 & 27.13148\end{array}$ $\begin{array}{lllllllllllllllllllllll}23.595834 & 23.10869 & 23.59583 & 23.10869 & 24.06178 & 23.56648 & 25.32299 & 24.80131 & 24.36961 & 23.86708 & 24.36961 & 23.86708 & 31.856987 & 31.19704 & 31.85699 & 31.19704 & 32.25789 & 31.59061\end{array}$ $\begin{array}{llllllllllllllllllll}25.3553 & 24.76517 & 25.3553 & 24.76517 & 25.87091 & 25.26952 & 27.2235 & 26.59056 & 26.19392 & 25.58472 & 26.19392 & 25.58472 & 34.2081 & 33.41039 & 34.2081 & 33.41039 & 34.6476 & 33.84012\end{array}$ $\begin{array}{lllllllllllllllllll} \\ 25.300424 & 24.60594 & 25.30042 & 24.60594 & 25.8118 & 25.10373 & 27.16372 & 26.41849 & 26.14119 & 25.42405 & 26.14119 & 25.42405 & 34.127396 & 33.18972 & 34.1274 & 33.18972 & 34.56532 & 33.61583\end{array}$ $\begin{array}{llllllllllllllllllllll}4.271902 & 13.43746 & 14.2719 & 13.43746 & 14.4831 & 13.63322 & 15.26709 & 14.37201 & 14.70233 & 13.8724 & 14.70233 & 13.8724 & 19.281436 & 18.12383 & 19.28144 & 18.12383 & 19.48752 & 18.37815\end{array}$ $\begin{array}{llllllllllllllllll}10.985575 & 10.50012 & 10.98558 & 10.50012 & 11.10487 & 10.61335 & 11.72111 & 11.2026 & 11.33824 & 10.83719 & 11.33824 & 10.83719 & 14.908993 & 14.25068 & 14.90899 & 14.25068 & 15.04602 & 14.38126\end{array}$ $\begin{array}{lllllllllllllllllll}10.170511 & 9.897463 & 10.17051 & 9.897463 & 10.26518 & 9.991829 & 10.8406 & 10.55134 & 10.49646 & 10.2155 & 10.49646 & 10.2155 & 13.813897 & 13.43982 & 13.8139 & 13.43982 & 13.93287 & 13.55687\end{array}$ $\begin{array}{lllllllllllllllllll}9.494057 & 9.293223 & 9.494057 & 9.293223 & 9.571035 & 9.371103 & 10.11152 & 9.899856 & 9.797221 & 9.59167 & 9.797221 & 9.59167 & 12.904572 & 12.62642 & 12.90457 & 12.62642 & 13.00979 & 12.73099\end{array}$ $\begin{array}{lllllllllllllllllll}7.954813 & 7.601873 & 7.954813 & 7.601873 & 7.987691 & 7.633874 & 8.451378 & 8.076651 & 8.21099 & 7.846217 & 8.21099 & 7.846217 & 10.827612 & 10.34783 & 10.82761 & 10.34783 & 10.90061 & 10.41777\end{array}$ $\begin{array}{llllllllllllllllll}7.796824 & 7.466801 & 7.796824 & 7.466801 & 7.826253 & 7.498431 & 8.281488 & 7.933158 & 8.047441 & 7.706404 & 8.047441 & 7.706404 & 10.615323 & 10.1647 & 10.61532 & 10.1647 & 10.68539 & 10.23343\end{array}$ $\begin{array}{llllllllllllllllllll}7.6952 & 7.345574 & 7.6952 & 7.345574 & 7.72406 & 7.376003 & 8.173485 & 7.803785 & 7.942787 & 7.580929 & 7.942787 & 7.580929 & 10.476542 & 10.0009 & 10.47654 & 10.0009 & 10.54566 & 10.0681\end{array}$ $\begin{array}{llllllllllllllllllll}.326497 & 7.086239 & 7.326497 & 7.086239 & 7.3538 & 7.114769 & 7.780996 & 7.527304 & 7.559743 & 7.311927 & 7.559743 & 7.311927 & 9.979983 & 9.65118 & 9.979983 & 9.65118 & 10.04521 & 9.715342\end{array}$ $\begin{array}{llllllllllllllllllll}19.648781 & 18.89484 & 19.64878 & 18.89484 & 20.01995 & 19.25053 & 21.07265 & 20.26336 & 20.28351 & 19.50557 & 20.28351 & 19.50557 & 26.559145 & 25.53972 & 26.55915 & 25.53972 & 26.88279 & 25.85049\end{array}$ $\begin{array}{llllllllllllllllllll}21.606406 & 21.15182 & 21.60641 & 21.15182 & 22.02864 & 21.56788 & 23.18412 & 22.6984 & 22.23003 & 21.84384 & 22.23003 & 21.84384 & 29.010797 & 28.37975 & 29.0108 & 28.37975 & 29.37267 & 28.73517\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}23.440628 & 22.91039 & 23.44063 & 22.91039 & 23.91135 & 23.37255 & 25.16291 & 24.59565 & 24.2133 & 23.66723 & 24.2133 & 23.66723 & 31.634194 & 30.91388 & 31.63419 & 30.91388 & 32.03713 & 31.30906\end{array}$ $\begin{array}{llllllllllllllllllllllll}20.823184 & 19.51836 & 20.82318 & 19.51836 & 21.22048 & 19.88555 & 22.33952 & 20.93587 & 21.51128 & 20.16256 & 21.51128 & 20.16256 & 28.111182 & 26.35485 & 28.11118 & 26.35485 & 28.45917 & 26.67829\end{array}$ $\begin{array}{llllllllllllllllll}16.243997 & 15.42424 & 16.244 & 15.42424 & 16.51431 & 15.67934 & 17.5018 & 16.68095 & 16.77489 & 15.9274 & 16.77489 & 15.9274 & 21.966519 & 20.66314 & 21.96652 & 20.66314 & 22.21734 & 21.09817\end{array}$ $\begin{array}{lllllllllllllllllll}12.754714 & 12.18238 & 12.75471 & 12.18238 & 12.93032 & 12.34863 & 13.63445 & 13.02151 & 13.16607 & 12.54794 & 13.16607 & 12.54794 & 17.282705 & 16.3199 & 17.28271 & 16.3199 & 17.4605 & 16.4859\end{array}$ $\begin{array}{lllllllllllllllllll}11.129192 & 10.48384 & 11.12919 & 10.48384 & 11.25907 & 10.60276 & 11.88028 & 11.18878 & 11.48585 & 10.808 & 11.48585 & 10.808 & 15.099599 & 13.98039 & 15.0996 & 13.98039 & 15.24277 & 14.10954\end{array}$ $\begin{array}{llllllllllllllllll}10.136687 & 9.743185 & 10.13669 & 9.743185 & 10.218 & 9.828284 & 10.80923 & 10.38956 & 10.43984 & 10.02192 & 10.43984 & 10.02192 & 13.738952 & 13.18896 & 13.73895 & 13.18896 & 13.86056 & 13.30555\end{array}$ $\begin{array}{lllllllllllllllll}9.439244 & 9.161952 & 9.439244 & 9.161952 & 9.521292 & 9.242253 & 10.05643 & 9.761805 & 9.739187 & 9.454246 & 9.739187 & 9.454246 & 12.829749 & 12.44995 & 12.82975 & 12.44995 & 12.9368 \\ 12.55441\end{array}$ $\begin{array}{llllllllllllllllllllll}8.933934 & 8.668085 & 8.933934 & 8.668085 & 9.001706 & 8.734274 & 9.511648 & 9.229229 & 9.218706 & 8.945494 & 9.218706 & 8.945494 & 12.14727 & 11.76924 & 12.14727 & 11.7481 & 12.24388 & 11.87733\end{array}$



$385950 \quad 373585058.67 \%$ 386450 3735850 59.39\% $386950 \quad 373585060.54 \%$ $388450 \quad 373585055.20 \%$ $388950 \quad 373585056.70 \%$ $380450 \quad 373635056.18 \%$ $380950 \quad 373635053.84 \%$ $381450373635070.54 \%$ $382450 \quad 373635066.15 \%$ $382950 \quad 373635067.60 \%$ $383950 \quad 373635061.33 \%$ $384450 \quad 373635065.10 \%$ $384950 \quad 373635072.58 \%$ $385450 \quad 373635068.03 \%$ $385950 \quad 373635063.40 \%$ $386450373635061.28 \%$ $386950 \quad 373635057.76 \%$ $387450 \quad 373635057.20 \%$ $387950 \quad 373635058.42 \%$ $388450 \quad 373635055.93 \%$ $388950 \quad 373635054.22 \%$ $380450 \quad 373685055.16 \%$ $380950 \quad 3736850$ 57.73\% $381450 \quad 373685072.05 \%$ $382450 \quad 373685068.07 \%$ $382950 \quad 373685072.26 \%$ $383450 \quad 3736850$ 66.82\% 383950 3736850 66.15\% $384450 \quad 373685059.65 \%$ $384950 \quad 373685064.81 \%$ $385950 \quad 373685068.74 \%$ $386450 \quad 373685067.15 \%$ $387450 \quad 3736850$ 69.94\% 387950 3736850 64.33\% $388450 \quad 373685058.19 \%$ $388950373685056.64 \%$ $389450 \quad 373685055.67 \%$ $380450 \quad 373735057.87 \%$ $380950 \quad 373735063.61 \%$ $381450 \quad 373735070.61 \%$ $381950 \quad 373735078.92 \%$ $382450 \quad 373735068.61 \%$ $382950 \quad 373735070.62 \%$ $383450 \quad 373735065.58 \%$ $383950 \quad 373735073.34 \%$ $384450 \quad 373735059.78 \%$ $384950 \quad 373735063.58 \%$ $385450 \quad 3737350$ 58.48\% $385950 \quad 373735064.96 \%$ $386950 \quad 373735066.60 \%$ $387950 \quad 373735064.20 \%$ $388450 \quad 373735064.51 \%$ 3889503737350 60.35\% $389450 \quad 373735058.02 \%$ $380450 \quad 373785060.72 \%$ $380950 \quad 373785067.08 \%$ $381450 \quad 373785066.21 \%$ $381950373785076.97 \%$ 3824503737850 69.99\% $382950 \quad 373785070.44 \%$ $383450 \quad 373785068.59 \%$ $383950 \quad 373785060.00 \%$ $384450 \quad 373785068.30 \%$ $384950 \quad 373785061.80 \%$ $385450373785056.64 \%$ $385950 \quad 373785055.22 \%$ $386450 \quad 373785061.82 \%$ 3869503737850 67.28\% $387450 \quad 373785064.98 \%$ $387950 \quad 3737850 \quad 64.75 \%$ $388450 \quad 373785062.19 \%$ $388950 \quad 3737850$ 64.87\% 3894503737850 62.76\% $380450 \quad 373835072.53 \%$ $380950 \quad 373835072.92 \%$ $381450 \quad 373835066.06 \%$ $381950 \quad 373835073.33 \%$ $382450 \quad 373835069.14 \%$ $382950 \quad 373835074.16 \%$ $383450 \quad 373835072.34 \%$ $383950 \quad 373835062.94 \%$ $384450 \quad 373835070.43 \%$ $384950 \quad 3738350$ 61.77\% $385450 \quad 373835057.27 \%$ $385950 \quad 373835058.46 \%$ $386450 \quad 373835056.89 \%$ $386950373835058.28 \%$
$64483-8.3218828 .64483-8.3218828 .7034948 .377898$

 $\begin{array}{lllllllllllllllllll}8.131344 & 7.859734 & 8.131344 & 7.859734 & 8.172375 & 7.900371 & 8.643214 & 8.355219 & 8.390735 & 8.110646 & 8.390735 & 8.110646 & 11.068496 & 10.69777 & 11.0685 & 10.69777 & 11.14629 & 10.77349\end{array}$ $\begin{array}{llllllllllllllllll}7.43115 & 7.11374 & 7.43115 & 7.11374 & 7.459363 & 7.141714 & 7.892666 & 7.556144 & 7.668279 & 7.340583 & 7.668279 & 7.340583 & 10.121014 & 9.688464 & 10.12101 & 9.688464 & 10.18756 & 9.752597\end{array}$ $\begin{array}{llllllllllllllllll}7.211887 & 6.984407 & 7.211887 & 6.984407 & 7.237492 & 7.0115 & 7.658174 & 7.418466 & 7.44072 & 7.206937 & 7.44072 & 7.206937 & 9.826259 & 9.512967 & 9.826259 & 9.512967 & 9.889699 & 9.575723\end{array}$ $\begin{array}{llllllllllllllllll}19.125284 & 18.51883 & 19.12528 & 18.51883 & 19.48243 & 18.86639 & 20.50801 & 19.85933 & 19.74207 & 19.11748 & 19.74207 & 19.11748 & 25.855957 & 25.03214 & 25.85596 & 25.03214 & 26.16882 & 25.33621\end{array}$ $\begin{array}{llllllllllllllllllll}20.741548 & 20.08931 & 20.74155 & 20.08931 & 21.13489 & 20.47253 & 22.24663 & 21.5492 & 21.41476 & 20.74351 & 21.41476 & 20.74351 & 28.028287 & 26.6493 & 28.02829 & 26.6493 & 28.3715 & 26.97551\end{array}$ $\begin{array}{llllllllllllllllllll}21.79217 & 21.2839 & 21.79217 & 21.2839 & 22.21992 & 21.7035 & 23.38585 & 22.84197 & 22.50783 & 21.98404 & 22.50783 & 21.98404 & 29.421148 & 28.73137 & 29.42115 & 28.73137 & 29.79038 & 29.0931\end{array}$ $\begin{array}{llllllllllllllllllllllllll}19.261847 & 18.64011 & 19.26185 & 18.64011 & 19.62009 & 18.9864 & 20.65696 & 19.99019 & 19.89459 & 19.25313 & 19.89459 & 19.25313 & 26.017199 & 25.17626 & 26.0172 & 25.17626 & 26.33371 & 25.48252\end{array}$ $\begin{array}{llllllllllllllllllllll}16.191123 & 15.15671 & 16.19112 & 15.15671 & 16.46584 & 15.40835 & 17.3448 & 16.23282 & 16.719 & 15.6504 & 16.719 & 15.6504 & 21.894428 & 20.50038 & 21.89443 & 20.50038 & 22.1468 & 20.7337\end{array}$ $\begin{array}{llllllllllllllllll}11.365771 & 10.70274 & 11.36577 & 10.70274 & 11.50855 & 10.83364 & 12.1396 & 11.42871 & 11.72965 & 11.04441 & 11.72965 & 11.04441 & 15.414956 & 14.52006 & 15.41496 & 14.52006 & 15.56609 & 14.66042\end{array}$ $\begin{array}{llllllllllllllllll}10.123837 & 9.377926 & 10.12384 & 9.377926 & 10.23157 & 9.47181 & 10.79939 & 9.99932 & 10.44627 & 9.675392 & 10.44627 & 9.675392 & 13.746313 & 12.73979 & 13.74631 & 12.73979 & 13.87102 & 12.85215\end{array}$ $\begin{array}{lllllllllllllllllllll}9.180445 & 8.92061 & 9.180445 & 8.92061 & 9.26456 & 9.002529 & 9.783285 & 9.506773 & 9.471041 & 9.203818 & 9.471041 & 9.203818 & 12.477697 & 12.12263 & 12.4777 & 12.12263 & 12.58372 & 12.22591\end{array}$ $\begin{array}{llllllllllllllllll}8.692935 & 8.515032 & 8.692935 & 8.515032 & 8.762773 & 8.584579 & 9.257145 & 9.068898 & 8.968181 & 8.786114 & 8.968181 & 8.786114 & 11.821045 & 11.57527 & 11.82105 & 11.57527 & 11.91662 & 11.66973\end{array}$ $\begin{array}{lllllllllllllllllll}8.302674 & 8.018857 & 8.302674 & 8.018857 & 8.360394 & 8.074502 & 8.835797 & 8.533687 & 8.566667 & 8.273843 & 8.566667 & 8.273843 & 11.293619 & 10.90758 & 11.29362 & 10.90758 & 11.3807 & 10.99164\end{array}$ $\begin{array}{lllllllllllllllllllll}8.199509 & 7.893305 & 8.199509 & 7.893305 & 8.249754 & 7.942033 & 8.721746 & 8.396041 & 8.461303 & 8.144545 & 8.461303 & 8.144545 & 11.155226 & 10.74007 & 11.15523 & 10.74007 & 11.2381 & 10.81986\end{array}$ $\begin{array}{llllllllllllllllllll}7.894852 & 7.636689 & 7.894852 & 7.636689 & 7.936852 & 7.678223 & 8.393128 & 8.119203 & 8.146176 & 7.87952 & 8.146176 & 7.87952 & 10.746364 & 10.39492 & 10.74636 & 10.39492 & 10.82287 & 10.46931\end{array}$ | 7.721833 | 7.451078 | 7.721833 | 7.451078 | 7.758647 | 7.486541 | 8.206517 | 7.918688 | 7.96839 | 7.68882 | 7.96839 | 7.68882 | 10.511957 | 10.14373 | 10.51196 | 10.14373 | 10.58481 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{lllllllllllllllllll}7.530887 & 7.256612 & 7.530887 & 7.256612 & 7.562643 & 7.287328 & 8.00069 & 7.709237 & 7.771073 & 7.487536 & 7.771073 & 7.487536 & 10.255152 & 9.882694 & 10.25515 & 9.882694 & 10.3241 & 9.949101\end{array}$ $\begin{array}{lllllllllllllllllll}7.2064 & 6.944405 & 7.2064 & 6.944405 & 7.233094 & 6.970831 & 7.653202 & 7.375083 & 7.435383 & 7.163883 & 7.435383 & 7.163883 & 9.817388 & 9.462548 & 9.817388 & 9.462548 & 9.881403 & 9.524343\end{array}$ $\begin{array}{lllllllllllllllllll}7.054673 & 6.756514 & 7.054673 & 6.756514 & 7.079042 & 6.780993 & 7.490615 & 7.174504 & 7.278016 & 6.969409 & 7.278016 & 6.969409 & 9.61356 & 9.208669 & 9.61356 & 9.208669 & 9.675186 & 9.268063\end{array}$ $\begin{array}{lllllllllllllllllll}18.124494 & 17.53986 & 18.12449 & 17.53986 & 18.45393 & 17.86191 & 19.4274 & 18.8036 & 18.70465 & 18.10317 & 18.70465 & 18.10317 & 24.518019 & 23.72127 & 24.51802 & 23.72127 & 24.80919 & 24.00501\end{array}$ $\begin{array}{lllllllllllllllll}19.099849 & 18.4293 & 19.09985 & 18.4293 & 19.4531 & 18.7724 & 20.47874 & 19.76186 & 19.71685 & 19.02657 & 19.71685 & 19.02657 & 25.821973 & 24.90991 & 25.82197 & 24.90991 & 26.13287 \\ 25.21139\end{array}$ $\begin{array}{lllllllllllllllllllll}19.729977 & 19.11913 & 19.72998 & 19.11913 & 20.10755 & 19.48486 & 21.16505 & 20.50974 & 20.37415 & 19.74371 & 20.37415 & 19.74371 & 26.65119 & 25.82552 & 26.65119 & 25.82552 & 26.97993 & 26.14407\end{array}$ $\begin{array}{llllllllllllllllllll}17.897833 & 17.16528 & 17.89783 & 17.16528 & 18.22435 & 17.47673 & 19.18901 & 18.4024 & 18.48287 & 17.72622 & 18.48287 & 17.72622 & 24.185158 & 23.19624 & 24.18516 & 23.19624 & 24.47556 & 23.47398\end{array}$ $\begin{array}{lllllllllllllllll}15.323124 & 14.25431 & 15.32312 & 14.25431 & 15.58008 & 14.48726 & 16.4122 & 15.26288 & 15.8203 & 14.71565 & 15.8203 & 14.71565 & 20.727589 & 19.28828 & 20.72759 & 19.28828 & 20.96444 \\ 19.50532\end{array}$ $\begin{array}{lllllllllllllllllll}13.298694 & 12.30424 & 13.29869 & 12.30424 & 13.49944 & 12.48326 & 14.22797 & 13.15898 & 13.72757 & 12.69962 & 13.72757 & 12.69962 & 18.008858 & 16.66937 & 18.00886 & 16.66937 & 18.20296 & 16.84525\end{array}$ $\begin{array}{lllllllllllllllllll}11.544107 & 11.05677 & 11.54411 & 11.05677 & 11.70003 & 11.20337 & 12.33742 & 11.81461 & 11.91355 & 11.41018 & 11.91355 & 11.41018 & 15.650351 & 14.99231 & 15.65035 & 14.99231 & 15.80924 & 15.143\end{array}$ $\begin{array}{llllllllllllllllll}10.193106 & 9.630448 & 10.19311 & 9.630448 & 10.30999 & 9.737268 & 10.87891 & 10.27555 & 10.51748 & 9.935641 & 10.51748 & 9.935641 & 13.835682 & 13.0769 & 13.83568 & 13.0769 & 13.96532 & 13.19736\end{array}$ $\begin{array}{lllllllllllllllllll}9.130337 & 8.702327 & 9.130337 & 8.702327 & 9.219113 & 8.783493 & 9.733106 & 9.274397 & 9.418496 & 8.976659 & 9.418496 & 8.976659 & 12.408173 & 11.82935 & 12.40817 & 11.82935 & 12.51598 & 11.93034\end{array}$ $\begin{array}{lllllllllllllllllll}8.085042 & 7.898055 & 8.085042 & 7.898055 & 8.143361 & 7.955987 & 8.605054 & 8.406769 & 8.340266 & 8.147652 & 8.340266 & 8.147652 & 11.000188 & 10.7446 & 11.00019 & 10.7446 & 11.08565 & 10.82863\end{array}$ $\begin{array}{llllllllllllllllll}7.782803 & 7.576863 & 7.782803 & 7.576863 & 7.832424 & 7.625877 & 8.279205 & 8.060357 & 8.02934 & 7.816044 & 8.02934 & 7.816044 & 10.59124 & 10.31229 & 10.59124 & 10.31229 & 10.67047 & 10.38961\end{array}$ $\begin{array}{lllllllllllllllllll}7.537078 & 7.230585 & 7.537078 & 7.230585 & 7.574568 & 7.266605 & 8.010741 & 7.684595 & 7.77615 & 7.458515 & 7.77615 & 7.458515 & 10.262812 & 9.848427 & 10.26281 & 9.848427 & 10.33439 & 9.916841\end{array}$ $\begin{array}{lllllllllllllllllllll}7.333141 & 7.109709 & 7.333141 & 7.109709 & 7.364884 & 7.141048 & 7.790778 & 7.553705 & 7.565731 & 7.334987 & 7.565731 & 7.334987 & 9.988099 & 9.683921 & 9.988099 & 9.683921 & 10.0554 & 9.749413\end{array}$ $\begin{array}{lllllllllllllllll}6.960413 & 6.748242 & 6.960413 & 6.748242 & 6.987553 & 6.775042 & 7.392623 & 7.167276 & 7.180753 & 6.960766 & 7.180753 & 6.960766 & 9.483191 & 9.19614 & 9.483191 & 9.19614 & 9.545518\end{array} 9.256604$ $\begin{array}{lllllllllllllllllll}6.749398 & 6.530213 & 6.749398 & 6.530213 & 6.772803 & 6.554443 & 7.166226 & 6.93438 & 6.962033 & 6.735287 & 6.962033 & 6.735287 & 9.19969 & 8.901347 & 9.19969 & 8.901347 & 9.258489 & 8.958897\end{array}$ $\begin{array}{llllllllllllllllll}6.580922 & 6.401765 & 6.580922 & 6.401765 & 6.602387 & 6.424387 & 6.986035 & 6.797267 & 6.78697 & 6.603003 & 6.78697 & 6.603003 & 8.973665 & 8.726565 & 8.973665 & 8.726565 & 9.030077 & 8.782456\end{array}$ $\begin{array}{llllllllllllllllll}16.585029 & 16.17214 & 16.58503 & 16.17214 & 16.87672 & 16.46101 & 17.76956 & 17.3311 & 17.11213 & 16.68896 & 17.11213 & 16.68896 & 22.449867 & 21.77258 & 22.44987 & 21.77258 & 22.71076 & 22.02794\end{array}$ $\begin{array}{lllllllllllllllllll}17.826167 & 17.2073 & 17.82617 & 17.2073 & 18.14942 & 17.52104 & 19.10809 & 18.44649 & 18.39983 & 17.76281 & 18.39983 & 17.76281 & 24.108527 & 23.26691 & 24.10853 & 23.26691 & 24.39507 & 23.54471\end{array}$ $\begin{array}{lllllllllllllllllll}17.905754 & 17.23866 & 17.90575 & 17.23866 & 18.23983 & 17.55981 & 19.2013 & 18.48566 & 18.4869 & 17.79826 & 18.4869 & 17.79826 & 24.199977 & 23.2983 & 24.19998 & 23.2983 & 24.49343 & 23.58059\end{array}$ $\begin{array}{lllllllllllllllllll}17.545129 & 16.81896 & 17.54513 & 16.81896 & 17.86795 & 17.12661 & 18.81186 & 18.03209 & 18.11571 & 17.36617 & 18.11571 & 17.36617 & 23.712644 & 22.73179 & 23.71264 & 22.73179 & 23.99824 & 23.00467\end{array}$ $\begin{array}{lllllllllllllllllll}16.398975 & 15.77083 & 16.39898 & 15.77083 & 16.68921 & 16.04959 & 17.57514 & 16.90147 & 16.93205 & 16.28298 & 16.93205 & 16.28298 & 22.171458 & 21.32362 & 22.17146 & 21.32362 & 22.43256 & 21.57444\end{array}$ $\begin{array}{llllllllllllllllll}14.434183 & 13.68562 & 14.43418 & 13.68562 & 14.67231 & 13.90732 & 15.45662 & 14.65204 & 14.90017 & 14.12674 & 14.90017 & 14.12674 & 19.532552 & 18.52397 & 19.53255 & 18.52397 & 19.75331 & 18.73105\end{array}$ $\begin{array}{lllllllllllllllllll}12.71077 & 12.14995 & 12.71077 & 12.14995 & 12.90047 & 12.32968 & 13.59694 & 12.99549 & 13.11911 & 12.53874 & 13.11911 & 12.53874 & 17.217393 & 16.46196 & 17.21739 & 16.46196 & 17.40144 & 16.63688\end{array}$ $\begin{array}{llllllllllllllllll}11.333488 & 10.54213 & 11.33349 & 10.54213 & 11.48747 & 10.67796 & 12.11258 & 11.26139 & 11.69502 & 10.87708 & 11.69502 & 10.87708 & 15.366657 & 14.30119 & 15.36666 & 14.30119 & 15.52284 & 14.44255\end{array}$ $\begin{array}{lllllllllllllllll}10.26522 & 9.740409 & 10.26522 & 9.740409 & 10.39032 & 9.85605 & 10.96084 & 10.39798 & 10.59173 & 10.0489 & 10.59173 & 10.0489 & 13.929251 & 13.22187 & 13.92925 & 13.22187 & 14.06343 \\ 13.34741\end{array}$ $\begin{array}{lllllllllllllllllllll}9.188943 & 8.788951 & 9.188943 & 8.788951 & 9.285155 & 8.878109 & 9.800155 & 9.371611 & 9.478692 & 9.06608 & 9.478692 & 9.06608 & 12.484055 & 11.94246 & 12.48406 & 11.94246 & 12.59589 & 12.04802\end{array}$ $\begin{array}{llllllllllllllllllll}8.38318 & 8.087616 & 8.38318 & 8.087616 & 8.455986 & 8.156981 & 8.930334 & 8.61498 & 8.646527 & 8.341979 & 8.646527 & 8.341979 & 11.400857 & 10.9988 & 11.40086 & 10.9988 & 11.49531 & 11.08956\end{array}$ $\begin{array}{llllllllllllllllll}8.031241 & 7.71295 & 8.031241 & 7.71295 & 8.093547 & 7.771156 & 8.550466 & 8.210639 & 8.283803 & 7.955983 & 8.283803 & 7.955983 & 10.926289 & 10.4933 & 10.92629 & 10.4933 & 11.01317 & 10.57601\end{array}$ $\begin{array}{lllllllllllllllllll}7.514244 & 7.290025 & 7.514244 & 7.290025 & 7.559455 & 7.334604 & 7.991668 & 7.753369 & 7.752184 & 7.519827 & 7.752184 & 7.519827 & 10.227662 & 9.92423 & 10.22766 & 9.92423 & 10.30282 & 9.997287\end{array}$ $\begin{array}{lllllllllllllllllll}7.129635 & 6.915016 & 7.129635 & 6.915016 & 7.162322 & 6.94749 & 7.575556 & 7.34796 & 7.354975 & 7.133284 & 7.354975 & 7.133284 & 9.711466 & 9.419294 & 9.711466 & 9.419294 & 9.777647 & 9.483795\end{array}$ $\begin{array}{lllllllllllllllll}6.79215 & 6.647153 & 6.79215 & 6.647153 & 6.819351 & 6.675058 & 7.213948 & 7.060861 & 7.005643 & 6.85627 & 7.005643 & 6.85627 & 9.256751 & 9.057952 & 9.256751 & 9.057952 & 9.317641\end{array} 9.118187$ $\begin{array}{lllllllllllllllll}6.820907 & 6.588683 & 6.820907 & 6.588683 & 6.84524 & 6.612828 & 7.242483 & 6.996052 & 7.035409 & 6.794896 & 7.035409 & 6.794896 & 9.297592 & 8.982718 & 9.297592 & 8.982718 & 9.35728\end{array} 9.040494$ $\begin{array}{lllllllllllllllllll}6.682294 & 6.42032 & 6.682294 & 6.42032 & 6.702713 & 6.441806 & 7.092783 & 6.815551 & 6.891753 & 6.62018 & 6.891753 & 6.62018 & 9.112245 & 8.756765 & 9.112245 & 8.756765 & 9.168901 & 8.811843\end{array}$ $\begin{array}{lllllllllllllllllllll}5.674867 & 15.0149 & 15.67487 & 15.0149 & 15.9463 & 15.2774 & 16.7908 & 16.08633 & 16.17101 & 15.49252 & 16.17101 & 15.49252 & 21.224778 & 20.32433 & 21.22478 & 20.32433 & 21.46884 & 20.55987\end{array}$ $\begin{array}{llllllllllllllllllll}16.493702 & 16.17218 & 16.4937 & 16.17218 & 16.78645 & 16.46285 & 17.67493 & 17.33343 & 17.02263 & 16.69262 & 17.02263 & 16.69262 & 22.31419 & 21.87333 & 22.31419 & 21.87333 & 22.57593 & 22.13201\end{array}$ $\begin{array}{llllllllllllllllllllll}17.041895 & 16.03992 & 17.0419 & 16.03992 & 17.35255 & 16.32815 & 18.2692 & 17.19207 & 17.59257 & 16.55754 & 17.59257 & 16.55754 & 23.042211 & 21.6912 & 23.04221 & 21.6912 & 23.31743 & 21.94807\end{array}$ $\begin{array}{llllllllllllllllllllll}16.189931 & 15.39262 & 16.18993 & 15.39262 & 16.47872 & 15.6643 & 17.35162 & 16.49515 & 16.71323 & 15.89 & 16.71323 & 15.89 & 21.893592 & 20.81753 & 21.89359 & 20.81753 & 22.15191 & 21.06177\end{array}$ $\begin{array}{lllllllllllllllllll}15.116154 & 14.49401 & 15.11615 & 14.49401 & 15.37588 & 14.74207 & 16.19381 & 15.52668 & 15.60385 & 14.96159 & 15.60385 & 14.96159 & 20.442181 & 19.60569 & 20.44218 & 19.60569 & 20.67853 & 19.83179\end{array}$ $\begin{array}{llllllllllllllll}13.63065 & 13.00854 & 13.63065 & 13.00854 & 13.8512 & 13.21611 & 14.59259 & 13.92449 & 14.06871 & 13.42605 & 14.06871 & 13.42605 & 18.452178 & 17.61308 & 18.45218 & 17.61308 \\ 18.65802 & 17.80801\end{array}$ $\begin{array}{lllllllllllllllllllll}12.049254 & 11.3435 & 12.04925 & 11.3435 & 12.22583 & 11.50672 & 12.88651 & 12.12897 & 12.43439 & 11.70379 & 12.43439 & 11.70379 & 16.327523 & 15.3779 & 16.32752 & 15.3779 & 16.49996 & 15.53833\end{array}$ $\begin{array}{lllllllllllllllllll}10.998086 & 10.56661 & 10.99809 & 10.56661 & 11.14741 & 10.70729 & 11.75368 & 11.29062 & 11.34769 & 10.90237 & 11.34769 & 10.90237 & 14.914621 & 14.33154 & 14.91462 & 14.33154 & 15.06585 & 14.47547\end{array}$ $\begin{array}{lllllllllllllllllllllll}9.846203 & 9.251244 & 9.846203 & 9.251244 & 9.965309 & 9.358843 & 10.51235 & 9.873878 & 10.15784 & 9.542941 & 10.15784 & 9.542941 & 13.36453 & 12.56201 & 13.36453 & 12.56201 & 13.49249 & 12.67989\end{array}$ $\begin{array}{llllllllllllllllllll}9.227075 & 8.770195 & 9.227075 & 8.770195 & 9.329418 & 8.863828 & 9.844678 & 9.354705 & 9.517881 & 9.046517 & 9.517881 & 9.046517 & 12.532567 & 11.91452 & 12.53257 & 11.91452 & 12.64768 & 12.0221\end{array}$ $\begin{array}{lllllllllllllllllllll}8.51369 & 8.161172 & 8.51369 & 8.161172 & 8.594835 & 8.237135 & 9.074301 & 8.697332 & 8.781297 & 8.417678 & 8.781297 & 8.417678 & 11.573518 & 11.09547 & 11.57352 & 11.09547 & 11.67302 & 11.18995\end{array}$ $\begin{array}{llllllllllllllllll}7.836027 & 7.61399 & 7.836027 & 7.61399 & 7.897918 & 7.674296 & 8.343009 & 8.106983 & 8.08128 & 7.853159 & 8.08128 & 7.853159 & 10.662504 & 10.35844 & 10.6625 & 10.35844 & 10.74758 & 10.44136\end{array}$ $\begin{array}{lllllllllllllllllll}7.525459 & 7.303547 & 7.525459 & 7.303547 & 7.577973 & 7.354854 & 8.007763 & 7.771973 & 7.761341 & 7.532819 & 7.761341 & 7.532819 & 10.243513 & 9.940469 & 10.24351 & 9.940469 & 10.32186 & 10.01677\end{array}$ $\begin{array}{lllllllllllllllll}7.308855 & 7.068177 & 7.308855 & 7.068177 & 7.354998 & 7.112037 & 7.774129 & 7.517523 & 7.5384 & 7.289926 & 7.5384 & 7.289926 & 9.950722 & 9.624075 & 9.950722 & 9.624075 & 10.02453 \\ 9.695008\end{array}$ $\begin{array}{lllllllllllllllllllll}6.996741 & 6.819579 & 6.996741 & 6.819579 & 7.035087 & 6.857669 & 7.438046 & 7.250108 & 7.216027 & 7.03302 & 7.216027 & 7.03302 & 9.53048 & 9.289314 & 9.53048 & 9.289314 & 9.598159 & 9.355576\end{array}$ $\begin{array}{llllllllllllllllll} \\ 6.947669 & 6.697304 & 6.947669 & 6.697304 & 6.981559 & 6.731127 & 7.394407 & 7.12762 & 7.166337 & 6.906833 & 7.166337 & 6.906833 & 9.464271 & 9.125209 & 9.464271 & 9.125209 & 9.529597 & 9.18849\end{array}$ $\begin{array}{llllllllllllllllllll}6.646633 & 6.484177 & 6.646633 & 6.484177 & 6.675292 & 6.513419 & 7.060438 & 6.88875 & 6.854389 & 6.686938 & 6.854389 & 6.686938 & 9.059279 & 8.834937 & 9.059279 & 8.834937 & 9.119647 & 8.894429\end{array}$ $\begin{array}{llllllllllllllllllllll}6.722594 & 6.484462 & 6.722594 & 6.484462 & 6.747584 & 6.509769 & 7.138662 & 6.886146 & 6.933599 & 6.686465 & 6.933599 & 6.686465 & 9.163791 & 8.841688 & 9.163791 & 8.841688 & 9.223032 & 8.89912\end{array}$ $\begin{array}{lllllllllllllllllll}6.595936 & 6.37204 & 6.595936 & 6.37204 & 6.617123 & 6.393494 & 7.001698 & 6.764365 & 6.802309 & 6.570293 & 6.802309 & 6.570293 & 8.994598 & 8.691047 & 8.994598 & 8.691047 & 9.050959 & 8.745763\end{array}$ $\begin{array}{lllllllllllllllllll}14.901849 & 14.53796 & 14.90185 & 14.53796 & 15.1601 & 14.79176 & 15.96334 & 15.57519 & 15.37504 & 15.00082 & 15.37504 & 15.00082 & 20.174826 & 19.67818 & 20.17483 & 19.67818 & 20.40725 & 19.90605\end{array}$ $\begin{array}{lllllllllllllllllll}15.317188 & 14.70074 & 15.31719 & 14.70074 & 15.58724 & 14.95908 & 16.41257 & 15.75143 & 15.80718 & 15.17094 & 15.80718 & 15.17094 & 20.726536 & 19.89306 & 20.72654 & 19.89306 & 20.96838 & 20.12473\end{array}$ $\begin{array}{lllllllllllllllllllll}15.7703 & 14.87569 & 15.7703 & 14.87569 & 16.04763 & 15.13522 & 16.89829 & 15.93828 & 16.2773 & 15.35354 & 16.2773 & 15.35354 & 21.334718 & 20.1265 & 21.33472 & 20.1265 & 21.58385 & 20.3604\end{array}$ $\begin{array}{lllllllllllllllllll}4.961533 & 14.12486 & 14.96153 & 14.12486 & 15.22059 & 14.36521 & 16.0288 & 15.12954 & 15.44197 & 14.57819 & 15.44197 & 14.57819 & 20.244079 & 19.11528 & 20.24408 & 19.11528 & 20.47838 & 19.33441\end{array}$ $\begin{array}{llllllllllllllllllllll}4.077305 & 13.45764 & 14.07731 & 13.45764 & 14.31241 & 13.68026 & 15.0755 & 14.41043 & 14.52887 & 13.88917 & 14.52887 & 13.88917 & 19.054327 & 18.21718 & 19.05433 & 18.21718 & 19.27035 & 18.42266\end{array}$ $\begin{array}{lllllllllllllllllll}12.907536 & 12.15674 & 12.90754 & 12.15674 & 13.11153 & 12.3447 & 13.81463 & 13.00781 & 13.32046 & 12.54423 & 13.32046 & 12.54423 & 17.480388 & 16.46933 & 17.48039 & 16.46933 & 17.6726 & 16.64797\end{array}$ $\begin{array}{lllllllllllllllllllllllll}11.398359 & 10.98835 & 11.39836 & 10.98835 & 11.56204 & 11.14565 & 12.18739 & 11.74832 & 11.76037 & 11.33616 & 11.76037 & 11.33616 & 15.452536 & 14.89955 & 15.45254 & 14.89955 & 15.6136 & 15.05435\end{array}$ $\begin{array}{lllllllllllllllllll}10.571471 & 10.18684 & 10.57147 & 10.18684 & 10.71287 & 10.32094 & 11.29581 & 10.88327 & 10.90587 & 10.50879 & 10.90587 & 10.50879 & 14.340936 & 13.82103 & 14.34094 & 13.82103 & 14.4849 & 13.9587\end{array}$ $\begin{array}{lllllllllllllllllll}9.913713 & 9.24545 & 9.913713 & 9.24545 & 10.03647 & 9.35446 & 10.58622 & 9.868343 & 10.22707 & 9.535792 & 10.22707 & 9.535792 & 13.455266 & 12.55574 & 13.45527 & 12.55574 & 13.58543 & 12.67405\end{array}$ $\begin{array}{llllllllllllllllllll}9.000391 & 8.597075 & 9.000391 & 8.597075 & 9.099696 & 8.688423 & 9.601984 & 9.16922 & 9.282524 & 8.866196 & 9.282524 & 8.866196 & 12.228268 & 11.68332 & 12.22827 & 11.68332 & 12.33999 & 11.78823\end{array}$ $\begin{array}{llllllllllllllllll}8.772891 & 8.193713 & 8.772891 & 8.193713 & 8.86039 & 8.270857 & 9.353265 & 8.73215 & 9.048831 & 8.449783 & 9.048831 & 8.449783 & 11.922996 & 11.14226 & 11.923 & 11.14226 & 12.02751 & 11.23726\end{array}$ $\begin{array}{lllllllllllllllllll} \\ 7.99302 & 7.68658 & 7.99302 & 7.68658 & 8.062431 & 7.751142 & 8.514381 & 8.186525 & 8.243045 & 7.927203 & 8.243045 & 7.927203 & 10.872478 & 10.45662 & 10.87248 & 10.45662 & 10.96233 & 10.54199\end{array}$ $\begin{array}{lllllllllllllllllllll}7.414475 & 7.191094 & 7.414475 & 7.191094 & 7.468421 & 7.2434 & 7.890821 & 7.653168 & 7.645731 & 7.415739 & 7.645731 & 7.415739 & 10.093505 & 9.788669 & 10.09351 & 9.788669 & 10.17157 & 9.864447 \\ 7.166563 & 6.87699 & 7.166563 & 6.87699 & 7.212736 & 6.920936 & 7.623084 & 7.314425 & 7.390608 & 7.090706 & 7.390608 & 7.090706 & 9.758638 & 9.36732 & 9.758638 & 9.36732 & 9.831257 & 9.436566\end{array}$


 2026_ALT1_C 2026_ALT1_ 2026_NP_C 2026_NP_N 2026_ALT3_ 2026_ALT3_ 2026_ALT4_ 2026_ALT4_ 2026_ALT5_ 2026_ALT5_ 2026_PP_CA 2026_PP_N 2033_ALT1_C 2033_ALT1_ 2033_NP_C 2033_NP_N 2033_ALT3_ 2033_ALT3_

Source Scaling Factor AAQ | 028095 | 6.748538 | 7.028095 | 6.748538 | 7.069109 | 6.786799 | 7.473032 | 7.17458 | 7.248275 | 6.958533 | 7.248275 | 6.958533 | 9.571803 | 9.194759 | 9.571803 | 9.194759 | 9.640996 | 9.260373 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

$387450 \quad 373835065.43 \%$
$387950 \quad 373835065.54 \%$ $388450 \quad 373835062.09 \%$ $388950 \quad 373835062.20 \%$ $389450 \quad 373835063.93 \%$ $380450 \quad 373885076.08 \%$ $380950 \quad 373885072.42 \%$ $381450 \quad 373885075.49 \%$ $381950 \quad 373885075.30 \%$ $382450 \quad 3738850$ 69.31\% $382950 \quad 3738850 \quad 72.85 \%$ $383450 \quad 373885066.99 \%$ 383950 3738850 66.02\% $384450 \quad 373885063.07 \%$ $384950 \quad 3738850$ 68.72\% $385450 \quad 373885055.99 \%$ $385950 \quad 373885057.96 \%$ $386450 \quad 3738850$ 60.12\% $386950 \quad 373885057.87 \%$ $387450 \quad 373885057.60 \%$ $387950 \quad 373885063.06 \%$ $388450373885064.46 \%$ $388950 \quad 373885062.50 \%$ $389450 \quad 373885065.28 \%$ $380450 \quad 373935076.01 \%$ $380950373935069.93 \%$ $381450 \quad 373935074.35 \%$ $381950 \quad 373935075.29 \%$ $382450373935070.12 \%$ $382950 \quad 373935072.49 \%$ $383450 \quad 373935064.78 \%$ $383950 \quad 373935069.65 \%$ $384450 \quad 373935060.53 \%$ $384950 \quad 3739350$ 61.91\% $385450373935061.99 \%$ $385950373935058.16 \%$ $386450 \quad 373935057.22 \%$ $386950373935061.43 \%$ $387450 \quad 373935058.71 \%$ $387950 \quad 373935057.64 \%$ $388450 \quad 373935060.01 \%$ $388950 \quad 373935063.92 \%$ $389450373935062.66 \%$ $380450 \quad 373985074.79 \%$ $380950373985073.94 \%$ $381450 \quad 373985074.33 \%$ $381950 \quad 373985074.59 \%$ $382450 \quad 373985069.77 \%$ $382950 \quad 373985073.32 \%$ 383450 3739850 67.23\% 3839503739850 68.85\% $384450373985065.18 \%$ $384950 \quad 373985065.61 \%$ $385450 \quad 373985064.49 \%$ $385950 \quad 373985054.54 \%$ $386450 \quad 373985060.22 \%$ 386950 3739850 57.94\% 387450 3739850 61.75\% 387950 3739850 59.57\% $388450 \quad 3739850 \quad 56.43 \%$ $388950 \quad 373985057.22 \%$ $389450 \quad 373985061.70 \%$ $380450 \quad 374035071.54 \%$ $380950374035070.98 \%$ $381450 \quad 374035077.02 \%$ 381950 3740350 74.21\% $382450 \quad 374035069.94 \%$ $382950 \quad 374035073.39 \%$ $383450 \quad 374035070.75 \%$ $383950 \quad 374035065.95 \%$ $384450 \quad 374035064.82 \%$ $384950 \quad 374035061.23 \%$ 3854503740350 61.12\% 385950 3740350 61.71\% $386450374035053.96 \%$ $386950374035062.38 \%$ $387450374035058.55 \%$ $387950 \quad 374035062.11 \%$ $388450 \quad 374035060.44 \%$ 388950 3740350 57.45\% 389450 3740350 59.61\% $380450 \quad 374085071.16 \%$ $380950 \quad 374085077.11 \%$ $381450 \quad 374085074.20 \%$ $381950 \quad 374085075.09 \%$ $382450 \quad 374085069.68 \%$ 382950 3740850 73.03\%
$\begin{array}{llllllllllllllllllll}6.802468 & 6.527782 & 6.802468 & 6.527782 & 6.836897 & 6.560806 & 7.229415 & 6.936978 & 7.015106 & 6.730208 & 7.015106 & 6.730208 & 9.268814 & 8.897987 & 9.268814 & 8.897987 & 9.333105 & 8.959353\end{array}$ $\begin{array}{lllllllllllllllllll}6.500013 & 6.337414 & 6.500013 & 6.337414 & 6.529134 & 6.366559 & 6.906477 & 6.743011 & 6.702414 & 6.535133 & 6.702414 & 6.535133 & 8.860739 & 8.637762 & 8.860739 & 8.637762 & 8.920147 & 8.696137\end{array}$ $\begin{array}{llllllllllllllllll}6.613464 & 6.465081 & 6.613464 & 6.465081 & 6.639357 & 6.4917 & 7.02326 & 6.866687 & 6.813651 & 6.662109 & 6.813651 & 6.662109 & 9.009038 & 8.806649 & 9.009038 & 8.806649 & 9.067593 & 8.86462\end{array}$ $\begin{array}{llllllllllllllllllll}6.459357 & 6.272953 & 6.459357 & 6.272953 & 6.481477 & 6.295569 & 6.857296 & 6.660049 & 6.660297 & 6.467657 & 6.660297 & 6.467657 & 8.809969 & 8.555929 & 8.809969 & 8.555929 & 8.865614 & 8.610438\end{array}$ $\begin{array}{lllllllllllllllll}13.572949 & 13.19534 & 13.57295 & 13.19534 & 13.805 & 13.42047 & 14.53703 & 14.13233 & 13.98519 & 13.61168 & 13.98519 & 13.61168 & 18.360245 & 17.8692 & 18.36025 & 17.8692 & 18.56964\end{array} 18.07292$ $\begin{array}{llllllllllllllllll}14.17396 & 13.6626 & 14.17396 & 13.6626 & 14.41852 & 13.89746 & 15.18313 & 14.63471 & 14.62469 & 14.09679 & 14.62469 & 14.09679 & 19.188442 & 18.49729 & 19.18844 & 18.49729 & 19.40911 & 18.70948\end{array}$ $\begin{array}{lllllllllllllllllll}14.0042 & 13.41042 & 14.0042 & 13.41042 & 14.24334 & 13.63701 & 14.99984 & 14.36229 & 14.45049 & 13.83782 & 14.45049 & 13.83782 & 18.958183 & 18.15595 & 18.95818 & 18.15595 & 19.1752 & 18.36256\end{array}$ $\begin{array}{lllllllllllllllllll}13.681034 & 12.86287 & 13.68103 & 12.86287 & 13.90977 & 13.07496 & 14.6507 & 13.77201 & 14.11778 & 13.27194 & 14.11778 & 13.27194 & 18.522009 & 17.41949 & 18.52201 & 17.41949 & 18.73176 & 17.6149\end{array}$ $\begin{array}{llllllllllllllllllllll}13.13221 & 12.53941 & 13.13221 & 12.53941 & 13.34432 & 12.73998 & 14.05767 & 13.42175 & 13.55061 & 12.93889 & 13.55061 & 12.93889 & 17.785473 & 16.98393 & 17.78547 & 16.98393 & 17.98296 & 17.17147\end{array}$ $\begin{array}{lllllllllllllllll}2.206174 & 11.62677 & 12.20617 & 11.62677 & 12.3938 & 11.80273 & 13.05975 & 12.43766 & 12.59445 & 11.99578 & 12.59445 & 11.99578 & 16.538653 & 15.75702 & 16.53865 & 15.75702 & 16.71739\end{array} 15.92574$ $\begin{array}{llllllllllllllllll}11.144702 & 10.70549 & 11.1447 & 10.70549 & 11.30394 & 10.85704 & 11.91528 & 11.4444 & 11.49744 & 11.04322 & 11.49744 & 11.04322 & 15.111727 & 14.51935 & 15.11173 & 14.51935 & 15.26861 & 14.66923\end{array}$ $\begin{array}{llllllllllllllllllll}10.244316 & 9.757198 & 10.24432 & 9.757198 & 10.37898 & 9.882347 & 10.94421 & 10.42142 & 10.56699 & 10.06365 & 10.56699 & 10.06365 & 13.901504 & 13.24433 & 13.9015 & 13.24433 & 14.03963 & 13.37418\end{array}$ $\begin{array}{lllllllllllllllllllll}9.642411 & 9.252283 & 9.642411 & 9.252283 & 9.760735 & 9.364102 & 10.29538 & 9.877314 & 9.945851 & 9.542324 & 9.945851 & 9.542324 & 13.090572 & 12.56437 & 13.09057 & 12.56437 & 13.21638 & 12.68402\end{array}$ $\begin{array}{lllllllllllllllll}8.97521 & 8.377384 & 8.97521 & 8.377384 & 9.07638 & 8.465475 & 9.576373 & 8.93387 & 9.255904 & 8.638242 & 9.255904 & 8.638242 & 12.194088 & 11.38827 & 12.19409 & 11.38827 & 12.30642\end{array} 11.48977$ $\begin{array}{lllllllllllllllllll}8.321393 & 8.00832 & 8.321393 & 8.00832 & 8.403871 & 8.086825 & 8.871064 & 8.536532 & 8.58156 & 8.25806 & 8.58156 & 8.25806 & 11.313032 & 10.88933 & 11.31303 & 10.88933 & 11.41159 & 10.98362\end{array}$ $\begin{array}{llllllllllllllllllll}8.009921 & 7.597601 & 8.009921 & 7.597601 & 8.082966 & 7.663104 & 8.534618 & 8.092687 & 8.260049 & 7.834709 & 8.260049 & 7.834709 & 10.894231 & 10.33612 & 10.89423 & 10.33612 & 10.98591 & 10.42118\end{array}$ $\begin{array}{llllllllllllllllllll}7.640713 & 7.305038 & 7.640713 & 7.305038 & 7.701283 & 7.36157 & 8.135064 & 7.776718 & 7.879359 & 7.533115 & 7.879359 & 7.533115 & 10.397641 & 9.941918 & 10.39764 & 9.941918 & 10.48062 & 10.02055\end{array}$ $\begin{array}{lllllllllllllllllll}7.101615 & 6.851463 & 7.101615 & 6.851463 & 7.149399 & 6.897964 & 7.555095 & 7.289177 & 7.322726 & 7.064574 & 7.322726 & 7.064574 & 9.670842 & 9.330411 & 9.670842 & 9.330411 & 9.743629 & 9.400789\end{array}$ $\begin{array}{llllllllllllllllllll}6.825573 & 6.560409 & 6.825573 & 6.560409 & 6.865784 & 6.599135 & 7.257607 & 6.975325 & 7.038252 & 6.763582 & 7.038252 & 6.763582 & 9.298203 & 8.939537 & 9.298203 & 8.939537 & 9.365365 & 9.003885\end{array}$ $\begin{array}{lllllllllllllllllll}6.626848 & 6.391377 & 6.626848 & 6.391377 & 6.662117 & 6.425378 & 7.043623 & 6.793003 & 6.832946 & 6.589096 & 6.832946 & 6.589096 & 9.03064 & 8.712004 & 9.03064 & 8.712004 & 9.093929 & 8.772824\end{array}$ $\begin{array}{lllllllllllllllllll}6.408574 & 6.154059 & 6.408574 & 6.154059 & 6.439015 & 6.183367 & 6.809079 & 6.538426 & 6.607719 & 6.344339 & 6.607719 & 6.344339 & 8.73581 & 8.390887 & 8.73581 & 8.390887 & 8.795176 & 8.447743\end{array}$ $\begin{array}{llllllllllllllllll}6.315139 & 6.157381 & 6.315139 & 6.157381 & 6.341076 & 6.183942 & 6.706915 & 6.540199 & 6.510953 & 6.328917 & 6.510953 & 6.328917 & 8.611946 & 8.371313 & 8.611946 & 8.371313 & 8.668337 & 8.426514\end{array}$ $\begin{array}{llllllllllllllllll}6.373272 & 6.113007 & 6.373272 & 6.113007 & 6.396572 & 6.136281 & 6.766886 & 6.49078 & 6.560658 & 6.298396 & 6.560658 & 6.298396 & 8.677753 & 8.330644 & 8.677753 & 8.330644 & 8.73315 & 8.384062\end{array}$ $\begin{array}{lllllllllllllllllllll}12.859206 & 12.36614 & 12.85921 & 12.36614 & 13.07354 & 12.57079 & 13.76835 & 13.2393 & 13.18181 & 12.73954 & 13.18181 & 12.73954 & 17.316171 & 16.73675 & 17.31617 & 16.73675 & 17.51021 & 16.92382\end{array}$ $\begin{array}{lllllllllllllllll}13.206883 & 12.66864 & 13.20688 & 12.66864 & 13.42717 & 12.87903 & 14.14139 & 13.56422 & 13.6245 & 13.06855 & 13.6245 & 13.06855 & 17.889054 & 17.16185 & 17.88905 & 17.16185 & 18.09049\end{array} 17.35445$ $\begin{array}{llllllllllllllllllll}12.889497 & 12.56154 & 12.8895 & 12.56154 & 13.10109 & 12.76816 & 13.7993 & 13.44858 & 13.29737 & 12.95948 & 13.29737 & 12.95948 & 17.460815 & 17.01509 & 17.46082 & 17.01509 & 17.65573 & 17.20538\end{array}$ $\begin{array}{lllllllllllllllllll}12.67613 & 11.94845 & 12.67613 & 11.94845 & 12.88147 & 12.13912 & 13.56921 & 12.7879 & 13.07805 & 12.32602 & 13.07805 & 12.32602 & 17.171624 & 16.19034 & 17.17162 & 16.19034 & 17.36209 & 16.3683\end{array}$ $\begin{array}{llllllllllllllllllll}12.156158 & 11.73328 & 12.15616 & 11.73328 & 12.34582 & 11.91623 & 13.00737 & 12.55491 & 12.54062 & 12.10463 & 12.54062 & 12.10463 & 16.473798 & 15.90028 & 16.4738 & 15.90028 & 16.65281 & 16.07299\end{array}$ $\begin{array}{lllllllllllllllll}11.501628 & 11.13604 & 11.50163 & 11.13604 & 11.67241 & 11.30112 & 12.30088 & 11.90997 & 11.86449 & 11.48823 & 11.86449 & 11.48823 & 15.58308 & 15.09644 & 15.58308 & 15.09644 & 15.7556\end{array} 15.25647$ $\begin{array}{lllllllllllllllllll}10.757424 & 10.28176 & 10.75742 & 10.28176 & 10.90842 & 10.42421 & 11.49896 & 10.98895 & 11.09657 & 10.60493 & 11.09657 & 10.60493 & 14.591121 & 13.94916 & 14.59112 & 13.94916 & 14.74094 & 14.09135\end{array}$ $\begin{array}{llllllllllllllllll}9.863344 & 9.327389 & 9.863344 & 9.327389 & 9.990417 & 9.443869 & 10.53504 & 9.95977 & 10.17264 & 9.618874 & 10.17264 & 9.618874 & 13.389061 & 12.66597 & 13.38906 & 12.66597 & 13.52051 & 12.78825\end{array}$ $\begin{array}{llllllllllllllllll}9.325633 & 8.985638 & 9.325633 & 8.985638 & 9.437539 & 9.093008 & 9.95498 & 9.591504 & 9.617646 & 9.266259 & 9.617646 & 9.266259 & 12.665189 & 12.20531 & 12.66519 & 12.20531 & 12.78533 & 12.3207\end{array}$ $\begin{array}{llllllllllllllllllll}8.782957 & 8.445319 & 8.782957 & 8.445319 & 8.880979 & 8.537317 & 9.37022 & 9.008437 & 9.056455 & 8.708187 & 9.056455 & 8.708187 & 11.936018 & 11.47886 & 11.93602 & 11.47886 & 12.04524 & 11.58274\end{array}$ $\begin{array}{llllllllllllllllllll}8.329139 & 7.700457 & 8.329139 & 7.700457 & 8.41296 & 7.772113 & 8.880056 & 8.205217 & 8.589138 & 7.938845 & 8.589138 & 7.938845 & 11.323677 & 10.47682 & 11.32368 & 10.47682 & 11.42287 & 10.56526\end{array}$ $\begin{array}{lllllllllllllllllll}7.785106 & 7.560326 & 7.785106 & 7.560326 & 7.855526 & 7.628096 & 8.294367 & 8.054592 & 8.027159 & 7.795793 & 8.027159 & 7.795793 & 10.591041 & 10.2848 & 10.59104 & 10.2848 & 10.67967 & 10.37062\end{array}$ $\begin{array}{llllllllllllllllll}7.555916 & 7.149612 & 7.555916 & 7.149612 & 7.619088 & 7.206216 & 8.046797 & 7.611789 & 7.791242 & 7.371784 & 7.791242 & 7.371784 & 10.281637 & 9.731793 & 10.28164 & 9.731793 & 10.36517 & 9.809186\end{array}$ $\begin{array}{llllllllllllllllll}7.121986 & 6.805088 & 7.121986 & 6.805088 & 7.174142 & 6.853488 & 7.579437 & 7.241229 & 7.343057 & 7.016346 & 7.343057 & 7.016346 & 9.69735 & 9.266719 & 9.69735 & 9.266719 & 9.772296 & 9.337635\end{array}$ $\begin{array}{llllllllllllllllllll}6.783035 & 6.535133 & 6.783035 & 6.535133 & 6.82557 & 6.576215 & 7.213857 & 6.950068 & 6.993529 & 6.737277 & 6.993529 & 6.737277 & 9.240444 & 8.904074 & 9.240444 & 8.904074 & 9.308307 & 8.969362\end{array}$ $\begin{array}{lllllllllllllllllll}6.482818 & 6.313403 & 6.482818 & 6.313403 & 6.517846 & 6.348063 & 6.890635 & 6.710759 & 6.683605 & 6.508372 & 6.683605 & 6.508372 & 8.835827 & 8.605782 & 8.835827 & 8.605782 & 8.897827 & 8.666327\end{array}$ $\begin{array}{lllllllllllllllll}6.30017 & 6.039625 & 6.30017 & 6.039625 & 6.331783 & 6.06966 & 6.694819 & 6.417425 & 6.495203 & 6.225498 & 6.495203 & 6.225498 & 8.58858 & 8.235927 & 8.58858 & 8.235927 & 8.647606 \\ 8.292169\end{array}$ $\begin{array}{lllllllllllllllllll}6.21107 & 5.997782 & 6.21107 & 5.997782 & 6.238648 & 6.024386 & 6.597592 & 6.370871 & 6.402957 & 6.18265 & 6.402957 & 6.18265 & 8.47018 & 8.180273 & 8.47018 & 8.180273 & 8.52655 & 8.234597\end{array}$ $\begin{array}{llllllllllllllllllllllll}6.057152 & 5.866079 & 6.057152 & 5.866079 & 6.080943 & 5.889546 & 6.431853 & 6.229145 & 6.243867 & 6.046543 & 6.243867 & 6.046543 & 8.263127 & 8.002963 & 8.263127 & 8.002963 & 8.316462 & 8.054756\end{array}$ $\begin{array}{lllllllllllllllllll}2.142472 & 11.62853 & 12.14247 & 11.62853 & 12.33987 & 11.81555 & 12.99683 & 12.44516 & 12.52219 & 11.88256 & 12.52219 & 11.88256 & 16.459365 & 15.62365 & 16.45937 & 15.62365 & 16.64117 & 15.79448\end{array}$ $\begin{array}{lllllllllllllllll}11.973879 & 11.59357 & 11.97388 & 11.59357 & 12.16677 & 11.78015 & 12.81558 & 12.40837 & 12.34945 & 11.95725 & 12.34945 & 11.95725 & 16.229648 & 15.71421 & 16.22965 & 15.71421 & 16.40827\end{array} 15.88708$ $\begin{array}{lllllllllllllllllll}11.975198 & 11.58824 & 11.9752 & 11.58824 & 12.16641 & 11.77279 & 12.81595 & 12.40165 & 12.35146 & 11.95272 & 12.35146 & 11.95272 & 16.231112 & 15.70612 & 16.23111 & 15.70612 & 16.4091 & 15.87819\end{array}$ $\begin{array}{lllllllllllllllllllll}11.860356 & 11.27831 & 11.86036 & 11.27831 & 12.0471 & 11.45317 & 12.69142 & 12.06675 & 12.23356 & 11.6331 & 12.23356 & 11.6331 & 16.075971 & 15.28896 & 16.07597 & 15.28896 & 16.25099 & 15.45405\end{array}$ $\begin{array}{llllllllllllllllllll}1.351073 & 10.90366 & 11.35107 & 10.90366 & 11.52319 & 11.06784 & 12.14189 & 11.66261 & 11.70789 & 11.24668 & 11.70789 & 11.24668 & 15.390559 & 14.78408 & 15.39056 & 14.78408 & 15.55474 & 14.94127\end{array}$ $\begin{array}{lllllllllllllllllll}10.835575 & 10.5166 & 10.83558 & 10.5166 & 10.99207 & 10.66974 & 11.58507 & 11.24492 & 11.17582 & 10.84692 & 11.17582 & 10.84692 & 14.697256 & 14.26363 & 14.69726 & 14.26363 & 14.85005 & 14.41261\end{array}$ $\begin{array}{lllllllllllllllllll}10.357134 & 9.788136 & 10.35713 & 9.788136 & 10.50058 & 9.920533 & 11.06937 & 10.45874 & 10.68234 & 10.09432 & 10.68234 & 10.09432 & 14.05213 & 13.2846 & 14.05213 & 13.2846 & 14.19521 & 13.41801\end{array}$ $\begin{array}{lllllllllllllllllll}9.494036 & 9.105075 & 9.494036 & 9.105075 & 9.614799 & 9.218944 & 10.13917 & 9.722198 & 9.790605 & 9.38864 & 9.790605 & 9.38864 & 12.891127 & 12.36604 & 12.89113 & 12.36604 & 13.01666 & 12.4853\end{array}$ $\begin{array}{lllllllllllllllllllll}9.104047 & 8.602677 & 9.104047 & 8.602677 & 9.212135 & 8.701872 & 9.717333 & 9.179719 & 9.388057 & 8.869518 & 9.388057 & 8.869518 & 12.367206 & 11.69125 & 12.36721 & 11.69125 & 12.48372 & 11.79959\end{array}$ $\begin{array}{llllllllllllllllll}8.644937 & 8.333113 & 8.644937 & 8.333113 & 8.741947 & 8.4246 & 9.223088 & 8.888979 & 8.91334 & 8.591657 & 8.91334 & 8.591657 & 11.749818 & 11.32765 & 11.74982 & 11.32765 & 11.85742 & 11.43034\end{array}$ $\begin{array}{lllllllllllllllllllllll}8.32959 & 7.759792 & 8.32959 & 7.759792 & 8.415407 & 7.834422 & 8.88178 & 8.270031 & 8.589246 & 7.999801 & 8.589246 & 7.999801 & 11.323782 & 10.55654 & 11.32378 & 10.55654 & 11.42389 & 10.6468\end{array}$ $\begin{array}{lllllllllllllllllllll}7.703325 & 7.30381 & 7.703325 & 7.30381 & 7.773839 & 7.366561 & 8.207614 & 7.778972 & 7.942233 & 7.529712 & 7.942233 & 7.529712 & 10.480549 & 9.940876 & 10.48055 & 9.940876 & 10.56853 & 10.02214\end{array}$ $\begin{array}{lllllllllllllllllll}7.381223 & 7.1465 & 7.381223 & 7.1465 & 7.443394 & 7.20581 & 7.860729 & 7.610135 & 7.610023 & 7.367912 & 7.610023 & 7.367912 & 10.045947 & 9.727291 & 10.04595 & 9.727291 & 10.12755 & 9.805859\end{array}$ $\begin{array}{lllllllllllllllllll}7.111959 & 6.749957 & 7.111959 & 6.749957 & 7.167241 & 6.799573 & 7.570809 & 7.183379 & 7.332282 & 6.958642 & 7.332282 & 6.958642 & 9.682626 & 9.192487 & 9.682626 & 9.192487 & 9.758972 & 9.263452\end{array}$ $\begin{array}{llllllllllllllllllll}6.784975 & 6.483206 & 6.784975 & 6.483206 & 6.831037 & 6.525397 & 7.218093 & 6.895682 & 6.994864 & 6.683269 & 6.994864 & 6.683269 & 9.242282 & 8.833426 & 9.242282 & 8.833426 & 9.311757 & 8.898819\end{array}$ $\begin{array}{llllllllllllllllllll}6.451445 & 6.203909 & 6.451445 & 6.203909 & 6.489425 & 6.239988 & 6.859199 & 6.595232 & 6.650579 & 6.393847 & 6.650579 & 6.393847 & 8.792564 & 8.458752 & 8.792564 & 8.458752 & 8.855663 & 8.51892\end{array}$ $\begin{array}{llllllllllllllllll}6.178876 & 5.958285 & 6.178876 & 5.958285 & 6.21049 & 5.989372 & 6.566086 & 6.331552 & 6.369331 & 6.140202 & 6.369331 & 6.140202 & 8.424587 & 8.127156 & 8.424587 & 8.127156 & 8.482639 & 8.18308\end{array}$ $\begin{array}{llllllllllllllllll}6.108693 & 5.892495 & 6.108693 & 5.892495 & 6.137003 & 5.91892 & 6.489555 & 6.258986 & 6.297122 & 6.073339 & 6.297122 & 6.073339 & 8.330447 & 8.038137 & 8.330447 & 8.038137 & 8.38641 & 8.091501\end{array}$ $\begin{array}{llllllllllllllllllll}5.934841 & 5.786796 & 5.934841 & 5.786796 & 5.959264 & 5.810461 & 6.302469 & 6.145161 & 6.116925 & 5.964376 & 6.116925 & 5.964376 & 8.09741 & 7.895434 & 8.09741 & 7.895434 & 8.150067 & 7.946703\end{array}$ $\begin{array}{lllllllllllllllllll}1.59055 & 11.2029 & 11.59055 & 11.2029 & 11.77374 & 11.37921 & 12.40196 & 11.98668 & 11.95115 & 11.55152 & 11.95115 & 11.55152 & 15.718522 & 15.19313 & 15.71852 & 15.19313 & 15.88912 & 15.3577\end{array}$ $\begin{array}{lllllllllllllllll}11.619715 & 11.0337 & 11.61972 & 11.0337 & 11.80363 & 11.20512 & 12.43381 & 11.80442 & 11.98276 & 11.378 & 11.98276 & 11.378 & 15.754616 & 14.96302 & 15.75462 & 14.96302 & 15.92609\end{array} 15.12416$ $\begin{array}{lllllllllllllllllllll}11.196895 & 10.71016 & 11.1969 & 10.71016 & 11.37094 & 10.8757 & 11.97926 & 11.45767 & 11.54688 & 11.04424 & 11.54688 & 11.04424 & 15.183013 & 14.52504 & 15.18301 & 14.52504 & 15.34674 & 14.68102\end{array}$ $\begin{array}{lllllllllllllllllll}1.171201 & 10.65922 & 11.1712 & 10.65922 & 11.34157 & 10.81984 & 11.94969 & 11.40061 & 11.52085 & 10.99249 & 11.52085 & 10.99249 & 15.149219 & 14.4569 & 15.14922 & 14.4569 & 15.3111 & 14.61021\end{array}$ $\begin{array}{lllllllllllllllll}10.770681 & 10.27447 & 10.77068 & 10.27447 & 10.92975 & 10.42437 & 11.51764 & 10.98571 & 11.10746 & 10.59555 & 11.10746 & 10.59555 & 14.610077 & 13.93853 & 14.61008 & 13.93853 & 14.76343\end{array} 14.08389$ $\begin{array}{lllllllllllllllll}10.30936 & 9.885632 & 10.30936 & 9.885632 & 10.4549 & 10.02516 & 11.01975 & 10.56654 & 10.63164 & 10.19379 & 10.63164 & 10.19379 & 13.988669 & 13.41558 & 13.98867 & 13.41558 & 14.13213\end{array} 13.55296$ $\begin{array}{llllllllllllllllllllllll}9.852383 & 9.277225 & 9.852383 & 9.277225 & 9.988829 & 9.399459 & 10.53523 & 9.9101 & 10.1601 & 9.564817 & 10.1601 & 9.564817 & 13.372366 & 12.59538 & 13.37237 & 12.59538 & 13.50691 & 12.71992\end{array}$ $\begin{array}{lllllllllllllllllllll}9.176993 & 8.973048 & 9.176993 & 8.973048 & 9.291578 & 9.085904 & 9.79875 & 9.581432 & 9.462454 & 9.251793 & 9.462454 & 9.251793 & 12.464556 & 12.18784 & 12.46456 & 12.18784 & 12.58462 & 12.30555\end{array}$ $\begin{array}{lllllllllllllllll}8.58658 & 8.124483 & 8.58658 & 8.124483 & 8.686493 & 8.215152 & 9.163122 & 8.666945 & 8.852788 & 8.374949 & 8.852788 & 8.374949 & 11.669082 & 11.0465 & 11.66908 & 11.0465 & 11.77764\end{array} 11.14703$ $\begin{array}{lllllllllllllllllll}8.235115 & 8.030881 & 8.235115 & 8.030881 & 8.326191 & 8.118819 & 8.784598 & 8.566107 & 8.48964 & 8.278986 & 8.48964 & 8.278986 & 11.19608 & 10.91917 & 11.19608 & 10.91917 & 11.29771 & 11.01782\end{array}$ $\begin{array}{llllllllllllllllllll}7.998886 & 7.671658 & 7.998886 & 7.671658 & 8.079965 & 7.747531 & 8.527842 & 8.177325 & 8.246913 & 7.908353 & 8.246913 & 7.908353 & 10.877827 & 10.43651 & 10.87783 & 10.43651 & 10.97304 & 10.52669\end{array}$ $\begin{array}{lllllllllllllllll}7.658479 & 7.160401 & 7.658479 & 7.160401 & 7.73109 & 7.221967 & 8.161386 & 7.625986 & 7.895514 & 7.38095 & 7.895514 & 7.38095 & 10.419019 & 9.747613 & 10.41902 & 9.747613 & 10.50762\end{array} 9.827127$ $\begin{array}{llllllllllllllllll}7.270977 & 6.896658 & 7.270977 & 6.896658 & 7.332452 & 6.950981 & 7.74318 & 7.34164 & 7.495367 & 7.108815 & 7.495367 & 7.108815 & 9.89789 & 9.392253 & 9.89789 & 9.392253 & 9.978201 & 9.466341\end{array}$ $\begin{array}{lllllllllllllllll}6.996815 & 6.693258 & 6.996815 & 6.693258 & 7.051797 & 6.74375 & 7.448474 & 7.123629 & 7.213055 & 6.899248 & 7.213055 & 6.899248 & 9.52659 & 9.116482 & 9.52659 & 9.116482 & 9.601886 \\ 9.187294\end{array}$ $\begin{array}{lllllllllllllllllll}6.784613 & 6.391928 & 6.784613 & 6.391928 & 6.83346 & 6.435376 & 7.219598 & 6.799499 & 6.994472 & 6.588049 & 6.994472 & 6.588049 & 9.240104 & 8.710289 & 9.240104 & 8.710289 & 9.31095 & 8.775439\end{array}$ $\begin{array}{lllllllllllllllll}6.476247 & 6.178809 & 6.476247 & 6.178809 & 6.517114 & 6.215891 & 6.88745 & 6.569419 & 6.676233 & 6.368244 & 6.676233 & 6.368244 & 8.824463 & 8.423275 & 8.824463 & 8.423275 & 8.889179 \\ 8.483808\end{array}$ $\begin{array}{lllllllllllllllllll}6.104026 & 5.930617 & 6.104026 & 5.930617 & 6.137368 & 5.962989 & 6.487813 & 6.303094 & 6.291626 & 6.111614 & 6.291626 & 6.111614 & 8.322384 & 8.08868 & 8.322384 & 8.08868 & 8.380666 & 8.145023\end{array}$ $\begin{array}{lllllllllllllllllllllll}6.013816 & 5.792999 & 6.013816 & 5.792999 & 6.042382 & 5.820273 & 6.389197 & 6.153784 & 6.199196 & 5.969475 & 6.199196 & 5.969475 & 8.200892 & 7.904402 & 8.200892 & 7.904402 & 8.256298 & 7.95724\end{array}$ $\begin{array}{lllllllllllllllllllll}5.848532 & 5.658517 & 5.848532 & 5.658517 & 5.873584 & 5.682006 & 6.211438 & 6.008831 & 6.027827 & 5.831029 & 6.027827 & 5.831029 & 7.979326 & 7.722568 & 7.979326 & 7.722568 & 8.031669 & 7.772652\end{array}$ $\begin{array}{lllllllllllllllll}10.907782 & 10.56644 & 10.90778 & 10.56644 & 11.07523 & 10.72889 & 11.66758 & 11.3025 & 11.24567 & 10.89331 & 11.24567 & 10.89331 & 14.798815 & 14.33647 & 14.79882 & 14.33647 & 14.95664\end{array} 14.48936$ $\begin{array}{lllllllllllllllll}10.716281 & 10.22547 & 10.71628 & 10.22547 & 10.88083 & 10.3801 & 11.46295 & 10.93608 & 11.0488 & 10.54196 & 11.0488 & 10.54196 & 14.537749 & 13.87515 & 14.53775 & 13.87515 & 14.69288 \\ 10.02188\end{array}$ $\begin{array}{llllllllllllllllllll}0.744789 & 10.32636 & 10.74479 & 10.32636 & 10.90705 & 10.48172 & 11.4919 & 11.04378 & 11.07924 & 10.64705 & 11.07924 & 10.64705 & 14.575964 & 14.01026 & 14.57596 & 14.01026 & 14.73039 & 14.1583\end{array}$ 14.54 .54 $\begin{array}{llllllllllllllllll}10.18004 & 9.706925 & 10.18004 & 9.706925 & 10.3263 & 9.844755 & 10.88277 & 10.3757 & 10.49673 & 10.00827 & 10.49673 & 10.00827 & 13.814943 & 13.1752 & 13.81494 & 13.1752 & 13.95756 & 13.31026\end{array}$ $\begin{array}{lllllllllllllllllllll}9.827462 & 9.364347 & 9.827462 & 9.364347 & 9.962691 & 9.492808 & 10.50178 & 10.00626 & 10.13311 & 9.654411 & 10.13311 & 9.654411 & 13.3403 & 12.71439 & 13.3403 & 12.71439 & 13.47503 & 12.84236\end{array}$



$383450 \quad$ Source Scaling Factor
$383450 \quad 374085072.76 \%$ $383950 \quad 374085063.71 \%$ $384450 \quad 374085068.09 \%$ $384950 \quad 374085061.63 \%$ $385450 \quad 374085067.49 \%$ $385950 \quad 374085062.24 \%$ $386450 \quad 374085057.86 \%$ $386450 \quad 3740850$ 57.86\% $386950 \quad 374085056.87 \%$ $\begin{array}{ll}387450 & 374085061.88 \% \\ 387950 & 374085060.45 \%\end{array}$ $388450 \quad 3740850$ 62.32\% 388950 3740850 59.77\% 3894503740850 59.15\% $380450 \quad 374135070.48 \%$ $380950 \quad 374135079.70 \%$ $381450 \quad 374135074.51 \%$ $381950 \quad 374135074.45 \%$ $382450 \quad 3741350$ 69.62\% $382950 \quad 374135072.67 \%$ $383450374135074.01 \%$ 383950 3741350 63.07\% $384450 \quad 3741350$ 67.94\% $384950 \quad 3741350$ 64.17\% $385450 \quad 374135062.19 \%$ $385950 \quad 374135064.98 \%$ $386450 \quad 374135064.76 \%$ $386950 \quad 374135055.46 \%$ $387450 \quad 374135058.61 \%$ $387950 \quad 374135061.06 \%$ $388950 \quad 374135064.00 \%$ $389450 \quad 374135058.75 \%$ $380450 \quad 374185072.76 \%$ $380950 \quad 374185075.36 \%$ $381450 \quad 374185076.90 \%$ $381950 \quad 374185074.02 \%$ $382450 \quad 3741850$ 69.32\% $382950374185071.80 \%$ $383450 \quad 374185074.73 \%$ $383950 \quad 374185066.27 \%$ $384450 \quad 374185065.57 \%$ $384950 \quad 3741850$ 63.36\% $385450 \quad 374185057.60 \%$ $385950 \quad 3741850$ 64.72\% $386450 \quad 374185062.53 \%$ $386950 \quad 3741850$ 59.89\% $387450 \quad 374185055.73 \%$ $387950 \quad 374185062.11 \%$ $388950 \quad 374185060.84 \%$ $389450 \quad 374185063.79 \%$ $380450 \quad 374235070.49 \%$ $380950 \quad 374235075.32 \%$ $381450 \quad 374235075.29 \%$ $381950 \quad 374235073.61 \%$ $382450 \quad 374235068.91 \%$ $382950 \quad 374235070.82 \%$ $383450 \quad 374235074.55 \%$ $383950 \quad 374235068.04 \%$ $384450374235063.98 \%$ $384950 \quad 374235065.06 \%$ $385450 \quad 374235058.75 \%$ $385950 \quad 374235063.27 \%$ $386450 \quad 374235062.73 \%$ $386950 \quad 374235062.08 \%$ $387450 \quad 374235056.12 \%$ $387950 \quad 374235056.28 \%$ $388950 \quad 374235057.58 \%$ $389450 \quad 374235061.39 \%$ 3802003731100 66.34\% $380700 \quad 373110059.77 \%$ $380200 \quad 3731600$ 63.17\% $380700 \quad 373160062.25 \%$ $381200 \quad 373160059.79 \%$ $381700 \quad 373160066.28 \%$ $383700 \quad 3731600$ 68.68\% $384200 \quad 373160062.24 \%$ $380200 \quad 373210069.12 \%$ $380700 \quad 373210061.26 \%$ $381200 \quad 373210060.23 \%$ $381700 \quad 3732100$ 67.13\% 382700 3732100 67.02\% $383700 \quad 373210064.80 \%$ $380200373260060.83 \%$ $380700 \quad 3732600$ 67.11\% $381200 \quad 373260058.57 \%$ $381700 \quad 3732600$ 63.37\% 383700 3732600 65.41\% $384200373260063.13 \%$

 $\begin{array}{llllllllllllllllll}8.323929 & 7.963913 & 8.323929 & 7.963913 & 8.418592 & 8.052113 & 8.881002 & 8.494947 & 8.580867 & 8.208611 & 8.580867 & 8.208611 & 11.315909 & 10.83038 & 11.31591 & 10.83038 & 11.41985 & 10.92844\end{array}$ $\begin{array}{llllllllllllllllll}8.050393 & 7.701234 & 8.050393 & 7.701234 & 8.138739 & 7.78253 & 8.58681 & 8.21196 & 8.298326 & 7.937579 & 8.298326 & 7.937579 & 10.947215 & 10.47623 & 10.94722 & 10.47623 & 11.04607 & 10.56902\end{array}$ $\begin{array}{lllllllllllllllllll}7.836718 & 7.567483 & 7.836718 & 7.567483 & 7.916711 & 7.643291 & 8.355096 & 8.066774 & 8.078965 & 7.800412 & 8.078965 & 7.800412 & 10.658531 & 10.29538 & 10.65853 & 10.29538 & 10.75196 & 10.38469\end{array}$ $\begin{array}{lllllllllllllllll}7.436132 & 7.179232 & 7.436132 & 7.179232 & 7.50658 & 7.244709 & 7.92411 & 7.648447 & 7.665312 & 7.399944 & 7.665312 & 7.399944 & 10.118569 & 9.771784 & 10.11857 & 9.771784 & 10.2044 \\ 9.85328\end{array}$ $\begin{array}{lllllllllllllllll}7.046537 & 6.666365 & 7.046537 & 6.666365 & 7.107502 & 6.719611 & 7.504934 & 7.096711 & 7.263464 & 6.870531 & 7.263464 & 6.870531 & 9.592589 & 9.080118 & 9.592589 & 9.080118 & 9.671014\end{array} 9.151914$ $\begin{array}{lllllllllllllllll}6.794865 & 6.515817 & 6.794865 & 6.515817 & 6.848004 & 6.564283 & 7.233004 & 6.934043 & 7.003883 & 6.715458 & 7.003883 & 6.715458 & 9.25385 & 8.877088 & 9.25385 & 8.877088 & 9.326644 \\ 8.945513\end{array}$ $\begin{array}{llllllllllllllllll}6.675503 & 6.338401 & 6.675503 & 6.338401 & 6.724362 & 6.382982 & 7.103822 & 6.743407 & 6.881294 & 6.532287 & 6.881294 & 6.532287 & 9.092478 & 8.637668 & 9.092478 & 8.637668 & 9.162431 & 8.702923\end{array}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 6.473584 | 6.099265 | 6.473584 | 6.099265 | 6.51699 | 6.137537 | 6.886238 | 6.485726 | 6.673101 | 6.285484 | 6.673101 | 6.285484 | 8.820041 | 8.315413 | 8.820041 | 8.315413 | 8.88592 | 8.37585 | $\begin{array}{lllllllllllllllllll}6.095074 & 5.800846 & 6.095074 & 5.800846 & 6.131596 & 5.832709 & 6.480412 & 6.165056 & 6.282173 & 5.977059 & 6.282173 & 5.977059 & 8.308671 & 7.913325 & 8.308671 & 7.913325 & 8.368396 & 7.96838\end{array}$ $\begin{array}{llllllllllllllllll}5.957719 & 5.751961 & 5.957719 & 5.751961 & 5.98809 & 5.780695 & 6.330857 & 6.111204 & 6.140853 & 5.926811 & 6.140853 & 5.926811 & 8.124204 & 7.848166 & 8.124204 & 7.848166 & 8.180005 & 7.901381\end{array}$ $\begin{array}{llllllllllllllllllll}5.768772 & 5.609145 & 5.768772 & 5.609145 & 5.794598 & 5.633394 & 6.1274 & 5.956953 & 5.945359 & 5.779844 & 5.945359 & 5.779844 & 7.870396 & 7.655228 & 7.870396 & 7.655228 & 7.922524 & 7.705299\end{array}$ $\begin{array}{lllllllllllllllll}10.322875 & 10.00728 & 10.32288 & 10.00728 & 10.47688 & 10.15607 & 11.03835 & 10.7005 & 10.64085 & 10.31542 & 10.64085 & 10.31542 & 14.011834 & 13.58401 & 14.01183 & 13.58401 & 14.15863 \\ 13.72608\end{array}$ $\begin{array}{llllllllllllllllll}9.806268 & 9.57906 & 9.806268 & 9.57906 & 9.951613 & 9.720743 & 10.48517 & 10.242 & 10.10793 & 9.873628 & 10.10793 & 9.873628 & 13.31208 & 13.00405 & 13.31208 & 13.00405 & 13.45107 & 13.13955\end{array}$ $\begin{array}{llllllllllllllllllllll}10.137185 & 9.811635 & 10.13719 & 9.811635 & 10.28639 & 9.955513 & 10.83878 & 10.49028 & 10.45065 & 10.1148 & 10.45065 & 10.1148 & 13.758493 & 13.31747 & 13.75849 & 13.31747 & 13.90189 & 13.45604\end{array}$ $\begin{array}{lllllllllllllllllllll}9.859157 & 9.379893 & 9.859157 & 9.379893 & 10.00073 & 9.512077 & 10.53904 & 10.02479 & 10.16376 & 9.668966 & 10.16376 & 9.668966 & 13.383922 & 12.73645 & 13.38392 & 12.73645 & 13.52162 & 12.86608\end{array}$ $\begin{array}{lllllllllllllllllllllll}9.644493 & 9.227181 & 9.644493 & 9.227181 & 9.779402 & 9.354655 & 10.30725 & 9.859961 & 9.942826 & 9.511922 & 9.942826 & 9.511922 & 13.093982 & 12.5299 & 13.09398 & 12.5299 & 13.22698 & 12.65621\end{array}$ $\begin{array}{lllllllllllllllllll}9.355616 & 8.874804 & 9.355616 & 8.874804 & 9.482135 & 8.993569 & 9.99559 & 9.480534 & 9.645096 & 9.147757 & 9.645096 & 9.147757 & 12.70434 & 12.05568 & 12.70434 & 12.05568 & 12.83123 & 12.17511\end{array}$ $\begin{array}{llllllllllllllllllllll}8.947965 & 8.663602 & 8.947965 & 8.663602 & 9.063219 & 8.775034 & 9.555874 & 9.252047 & 9.223909 & 8.930645 & 9.223909 & 8.930645 & 12.156316 & 11.77043 & 12.15632 & 11.77043 & 12.27466 & 11.8849\end{array}$ $\begin{array}{lllllllllllllllll}8.542135 & 8.256946 & 8.542135 & 8.256946 & 8.646671 & 8.3573 & 9.123321 & 8.815375 & 8.805794 & 8.510792 & 8.805794 & 8.510792 & 11.607935 & 11.22299 & 11.60794 & 11.22299 & 11.71824\end{array} 11.32907$ $\begin{array}{llllllllllllllllll}8.153528 & 7.823087 & 8.153528 & 7.823087 & 8.247284 & 7.910406 & 8.699746 & 8.345025 & 8.404714 & 8.062931 & 8.404714 & 8.062931 & 11.084653 & 10.63956 & 11.08465 & 10.63956 & 11.18688 & 10.73611\end{array}$ $\begin{array}{llllllllllllllllll}7.766418 & 7.35748 & 7.766418 & 7.35748 & 7.850062 & 7.432137 & 8.282528 & 7.8429 & 8.004579 & 7.58178 & 8.004579 & 7.58178 & 10.564266 & 10.01367 & 10.56427 & 10.01367 & 10.65863 & 10.10055\end{array}$ $\begin{array}{llllllllllllllllll}7.530704 & 7.308488 & 7.530704 & 7.308488 & 7.60688 & 7.381127 & 8.028036 & 7.790023 & 7.762412 & 7.532537 & 7.762412 & 7.532537 & 10.245071 & 9.945304 & 10.24507 & 9.945304 & 10.33428 & 10.0311\end{array}$ $\begin{array}{llllllllllllllllllllll}7.099326 & 6.904828 & 7.099326 & 6.904828 & 7.166488 & 6.968557 & 7.564815 & 7.356342 & 7.317086 & 7.116185 & 7.317086 & 7.116185 & 9.662547 & 9.39975 & 9.662547 & 9.39975 & 9.744239 & 9.47833\end{array}$ $\begin{array}{lllllllllllllllll}6.943753 & 6.617207 & 6.943753 & 6.617207 & 7.005118 & 6.672143 & 7.396202 & 7.045653 & 7.157045 & 6.819435 & 7.157045 & 6.819435 & 9.452877 & 9.012761 & 9.452877 & 9.012761 & 9.5307 \\ 9.084971\end{array}$ $\begin{array}{lllllllllllllllllll}6.623584 & 6.362058 & 6.623584 & 6.362058 & 6.675473 & 6.409565 & 7.050549 & 6.770324 & 6.826676 & 6.556321 & 6.826676 & 6.556321 & 9.021956 & 8.668902 & 9.021956 & 8.668902 & 9.092834 & 8.735676\end{array}$ $\begin{array}{lllllllllllllllllll}6.501946 & 6.202653 & 6.501946 & 6.202653 & 6.549562 & 6.246092 & 6.918822 & 6.598581 & 6.701324 & 6.391485 & 6.701324 & 6.391485 & 8.858309 & 8.454702 & 8.858309 & 8.454702 & 8.926268 & 8.518274\end{array}$ $\begin{array}{llllllllllllllllll}6.364996 & 6.055911 & 6.364996 & 6.055911 & 6.408629 & 6.095499 & 6.771089 & 6.440628 & 6.560215 & 6.240538 & 6.560215 & 6.240538 & 8.673525 & 8.255881 & 8.673525 & 8.255881 & 8.738591 & 8.316617\end{array}$ $\begin{array}{llllllllllllllllll}5.926962 & 5.611111 & 5.926962 & 5.611111 & 5.959632 & 5.639931 & 6.299664 & 5.961721 & 6.108619 & 5.780457 & 6.108619 & 5.780457 & 8.081882 & 7.658089 & 8.081882 & 7.658089 & 8.138509 & 7.710139\end{array}$ $\begin{array}{llllllllllllllllllll}5.716492 & 5.539508 & 5.716492 & 5.539508 & 5.743628 & 5.56551 & 6.072841 & 5.88419 & 5.891205 & 5.707397 & 5.891205 & 5.707397 & 7.798659 & 7.560398 & 7.798659 & 7.560398 & 7.851016 & 7.610726\end{array}$ $\begin{array}{llllllllllllllllllll}9.609347 & 9.275792 & 9.609347 & 9.275792 & 9.749252 & 9.409268 & 10.27238 & 9.9146 & 9.903198 & 9.559022 & 9.903198 & 9.559022 & 13.050044 & 12.59895 & 13.05004 & 12.59895 & 13.18457 & 12.72798\end{array}$ $\begin{array}{llllllllllllllllllllll}9.671415 & 9.247892 & 9.671415 & 9.247892 & 9.812032 & 9.380239 & 10.33896 & 9.884429 & 9.968347 & 9.530704 & 9.968347 & 9.530704 & 13.131975 & 12.5606 & 13.13198 & 12.5606 & 13.26757 & 12.68897\end{array}$ $\begin{array}{lllllllllllllllllll}9.410638 & 9.072823 & 9.410638 & 9.072823 & 9.545557 & 9.201085 & 10.05886 & 9.696433 & 9.699485 & 9.350899 & 9.699485 & 9.350899 & 12.779235 & 12.32248 & 12.77924 & 12.32248 & 12.91018 & 12.44775\end{array}$ $\begin{array}{llllllllllllllllllllllll}9.348099 & 8.944029 & 9.348099 & 8.944029 & 9.479054 & 9.067088 & 9.990041 & 9.55651 & 9.635366 & 9.218256 & 9.635366 & 9.218256 & 12.695484 & 12.14943 & 12.69548 & 12.14943 & 12.82412 & 12.27129\end{array}$ $\begin{array}{llllllllllllllllllllllllll}9.117173 & 8.736581 & 9.117173 & 8.736581 & 9.241477 & 8.853627 & 9.740959 & 9.332769 & 9.39742 & 9.004584 & 9.39742 & 9.004584 & 12.383844 & 11.86936 & 12.38384 & 11.86936 & 12.50763 & 11.98685\end{array}$ $\begin{array}{lllllllllllllllllll}8.925074 & 8.529805 & 8.925074 & 8.529805 & 9.043741 & 8.641591 & 9.533756 & 9.110126 & 9.199688 & 8.791286 & 9.199688 & 8.791286 & 12.124247 & 11.59038 & 12.12425 & 11.59038 & 12.244 & 11.70383\end{array}$ $\begin{array}{llllllllllllllllll}8.521082 & 8.311474 & 8.521082 & 8.311474 & 8.628643 & 8.416349 & 9.098127 & 8.874339 & 8.782606 & 8.5667 & 8.782606 & 8.5667 & 11.58044 & 11.29528 & 11.58044 & 11.29528 & 11.6918 & 11.40391\end{array}$ $\begin{array}{llllllllllllllllll}8.194187 & 7.865663 & 8.194187 & 7.865663 & 8.292767 & 7.958746 & 8.745783 & 8.393831 & 8.445644 & 8.106159 & 8.445644 & 8.106159 & 11.130645 & 10.69226 & 11.13065 & 10.69226 & 11.23552 & 10.79189\end{array}$ $\begin{array}{lllllllllllllllllll}7.848565 & 7.615623 & 7.848565 & 7.615623 & 7.937652 & 7.700751 & 8.373223 & 8.123618 & 8.089229 & 7.848497 & 8.089229 & 7.848497 & 10.673198 & 10.35859 & 10.6732 & 10.35859 & 10.77081 & 10.45253\end{array}$ $\begin{array}{llllllllllllllllll}7.351638 & 7.154863 & 7.351638 & 7.154863 & 7.428756 & 7.22885 & 7.838395 & 7.627709 & 7.57582 & 7.372505 & 7.57582 & 7.372505 & 10.003999 & 9.738045 & 10.004 & 9.738045 & 10.09207 & 9.823128\end{array}$ $\begin{array}{llllllllllllllllll}7.290013 & 7.022102 & 7.290013 & 7.022102 & 7.363279 & 7.090573 & 7.770838 & 7.483582 & 7.513356 & 7.236425 & 7.513356 & 7.236425 & 9.919964 & 9.558418 & 9.919964 & 9.558418 & 10.00592 & 9.640008\end{array}$ $\begin{array}{llllllllllllllllllll}7.01151 & 6.804651 & 7.01151 & 6.804651 & 7.078371 & 6.867937 & 7.471428 & 7.249777 & 7.226029 & 7.012382 & 7.226029 & 7.012382 & 9.543878 & 9.264271 & 9.543878 & 9.264271 & 9.624707 & 9.341839\end{array}$ $\begin{array}{llllllllllllllllll}6.799094 & 6.605057 & 6.799094 & 6.605057 & 6.858909 & 6.661795 & 7.241695 & 7.03401 & 7.007186 & 6.806904 & 7.007186 & 6.806904 & 9.257723 & 8.994991 & 9.257723 & 8.994991 & 9.333631 & 9.068007\end{array}$ $\begin{array}{llllllllllllllllll}6.609207 & 6.195063 & 6.609207 & 6.195063 & 6.663114 & 6.240998 & 7.036667 & 6.592149 & 6.811772 & 6.383396 & 6.811772 & 6.383396 & 9.001207 & 8.443339 & 9.001207 & 8.443339 & 9.07298 & 8.508047\end{array}$ $\begin{array}{llllllllllllllllll}6.280058 & 6.085102 & 6.280058 & 6.085102 & 6.325059 & 6.128067 & 6.681652 & 6.473627 & 6.47142 & 6.269932 & 6.47142 & 6.269932 & 8.559205 & 8.29514 & 8.559205 & 8.29514 & 8.624109 & 8.357604\end{array}$ $\begin{array}{llllllllllllllllll}6.212718 & 5.934822 & 6.212718 & 5.934822 & 6.255359 & 5.974004 & 6.608868 & 6.311964 & 6.402449 & 6.115265 & 6.402449 & 6.115265 & 8.467683 & 8.091632 & 8.467683 & 8.091632 & 8.53106 & 8.151238\end{array}$ $\begin{array}{lllllllllllllllllll} & 6.254\end{array}$ $\begin{array}{lllllllllllllllllllll}5.708955 & 5.39883 & 5.708955 & 5.39883 & 5.738463 & 5.424473 & 6.066499 & 5.734614 & 5.883549 & 5.561343 & 5.883549 & 5.561343 & 7.786615 & 7.370571 & 7.786615 & 7.370571 & 7.840138 & 7.419553\end{array}$ $\begin{array}{lllllllllllllllllll}9.220759 & 8.927601 & 9.220759 & 8.927601 & 9.351056 & 9.052782 & 9.853874 & 9.539796 & 9.501393 & 9.198856 & 9.501393 & 9.198856 & 12.527678 & 12.1309 & 12.52768 & 12.1309 & 12.65457 & 12.25322\end{array}$ $\begin{array}{llllllllllllllllllllll}9.163152 & 8.687832 & 9.163152 & 8.687832 & 9.29334 & 8.808453 & 9.793153 & 9.282747 & 9.443174 & 8.951753 & 9.443174 & 8.951753 & 12.446513 & 11.80597 & 12.44651 & 11.80597 & 12.57318 & 11.9244\end{array}$



 $\begin{array}{llllllllllllllllllll}8.889807 & 8.545379 & 8.889807 & 8.545379 & 9.01117 & 8.660302 & 9.497711 & 9.128453 & 9.161638 & 8.806361 & 9.161638 & 8.806361 & 12.077975 & 11.61177 & 12.07798 & 11.61177 & 12.19847 & 11.72668 \\ 8.653685 & 8.310244 & 8.653685 & 8.310244 & 8.768261 & 8.41924 & 9.243015 & 8.875288 & 8.918279 & 8.563688 & 8.918279 & 8.563688 & 11.759437 & 11.29475 & 11.75944 & 11.29475 & 11.87497 & 11.40508\end{array}$ $\begin{array}{llllllllllllllllllll}8.517493 & 8.1182 & 8.517493 & 8.1182 & 8.628031 & 8.221587 & 9.096113 & 8.668123 & 8.778182 & 8.3659 & 8.778182 & 8.3659 & 11.575221 & 11.03544 & 11.57522 & 11.03544 & 11.68788 & 11.14169\end{array}$ $\begin{array}{llllllllllllllllll}8.18256 & 7.9456 & 8.18256 & 7.9456 & 8.284113 & 8.043924 & 8.73514 & 8.482012 & 8.432523 & 8.188449 & 8.432523 & 8.188449 & 11.123973 & 10.8017 & 11.12397 & 10.8017 & 11.22982 & 10.90438\end{array}$ $\begin{array}{llllllllllllllllllll}7.950896 & 7.580874 & 7.950896 & 7.580874 & 8.045279 & 7.668643 & 8.484958 & 8.088345 & 8.193886 & 7.811839 & 8.193886 & 7.811839 & 10.8115 & 10.31119 & 10.8115 & 10.31119 & 10.91226 & 10.40605\end{array}$ $\begin{array}{llllllllllllllllllllll}7.627332 & 7.352857 & 7.627332 & 7.352857 & 7.71356 & 7.434013 & 8.136702 & 7.842392 & 7.860342 & 7.576959 & 7.860342 & 7.576959 & 10.374408 & 10.00339 & 10.37441 & 10.00339 & 10.46891 & 10.09343\end{array}$ $\begin{array}{lllllllllllllllllll}7.221947 & 6.896145 & 7.221947 & 6.896145 & 7.298058 & 6.965635 & 7.700216 & 7.350334 & 7.441684 & 7.104848 & 7.441684 & 7.104848 & 9.828393 & 9.389345 & 9.828393 & 9.389345 & 9.914985 & 9.470248\end{array}$ $\begin{array}{llllllllllllllllllll}7.042213 & 6.721984 & 7.042213 & 6.721984 & 7.112553 & 6.786023 & 7.50616 & 7.162398 & 7.257161 & 6.926097 & 7.257161 & 6.926097 & 9.584761 & 9.153108 & 9.584761 & 9.153108 & 9.667421 & 9.230266\end{array}$ $\begin{array}{llllllllllllllllllll}6.779532 & 6.618152 & 6.779532 & 6.618152 & 6.843323 & 6.679694 & 7.223359 & 7.050808 & 6.986002 & 6.819342 & 6.986002 & 6.819342 & 9.230689 & 9.012176 & 9.230689 & 9.012176 & 9.308227 & 9.087441\end{array}$ $\begin{array}{lllllllllllllllllll}6.640678 & 6.468142 & 6.640678 & 6.468142 & 6.698703 & 6.52343 & 7.072447 & 6.887815 & 6.843109 & 6.665156 & 6.843109 & 6.665156 & 9.043991 & 8.810075 & 9.043991 & 8.810075 & 9.117791 & 8.881327\end{array}$ $\begin{array}{lllllllllllllllll}6.461248 & 6.218401 & 6.461248 & 6.218401 & 6.514211 & 6.26756 & 6.879059 & 6.61904 & 6.658448 & 6.407423 & 6.658448 & 6.407423 & 8.801306 & 8.473236 & 8.801306 & 8.473236 & 8.871436 \\ 8.539698\end{array}$ $\begin{array}{lllllllllllllllllll}6.235787 & 5.913822 & 6.235787 & 5.913822 & 6.282326 & 5.95461 & 6.635778 & 6.290521 & 6.425634 & 6.092687 & 6.425634 & 6.092687 & 8.498035 & 8.063869 & 8.498035 & 8.063869 & 8.563377 & 8.12396\end{array}$ | 6.036333 | 5.822223 | 6.036333 | 5.822223 | 6.076549 | 5.860808 | 6.420199 | 6.191978 | 6.219961 | 5.998194 | 6.219961 | 5.998194 | 8.229595 | 7.940199 | 8.229595 | 7.940199 | 8.29042 | 7.998552 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{lllllllllllllllllllll}5.829381 & 5.564498 & 5.829381 & 5.564498 & 5.864599 & 5.596595 & 6.197681 & 5.914637 & 6.006854 & 5.732633 & 6.006854 & 5.732633 & 7.949406 & 7.591836 & 7.949406 & 7.591836 & 8.006387 & 7.645226\end{array}$ $\begin{array}{lllllllllllllllllll}5.678204 & 5.35547 & 5.678204 & 5.35547 & 5.709795 & 5.382167 & 6.035168 & 5.689353 & 5.851301 & 5.516465 & 5.851301 & 5.516465 & 7.744487 & 7.311055 & 7.744487 & 7.311055 & 7.798702 & 7.36021\end{array}$ $\begin{array}{lllllllllllllllll}11.885572 & 11.58289 & 11.88557 & 11.58289 & 12.02419 & 11.72089 & 12.67401 & 12.35392 & 12.22195 & 11.913 & 12.22195 & 11.913 & 16.22029 & 15.80054 & 16.22029 & 15.80054 & 16.36453 \\ 15.94297\end{array}$ $\begin{array}{lllllllllllllllllll}14.652875 & 14.39624 & 14.65288 & 14.39624 & 14.85782 & 14.60123 & 15.65511 & 15.38433 & 15.09079 & 14.82942 & 15.09079 & 14.82942 & 19.92635 & 19.56876 & 19.92635 & 19.56876 & 20.12544 & 19.76674\end{array}$ $\begin{array}{llllllllllllllllllllll}13.861069 & 13.40414 & 13.86107 & 13.40414 & 14.04981 & 13.58774 & 14.80373 & 14.31703 & 14.26923 & 13.80045 & 14.26923 & 13.80045 & 18.86561 & 18.23966 & 18.86561 & 18.23966 & 19.05016 & 18.41906\end{array}$ $\begin{array}{lllllllllllllllllll}16.492363 & 15.86985 & 16.49236 & 15.86985 & 16.74623 & 16.11397 & 17.63976 & 16.9743 & 16.99729 & 16.357 & 16.99729 & 16.357 & 22.38761 & 21.53991 & 22.38761 & 21.53991 & 22.62541 & 21.76897\end{array}$ $\begin{array}{llllllllllllllllllllll}18.413027 & 17.78344 & 18.41303 & 17.78344 & 18.72392 & 18.08371 & 19.71803 & 19.04414 & 18.99402 & 18.34559 & 18.99402 & 18.34559 & 24.94083 & 24.08634 & 24.94083 & 24.08634 & 25.22337 & 24.35924\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}21.189418 & 20.71738 & 21.18942 & 20.71738 & 21.57088 & 21.0927 & 22.71195 & 22.2077 & 21.87338 & 21.38657 & 21.87338 & 21.38657 & 28.65448 & 28.01388 & 28.65448 & 28.01388 & 28.99414 & 28.34715\end{array}$ $\begin{array}{llllllllllllllll}7.966964 & 17.74146 & 17.96696 & 17.74146 & 18.18311 & 17.95857 & 19.19793 & 18.95971 & 18.58862 & 18.3561 & 18.58862 & 18.3561 & 24.27538\end{array}$ $\begin{array}{lllllllllllll}16.808767 & 16.20075 & 16.80877 & 16.20075 & 16.9771 & 16.36377 & 17.94056 & 17.292 & 17.40058 & 16.77073 & 17.40058 & 16.77073 & 22.71006\end{array}$ $\begin{array}{lllllllllllll}14.646467 & 14.31229 & 14.64647 & 14.31229 & 14.85786 & 14.52147 & 15.65291 & 15.29828 & 15.08506 & 14.74304 & 15.08506 & 14.74304 & 19.91179\end{array}$ $\begin{array}{lllllllllllll}17.379145 & 16.74207 & 17.37915 & 16.74207 & 17.65893 & 17.01 & 18.59892 & 17.91612 & 17.91861 & 17.26215 & 17.91861 & 17.26215 & 23.56797\end{array}$ $\begin{array}{lllllllllllllll}19.590528 & 18.98992 & 19.59053 & 18.98992 & 19.93251 & 19.32119 & 20.9888 & 20.34505 & 20.21573 & 19.59575 & 20.21573 & 19.59575 & 26.51412\end{array}$ $\begin{array}{llllllllllllll}22.004249 & 21.5746 & 22.00425 & 21.5746 & 22.40747 & 21.97167 & 23.59182 & 23.13264 & 22.71999 & 22.27721 & 22.71999 & 22.27721 & 29.74023\end{array}$ $\begin{array}{lllllllllllllll}21.636228 & 21.2932 & 21.63623 & 21.2932 & 21.99939 & 21.65378 & 23.17956 & 22.81439 & 22.35608 & 22.00198 & 22.35608 & 22.00198 & 29.2294\end{array}$ $\begin{array}{llllllllllllll}15.926318 & 15.57741 & 15.92632 & 15.57741 & 16.10425 & 15.75509 & 17.00638 & 16.63627 & 16.47137 & 16.11059 & 16.47137 & 16.11059 & 21.53961\end{array}$ $\begin{array}{lllllllllllll}15.896674 & 15.38579 & 15.89667 & 15.38579 & 16.14049 & 15.62119 & 17.00197 & 16.4551 & 16.38319 & 15.85624 & 16.38319 & 15.85624 & 21.57999\end{array}$ $\begin{array}{lllllllllllll}17.929276 & 17.4346 & 17.92928 & 17.4346 & 18.22547 & 17.7218 & 19.19468 & 18.66431 & 18.49204 & 17.98124 & 18.49204 & 17.98124 & 24.29631\end{array}$ $\begin{array}{llllllllllllll}20.442168 & 19.75854 & 20.44217 & 19.75854 & 20.80685 & 20.10922 & 21.9081 & 21.17417 & 21.0998 & 20.39405 & 21.0998 & 20.39405 & 27.65069\end{array}$ $\begin{array}{lllllllllllll}23.689955 & 22.25496 & 23.68996 & 22.25496 & 24.13685 & 22.63891 & 25.40942 & 23.68556 & 24.46582 & 22.80948 & 24.46582 & 22.80948 & 31.99945\end{array}$ $\begin{array}{llllllllllllll}14.210062 & 13.89161 & 14.21006 & 13.89161 & 14.35748 & 14.04033 & 15.16405 & 14.82777 & 14.68986 & 14.36204 & 14.68986 & 14.36204 & 19.23926\end{array}$ $\begin{array}{lllllllllllllllllllllll}13.323185 & 12.80898 & 13.32319 & 12.80898 & 13.44292 & 12.92656 & 14.2059 & 13.65938 & 13.77567 & 13.24426 & 13.77567 & 13.24426 & 18.04447 & 17.33236 & 18.04447 & 17.33236 & 18.20324 & 17.48599\end{array}$




Y Source Scaling Factor
$384700 \quad 373260060.22 \%$
$385200 \quad 373260054.77 \%$
$380200 \quad 373310063.39 \%$
$380700 \quad 373310057.76 \%$
381200 3733100 58.75\%
381700 3733100 55.55\%
382200 3733100 60.53\%
$\begin{array}{ll}382200 & 373310060.53 \% \\ 382700 & 3733100 \\ 7439\end{array}$
$382700 \quad 373310074.39 \%$
$\begin{array}{ll}383200 & 3733100 \\ 384700 & 73.29 \% \\ 6233100\end{array}$ $385200 \quad 373310060.77 \%$ $380200 \quad 373360050.04 \%$ 380700 3733600 52.11\% $381200 \quad 373360051.99 \%$ $381700 \quad 373360066.74 \%$ $382200 \quad 373360062.18 \%$ $382700 \quad 373360078.18 \%$ $383200 \quad 373360070.67 \%$ $383700 \quad 373360070.53 \%$ $384200373360066.14 \%$ $384700 \quad 373360068.52 \%$ $388700 \quad 373360051.76 \%$ 389200 3733600 50.68\% $380200 \quad 3734100$ 47.01\% $380700 \quad 373410045.81 \%$ $381200 \quad 373410043.06 \%$ $383200 \quad 373410064.53 \%$ 3837003734100 67.18\% $385700 \quad 373410062.31 \%$ 3882003734100 52.11\% $389700 \quad 373410053.22 \%$ $380200 \quad 373460046.84 \%$ $380700 \quad 373460050.83 \%$ $381200 \quad 373460049.12 \%$ 381700 3734600 54.03\% $382700373460056.86 \%$ $383200 \quad 373460071.76 \%$ $383700 \quad 373460065.17 \%$ $384700 \quad 373460070.21 \%$ $387700 \quad 373460059.76 \%$ $388700 \quad 373460056.47 \%$ $389200 \quad 373460055.90 \%$ $389700 \quad 373460054.77 \%$ 380200 3735100 46.05\% $380700 \quad 373510049.75 \%$ $381200 \quad 373510055.01 \%$ $381700 \quad 373510059.87 \%$ $383200 \quad 3735100$ 57.62\% $383700 \quad 373510076.73 \%$ $384700373510068.45 \%$ $387700 \quad 373510059.97 \%$ 3887003735100 59.49\% $389200 \quad 373510056.92 \%$ 389700 3735100 56.15\% $380200373560051.65 \%$ $380700 \quad 373560054.52 \%$ $381200373560058.62 \%$ 381700 3735600 62.25\% $382700 \quad 373560064.17 \%$ $383200 \quad 373560073.07 \%$ $383700 \quad 373560068.91 \%$ $384200 \quad 373560075.45 \%$ $384700 \quad 3735600$ 68.91\% $385200373560065.00 \%$ 385700 3735600 63.91\% $386700 \quad 3735600$ 59.37\% 3882003735600 60.17\% $388700 \quad 3735600$ 59.97\% $389200373560059.86 \%$ 380200 3736100 57.13\% $380700 \quad 373610059.81 \%$ $381200373610065.96 \%$ $381700 \quad 3736100$ 67.87\% $382200 \quad 373610072.42 \%$ $382700 \quad 373610066.47 \%$ $383700 \quad 373610065.38 \%$ $384200 \quad 373610066.66 \%$ $384700 \quad 373610075.29 \%$ $385200373610066.45 \%$ 385700 3736100 62.93\% $386200 \quad 373610058.88 \%$ $386700 \quad 3736100$ 59.27\% 387700 3736100 58.03\% $388200373610058.15 \%$ $388700 \quad 373610054.38 \%$ $389700 \quad 373610052.33 \%$ 380200 3736600 58.15\%

| 2.694038 | 12.0376 | 12.69404 | 12.0376 | 12.80102 | 12.13862 | 13.52965 | 12.82994 | 13.12319 | 12.44529 | 13.12319 | 12.44529 | 17.20105 | 16.31023 | 17.20105 | 16.31023 | 17.34836 | 16.44987 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{lllllllllllllllll}12.060291 & 11.55853 & 12.06029 & 11.55853 & 12.15548 & 11.65037 & 12.84909 & 12.31547 & 12.46565 & 11.94881 & 12.46565 & 11.94881 & 16.35135 & 15.66688 & 16.35135 & 15.66688 & 16.48768 \\ 15.79818\end{array}$ $\begin{array}{llllllllllllllllll}16.309312 & 15.82721 & 16.30931 & 15.82721 & 16.56674 & 16.07631 & 17.44964 & 16.93322 & 16.81265 & 16.31547 & 16.81265 & 16.31547 & 22.12693 & 21.47242 & 22.12693 & 21.47242 & 22.36603 & 21.7041\end{array}$ $\begin{array}{llllllllllllllllllll}18.58773 & 17.66202 & 18.58773 & 17.66202 & 18.90244 & 17.95636 & 19.90609 & 18.91114 & 19.1754 & 18.21907 & 19.1754 & 18.21907 & 25.17471 & 23.92669 & 25.17471 & 23.92669 & 25.46051 & 24.19562\end{array}$ $\begin{array}{lllllllllllllllllllll}21.897206 & 21.22982 & 21.89721 & 21.22982 & 22.29723 & 21.61709 & 23.47503 & 22.75898 & 22.60552 & 21.9158 & 22.60552 & 21.9158 & 29.60469 & 28.64425 & 29.60469 & 28.64425 & 29.95892 & 28.98628\end{array}$ $\begin{array}{lllllllllllllllllllll}25.416123 & 23.99416 & 25.41612 & 23.99416 & 25.90955 & 24.45632 & 27.27243 & 25.74409 & 26.25517 & 24.78599 & 26.25517 & 24.78599 & 34.30822 & 32.39158 & 34.30822 & 32.39158 & 34.73695 & 32.79443\end{array}$ $\begin{array}{lllllllllllllllllllllll}22.394813 & 20.86976 & 22.39481 & 20.86976 & 22.80397 & 21.24546 & 24.0134 & 22.37419 & 23.13528 & 21.55946 & 23.13528 & 21.55946 & 30.241055 & 28.18396 & 30.24106 & 28.18396 & 30.60646 & 28.52165\end{array}$ $\begin{array}{llllllllllllllllllll}17.300896 & 16.1966 & 17.3009 & 16.1966 & 17.56422 & 16.43831 & 18.51492 & 17.33007 & 17.87068 & 16.7309 & 17.87068 & 16.7309 & 23.401988 & 21.90954 & 23.40199 & 21.90954 & 23.6578 & 22.14677\end{array}$ $\begin{array}{lllllllllllllllllll}14.347424 & 13.66716 & 14.34742 & 13.66716 & 14.52106 & 13.83215 & 15.32428 & 14.59785 & 14.82168 & 14.12019 & 14.82168 & 14.12019 & 19.431419 & 18.50762 & 19.43142 & 18.50762 & 19.62177 & 18.68898\end{array}$ $\begin{array}{llllllllllllllllllllll}11.632062 & 11.2238 & 11.63206 & 11.2238 & 11.72514 & 11.31599 & 12.39284 & 11.95965 & 12.02022 & 11.59882 & 12.02022 & 11.59882 & 15.775911 & 15.21966 & 15.77591 & 15.21966 & 15.90748 & 15.34788\end{array}$ $\begin{array}{llllllllllllllllll}11.272134 & 10.85623 & 11.27213 & 10.85623 & 11.35835 & 10.9387 & 12.00634 & 11.56361 & 11.64719 & 11.21957 & 11.64719 & 11.21957 & 15.292585 & 14.72417 & 15.29259 & 14.72417 & 15.4179 & 14.845\end{array}$ $\begin{array}{llllllllllllllllllllll}16.559226 & 16.07793 & 16.55923 & 16.07793 & 16.8254 & 16.3373 & 17.72123 & 17.20696 & 17.07356 & 16.57795 & 17.07356 & 16.57795 & 22.45573 & 21.80107 & 22.45573 & 21.80107 & 22.70151 & 22.04036\end{array}$ $\begin{array}{llllllllllllllllllll}19.392768 & 18.82617 & 19.39277 & 18.82617 & 19.73229 & 19.15634 & 20.77718 & 20.17042 & 20.01048 & 19.42566 & 20.01048 & 19.42566 & 26.11159 & 25.36548 & 26.11159 & 25.36548 & 26.414 & 25.65956\end{array}$ $\begin{array}{llllllllllllllllllll}23.056103 & 22.47431 & 23.0561 & 22.47431 & 23.48691 & 22.89659 & 24.72553 & 24.10314 & 23.8072 & 23.20619 & 23.8072 & 23.20619 & 31.15431 & 30.36705 & 31.15431 & 30.36705 & 31.53296 & 30.73735\end{array}$ $\begin{array}{llllllllllllllllllll}26.9387 & 26.10056 & 26.9387 & 26.10056 & 27.4808 & 26.62746 & 28.92049 & 28.02236 & 27.83228 & 26.96843 & 27.83228 & 26.96843 & 36.342408 & 35.2062 & 36.34241 & 35.2062 & 36.8071 & 35.65759\end{array}$ $\begin{array}{llllllllllllllllllllll}21.121183 & 20.4864 & 21.12118 & 20.4864 & 21.50134 & 20.85698 & 22.64352 & 21.9646 & 21.81837 & 21.16395 & 21.81837 & 21.16395 & 28.529225 & 27.66791 & 28.52923 & 27.66791 & 28.87086 & 28.00034\end{array}$ $\begin{array}{llllllllllllllllllllll}16.265152 & 15.39425 & 16.26515 & 15.39425 & 16.50885 & 15.62124 & 17.40315 & 16.46921 & 16.79853 & 15.90029 & 16.79853 & 15.90029 & 22.008383 & 20.82943 & 22.00838 & 20.82943 & 22.24652 & 21.05323\end{array}$ $\begin{array}{llllllllllllllllllllll}13.674842 & 13.08886 & 13.67484 & 13.08886 & 13.84106 & 13.24736 & 14.6055 & 13.97965 & 14.12377 & 13.51993 & 14.12377 & 13.51993 & 18.526549 & 17.73017 & 18.52655 & 17.73017 & 18.70778 & 17.90362\end{array}$ $\begin{array}{lllllllllllllllll}12.443479 & 11.8514 & 12.44348 & 11.8514 & 12.57285 & 11.97294 & 13.27578 & 12.6434 & 12.85296 & 12.24282 & 12.85296 & 12.24282 & 16.869952 & 16.06528 & 16.86995 & 16.06528 & 17.02421\end{array} 16.2117$ $\begin{array}{llllllllllllllllllll}11.381085 & 11.01813 & 11.38109 & 11.01813 & 11.48022 & 11.11616 & 12.12946 & 11.74443 & 11.75607 & 11.38243 & 11.75607 & 11.38243 & 15.440685 & 14.94428 & 15.44069 & 14.94428 & 15.57245 & 15.07311\end{array}$ $\begin{array}{llllllllllllllllll}10.753695 & 10.44971 & 10.7537 & 10.44971 & 10.83659 & 10.53221 & 11.45359 & 11.13141 & 11.10827 & 10.79514 & 11.10827 & 10.79514 & 14.595676 & 14.17996 & 14.59568 & 14.17996 & 14.71493 & 14.29697\end{array}$ $\begin{array}{lllllllllllllllllll}8.763289 & 8.372909 & 8.763289 & 8.372909 & 8.808932 & 8.417539 & 9.318163 & 8.903945 & 9.050233 & 8.647682 & 9.050233 & 8.647682 & 11.912155 & 11.37951 & 11.91216 & 11.37951 & 11.99813 & 11.46228\end{array}$ $\begin{array}{llllllllllllllllll}8.473234 & 8.149235 & 8.473234 & 8.149235 & 8.514754 & 8.189826 & 9.007464 & 8.663836 & 8.749042 & 8.415634 & 8.749042 & 8.415634 & 11.522924 & 11.07953 & 11.52292 & 11.07953 & 11.60446 & 11.15848\end{array}$ $\begin{array}{lllllllllllllllllll}17.179051 & 16.58898 & 17.17905 & 16.58898 & 17.4656 & 16.86693 & 18.39292 & 17.76206 & 17.71679 & 17.10869 & 17.71679 & 17.10869 & 23.28108 & 22.47951 & 23.28108 & 22.47951 & 23.54202 & 22.7322\end{array}$ $\begin{array}{llllllllllllllllllllll}20.451171 & 19.61604 & 20.45117 & 19.61604 & 20.82019 & 19.96963 & 21.92046 & 21.02478 & 21.10866 & 20.2458 & 21.10866 & 20.2458 & 27.66114 & 26.53367 & 27.66114 & 26.53367 & 27.98892 & 26.84761\end{array}$ $\begin{array}{llllllllllllllllllll}25.34196 & 24.70526 & 25.34196 & 24.70526 & 25.84048 & 25.19182 & 27.1965 & 26.51358 & 26.17589 & 25.51826 & 26.17589 & 25.51826 & 34.20952 & 33.34963 & 34.20952 & 33.34963 & 34.63974 & 33.7693\end{array}$ $\begin{array}{llllllllllllllllll}13.430512 & 12.85255 & 13.43051 & 12.85255 & 13.59226 & 13.00464 & 14.34295 & 13.7237 & 13.86958 & 13.26739 & 13.86958 & 13.26739 & 18.200411 & 17.42029 & 18.20041 & 17.42029 & 18.37733 & 17.58085\end{array}$ $\begin{array}{llllllllllllllllllll}12.074273 & 11.54183 & 12.07427 & 11.54183 & 12.20127 & 11.66012 & 12.88204 & 12.31178 & 12.46886 & 11.91873 & 12.46886 & 11.91873 & 16.374288 & 15.65478 & 16.37429 & 15.65478 & 16.52419 & 15.79651\end{array}$ $\begin{array}{lllllllllllllllllll}9.830733 & 9.321074 & 9.830733 & 9.321074 & 9.897664 & 9.380417 & 10.46393 & 9.91886 & 10.15284 & 9.627167 & 10.15284 & 9.627167 & 13.35284 & 12.66172 & 13.35284 & 12.66172 & 13.45709 & 12.75867\end{array}$ $\begin{array}{llllllllllllllllll}8.95445 & 8.547445 & 8.95445 & 8.547445 & 8.997605 & 8.589811 & 9.519361 & 9.087366 & 9.248611 & 8.827891 & 9.248611 & 8.827891 & 12.172125 & 11.61886 & 12.17213 & 11.61886 & 12.25845 & 11.70177\end{array}$ $\begin{array}{lllllllllllllllllll}8.114756 & 7.702814 & 8.114756 & 7.702814 & 8.149612 & 7.73696 & 8.622343 & 8.185198 & 8.376567 & 7.950799 & 8.376567 & 7.950799 & 11.043445 & 10.4833 & 11.04345 & 10.4833 & 11.11866 & 10.55511\end{array}$ $\begin{array}{lllllllllllllllllll}17.827621 & 17.34324 & 17.82762 & 17.34324 & 18.13368 & 17.64357 & 19.09473 & 18.5779 & 18.39075 & 17.89172 & 18.39075 & 17.89172 & 24.14373 & 23.48463 & 24.14373 & 23.48463 & 24.41982 & 23.75459\end{array}$ $\begin{array}{lllllllllllllllllll}21.564942 & 21.15028 & 21.56494 & 21.15028 & 21.96771 & 21.54803 & 23.12478 & 22.68235 & 22.2625 & 21.83559 & 22.2625 & 21.83559 & 29.150101 & 28.58542 & 29.1501 & 28.58542 & 29.50333 & 28.93332\end{array}$ $\begin{array}{lllllllllllllllllllllllll}27.002255 & 26.34025 & 27.00226 & 26.34025 & 27.54837 & 26.87415 & 28.98927 & 28.27936 & 27.89365 & 27.20969 & 27.89365 & 27.20969 & 36.435442 & 35.53667 & 36.43544 & 35.53667 & 36.90178 & 35.99202\end{array}$ $\begin{array}{lllllllllllllllllllll}28.343311 & 27.67964 & 28.34331 & 27.67964 & 28.92973 & 28.25369 & 30.44048 & 29.7286 & 29.28742 & 28.60147 & 29.28742 & 28.60147 & 38.21868 & 37.3236 & 38.21868 & 37.3236 & 38.70892 & 37.8102\end{array}$ $\begin{array}{llllllllllllllllllll}14.894615 & 14.19269 & 14.89462 & 14.19269 & 15.11193 & 14.39532 & 15.93147 & 15.17743 & 15.37891 & 14.65342 & 15.37891 & 14.65342 & 20.166371 & 19.22004 & 20.16637 & 19.22004 & 20.38076 & 19.42206\end{array}$ $\begin{array}{llllllllllllllllll}12.572855 & 12.21427 & 12.57286 & 12.21427 & 12.72741 & 12.3654 & 13.42809 & 13.04561 & 12.98039 & 12.60965 & 12.98039 & 12.60965 & 17.043537 & 16.5575 & 17.04354 & 16.5575 & 17.21005 & 16.71971\end{array}$ $\begin{array}{llllllllllllllllll}11.648631 & 11.19603 & 11.64863 & 11.19603 & 11.77 & 11.31242 & 12.42615 & 11.94272 & 12.02608 & 11.55735 & 12.02608 & 11.55735 & 15.804626 & 15.19379 & 15.80463 & 15.19379 & 15.94808 & 15.33126\end{array}$ $\begin{array}{llllllllllllllllll}10.003927 & 9.777132 & 10.00393 & 9.777132 & 10.08632 & 9.859022 & 10.65663 & 10.41635 & 10.3273 & 10.0945 & 10.3273 & 10.0945 & 13.588471 & 13.27675 & 13.58847 & 13.27675 & 13.70075 & 13.38741\end{array}$ $\begin{array}{llllllllllllllllllllll}8.612445 & 8.341603 & 8.612445 & 8.341603 & 8.651119 & 8.381962 & 9.15307 & 8.867539 & 8.892803 & 8.614278 & 8.892803 & 8.614278 & 11.714439 & 11.34181 & 11.71444 & 11.34181 & 11.79557 & 11.42205\end{array}$ $\begin{array}{llllllllllllllllll}8.304385 & 7.794067 & 8.304385 & 7.794067 & 8.340013 & 7.829685 & 8.824718 & 8.28295 & 8.575296 & 8.045208 & 8.575296 & 8.045208 & 11.295203 & 10.60638 & 11.2952 & 10.60638 & 11.37272 & 10.67961\end{array}$ $\begin{array}{llllllllllllllllll}7.91501 & 7.598298 & 7.91501 & 7.598298 & 7.948286 & 7.630348 & 8.409446 & 8.073109 & 8.169845 & 7.843234 & 8.169845 & 7.843234 & 10.77322 & 10.34145 & 10.77322 & 10.34145 & 10.84612 & 10.41154\end{array}$ $\begin{array}{llllllllllllllllllll}7.712614 & 7.48459 & 7.712614 & 7.48459 & 7.742128 & 7.515521 & 8.192072 & 7.951702 & 7.959749 & 7.725296 & 7.959749 & 7.725296 & 10.502064 & 10.18824 & 10.50206 & 10.18824 & 10.57143 & 10.25686\end{array}$ $\begin{array}{llllllllllllllllllll}18.943745 & 17.83753 & 18.94375 & 17.83753 & 19.28241 & 18.15333 & 20.30109 & 19.11323 & 19.54785 & 18.40561 & 19.54785 & 18.40561 & 25.634461 & 24.14141 & 25.63446 & 24.14141 & 25.93552 & 24.42322\end{array}$ $\begin{array}{llllllllllllllllllllll}22.332927 & 21.47495 & 22.33293 & 21.47495 & 22.76202 & 21.88723 & 23.95783 & 23.037 & 23.0597 & 22.17324 & 23.0597 & 22.17324 & 30.171207 & 29.0138 & 30.17121 & 29.0138 & 30.54374 & 29.37167\end{array}$ $\begin{array}{lllllllllllllllllllllll}25.932098 & 25.13947 & 25.9321 & 25.13947 & 26.45644 & 25.64709 & 27.84039 & 26.98879 & 26.78857 & 25.96942 & 26.78857 & 25.96942 & 34.990788 & 33.92228 & 34.99079 & 33.92228 & 35.4386 & 34.356\end{array}$ $\begin{array}{lllllllllllllllllllllllll}27.03372 & 26.08793 & 27.03372 & 26.08793 & 27.58564 & 26.62512 & 29.02643 & 28.01599 & 27.92719 & 26.95518 & 27.92719 & 26.95518 & 36.457662 & 35.18285 & 36.44926 & 35.18285 & 36.92265 & 35.63898\end{array}$ $\begin{array}{llllllllllllllllllllllll}12.597566 & 12.03957 & 12.59757 & 12.02502 & 12.75471 & 12.17242 & 13.45534 & 12.84194 & 13.00365 & 12.41232 & 13.00365 & 12.41232 & 17.080396 & 16.30645 & 17.0804 & 16.30645 & 17.24791 & 16.46428\end{array}$ $\begin{array}{llllllllllllllllll}11.505411 & 10.9867 & 11.50541 & 10.9867 & 11.63298 & 11.10761 & 12.27791 & 11.72358 & 11.87599 & 11.34 & 11.87599 & 11.34 & 15.61026 & 14.90707 & 15.61026 & 14.90707 & 15.75532 & 15.045\end{array}$ $\begin{array}{llllllllllllllllllll}9.705026 & 9.433682 & 9.705026 & 9.433682 & 9.787472 & 9.514262 & 10.33911 & 10.05081 & 10.01608 & 9.737599 & 10.01608 & 9.737599 & 13.186542 & 12.81426 & 13.18654 & 12.81426 & 13.29619 & 12.92136\end{array}$ $\begin{array}{llllllllllllllllll}8.249544 & 7.888669 & 8.249544 & 7.888669 & 8.285559 & 7.922791 & 8.766112 & 8.382403 & 8.516204 & 8.143583 & 8.516204 & 8.143583 & 11.225494 & 10.73483 & 11.22549 & 10.73483 & 11.30233 & 10.80813\end{array}$ $\begin{array}{llllllllllllllllll}7.903906 & 7.647424 & 7.903906 & 7.647424 & 7.935188 & 7.68027 & 8.396441 & 8.125925 & 8.158738 & 7.894622 & 8.158738 & 7.894622 & 10.758529 & 10.40645 & 10.75853 & 10.40645 & 10.83045 & 10.47742\end{array}$ $\begin{array}{llllllllllllllllll}7.613046 & 7.303684 & 7.613046 & 7.303684 & 7.642503 & 7.334355 & 8.086652 & 7.75933 & 7.857365 & 7.536928 & 7.857365 & 7.536928 & 10.365492 & 9.945198 & 10.36549 & 9.945198 & 10.43419 & 10.01207\end{array}$ $\begin{array}{llllllllllllllllllll}7.368742 & 7.087567 & 7.368742 & 7.087567 & 7.395486 & 7.114536 & 7.825439 & 7.527813 & 7.603573 & 7.313885 & 7.603573 & 7.313885 & 10.037477 & 9.652723 & 10.03748 & 9.652723 & 10.10279 & 9.71624\end{array}$ $\begin{array}{llllllllllllllllllllllll}18.721098 & 18.22654 & 18.7211 & 18.22654 & 19.06484 & 18.56138 & 20.06956 & 19.53968 & 19.32127 & 18.81141 & 19.32127 & 18.81141 & 25.320898 & 24.65095 & 25.3209 & 24.65095 & 25.62357 & 24.9458\end{array}$ $\begin{array}{llllllllllllllllllllll}20.873173 & 20.45316 & 20.87317 & 20.45316 & 21.27632 & 20.84919 & 22.39329 & 21.94349 & 21.55246 & 21.11931 & 21.55246 & 21.11931 & 28.197736 & 27.62861 & 28.19774 & 27.62861 & 28.54695 & 27.97136\end{array}$ $\begin{array}{llllllllllllllllllllll}23.43235 & 22.96614 & 23.43235 & 22.96614 & 23.90123 & 23.42712 & 25.1523 & 24.65321 & 24.20287 & 23.72244 & 24.20287 & 23.72244 & 31.628159 & 30.29851 & 31.62816 & 30.29851 & 32.02972 & 30.69544\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}25.169561 & 24.25444 & 25.16956 & 24.25444 & 25.68187 & 24.7482 & 27.02489 & 26.04261 & 26.0036 & 25.05891 & 26.0036 & 25.05891 & 33.953621 & 32.71752 & 33.95362 & 32.71752 & 34.39046 & 33.13869\end{array}$ $\begin{array}{llllllllllllllllll}18.698539 & 16.96549 & 18.69854 & 16.96549 & 19.02561 & 17.25632 & 20.03645 & 18.43305 & 19.30613 & 17.51959 & 19.30613 & 17.51959 & 25.253491 & 22.86038 & 25.25349 & 22.86038 & 25.55419 & 23.19473\end{array}$ $\begin{array}{lllllllllllllllll}13.556262 & 12.92004 & 13.55626 & 12.72996 & 13.75125 & 12.89696 & 14.49733 & 13.59846 & 13.99485 & 13.13002 & 13.99485 & 13.13002 & 18.360757 & 17.23061 & 18.34856 & 17.23061 & 18.55403 \\ 17.40946\end{array}$ $\begin{array}{llllllllllllllllllllll}11.730295 & 10.88652 & 11.7303 & 10.88652 & 11.87382 & 11.01358 & 12.52694 & 11.62135 & 12.10784 & 11.23577 & 12.10784 & 11.23577 & 15.907504 & 14.76952 & 15.9075 & 14.76952 & 16.06202 & 14.90962\end{array}$ $\begin{array}{lllllllllllllllllllll}10.454327 & 10.19404 & 10.45433 & 10.19404 & 10.56234 & 10.30073 & 11.15004 & 10.87372 & 10.78831 & 10.52086 & 10.78831 & 10.52086 & 14.194955 & 13.83824 & 14.19496 & 13.77864 & 14.30298 & 13.90078\end{array}$ $\begin{array}{lllllllllllllllllll}9.816822 & 9.494715 & 9.816822 & 9.494715 & 9.905913 & 9.580603 & 10.46162 & 10.11857 & 10.12999 & 9.798899 & 10.12999 & 9.798899 & 13.337999 & 12.89779 & 13.338 & 12.89779 & 13.45144 & 13.00761\end{array}$ $\begin{array}{llllllllllllllllllllll}9.319559 & 8.937113 & 9.319559 & 8.937113 & 9.393448 & 9.008225 & 9.924784 & 9.517688 & 9.617967 & 9.223325 & 9.617967 & 9.223325 & 12.666695 & 12.14661 & 12.6667 & 12.14661 & 12.76932 & 12.24517\end{array}$ $\begin{array}{llllllllllllllllll}8.81703 & 8.526295 & 8.81703 & 8.526295 & 8.878108 & 8.585057 & 9.383644 & 9.074119 & 9.099398 & 8.799672 & 9.099398 & 8.799672 & 11.989097 & 11.59329 & 11.9891 & 11.59329 & 12.08185 & 11.6829\end{array}$ $\begin{array}{lllllllllllllllllll}8.420259 & 8.061813 & 8.420259 & 8.061813 & 8.465055 & 8.105221 & 8.952412 & 8.571577 & 8.690646 & 8.320381 & 8.690646 & 8.320381 & 11.456575 & 10.96916 & 11.45658 & 10.96916 & 11.53861 & 11.0479\end{array}$ $\begin{array}{lllllllllllllllllll}7.637531 & 7.337865 & 7.637531 & 7.337865 & 7.66799 & 7.368379 & 8.113093 & 7.795785 & 7.882016 & 7.57337 & 7.882016 & 7.57337 & 10.399534 & 9.989458 & 10.39953 & 9.989458 & 10.46879 & 10.05672\end{array}$ $\begin{array}{lllllllllllllllllll}7.604316 & 7.359831 & 7.604316 & 7.359831 & 7.630794 & 7.389136 & 8.075005 & 7.818285 & 7.847142 & 7.59611 & 7.847142 & 7.59611 & 10.358034 & 10.02 & 10.35803 & 10.02 & 10.42496 & 10.08686\end{array}$ $\begin{array}{llllllllllllllllllll}7.472754 & 7.081485 & 7.472754 & 7.081485 & 7.499479 & 7.109825 & 7.936059 & 7.522006 & 7.712274 & 7.30663 & 7.712274 & 7.30663 & 10.17651 & 9.64567 & 10.17651 & 9.64567 & 10.24279 & 9.709624\end{array}$ $\begin{array}{llllllllllllllllllllll}18.091283 & 17.3584 & 18.09128 & 17.3584 & 18.4237 & 17.67651 & 19.39438 & 18.6084 & 18.67071 & 17.9153 & 18.67071 & 17.9153 & 24.469964 & 23.47733 & 24.46996 & 23.47733 & 24.76246 & 23.75778\end{array}$ $\begin{array}{lllllllllllllllllllll}20.255466 & 19.89271 & 20.25547 & 19.89271 & 20.64243 & 20.27629 & 21.7273 & 21.34083 & 20.91329 & 20.53987 & 20.91329 & 20.53987 & 27.368852 & 26.87404 & 27.36885 & 26.87404 & 27.70529 & 27.20649\end{array}$ $\begin{array}{llllllllllllllllllllllll}21.559279 & 20.79122 & 21.55928 & 20.79122 & 21.98019 & 21.19698 & 23.13381 & 22.30963 & 22.26531 & 21.47235 & 22.26531 & 21.47235 & 29.112491 & 28.00455 & 29.11249 & 27.95725 & 29.47628 & 28.42568\end{array}$

 $\begin{array}{llllllllllllllllllllllllll}22.087944 & 21.33013 & 22.08794 & 21.33013 & 22.51995 & 21.74808 & 23.70369 & 22.89109 & 22.81816 & 22.03568 & 22.81816 & 22.03568 & 29.811262 & 28.78716 & 29.81126 & 28.78716 & 30.18565 & 29.14913\end{array}$ $\begin{array}{lllllllllllllllll}18.368085 & 16.91704 & 18.36809 & 16.91704 & 18.69915 & 17.21476 & 19.6913 & 18.13049 & 18.97117 & 17.47128 & 18.97117 & 17.47128 & 24.817285 & 22.8638 & 24.81729 & 22.8638 & 25.11391\end{array} 23.13328$ $\begin{array}{llllllllllllllllllll}12.041912 & 11.38561 & 12.04191 & 11.38561 & 12.19973 & 11.53249 & 12.86677 & 12.16357 & 12.42931 & 11.7507 & 12.42931 & 11.7507 & 16.323929 & 15.43815 & 16.32393 & 15.43815 & 16.4876 & 15.59157\end{array}$ $\begin{array}{lllllllllllllllllll}10.588937 & 9.873409 & 10.58894 & 9.873409 & 10.70731 & 9.97794 & 11.29959 & 10.53191 & 10.92682 & 10.18795 & 10.92682 & 10.18795 & 14.372923 & 13.40647 & 14.37292 & 13.40647 & 14.50629 & 13.52783\end{array}$ $\begin{array}{llllllllllllllllllll}10.588937 & 9.873409 & 10.58894 & 9.873409 & 10.70731 & 9.97794 & 11.29959 & 10.53191 & 10.92682 & 10.18795 & 10.92682 & 10.18795 & 14.372923 & 13.40647 & 14.37292 & 13.40647 & 14.50629 & 13.52783 \\ 9.713751 & 9.424804 & 9.713751 & 9.424804 & 9.807933 & 9.51614 & 10.35546 & 10.04778 & 10.02233 & 9.725427 & 10.02233 & 9.725427 & 13.196919 & 12.73817 & 13.19692 & 12.71814 & 13.31189 & 12.82861\end{array}$ $\begin{array}{lllllllllllllllllll}9.174326 & 8.796981 & 9.174326 & 8.796981 & 9.251286 & 8.870879 & 9.772497 & 9.370685 & 9.466532 & 9.077381 & 9.466532 & 9.077381 & 12.469939 & 11.95657 & 12.46994 & 11.95657 & 12.57275 & 12.05524\end{array}$ $\begin{array}{llllllllllllllllllll}8.579956 & 8.29834 & 8.579956 & 8.29834 & 8.643044 & 8.358872 & 9.133206 & 8.833441 & 8.852754 & 8.563289 & 8.852754 & 8.563289 & 11.668653 & 11.28365 & 11.66865 & 11.28365 & 11.76033 & 11.37229\end{array}$ $\begin{array}{llllllllllllllllll}8.214041 & 8.007499 & 8.214041 & 8.007499 & 8.266342 & 8.058831 & 8.738492 & 8.519112 & 8.476138 & 8.26338 & 8.476138 & 8.26338 & 11.174095 & 10.89214 & 11.1741 & 10.89214 & 11.25805 & 10.97423\end{array}$ $\begin{array}{llllllllllllllllll}8.227338 & 7.860577 & 8.227338 & 7.860577 & 8.273856 & 7.904914 & 8.748947 & 8.35856 & 8.490801 & 8.11131 & 8.490801 & 8.11131 & 11.1939 & 10.69704 & 11.1939 & 10.69704 & 11.27528 & 10.77455\end{array}$ $\begin{array}{llllllllllllllllll}7.646708 & 7.405664 & 7.646708 & 7.405664 & 7.679692 & 7.437958 & 8.124392 & 7.868535 & 7.891076 & 7.642334 & 7.891076 & 7.642334 & 10.411382 & 10.08297 & 10.41138 & 10.08297 & 10.48185 & 10.1514\end{array}$ $\begin{array}{llllllllllllllllll}7.477615 & 7.216406 & 7.477615 & 7.216406 & 7.505667 & 7.245046 & 7.941764 & 7.66519 & 7.71619 & 7.445926 & 7.71619 & 7.445926 & 10.184617 & 9.829377 & 10.18462 & 9.829377 & 10.25139 & 9.894444\end{array}$ $\begin{array}{lllllllllllllllllllll}7.265362 & 6.926645 & 7.265362 & 6.926645 & 7.291513 & 6.952577 & 7.715408 & 7.356091 & 7.496567 & 7.14611 & 7.496567 & 7.14611 & 9.897475 & 9.437476 & 9.897475 & 9.437476 & 9.961698 & 9.498997\end{array}$ $\begin{array}{lllllllllllllllll}6.756067 & 6.468994 & 6.756067 & 6.468994 & 6.77962 & 6.493075 & 7.173475 & 6.869265 & 6.969231 & 6.671621 & 6.969231 & 6.671621 & 9.208049 & 8.81897 & 9.208049 & 8.81897 & 9.26703\end{array} \quad 8.875915$ $\begin{array}{llllllllllllllllllllllllllllll}17.630634 & 17.18429 & 17.63063 & 17.18429 & 17.951 & 17.4986 & 18.89807 & 18.42145 & 18.19502 & 17.73573 & 18.19502 & 17.73573 & 23.849916 & 23.24193 & 23.84992 & 23.24193 & 24.13316 & 23.51922\end{array}$

 2026_ALT1_C 2026_ALT1_ 2026_NP_C 2026_NP_N 2026_ALT3_ 2026_ALT3_ 2026_ALT4_ 2026_ALT4_ 2026_ALT5_ 2026_ALT5_ 2026_PP_CA 2026_PP_N 2033_ALT1_C 2033_ALT1_ 2033_NP_C 2033_NP_N 2033_ALT3_ 2033_ALT3_

 $\begin{array}{llllllllllllllllllllllll}20.689717 & 20.03125 & 20.68972 & 20.03125 & 21.0835 & 20.41429 & 22.19269 & 21.48817 & 21.36366 & 20.68541 & 21.36366 & 20.68541 & 27.952292 & 27.05797 & 27.95229 & 27.05797 & 28.29571 & 27.39165\end{array}$ $\begin{array}{lllllllllllllllllllllll}20.874389 & 19.92315 & 20.87439 & 19.92315 & 21.28046 & 20.30893 & 22.39831 & 21.37645 & 21.55966 & 20.57713 & 21.55966 & 20.57713 & 28.18536 & 26.90187 & 28.18536 & 26.90187 & 28.53713 & 27.23678\end{array}$ $\begin{array}{lllllllllllllllllllllll}19.872921 & 19.1645 & 19.87292 & 19.1645 & 20.24986 & 19.52699 & 21.31726 & 20.55687 & 20.52569 & 19.79438 & 20.52569 & 19.79438 & 26.838009 & 25.88113 & 26.83801 & 25.88113 & 27.16819 & 26.19918\end{array}$ $\begin{array}{lllllllllllllllllllll}17.335236 & 15.91479 & 17.33524 & 15.91479 & 17.64313 & 16.19055 & 18.58029 & 17.0525 & 17.90219 & 16.43306 & 17.90219 & 16.43306 & 23.429044 & 21.51839 & 23.42904 & 21.51839 & 23.7063 & 21.76911\end{array}$ $\begin{array}{lllllllllllllllll}10.693042 & 10.06843 & 10.69304 & 10.06843 & 10.82197 & 10.1856 & 11.41707 & 10.74699 & 11.03431 & 10.38878 & 11.03431 & 10.38878 & 14.508232 & 13.66554 & 14.50823 & 13.66554 & 14.64754 \\ 13.79444\end{array}$ $\begin{array}{llllllllllllllllll}9.578557 & 8.997849 & 9.578557 & 8.997849 & 9.676417 & 9.084985 & 10.21444 & 9.591753 & 9.8819 & 9.282236 & 9.8819 & 9.282236 & 13.012147 & 12.22748 & 13.01215 & 12.22748 & 13.12779 & 12.33364\end{array}$ $\begin{array}{llllllllllllllllll}8.873539 & 8.546373 & 8.873539 & 8.546373 & 8.950579 & 8.620222 & 9.453372 & 9.104577 & 9.154518 & 8.816953 & 9.154518 & 8.816953 & 12.063005 & 11.61856 & 12.06301 & 11.61856 & 12.16341 & 11.71507\end{array}$ $\begin{array}{lllllllllllllllllll}8.386204 & 8.181217 & 8.386204 & 8.181217 & 8.450302 & 8.244296 & 8.92815 & 8.710547 & 8.651304 & 8.440702 & 8.651304 & 8.440702 & 11.406953 & 11.12592 & 11.40695 & 11.12592 & 11.49745 & 11.21465\end{array}$ $\begin{array}{llllllllllllllllllll}8.01859 & 7.769743 & 8.01859 & 7.769743 & 8.072092 & 7.821255 & 8.531725 & 8.26658 & 8.272837 & 8.01562 & 8.272837 & 8.01562 & 10.910155 & 10.57279 & 10.91016 & 10.57279 & 10.993 & 10.6528\end{array}$ | .753374 | 7.518914 | 7.753374 | 7.518914 | 7.798646 | 7.562654 | 8.245323 | 7.995602 | 7.999762 | 7.756941 | 7.999762 | 7.756941 | 10.55213 | 10.23509 | 10.55213 | 10.23509 | 10.62915 | 10.30953 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{llllllllllllllllllll}7.611719 & 7.390526 & 7.611719 & 7.390526 & 7.65115 & 7.429158 & 8.091104 & 7.856085 & 7.853027 & 7.624417 & 7.853027 & 7.624417 & 10.363736 & 10.0632 & 10.36374 & 10.0632 & 10.43677 & 10.13421\end{array}$ $\begin{array}{lllllllllllllllllllll}7.473241 & 7.255896 & 7.473241 & 7.255896 & 7.506435 & 7.288409 & 7.940367 & 7.709578 & 7.710838 & 7.486423 & 7.710838 & 7.486423 & 10.177193 & 9.881381 & 10.17719 & 9.881381 & 10.24631 & 9.948587\end{array}$ $\begin{array}{lllllllllllllllllll}7.352182 & 7.119549 & 7.352182 & 7.119549 & 7.381916 & 7.148156 & 7.809625 & 7.562328 & 7.585505 & 7.345279 & 7.585505 & 7.345279 & 10.015073 & 9.698766 & 10.01507 & 9.698766 & 10.08155 & 9.762998\end{array}$ $\begin{array}{llllllllllllllllll}7.115596 & 6.885204 & 7.115596 & 6.885204 & 7.141158 & 6.910622 & 7.5559 & 7.311574 & 7.340621 & 7.102502 & 7.340621 & 7.102502 & 9.696459 & 9.383054 & 9.696459 & 9.383054 & 9.75906 & 9.443877\end{array}$ $\begin{array}{llllllllllllllllll}6.886122 & 6.645159 & 6.886122 & 6.645159 & 6.908827 & 6.668277 & 7.310607 & 7.055633 & 7.103085 & 6.854631 & 7.103085 & 6.854631 & 9.386745 & 9.057336 & 9.386745 & 9.057336 & 9.446151 & 9.115289\end{array}$ $\begin{array}{llllllllllllllllll}6.760817 & 6.403032 & 6.760817 & 6.403032 & 6.781356 & 6.424758 & 7.176492 & 6.797524 & 6.974219 & 6.602741 & 6.974219 & 6.602741 & 9.216216 & 8.732142 & 9.216216 & 8.732142 & 9.273755 & 8.787301\end{array}$ $\begin{array}{llllllllllllllllllllll}17.091223 & 16.53753 & 17.09122 & 16.53753 & 17.39935 & 16.83787 & 18.3178 & 17.72613 & 17.63707 & 17.06655 & 17.63707 & 17.06655 & 23.124645 & 22.37235 & 23.12465 & 22.37235 & 23.39769 & 22.63781\end{array}$ $\begin{array}{llllllllllllllllllllll}17.918669 & 17.21285 & 17.91867 & 17.21285 & 18.24319 & 17.52646 & 19.20625 & 18.45174 & 18.49311 & 17.76677 & 18.49311 & 17.76677 & 24.238702 & 23.10902 & 24.2387 & 23.10902 & 24.52618 & 23.49658\end{array}$ $\begin{array}{llllllllllllllllllll}19.135996 & 18.74653 & 19.136 & 18.74653 & 19.49299 & 19.09975 & 20.52054 & 20.1058 & 19.757 & 19.35687 & 19.757 & 19.35687 & 25.862414 & 25.33011 & 25.86241 & 25.33011 & 26.17607 & 25.63937\end{array}$ $\begin{array}{lllllllllllllllllll}18.313321 & 17.71378 & 18.31332 & 17.71378 & 18.65874 & 18.04752 & 19.64148 & 18.99838 & 18.90964 & 18.29102 & 18.90964 & 18.29102 & 24.744195 & 23.93332 & 24.7442 & 23.93332 & 25.04647 & 24.22563\end{array}$ $\begin{array}{lllllllllllllllllll}18.077527 & 17.13311 & 18.07753 & 17.13311 & 18.41118 & 17.44656 & 19.38404 & 18.36953 & 18.66541 & 17.69225 & 18.66541 & 17.69225 & 24.421417 & 23.15162 & 24.42142 & 23.15162 & 24.71661 & 23.42992\end{array}$ $\begin{array}{llllllllllllllllll}15.966616 & 15.16851 & 15.96662 & 15.16851 & 16.24399 & 15.42836 & 17.10801 & 16.25034 & 16.48512 & 15.66093 & 16.48512 & 15.66093 & 21.591198 & 20.51461 & 21.5912 & 20.51461 & 21.84276 & 20.75183\end{array}$ $\begin{array}{llllllllllllllllllll}13.799979 & 12.91863 & 13.79998 & 12.91863 & 14.01748 & 13.11727 & 14.77052 & 13.82332 & 14.24514 & 13.33396 & 14.24514 & 13.33396 & 18.6816 & 17.49458 & 18.6816 & 17.49458 & 18.88748 & 17.68456\end{array}$

 $\begin{array}{llllllllllllllllll}10.876445 & 10.38025 & 10.87645 & 10.38025 & 11.01579 & 10.51045 & 11.61848 & 11.08614 & 11.22363 & 10.71031 & 11.22363 & 10.71031 & 14.751787 & 14.08328 & 14.75179 & 14.08328 & 14.89761 & 14.22076\end{array}$ $\begin{array}{lllllllllllllllllll}9.64609 & 9.195887 & 9.64609 & 9.195887 & 9.752042 & 9.293674 & 10.29143 & 9.808736 & 9.95139 & 9.486362 & 9.95139 & 9.486362 & 13.099603 & 12.49151 & 13.0996 & 12.49151 & 13.21967 & 12.60427\end{array}$ $\begin{array}{llllllllllllllllll}8.781425 & 8.374237 & 8.781425 & 8.374237 & 8.861922 & 8.448251 & 9.357826 & 8.921898 & 9.058544 & 8.63802 & 9.058544 & 8.63802 & 11.937091 & 11.38634 & 11.93709 & 11.38634 & 12.03837 & 11.48149\end{array}$ $\begin{array}{lllllllllllllllllllll}7.370525 & 7.128966 & 7.370525 & 7.128966 & 7.405418 & 7.163154 & 7.832533 & 7.575968 & 7.604325 & 7.35457 & 7.604325 & 7.35457 & 10.037062 & 9.708998 & 10.03706 & 9.708998 & 10.10619 & 9.775969\end{array}$ $\begin{array}{llllllllllllllllll}6.949811 & 6.737427 & 6.949811 & 6.737427 & 6.979009 & 6.766292 & 7.382608 & 7.157172 & 7.169202 & 6.949451 & 7.169202 & 6.949451 & 9.468755 & 9.180473 & 9.468755 & 9.180473 & 9.531902 & 9.241846\end{array}$ $\begin{array}{lllllllllllllllllll}6.949811 & 6.737427 & 6.949811 & 6.737427 & 6.979009 & 6.766292 & 7.382608 & 7.157172 & 7.169202 & 6.949451 & 7.169202 & 6.949451 & 9.468755 & 9.180473 & 9.468755 & 9.180473 & 9.531902 & 9.241846 \\ 6.937559 & 6.689571 & 6.937559 & 6.689571 & 6.963195 & 6.715248 & 7.367305 & 7.104163 & 7.156862 & 6.899585 & 7.156862 & 6.899585 & 9.453635 & 9.118175 & 9.453635 & 9.118175 & 9.515001 & 9.177541\end{array}$ $\begin{array}{llllllllllllllllll}6.937559 & 6.689571 & 6.937559 & 6.689571 & 6.963195 & 6.715248 & 7.367305 & 7.104163 & 7.156862 & 6.899585 & 7.156862 & 6.899585 & 9.453635 & 9.118175 & 9.453635 & 9.118175 & 9.515001 & 9.177541 \\ 6.818466 & 6.568078 & 6.818466 & 6.568078 & 6.840126 & 6.590952 & 7.238229 & 6.97334 & 7.033326 & 6.773611 & 7.033326 & 6.773611 & 9.294984 & 8.955441 & 9.294984 & 8.955441 & 9.353425 & 9.012446\end{array}$ $\begin{array}{llllllllllllllllll}6.818466 & 6.568078 & 6.818466 & 6.568078 & 6.840126 & 6.590952 & 7.238229 & 6.97334 & 7.033326 & 6.773611 & 7.033326 & 6.773611 & 9.294984 & 8.955441 & 9.294984 & 8.955441 & 9.353425 & 9.012446 \\ 6.677474 & 6.437954 & 6.677474 & 6.437954 & 6.69692 & 6.458308 & 7.08698 & 6.833991 & 6.886684 & 6.640089 & 6.886684 & 6.640089 & 9.106422 & 8.77793 & 9.106422 & 8.77793 & 9.162555 & 8.832894\end{array}$ $\begin{array}{llllllllllllllllllllll}6.677474 & 6.437954 & 6.6774 & 6.43754 & 6.69692 & 6.45859 & 17.17383 & 16.82648 & 16.53741 & 16.20251 & 16.53741 & 16.20251 & 21.694333 & 21.24791 & 21.69433 & 21.24791 & 21.94723 & 21.4972\end{array}$ $\begin{array}{llllllllllllllllllll}16.667038 & 16.04466 & 16.66704 & 15.99186 & 16.96213 & 16.3313 & 17.85939 & 17.1948 & 17.19868 & 16.50399 & 17.19868 & 16.50399 & 22.555447 & 21.63588 & 22.55545 & 21.63588 & 22.81892 & 21.8902\end{array}$ $\begin{array}{llllllllllllllllllll}17.601181 & 16.85135 & 17.60118 & 16.85135 & 17.92594 & 17.16075 & 18.87165 & 18.0666 & 18.17051 & 17.39629 & 18.17051 & 17.39629 & 23.794353 & 22.78195 & 23.79435 & 22.78195 & 24.08067 & 23.05531\end{array}$ $\begin{array}{llllllllllllllllllll}17.222957 & 16.5741 & 17.22296 & 16.5741 & 17.53811 & 16.87703 & 18.46477 & 17.76885 & 17.78162 & 17.11162 & 17.78162 & 17.11162 & 23.281679 & 22.40499 & 23.28168 & 22.40499 & 23.56076 & 22.67334\end{array}$ $\begin{array}{llllllllllllllllll}16.484405 & 15.43417 & 16.48441 & 15.43417 & 16.77983 & 15.70584 & 17.66866 & 16.53939 & 17.01877 & 15.9336 & 17.01877 & 15.9336 & 22.287941 & 20.87253 & 22.28794 & 20.87253 & 22.55198 & 21.11722\end{array}$ $\begin{array}{lllllllllllllllllll}14.830265 & 13.9666 & 14.83027 & 13.9666 & 15.08101 & 14.19834 & 15.885 & 14.9565 & 15.30934 & 14.41666 & 15.30934 & 14.41666 & 20.064406 & 18.90106 & 20.06441 & 18.90106 & 20.29414 & 19.11503\end{array}$ $\begin{array}{lllllllllllllllllll}13.050827 & 12.26392 & 13.05083 & 12.26392 & 13.25311 & 12.44898 & 13.96568 & 13.11984 & 13.46977 & 12.65626 & 13.46977 & 12.65626 & 17.673982 & 16.61433 & 17.67398 & 16.61433 & 17.86664 & 16.7926\end{array}$ $\begin{array}{llllllllllllllllll}11.876949 & 11.16734 & 11.87695 & 11.16734 & 12.04685 & 11.32243 & 12.69946 & 11.93712 & 12.25671 & 11.52299 & 12.25671 & 11.52299 & 16.096299 & 15.1405 & 16.0963 & 15.1405 & 16.26431 & 15.29599\end{array}$ $\begin{array}{llllllllllllllllll}10.605085 & 9.783218 & 10.60509 & 9.783218 & 10.74093 & 9.901391 & 11.3282 & 10.44479 & 10.94237 & 10.09222 & 10.94237 & 10.09222 & 14.386346 & 13.28056 & 14.38635 & 13.28056 & 14.52824 & 13.40749\end{array}$ $\begin{array}{llllllllllllllllllllll}9.702452 & 9.208247 & 9.702452 & 9.208247 & 9.815417 & 9.311848 & 10.35588 & 9.825756 & 10.00953 & 9.49905 & 10.00953 & 9.49905 & 13.1722 & 12.50488 & 13.1722 & 12.50488 & 13.29612 & 12.62058\end{array}$

 $\begin{array}{lllllllllllllllllll}8.080412 & 7.890861 & 8.080412 & 7.890861 & 8.147004 & 7.956274 & 8.605278 & 8.403986 & 8.333901 & 8.139439 & 8.333901 & 8.139439 & 10.99207 & 10.73179 & 10.99207 & 10.73179 & 11.08128 & 10.8193\end{array}$ $\begin{array}{llllllllllllllllllll}7.791433 & 7.523665 & 7.791433 & 7.523665 & 7.848771 & 7.578897 & 8.293071 & 8.00803 & 8.036556 & 7.760551 & 8.036556 & 7.760551 & 10.601824 & 10.23713 & 10.60182 & 10.23713 & 10.68458 & 10.31702\end{array}$ $\begin{array}{lllllllllllllllllll}7.480235 & 7.189286 & 7.480235 & 7.189286 & 7.528866 & 7.235634 & 7.957601 & 7.647573 & 7.715955 & 7.415037 & 7.715955 & 7.415037 & 10.181528 & 9.787457 & 10.18153 & 9.787457 & 10.2579 & 9.86051\end{array}$ $\begin{array}{llllllllllllllllllllllll}7.25485 & 7.010722 & 7.25485 & 7.010722 & 7.296875 & 7.051618 & 7.71438 & 7.454713 & 7.483571 & 7.230858 & 7.483571 & 7.230858 & 9.877754 & 9.547099 & 9.877754 & 9.547099 & 9.949315 & 9.616211\end{array}$ $\begin{array}{lllllllllllllllllll}7.074236 & 6.839524 & 7.074236 & 6.839524 & 7.11 & 6.875608 & 7.518694 & 7.27792 & 7.296959 & 7.053995 & 7.296959 & 7.053995 & 9.63576 & 9.316946 & 9.63576 & 9.316946 & 9.702901 & 9.382428\end{array}$ $\begin{array}{lllllllllllllllll}6.971688 & 6.81081 & 6.971688 & 6.81081 & 7.002196 & 6.841672 & 7.406402 & 7.236316 & 7.190891 & 7.025303 & 7.190891 & 7.025303 & 9.499652 & 9.279028 & 9.499652 & 9.279028 & 9.563428 \\ 9.341919\end{array}$ $\begin{array}{lllllllllllllllllll}6.749623 & 6.567095 & 6.749623 & 6.567095 & 6.775783 & 6.593463 & 7.168103 & 6.974769 & 6.961523 & 6.772912 & 6.961523 & 6.772912 & 9.199876 & 8.951254 & 9.199876 & 8.951254 & 9.259888 & 9.010025\end{array}$ $\begin{array}{lllllllllllllllll}6.69624 & 6.443875 & 6.69624 & 6.443875 & 6.718937 & 6.466137 & 7.109049 & 6.841037 & 6.905984 & 6.644454 & 6.905984 & 6.644454 & 9.130142 & 8.788475 & 9.130142 & 8.788475 & 9.187988 \\ 8.84409\end{array}$ $\begin{array}{lllllllllllllllll}6.548219 & 6.325155 & 6.548219 & 6.325155 & 6.567665 & 6.345511 & 6.949759 & 6.714014 & 6.752409 & 6.522149 & 6.752409 & 6.522149 & 8.931994 & 8.627249 & 8.931994 & 8.627249 & 8.987034 \\ 8.681134\end{array}$ $\begin{array}{lllllllllllllllllll}15.060866 & 14.57604 & 15.06087 & 14.57604 & 15.32276 & 14.83001 & 16.13405 & 15.61522 & 15.53799 & 15.03868 & 15.53799 & 15.03868 & 20.391567 & 19.65259 & 20.39157 & 19.65259 & 20.62671 & 19.96121\end{array}$ $\begin{array}{llllllllllllllllllllll}15.751423 & 15.15121 & 15.75142 & 15.15121 & 16.02716 & 15.41681 & 16.87612 & 16.2335 & 16.25386 & 15.63523 & 16.25386 & 15.63523 & 21.318201 & 20.50409 & 21.3182 & 20.50409 & 21.56572 & 20.74247\end{array}$ $\begin{array}{lllllllllllllllllllll}15.969652 & 15.21365 & 15.96965 & 15.21365 & 16.25551 & 15.48358 & 17.11532 & 16.30337 & 16.48273 & 15.70232 & 16.48273 & 15.70232 & 21.60164 & 20.58107 & 21.60164 & 20.58107 & 21.85647 & 20.82252\end{array}$ $\begin{array}{llllllllllllllllllll}15.916107 & 15.33919 & 15.91611 & 15.33919 & 16.19871 & 15.61056 & 17.05691 & 16.43803 & 16.42908 & 15.83416 & 16.42908 & 15.83416 & 21.527321 & 20.74656 & 21.52732 & 20.74656 & 21.78039 & 20.99007\end{array}$ $\begin{array}{lllllllllllllllllllll}15.238235 & 14.22887 & 15.23824 & 14.22887 & 15.50233 & 14.47141 & 16.32605 & 15.24139 & 15.72966 & 14.68611 & 15.72966 & 14.68611 & 20.613731 & 19.25448 & 20.61373 & 19.25448 & 20.85297 & 19.47544\end{array}$ $\begin{array}{lllllllllllllllllll}13.749651 & 13.24187 & 13.74965 & 13.24187 & 13.97559 & 13.45759 & 14.72221 & 14.17722 & 14.1908 & 13.6667 & 14.1908 & 13.6667 & 18.612834 & 17.92657 & 18.61283 & 17.92657 & 18.822 & 18.12721\end{array}$ $\begin{array}{llllllllllllllllll}12.47337 & 11.91369 & 12.47337 & 11.91369 & 12.66442 & 12.0933 & 13.34578 & 12.74471 & 12.87221 & 12.29376 & 12.87221 & 12.29376 & 16.89671 & 16.14224 & 16.89671 & 16.14224 & 17.07938 & 16.31509\end{array}$ $\begin{array}{llllllllllllllllllll}11.209516 & 10.80511 & 11.20952 & 10.80511 & 11.366 & 10.95458 & 11.98252 & 11.54915 & 11.56581 & 11.14801 & 11.56581 & 11.14801 & 15.198733 & 14.65242 & 15.19873 & 14.65242 & 15.355 & 14.80224\end{array}$ $\begin{array}{llllllllllllllllll}10.421918 & 9.869195 & 10.42192 & 9.869195 & 10.5564 & 9.992872 & 11.13287 & 10.53958 & 10.75223 & 10.1808 & 10.75223 & 10.1808 & 14.1397 & 13.39468 & 14.1397 & 13.39468 & 14.2794 & 13.52491\end{array}$ $\begin{array}{lllllllllllllllllll}10.421918 & 9.869195 & 10.42192 & 9.869195 & 10.5564 & 9.992872 & 11.13287 & 10.53958 & 10.75223 & 10.1808 & 10.75223 & 10.1808 & 14.1397 & 13.39468 & 14.1397 & 13.39468 & 14.2794 & 13.52491 \\ 9.465125 & 8.89086 & 9.465125 & 8.89086 & 9.574625 & 8.988681 & 10.10168 & 9.485043 & 9.763312 & 9.169857 & 9.763312 & 9.169857 & 12.853319 & 12.07902 & 12.85332 & 12.07902 & 12.97361 & 12.1893\end{array}$ $\begin{array}{llllllllllllllllllll}8.861695 & 8.405898 & 8.861695 & 8.405898 & 8.954744 & 8.490734 & 9.451217 & 8.962593 & 9.140783 & 8.670056 & 9.140783 & 8.670056 & 12.040018 & 11.42412 & 12.04002 & 11.42412 & 12.14794 & 11.52469\end{array}$ $\begin{array}{lllllllllllllllllllll}8.394999 & 8.042486 & 8.394999 & 8.042486 & 8.471174 & 8.11266 & 8.945036 & 8.567537 & 8.658383 & 8.294847 & 8.658383 & 8.294847 & 11.415576 & 10.9379 & 11.41558 & 10.9379 & 11.51171 & 11.02862\end{array}$ $\begin{array}{llllllllllllllllll}7.630139 & 7.386275 & 7.630139 & 7.386275 & 7.687911 & 7.442169 & 8.122037 & 7.862553 & 7.868692 & 7.617609 & 7.868692 & 7.617609 & 10.384458 & 10.05174 & 10.38446 & 10.05174 & 10.46603 & 10.13076\end{array}$ $\begin{array}{llllllllllllllllll}7.39824 & 7.170913 & 7.39824 & 7.170913 & 7.447524 & 7.219015 & 7.870742 & 7.629007 & 7.629944 & 7.395141 & 7.629944 & 7.395141 & 10.072235 & 9.763248 & 10.07224 & 9.763248 & 10.14807 & 9.83686\end{array}$ $\begin{array}{lllllllllllllllllll}7.265333 & 6.955816 & 7.265333 & 6.955816 & 7.309155 & 6.996803 & 7.726553 & 7.396214 & 7.493881 & 7.172957 & 7.493881 & 7.172957 & 9.892037 & 9.474742 & 9.892037 & 9.474742 & 9.964452 & 9.543264\end{array}$ $\begin{array}{llllllllllllllllll}6.934999 & 6.723568 & 6.934999 & 6.723568 & 6.971011 & 6.758916 & 7.370959 & 7.146214 & 7.152052 & 6.93295 & 7.152052 & 6.93295 & 9.448242 & 9.162114 & 9.448242 & 9.162114 & 9.51429 & 9.226161\end{array}$ $\begin{array}{llllllllllllllllll}6.794926 & 6.575138 & 6.794926 & 6.575138 & 6.826819 & 6.606492 & 7.219931 & 6.98652 & 7.008074 & 6.780713 & 7.008074 & 6.780713 & 9.258515 & 8.960162 & 9.258515 & 8.960162 & 9.321651 & 9.021353\end{array}$ $\begin{array}{llllllllllllllllll}6.686972 & 6.510323 & 6.686972 & 6.510323 & 6.714234 & 6.538096 & 7.102248 & 6.915287 & 6.896134 & 6.713405 & 6.896134 & 6.713405 & 9.112473 & 8.864324 & 9.112473 & 8.864324 & 9.172412 & 8.923055\end{array}$ $\begin{array}{llllllllllllllllllll}6.610412 & 6.381088 & 6.610412 & 6.381088 & 6.633791 & 6.404787 & 7.018494 & 6.775339 & 6.81716 & 6.579225 & 6.81716 & 6.579225 & 9.013172 & 8.702833 & 9.013172 & 8.702833 & 9.070691 & 8.758643\end{array}$ $\begin{array}{llllllllllllllllllllll}6.480356 & 6.210472 & 6.480356 & 6.210472 & 6.500469 & 6.230574 & 6.878338 & 6.591896 & 6.682489 & 6.402395 & 6.682489 & 6.402395 & 8.838774 & 8.47397 & 8.838774 & 8.47397 & 8.89367 & 8.526633\end{array}$ $\begin{array}{llllllllllllllllll}13.926363 & 13.49588 & 13.92636 & 13.49588 & 14.16441 & 13.72654 & 14.9153 & 14.45439 & 14.36588 & 13.92208 & 14.36588 & 13.92208 & 18.861825 & 18.27813 & 18.86183 & 18.27813 & 19.07689 & 18.48656\end{array}$ | 14.272751 | 13.7533 | 14.27275 | 13.7533 | 14.51958 | 13.9899 | 15.2893 | 14.73187 | 14.72638 | 14.19012 | 14.72638 | 14.19012 | 19.322485 | 18.62076 | 19.32249 | 18.62076 | 19.54492 | 18.8344 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{llllllllllllllllll}14.51677 & 13.9585 & 14.51677 & 13.9585 & 14.76868 & 14.19968 & 15.5519 & 14.95298 & 14.98012 & 14.40381 & 14.98012 & 14.40381 & 19.647747 & 18.89368 & 19.64775 & 18.89368 & 19.87487 & 19.1114\end{array}$ $\begin{array}{llllllllllllllllll}14.558652 & 14.06698 & 14.55865 & 14.06698 & 14.80882 & 14.30796 & 15.59551 & 15.06837 & 15.02481 & 14.51761 & 15.02481 & 14.51761 & 19.703215 & 19.03769 & 19.70322 & 19.03769 & 19.92992 & 19.25644\end{array}$ $\begin{array}{lllllllllllllllllllllll}14.13448 & 13.22451 & 14.13448 & 13.22451 & 14.37185 & 13.44317 & 15.1375 & 14.16022 & 14.58737 & 13.64691 & 14.58737 & 13.64691 & 19.131658 & 17.90527 & 19.13166 & 17.90527 & 19.34919 & 18.10675\end{array}$ $\begin{array}{llllllllllllllllll}13.068056 & 12.45678 & 13.06806 & 12.45678 & 13.27736 & 12.65416 & 13.98791 & 13.33215 & 13.48484 & 12.8542 & 13.48484 & 12.8542 & 17.689225 & 16.87189 & 17.68923 & 16.87189 & 17.88515 & 17.05744\end{array}$ $\begin{array}{lllllllllllllllllll}11.955742 & 11.3636 & 11.95574 & 11.3636 & 12.13486 & 11.53168 & 12.78871 & 12.15334 & 12.33642 & 11.72379 & 12.33642 & 11.72379 & 16.201433 & 15.40385 & 16.20143 & 15.40385 & 16.37423 & 15.56671\end{array}$ $\begin{array}{llllllllllllllllll}1.743022 & 10.16444 & 10.74302 & 10.16444 & 10.89059 & 10.29997 & 11.48167 & 10.86015 & 11.08265 & 10.48451 & 11.08265 & 10.48451 & 14.571622 & 13.79209 & 14.57162 & 13.79209 & 14.71987 & 13.93011\end{array}$ $\begin{array}{lllllllllllllllllll}10.122173 & 9.639852 & 10.12217 & 9.639852 & 10.25233 & 9.760377 & 10.81192 & 10.29412 & 10.44156 & 9.943101 & 10.44156 & 9.943101 & 13.736366 & 13.08594 & 13.73637 & 13.08594 & 13.87154 & 13.21279\end{array}$ $\begin{array}{llllllllllllllllllll}10.122173 & 9.639852 & 10.12217 & 9.639852 & 10.25233 & 9.760377 & 10.81192 & 10.29412 & 10.44156 & 9.943101 & 10.44156 & 9.943101 & 13.736366 & 13.08594 & 13.73637 & 13.08594 & 13.87154 & 13.21279 \\ 9.439879 & 8.772061 & 9.439879 & 8.772061 & 9.551641 & 8.869319 & 10.0763 & 9.358441 & 9.73671 & 9.046136 & 9.73671 & 9.046136 & 12.818685 & 11.9197 & 12.81869 & 11.9197 & 12.93978 & 12.02864\end{array}$ $\begin{array}{lllllllllllllllllllll}9.439879 & 8.772061 & 9.439879 & 8.772061 & 9.551641 & 8.869319 & 10.0763 & 9.358441 & 9.73671 & 9.046136 & 9.73671 & 9.046136 & 12.818685 & 11.9197 & 12.81869 & 11.9197 & 12.93978 & 12.02864 \\ 8.674292 & 8.37032 & 8.674292 & 8.37032 & 8.764788 & 8.456311 & 9.250567 & 8.925331 & 8.946271 & 8.632184 & 8.946271 & 8.632184 & 11.78835 & 11.37735 & 11.78835 & 11.37735 & 11.89346 & 11.47801\end{array}$ $\begin{array}{llllllllllllllllllll}8.674292 & 8.37032 & 8.674292 & 8.37032 & 8.764788 & 8.456311 & 9.250567 & 8.925331 & 8.946271 & 8.632184 & 8.946271 & 8.632184 & 11.78835 & 11.37735 & 11.78835 & 11.37735 & 11.89346 & 11.47801 \\ 8.268848 & 7.84593 & 8.268848 & 7.84593 & 8.347923 & 7.916967 & 8.813138 & 8.359577 & 8.527493 & 8.091094 & 8.527493 & 8.091094 & 11.243156 & 10.67118 & 11.24316 & 10.67118 & 11.3397 & 10.76076\end{array}$ $\begin{array}{llllllllllllllllll}8.268848 & 7.84593 & 8.268848 & 7.84593 & 8.347923 & 7.916967 & 8.813138 & 8.359577 & 8.527493 & 8.091094 & 8.527493 & 8.091094 & 11.243156 & 10.67118 & 11.24316 & 10.67118 & 11.3397 & 10.76076 \\ 7.762215 & 7.446789 & 7.762215 & 7.446789 & 7.826708 & 7.506825 & 8.266383 & 7.929231 & 8.004495 & 7.679254 & 8.004495 & 7.679254 & 10.561479 & 10.13338 & 10.56148 & 10.13338 & 10.6472 & 10.21472\end{array}$ $\begin{array}{lllllllllllllllllll}7.313819 & 7.085028 & 7.313819 & 7.085028 & 7.364981 & 7.134445 & 7.782204 & 7.538817 & 7.541653 & 7.306191 & 7.541653 & 7.306191 & 9.958348 & 9.645999 & 9.958348 & 9.645999 & 10.03428 & 9.719576\end{array}$


 2026_ALT1_C 2026_ALT1_ 2026_NP_C 2026_NP_N 2026_ALT3_ 2026_ALT3_ 2026_ALT4_ 2026_ALT4_ 2026_ALT5_ 2026_ALT5_ 2026_PP_CA 2026_PP_N 2033_ALT1_C 2033_ALT1_ 2033_NP_C 2033_NP_N 2033_ALT3_ 2033_ALT3_
Y Source Scaling Factor AAC
$\begin{array}{ll}387200 & 373860057.95 \%\end{array}$
$387700 \quad 373860064.27 \%$
$388200 \quad 373860065.76 \%$
$388700 \quad 373860062.21 \%$
$389200373860062.79 \%$
$389700 \quad 373860061.25 \%$
$380200 \quad 373910074.83 \%$
$380200 \quad 373910074.83 \%$
$380700 \quad 373910073.52 \%$
$\begin{array}{ll}381200 & 373910069.62 \% \\ 381700 & 3739100 \\ 77.41 \%\end{array}$
$382200 \quad 373910070.85 \%$
$382700 \quad 373910067.04 \%$
3832003739100 69.96\%
$383700 \quad 373910069.79 \%$
$384200 \quad 373910062.72 \%$ $384700 \quad 373910063.36 \%$ $385200 \quad 373910065.54 \%$ $385700 \quad 373910057.22 \%$ $386200 \quad 373910057.90 \%$ $386700 \quad 373910060.75 \%$ $387200 \quad 373910058.36 \%$ $387700 \quad 373910057.47 \%$ $388200 \quad 373910062.38 \%$ $388700 \quad 373910064.11 \%$ $389200 \quad 373910062.61 \%$ $389700 \quad 373910065.16 \%$ $380200 \quad 373960073.72 \%$ $380700373960073.70 \%$ $381200 \quad 373960077.67 \%$ $381700 \quad 373960075.65 \%$ $382200 \quad 373960071.77 \%$ $382700 \quad 373960066.25 \%$ $383200 \quad 373960071.85 \%$ $383700 \quad 373960066.12 \%$ 384200 3739600 65.05\% $384700 \quad 373960063.35 \%$ $385200 \quad 373960061.77 \%$ $385700 \quad 373960058.02 \%$ $386200 \quad 373960058.52 \%$ $386700 \quad 373960058.29 \%$ $387200 \quad 373960061.68 \%$ $387700 \quad 373960059.20 \%$ $388200373960059.22 \%$ $388700373960058.70 \%$ $389200 \quad 373960064.86 \%$ $389700 \quad 373960062.10 \%$ $380200 \quad 374010073.74 \%$ $380700 \quad 374010072.90 \%$ $381200 \quad 374010078.34 \%$ $381700 \quad 374010074.89 \%$ $382200 \quad 374010071.15 \%$ $382700 \quad 374010066.35 \%$ $383200 \quad 374010073.86 \%$ $383700 \quad 3740100$ 64.43\% $384200 \quad 3740100$ 68.33\% $384700 \quad 374010065.74 \%$ $385200 \quad 374010064.63 \%$ 3857003740100 63.64\% $386200 \quad 374010056.80 \%$ $386700 \quad 374010060.54 \%$ $387200 \quad 374010058.31 \%$ $387700 \quad 374010061.87 \%$ $388200 \quad 374010061.66 \%$ $388700 \quad 374010057.50 \%$ $389200374010057.14 \%$ $389700 \quad 374010062.50 \%$ $380200 \quad 374060073.10 \%$ $380700 \quad 374060073.37 \%$ $381200 \quad 374060074.51 \%$ $381700 \quad 374060077.83 \%$ $382200 \quad 374060070.67 \%$ 3827003740600 68.29\% $383200 \quad 374060073.38 \%$ $383700 \quad 3740600$ 65.11\% $384200 \quad 374060068.63 \%$ $384700 \quad 374060062.87 \%$ $385200 \quad 374060064.30 \%$ $385700 \quad 374060061.62 \%$ 386200 3740600 63.03\% 386700 3740600 56.41\% $387200 \quad 374060062.30 \%$ $387700 \quad 3740600$ 60.13\% $388200 \quad 374060065.75 \%$ $388700 \quad 3740600$ 60.34\% $389200 \quad 3740600$ 60.23\% $389700 \quad 374060057.72 \%$ $380200374110072.14 \%$

| .978714 | 6.720642 | 6.978714 | 6.720642 | 7.021867 | 6.761533 | 7.421844 | 7.146753 | 7.196238 | 6.929548 | 7.196238 | 6.929548 | 9.505355 | 9.155487 | 9.505355 | 9.155487 | 9.575041 | 9.222161 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{lllllllllllllllllll}6.790233 & 6.576288 & 6.790233 & 6.576288 & 6.828142 & 6.612884 & 7.218635 & 6.990939 & 7.001914 & 6.780754 & 7.001914 & 6.780754 & 9.251152 & 8.960903 & 9.251152 & 8.960903 & 9.316951 & 9.024464\end{array}$ $\begin{array}{llllllllllllllllll}6.701899 & 6.412747 & 6.701899 & 6.412747 & 6.73467 & 6.444218 & 7.121781 & 6.814141 & 6.911472 & 6.611865 & 6.911472 & 6.611865 & 9.132286 & 8.741236 & 9.132286 & 8.741236 & 9.195069 & 8.801102\end{array}$ $\begin{array}{lllllllllllllllll}6.43631 & 6.28071 & 6.43631 & 6.28071 & 6.463603 & 6.308819 & 6.839359 & 6.672113 & 6.636419 & 6.468788 & 6.636419 & 6.468788 & 8.775508 & 8.552841 & 8.775508 & 8.552841 & 8.833512 \\ 8.610043\end{array}$ $\begin{array}{lllllllllllllllllll}6.480702 & 6.259921 & 6.480702 & 6.259921 & 6.505427 & 6.284814 & 6.881755 & 6.647784 & 6.669272 & 6.454266 & 6.669272 & 6.454266 & 8.819593 & 8.53246 & 8.819593 & 8.53246 & 8.876452 & 8.587951\end{array}$ $\begin{array}{llllllllllllllllll}6.352131 & 6.129616 & 6.352131 & 6.129616 & 6.373075 & 6.151459 & 6.742788 & 6.507371 & 6.549337 & 6.318835 & 6.549337 & 6.318835 & 8.665095 & 8.362824 & 8.665095 & 8.362824 & 8.719336 & 8.415759\end{array}$ $\begin{array}{lllllllllllllllll}12.871917 & 12.53338 & 12.87192 & 12.53338 & 13.08792 & 12.74339 & 13.78273 & 13.42008 & 13.27633 & 12.92727 & 13.27633 & 12.92727 & 17.440139 & 16.98151 & 17.44014 & 16.98151 & 17.63651\end{array} 17.17261$ $\begin{array}{llllllllllllllllll}13.591789 & 13.12474 & 13.59179 & 13.12474 & 13.82059 & 13.34577 & 14.5549 & 14.05487 & 14.02157 & 13.53976 & 14.02157 & 13.53976 & 18.409061 & 17.77658 & 18.40906 & 17.77658 & 18.61743 & 17.97782\end{array}$ $\begin{array}{llllllllllllllllllllll}13.736511 & 12.98474 & 13.73651 & 12.98474 & 13.96867 & 13.20111 & 14.71121 & 13.90365 & 14.17329 & 13.39654 & 14.17329 & 13.39654 & 18.599615 & 17.58556 & 18.59962 & 17.58556 & 18.81096 & 17.78379\end{array}$ $\begin{array}{lllllllllllllllllllllll}13.342446 & 12.78693 & 13.34245 & 12.78693 & 13.56535 & 12.99858 & 14.28733 & 13.69116 & 13.76643 & 13.19322 & 13.76643 & 13.19322 & 18.067906 & 17.31722 & 18.06791 & 17.31722 & 18.2719 & 17.51173\end{array}$ $\begin{array}{lllllllllllllllll}13.067888 & 12.25783 & 13.06789 & 12.25783 & 13.28076 & 12.45301 & 13.98982 & 13.11941 & 13.48347 & 12.64709 & 13.48347 & 12.64709 & 17.698818 & 16.60577 & 17.69882 & 16.60577 & 17.89614\end{array} 16.78845$ $\begin{array}{llllllllllllllllll}12.338395 & 11.83484 & 12.3384 & 11.83484 & 12.53053 & 12.01809 & 13.20249 & 12.66302 & 12.72978 & 12.21037 & 12.72978 & 12.21037 & 16.718533 & 16.03662 & 16.71853 & 16.03662 & 16.90022 & 16.21043\end{array}$ $\begin{array}{lllllllllllllllll}11.555995 & 10.9341 & 11.556 & 10.9341 & 11.72682 & 11.093 & 12.35913 & 11.69163 & 11.9226 & 11.2792 & 11.9226 & 11.2792 & 15.664063 & 14.82649 & 15.66406 & 14.82649 & 15.82965\end{array} 14.98156$ $\begin{array}{lllllllllllllllllll}10.380347 & 10.02282 & 10.38035 & 10.02282 & 10.52031 & 10.1569 & 11.09182 & 10.70885 & 10.70697 & 10.33748 & 10.70697 & 10.33748 & 14.084579 & 13.60167 & 14.08458 & 13.60167 & 14.2262 & 13.73776\end{array}$ $\begin{array}{lllllllllllllllll}9.7294 & 9.39385 & 9.7294 & 9.39385 & 9.85153 & 9.510379 & 10.38982 & 10.03042 & 10.0346 & 9.688116 & 10.0346 & 9.688116 & 13.209021 & 12.75519 & 13.20902 & 12.75519 & 13.33713 \\ 12.87811\end{array}$ $\begin{array}{lllllllllllllllllllll}9.157688 & 8.823379 & 9.157688 & 8.823379 & 9.264343 & 8.924697 & 9.773447 & 9.415526 & 9.444228 & 9.098947 & 9.444228 & 9.098947 & 12.43957 & 11.98744 & 12.43957 & 11.98744 & 12.55591 & 12.09871\end{array}$ $\begin{array}{lllllllllllllllllllll}8.66996 & 8.028478 & 8.66996 & 8.028478 & 8.761928 & 8.107484 & 9.246777 & 8.557926 & 8.941107 & 8.277923 & 8.941107 & 8.277923 & 11.782974 & 10.91852 & 11.78297 & 10.91852 & 11.88865 & 11.01302\end{array}$ $\begin{array}{llllllllllllllllllll}7.984705 & 7.688734 & 7.984705 & 7.688734 & 8.060554 & 7.760015 & 8.509561 & 8.193002 & 8.233225 & 7.928236 & 8.233225 & 7.928236 & 10.859776 & 10.45792 & 10.85978 & 10.45792 & 10.9525 & 10.54638\end{array}$ $\begin{array}{llllllllllllllllll}7.753954 & 7.353846 & 7.753954 & 7.353846 & 7.821748 & 7.414695 & 8.259711 & 7.83111 & 7.995473 & 7.58267 & 7.995473 & 7.58267 & 10.549224 & 10.0075 & 10.54922 & 10.0075 & 10.63641 & 10.08845\end{array}$ $\begin{array}{lllllllllllllllllllll}7.352881 & 7.024083 & 7.352881 & 7.024083 & 7.408909 & 7.076337 & 7.826834 & 7.475962 & 7.581755 & 7.242655 & 7.581755 & 7.242655 & 10.009059 & 9.562438 & 10.00906 & 9.562438 & 10.08764 & 9.636858\end{array}$ $\begin{array}{llllllllllllllll}6.922584 & 6.671629 & 6.922584 & 6.671629 & 6.967538 & 6.715135 & 7.36338 & 7.09642 & 7.137628 & 6.878421 & 7.137628 & 6.878421 & 9.429128 & 9.088136 & 9.429128 & 9.088136 \\ 9.499185 & 9.155648\end{array}$ $\begin{array}{lllllllllllllllll}6.635955 & 6.418777 & 6.635955 & 6.418777 & 6.673368 & 6.455417 & 7.054581 & 6.823712 & 6.84188 & 6.616993 & 6.84188 & 6.616993 & 9.042733 & 8.748527 & 9.042733 & 8.748527 & 9.107034 \\ 8.810765\end{array}$ $\begin{array}{lllllllllllllllll}6.635955 & 6.418777 & 6.635955 & 6.418777 & 6.673368 & 6.455417 & 7.054581 & 6.823712 & 6.84188 & 6.616993 & 6.84188 & 6.616993 & 9.042733 & 8.748527 & 9.042733 & 8.748527 & 9.107034 \\ 8.501549 & 6.212194 & 6.501549 & 6.212194 & 6.535057 & 6.243957 & 6.909617 & 6.601383 & 6.703509 & 6.403366 & 6.703509 & 6.403366 & 8.861131 & 8.470733 & 8.861131 & 8.470733 & 8.922612\end{array} 8.529017$ $\begin{array}{llllllllllllllllllll} \\ 6.393361 & 6.181765 & 6.393361 & 6.181765 & 6.422793 & 6.21004 & 6.792194 & 6.567249 & 6.591771 & 6.373495 & 6.591771 & 6.373495 & 8.716274 & 8.428114 & 8.716274 & 8.428114 & 8.774968 & 8.484758\end{array}$ $\begin{array}{lllllllllllllllll}6.201814 & 6.021545 & 6.201814 & 6.021545 & 6.226674 & 6.045724 & 6.58595 & 6.394648 & 6.393462 & 6.207964 & 6.393462 & 6.207964 & 8.459136 & 8.212516 & 8.459136 & 8.212516 & 8.514097\end{array} 8.265958$ $\begin{array}{lllllllllllllllll}6.198664 & 5.976422 & 6.198664 & 5.976422 & 6.220446 & 5.998354 & 6.580619 & 6.344951 & 6.383243 & 6.160206 & 6.383243 & 6.160206 & 8.446815 & 8.150569 & 8.446815 & 8.150569 & 8.500137 \\ 8.202287\end{array}$ $\begin{array}{lllllllllllllllllll}12.410681 & 12.07114 & 12.41068 & 12.07114 & 12.61442 & 12.26915 & 13.28533 & 12.92172 & 12.79895 & 12.44882 & 12.79895 & 12.44882 & 16.821196 & 16.35992 & 16.8212 & 16.35992 & 17.00806 & 16.54156\end{array}$ $\begin{array}{lllllllllllllllllll}12.335219 & 12.04277 & 12.33522 & 12.04277 & 12.53788 & 12.2411 & 13.20496 & 12.89237 & 12.72217 & 12.42098 & 12.72217 & 12.42098 & 16.716704 & 16.3193 & 16.7167 & 16.3193 & 16.90271 & 16.50121\end{array}$ $\begin{array}{lllllllllllllllllll}12.411522 & 11.83709 & 12.41152 & 11.83709 & 12.61503 & 12.02897 & 13.28687 & 12.67043 & 12.80267 & 12.20989 & 12.80267 & 12.20989 & 16.816722 & 16.04028 & 16.81672 & 16.04028 & 17.00399 & 16.2178\end{array}$ $\begin{array}{lllllllllllllllll}12.52371 & 11.94194 & 12.52371 & 11.94194 & 12.72623 & 12.13397 & 13.40553 & 12.78179 & 12.91976 & 12.31859 & 12.91976 & 12.31859 & 16.967526 & 16.18222 & 16.96753 & 16.18222 & 17.15548 \\ 16.36057\end{array}$ $\begin{array}{llllllllllllllllllll}12.066788 & 11.47378 & 12.06679 & 11.47378 & 12.25686 & 11.65225 & 12.91284 & 12.27661 & 12.44792 & 11.8358 & 12.44792 & 11.8358 & 16.352602 & 15.5512 & 16.3526 & 15.5512 & 16.53107 & 15.71972\end{array}$ $\begin{array}{lllllllllllllllllllll}11.607569 & 11.04496 & 11.60757 & 11.04496 & 11.78351 & 11.21071 & 12.41668 & 11.81356 & 11.97393 & 11.39303 & 11.97393 & 11.39303 & 15.735222 & 14.97465 & 15.73522 & 14.97465 & 15.90341 & 15.13382\end{array}$ $\begin{array}{llllllllllllllllll}10.939028 & 10.25061 & 10.93903 & 10.25061 & 11.09609 & 10.39495 & 11.70434 & 10.95689 & 11.28396 & 10.57162 & 11.28396 & 10.57162 & 14.835172 & 13.90796 & 14.83517 & 13.90796 & 14.9892 & 14.05049\end{array}$ $\begin{array}{llllllllllllllllllllll}10.100844 & 9.815596 & 10.10084 & 9.815596 & 10.23578 & 9.946692 & 10.79196 & 10.48715 & 10.41757 & 10.1233 & 10.41757 & 10.1233 & 13.708471 & 13.32151 & 13.70847 & 13.32151 & 13.84545 & 13.4546\end{array}$ $\begin{array}{lllllllllllllllllllllll}9.395357 & 8.888605 & 9.395357 & 8.888605 & 9.510899 & 8.994407 & 10.03107 & 9.487353 & 9.688725 & 9.16522 & 9.688725 & 9.16522 & 12.75988 & 12.07587 & 12.75988 & 12.07587 & 12.88213 & 12.18961\end{array}$ $\begin{array}{lllllllllllllllllllll}8.972972 & 8.563771 & 8.972972 & 8.563771 & 9.07723 & 8.660633 & 9.575843 & 9.137114 & 9.25274 & 8.829981 & 9.25274 & 8.829981 & 12.190896 & 11.63834 & 12.1909 & 11.63834 & 12.30458 & 11.74537\end{array}$ $\begin{array}{llllllllllllllllll}8.573109 & 8.052571 & 8.573109 & 8.052571 & 8.665235 & 8.134473 & 9.144048 & 8.585274 & 8.840476 & 8.302296 & 8.840476 & 8.302296 & 11.652204 & 10.95057 & 11.6522 & 10.95057 & 11.75714 & 11.04658\end{array}$ $\begin{array}{lllllllllllllllllll}7.836256 & 7.444124 & 7.836256 & 7.444124 & 7.911687 & 7.512153 & 8.351783 & 7.931257 & 8.079325 & 7.674599 & 8.079325 & 7.674599 & 10.658982 & 10.12879 & 10.65898 & 10.12879 & 10.75031 & 10.21368\end{array}$ $\begin{array}{lllllllllllllllllllll}7.547453 & 7.335927 & 7.547453 & 7.335927 & 7.613424 & 7.399733 & 8.039464 & 7.814017 & 7.781652 & 7.563804 & 7.781652 & 7.563804 & 10.270147 & 9.982006 & 10.27015 & 9.982006 & 10.35484 & 10.06422\end{array}$ $\begin{array}{llllllllllllllllll}7.306691 & 6.93743 & 7.306691 & 6.93743 & 7.365703 & 6.990619 & 7.779767 & 7.384573 & 7.5336 & 7.152536 & 7.5336 & 7.152536 & 9.945214 & 9.445107 & 9.945214 & 9.445107 & 10.02484 & 9.519235\end{array}$ $\begin{array}{lllllllllllllllll}6.970422 & 6.614035 & 6.970422 & 6.614035 & 7.01938 & 6.659262 & 7.416726 & 7.036371 & 7.186818 & 6.818331 & 7.186818 & 6.818331 & 9.492238 & 9.009894 & 9.492238 & 9.009894 & 9.564578 \\ 9.077722\end{array}$ $\begin{array}{llllllllllllllllll}6.643912 & 6.393808 & 6.643912 & 6.393808 & 6.684157 & 6.432383 & 7.064894 & 6.798481 & 6.849958 & 6.59095 & 6.849958 & 6.59095 & 9.05209 & 8.713858 & 9.05209 & 8.713858 & 9.117823 & 8.776827\end{array}$ $\begin{array}{llllllllllllllllllll}6.338561 & 6.147161 & 6.338561 & 6.147161 & 6.371726 & 6.179784 & 6.736416 & 6.532965 & 6.534426 & 6.335922 & 6.534426 & 6.335922 & 8.64083 & 8.382177 & 8.64083 & 8.382177 & 8.700841 & 8.440352\end{array}$ $\begin{array}{lllllllllllllllllll}6.255458 & 5.993456 & 6.255458 & 5.993456 & 6.285477 & 6.021748 & 6.646441 & 6.367214 & 6.449321 & 6.177495 & 6.449321 & 6.177495 & 8.528077 & 8.174793 & 8.528077 & 8.174793 & 8.586056 & 8.229787\end{array}$ $\begin{array}{lllllllllllllllllll}6.113886 & 5.912911 & 6.113886 & 5.912911 & 6.139936 & 5.938212 & 6.493535 & 6.279947 & 6.302531 & 6.094686 & 6.302531 & 6.094686 & 8.338887 & 8.0661 & 8.338887 & 8.0661 & 8.393774 & 8.119096\end{array}$ $\begin{array}{llllllllllllllllll}5.969821 & 5.742933 & 5.969821 & 5.742933 & 5.992564 & 5.765145 & 6.338618 & 6.097521 & 6.15375 & 5.918477 & 6.15375 & 5.918477 & 8.144634 & 7.83785 & 8.144634 & 7.83785 & 8.196845 & 7.887967\end{array}$ $\begin{array}{lllllllllllllllllll}1.983037 & 11.48217 & 11.98304 & 11.48217 & 12.17532 & 11.66476 & 12.8242 & 12.2868 & 12.35687 & 11.83957 & 12.35687 & 11.83957 & 16.153568 & 15.56679 & 16.15357 & 15.56679 & 16.33016 & 15.73634\end{array}$ $\begin{array}{llllllllllllllllllllll}1.659654 & 11.29719 & 11.65965 & 11.29719 & 11.84581 & 11.47774 & 12.47765 & 12.08974 & 12.02388 & 11.64969 & 12.02388 & 11.64969 & 15.807893 & 15.31723 & 15.80789 & 15.31723 & 15.9808 & 15.4847\end{array}$ $\begin{array}{llllllllllllllllll}11.679069 & 11.13254 & 11.67907 & 11.13254 & 11.86504 & 11.30769 & 12.49841 & 11.91195 & 12.04501 & 11.48088 & 12.04501 & 11.48088 & 15.832165 & 15.0937 & 15.83217 & 15.0937 & 16.00533 & 15.25756\end{array}$ $\begin{array}{llllllllllllllllll}11.70612 & 11.20495 & 11.70612 & 11.20495 & 11.88951 & 11.38002 & 12.52565 & 11.98886 & 12.07403 & 11.55639 & 12.07403 & 11.55639 & 15.868406 & 15.19078 & 15.86841 & 15.19078 & 16.04064 & 15.35529\end{array}$ $\begin{array}{lllllllllllllllll}11.293273 & 10.8089 & 11.29327 & 10.8089 & 11.4657 & 10.97222 & 12.08061 & 11.56131 & 11.64741 & 11.14782 & 11.64741 & 11.14782 & 15.313201 & 14.65755 & 15.3132 & 14.65755 & 15.47699\end{array} 14.8135$ $\begin{array}{lllllllllllllllll}10.871966 & 10.42992 & 10.87197 & 10.42992 & 11.03196 & 10.58244 & 11.62588 & 11.15249 & 11.21295 & 10.75695 & 11.21295 & 10.75695 & 14.745622 & 14.1468 & 14.74562 & 14.1468 & 14.90038 \\ 14.8 .29474\end{array}$ $\begin{array}{lllllllllllllllllllll}10.324125 & 9.908832 & 10.32413 & 9.908832 & 10.4687 & 10.04775 & 11.03481 & 10.59086 & 10.64711 & 10.21823 & 10.64711 & 10.21823 & 13.998392 & 13.44552 & 13.99839 & 13.44552 & 14.14763 & 13.58395\end{array}$ $\begin{array}{lllllllllllllllllllll}9.686602 & 9.339904 & 9.686602 & 9.339904 & 9.814617 & 9.461645 & 10.34797 & 9.976358 & 9.98881 & 9.631 & 9.98881 & 9.631 & 13.150384 & 12.68139 & 13.15038 & 12.68139 & 13.28077 & 12.80622\end{array}$ $\begin{array}{lllllllllllllllllll} & 9.686602 & 9.339904 & 9.686602 & 9.339904 & 9.814617 & 9.461645 & 10.34797 & 9.976358 & 9.98881 & 9.631 & 9.98881 & 9.631 & 13.150384 & 12.68139 & 13.15038 & 12.68139 & 13.28077 & 12.80622 \\ 8.993168 & 8.55794 & 8.993168 & 8.55794 & 9.101658 & 8.658278 & 9.599851 & 9.132977 & 9.27272 & 8.822948 & 9.27272 & 8.822948 & 12.217656 & 11.63039 & 12.21766 & 11.63039 & 12.3334 & 11.7389\end{array}$ $\begin{array}{lllllllllllllllll}8.665241 & 8.378509 & 8.665241 & 8.378509 & 8.763496 & 8.472587 & 9.245361 & 8.938644 & 8.934028 & 8.637882 & 8.934028 & 8.637882 & 11.77732 & 11.38927 & 11.77732 & 11.38927 & 11.88563 \\ 11.49344\end{array}$ $\begin{array}{llllllllllllllllll}8.346778 & 7.990607 & 8.346778 & 7.990607 & 8.435671 & 8.073407 & 8.901745 & 8.520099 & 8.605913 & 8.237932 & 8.605913 & 8.237932 & 11.347574 & 10.86639 & 11.34757 & 10.86639 & 11.44912 & 10.96231\end{array}$ $\begin{array}{lllllllllllllllllll}7.784537 & 7.330923 & 7.784537 & 7.330923 & 7.862096 & 7.398873 & 8.298288 & 7.810971 & 8.025539 & 7.556863 & 8.025539 & 7.556863 & 10.587995 & 9.97635 & 10.588 & 9.97635 & 10.67992 & 10.06022\end{array}$ $\begin{array}{llllllllllllllllllllll}7.380374 & 7.07384 & 7.380374 & 7.07384 & 7.445171 & 7.133032 & 7.861438 & 7.532865 & 7.608601 & 7.292267 & 7.608601 & 7.292267 & 10.044313 & 9.62964 & 10.04431 & 9.62964 & 10.1271 & 9.707493\end{array}$ $\begin{array}{llllllllllllllllllllll}7.204825 & 6.936329 & 7.204825 & 6.936329 & 7.263299 & 6.99114 & 7.671343 & 7.384302 & 7.428056 & 7.150755 & 7.428056 & 7.150755 & 9.807454 & 9.443979 & 9.807454 & 9.443979 & 9.886022 & 9.518772\end{array}$ $\begin{array}{lllllllllllllllll}6.944665 & 6.571229 & 6.944665 & 6.571229 & 6.996575 & 6.617688 & 7.391286 & 6.991737 & 7.159725 & 6.773793 & 7.159725 & 6.773793 & 9.456333 & 8.951516 & 9.456333 & 8.951516 & 9.529843 \\ 9.019574\end{array}$ $\begin{array}{lllllllllllllllllll}6.635939 & 6.311616 & 6.635939 & 6.311616 & 6.679286 & 6.351109 & 7.058384 & 6.711787 & 6.841218 & 6.505391 & 6.841218 & 6.505391 & 9.040368 & 8.602736 & 9.040368 & 8.602736 & 9.10747 & 8.665421\end{array}$ $\begin{array}{lllllllllllllllll}6.347164 & 6.139883 & 6.347164 & 6.139883 & 6.383274 & 6.174014 & 6.747457 & 6.526221 & 6.543045 & 6.32822 & 6.543045 & 6.32822 & 8.651263 & 8.371679 & 8.651263 & 8.371679 & 8.712725 \\ 8.430517\end{array}$ $\begin{array}{lllllllllllllllll}6.122462 & 5.921422 & 6.122462 & 5.921422 & 6.152475 & 5.950568 & 6.505326 & 6.291272 & 6.311439 & 6.102499 & 6.311439 & 6.102499 & 8.347951 & 8.077348 & 8.347951 & 8.077348 & 8.40487 \\ 8.132123\end{array}$ $\begin{array}{lllllllllllllllllll}5.979531 & 5.785129 & 5.979531 & 5.785129 & 6.006192 & 5.810187 & 6.351451 & 6.144213 & 6.16342 & 5.962222 & 6.16342 & 5.962222 & 8.156172 & 7.893235 & 8.156172 & 7.893235 & 8.210324 & 7.945086\end{array}$ $\begin{array}{lllllllllllllllllll}5.835008 & 5.647093 & 5.835008 & 5.647093 & 5.858375 & 5.668897 & 6.195922 & 5.995664 & 6.013711 & 5.819508 & 6.013711 & 5.819508 & 7.962276 & 7.707498 & 7.962276 & 7.707498 & 8.013667 & 7.756724\end{array}$ $\begin{array}{lllllllllllllllll}11.256605 & 10.7575 & 11.25661 & 10.7575 & 11.43205 & 10.92325 & 12.04252 & 11.50708 & 11.6054 & 11.09019 & 11.6054 & 11.09019 & 15.270138 & 14.48282 & 15.27014 & 14.48282 & 15.43438 \\ 14.63696\end{array}$ $\begin{array}{llllllllllllllllll}10.822197 & 10.46028 & 10.8222 & 10.46028 & 10.99012 & 10.62148 & 11.5774 & 11.18942 & 11.15792 & 10.78461 & 11.15792 & 10.78461 & 14.680519 & 14.19069 & 14.68052 & 14.19069 & 14.83813 & 14.3424\end{array}$ $\begin{array}{lllllllllllllllllllll}11.166262 & 10.48354 & 11.16626 & 10.48354 & 11.33963 & 10.64187 & 11.94605 & 11.21231 & 11.51432 & 10.80927 & 11.51432 & 10.80927 & 15.143704 & 14.22271 & 15.1437 & 14.22271 & 15.30669 & 14.37334\end{array}$ $\begin{array}{lllllllllllllllll}10.79594 & 10.45055 & 10.79594 & 10.45055 & 10.96014 & 10.60896 & 11.54751 & 11.17776 & 11.1323 & 10.77634 & 11.1323 & 10.77634 & 14.643915 & 14.17542 & 14.64392 & 14.17542 & 14.7997 \\ 14.34 .32604\end{array}$ $\begin{array}{llllllllllllllll}10.611986 & 10.2313 & 10.61199 & 10.2313 & 10.76895 & 10.38194 & 11.34776 & 10.94019 & 10.9427 & 10.55008 & 10.9427 & 10.55008 & 14.397032 & 13.88109 & 14.39703 & 13.88109\end{array} 14.54807 \quad 14.02638$ $\begin{array}{lllllllllllllllllll}10.307937 & 9.931571 & 10.30794 & 9.931571 & 10.4558 & 10.07298 & 11.01952 & 10.61654 & 10.62922 & 10.24138 & 10.62922 & 10.24138 & 13.987315 & 13.47673 & 13.98732 & 13.47673 & 14.1317 & 13.61545\end{array}$ $\begin{array}{lllllllllllllllllllll}9.807553 & 9.437902 & 9.807553 & 9.437902 & 9.941256 & 9.56654 & 10.47964 & 10.08453 & 10.11253 & 9.731017 & 10.11253 & 9.731017 & 13.314186 & 12.81319 & 13.31419 & 12.81319 & 13.44802 & 12.94188\end{array}$ $\begin{array}{lllllllllllllllllllll}9.327176 & 8.954803 & 9.327176 & 8.954803 & 9.448333 & 9.068872 & 9.962186 & 9.562824 & 9.616917 & 9.232619 & 9.616917 & 9.232619 & 12.666443 & 12.16286 & 12.66644 & 12.16286 & 12.79071 & 12.28099\end{array}$ $\begin{array}{llllllllllllllllll}8.774736 & 8.410962 & 8.774736 & 8.410962 & 8.880263 & 8.510166 & 9.366241 & 8.976265 & 9.046796 & 8.670588 & 9.046796 & 8.670588 & 11.922605 & 11.43201 & 11.92261 & 11.43201 & 12.03523 & 11.53879\end{array}$ $\begin{array}{lllllllllllllllllllll}8.290484 & 7.864268 & 8.290484 & 7.864268 & 8.384594 & 7.949856 & 8.845315 & 8.387637 & 8.54675 & 8.105936 & 8.54675 & 8.105936 & 11.269797 & 10.69576 & 11.2698 & 10.69576 & 11.3733 & 10.79185\end{array}$ $\begin{array}{llllllllllllllllllll}8.061048 & 7.724914 & 8.061048 & 7.724914 & 8.146678 & 7.804297 & 8.596579 & 8.236 & 8.31037 & 7.962882 & 8.31037 & 7.962882 & 10.961276 & 10.50787 & 10.96128 & 10.50787 & 11.05905 & 10.60006\end{array}$ $\begin{array}{llllllllllllllllll}7.657334 & 7.37603 & 7.657334 & 7.37603 & 7.732531 & 7.446236 & 8.161777 & 7.860177 & 7.89381 & 7.60301 & 7.89381 & 7.60301 & 10.416926 & 10.03737 & 10.41693 & 10.03737 & 10.5067 & 10.12259\end{array}$ $\begin{array}{llllllllllllllllll}7.484245 & 6.932657 & 7.484245 & 6.932657 & 7.551186 & 6.987548 & 7.972879 & 7.379952 & 7.715527 & 7.145296 & 7.715527 & 7.145296 & 10.18519 & 9.44241 & 10.18519 & 9.44241 & 10.26974 & 9.516896\end{array}$ $\begin{array}{lllllllllllllllllll}7.011398 & 6.718531 & 7.011398 & 6.718531 & 7.068026 & 6.770494 & 7.464945 & 7.151272 & 7.227782 & 6.924904 & 7.227782 & 6.924904 & 9.546138 & 9.150908 & 9.546138 & 9.150908 & 9.622298 & 9.222558\end{array}$ $\begin{array}{llllllllllllllllll}6.801929 & 6.498686 & 6.801929 & 6.498686 & 6.853709 & 6.545646 & 7.239668 & 6.914994 & 7.011473 & 6.698199 & 7.011473 & 6.698199 & 9.263733 & 8.853754 & 9.263733 & 8.853754 & 9.335964 & 8.921423\end{array}$ $\begin{array}{lllllllllllllllll}6.610138 & 6.260281 & 6.610138 & 6.260281 & 6.656137 & 6.301058 & 7.03264 & 6.65824 & 6.813895 & 6.4523 & 6.813895 & 6.4523 & 9.004967 & 8.532135 & 9.004967 & 8.532135 & 9.073064 \\ 8.595075\end{array}$ $\begin{array}{lllllllllllllllll}6.610138 & 6.260281 & 6.610138 & 6.260281 & 6.656137 & 6.301058 & 7.03264 & 6.65824 & 6.813895 & 6.4523 & 6.813895 & 6.4523 & 9.004967 & 8.532135 & 9.004967 & 8.532135 & 9.073064 \\ 8.595075 \\ 6.302918 & 6.004403 & 6.302918 & 6.004403 & 6.341559 & 6.039209 & 6.702045 & 6.382756 & 6.496576 & 6.187198 & 6.496576 & 6.187198 & 8.591071 & 8.189007 & 8.591071 & 8.189007 & 8.653305 \\ 8.246976\end{array}$ $\begin{array}{llllllllllllllllllll}6.302918 & 6.004403 & 6.302918 & 6.004403 & 6.341559 & 6.039209 & 6.702045 & 6.382756 & 6.496576 & 6.187198 & 6.496576 & 6.187198 & 8.591071 & 8.189007 & 8.591071 & 8.189007 & 8.653305 & 8.246976 \\ 6.07003 & 5.82704 & 6.07003 & 5.82704 & 6.102221 & 5.857464 & 6.451089 & 6.191778 & 6.256809 & 6.003926 & 6.256809 & 6.003926 & 8.276168 & 7.950299 & 8.276168 & 7.950299 & 8.333685 & 8.004806\end{array}$ $\begin{array}{llllllllllllllllll}6.07003 & 5.82704 & 6.07003 & 5.82704 & 6.102221 & 5.857464 & 6.451089 & 6.191778 & 6.256809 & 6.003926 & 6.256809 & 6.003926 & 8.276168 & 7.950299 & 8.276168 & 7.950299 & 8.333685 & 8.004806 \\ 5.876939 & 5.699151 & 5.876939 & 5.699151 & 5.904096 & 5.724825 & 6.242998 & 6.053306 & 6.057262 & 5.872745 & 6.057262 & 5.872745 & 8.016472 & 7.777114 & 8.016472 & 7.777114 & 8.070082 & 7.828533\end{array}$ $\begin{array}{llllllllllllllllllll}5.876939 & 5.699151 & 5.876939 & 5.699151 & 5.904096 & 5.724825 & 6.242998 & 6.053306 & 6.057262 & 5.872745 & 6.057262 & 5.872745 & 8.016472 & 7.777114 & 8.016472 & 7.777114 & 8.070082 & 7.828533 \\ 5.743133 & 5.56888 & 5.743133 & 5.56888 & 5.76654 & 5.59111 & 6.09851 & 5.912906 & 5.918612 & 5.738207 & 5.918612 & 5.738207 & 7.83749 & 7.601771 & 7.83749 & 7.601771 & 7.888203 & 7.650547\end{array}$ $\begin{array}{lllllllllllllllllll}10.672794 & 10.12796 & 10.67279 & 10.12796 & 10.83559 & 10.27963 & 11.41503 & 10.83009 & 11.00179 & 10.43919 & 11.00179 & 10.43919 & 14.484133 & 13.74853 & 14.48413 & 13.74853 & 14.63774 & 13.89272\end{array}$




$\begin{array}{ll}380700 & 374110069.60 \%\end{array}$
$381200374110073.86 \%$ $381700 \quad 374110075.98 \%$ $382200 \quad 374110070.53 \%$ $382700 \quad 374110068.68 \%$ $383200 \quad 374110073.00 \%$ $383700 \quad 374110068.11 \%$ $384200 \quad 374110065.69 \%$ $\begin{array}{ll}384200 & 3741100 \\ 385.69 \%\end{array}$ $\begin{array}{ll}384700 & 374110066.34 \% \\ 385200 & 374110058.28 \%\end{array}$ $\begin{array}{ll}385200 & 374110058.28 \% \\ 385700 & 3741100 \\ 64.58 \%\end{array}$ $386200 \quad 374110061.57 \%$ $386700 \quad 374110054.71 \%$ $387200 \quad 374110058.00 \%$ $387700374110061.54 \%$ $388200 \quad 374110061.18 \%$ $388700 \quad 374110064.52 \%$ $389200 \quad 374110059.47 \%$ $389700 \quad 374110058.44 \%$ $380200 \quad 374160073.52 \%$ $380700 \quad 374160071.37 \%$ $381200 \quad 374160074.55 \%$ $381700 \quad 374160077.31 \%$ $382200 \quad 374160070.00 \%$ $382700 \quad 374160068.80 \%$ $383200 \quad 374160074.43 \%$ $383700 \quad 374160070.69 \%$ 3842003741600 63.31\% $384700 \quad 3741600$ 66.92\% $385200 \quad 3741600$ 60.51\% $385700 \quad 374160063.81 \%$ $386200 \quad 374160064.11 \%$ 386700 3741600 62.01\% $387200 \quad 374160055.16 \%$ $387700 \quad 374160060.22 \%$ $388200374160059.88 \%$ 388700 3741600 60.44\% $389200 \quad 374160064.00 \%$ $389700 \quad 374160058.11 \%$ $380200 \quad 374210071.58 \%$ $380700 \quad 374210075.23 \%$ $381200 \quad 374210072.14 \%$ $381700 \quad 374210078.36 \%$ $382200 \quad 374210069.22 \%$ $382700374210068.84 \%$ $383200 \quad 374210074.97 \%$ $383700 \quad 374210072.42 \%$ $384200 \quad 374210062.44 \%$ $384700 \quad 374210066.92 \%$ $385200374210061.12 \%$ $385700374210059.14 \%$ $386200 \quad 374210065.69 \%$ $386700374210062.59 \%$ $387200 \quad 374210058.31 \%$ $387700 \quad 374210055.66 \%$ 3882003742100 62.14\% $388700 \quad 374210059.21 \%$ $389200374210061.10 \%$ $389700374210063.56 \%$ $389978 \quad 3741459$ 62.22\% 3800223739531 71.37\% $379814373934172.65 \%$ $379142 \quad 3733893$ 49.94\% 3894493739338 62.62\% 3892153739462 63.14\% $378929 \quad 373400752.02 \%$ $389539374132958.29 \%$ $390167373839465.90 \%$ $390353374137361.44 \%$ $383100 \quad 373822470.29 \%$ $387369 \quad 374207354.95 \%$ $387922374313156.16 \%$ 3874013740832 62.02\% $387445 \quad 3739252$ 57.34\% $389789 \quad 3736894$ 54.01\% $387455374069660.76 \%$ $386939374326064.13 \%$ $390450 \quad 3740328$ 62.32\% 3804453733657 49.59\% 3897093742434 68.11\% 3897093742485 69.24\% 389401 3740862 59.44\% $381762 \quad 373774079.50 \%$ $380296 \quad 373311561.89 \%$ $381348373356353.08 \%$ $389119373878264.98 \%$ 3871923740865 60.75\%

> | 0.568698 | 10.1915 | 10.5687 | 10.1915 | 10.72831 | 10.34402 | 11.30285 | 10.89851 | 10.89528 | 10.50644 | 10.89528 | 10.50644 | 14.342136 | 13.83112 | 14.34214 | 13.83112 | 14.49361 | 13.97648 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

 $\begin{array}{llllllllllllllllll}10.273655 & 9.936093 & 10.27366 & 9.936093 & 10.42487 & 10.08169 & 10.98491 & 10.62354 & 10.59201 & 10.244 & 10.59201 & 10.244 & 13.942282 & 13.48461 & 13.94228 & 13.48461 & 14.08782 & 13.62499\end{array}$ $\begin{array}{llllllllllllllllll}9.996529 & 9.697513 & 9.996529 & 9.697513 & 10.14024 & 9.836551 & 10.68629 & 10.36644 & 10.30634 & 9.998226 & 10.30634 & 9.998226 & 13.568284 & 13.16232 & 13.56828 & 13.16232 & 13.70819 & 13.29785\end{array}$ $\begin{array}{llllllllllllllllll}9.733257 & 9.406876 & 9.733257 & 9.406876 & 9.86866 & 9.537664 & 10.40183 & 10.0529 & 10.03506 & 9.698299 & 10.03506 & 9.698299 & 13.213419 & 12.77097 & 13.21342 & 12.77097 & 13.34741 & 12.90038\end{array}$ $\begin{array}{llllllllllllllllllllll}9.330437 & 9.054565 & 9.330437 & 9.054565 & 9.454411 & 9.175315 & 9.967231 & 9.672788 & 9.619225 & 9.334664 & 9.619225 & 9.334664 & 12.671334 & 12.29675 & 12.67133 & 12.29675 & 12.79681 & 12.41869\end{array}$ $\begin{array}{llllllllllllllllll}9.02607 & 8.585273 & 9.02607 & 8.585273 & 9.141504 & 8.692315 & 9.638916 & 9.166209 & 9.305046 & 8.85025 & 9.305046 & 8.85025 & 12.250375 & 11.66381 & 12.25038 & 11.66381 & 12.3697 & 11.77568\end{array}$ $\begin{array}{lllllllllllllllll}8.459134 & 8.272725 & 8.459134 & 8.272725 & 8.55936 & 8.371227 & 9.028033 & 8.82922 & 8.7204 & 8.527578 & 8.7204 & 8.527578 & 11.496868 & 11.24462 & 11.49687 & 11.24462 & 11.60452\end{array} 11.35$
 $\begin{array}{llllllllllllllllllll} \\ 7.710417 & 7.491372 & 7.710417 & 7.491372 & 7.791084 & 7.568397 & 8.221474 & 7.986782 & 7.947801 & 7.721319 & 7.947801 & 7.721319 & 10.487568 & 10.19195 & 10.48757 & 10.19195 & 10.58026 & 10.28121\end{array}$ $\begin{array}{llllllllllllllllllll}7.45832 & 7.225013 & 7.45832 & 7.225013 & 7.531893 & 7.294733 & 7.949679 & 7.699685 & 7.688016 & 7.446644 & 7.688016 & 7.446644 & 10.14732 & 9.832742 & 10.14732 & 9.832742 & 10.2348 & 9.916552\end{array}$ $\begin{array}{lllllllllllllllllll}7.276961 & 6.931317 & 7.276961 & 6.931317 & 7.343651 & 6.990868 & 7.752949 & 7.381712 & 7.501215 & 7.143947 & 7.501215 & 7.143947 & 9.903437 & 9.437593 & 9.903437 & 9.437593 & 9.986312 & 9.514386\end{array}$ $\begin{array}{lllllllllllllllllll}6.882696 & 6.540949 & 6.882696 & 6.540949 & 6.939256 & 6.59099 & 7.328339 & 6.961568 & 7.094354 & 6.740833 & 7.094354 & 6.740833 & 9.371905 & 8.911564 & 9.371905 & 8.911564 & 9.446986 & 8.980854\end{array}$ $\begin{array}{llllllllllllllllll}6.635609 & 6.36967 & 6.635609 & 6.36967 & 6.685927 & 6.415717 & 7.062285 & 6.777445 & 6.839269 & 6.564302 & 6.839269 & 6.564302 & 9.038965 & 8.679912 & 9.038965 & 8.679912 & 9.109203 & 8.746056\end{array}$ $\begin{array}{lllllllllllllllll}6.510603 & 6.17931 & 6.510603 & 6.17931 & 6.556743 & 6.22115 & 6.927147 & 6.572908 & 6.71074 & 6.367896 & 6.71074 & 6.367896 & 8.870037 & 8.422776 & 8.870037 & 8.422776 & 8.937412 \\ 8.485493\end{array}$ $\begin{array}{lllllllllllllllllllll}6.351353 & 5.990439 & 6.351353 & 5.990439 & 6.392355 & 6.026129 & 6.755019 & 6.368664 & 6.546717 & 6.173157 & 6.546717 & 6.173157 & 8.655341 & 8.168649 & 8.655341 & 8.168649 & 8.719115 & 8.227024\end{array}$ $\begin{array}{llllllllllllllllllll}6.070642 & 5.780536 & 6.070642 & 5.780536 & 6.10531 & 5.811299 & 6.453253 & 6.142729 & 6.256895 & 5.955933 & 6.256895 & 5.955933 & 8.276619 & 7.88668 & 8.276619 & 7.88668 & 8.33525 & 7.941013\end{array}$ $\begin{array}{lllllllllllllllllll}5.842852 & 5.62702 & 5.842852 & 5.62702 & 5.871531 & 5.654333 & 6.207938 & 5.977737 & 6.02217 & 5.797479 & 6.02217 & 5.797479 & 7.968909 & 7.679433 & 7.968909 & 7.679433 & 8.023033 & 7.730983\end{array}$ $\begin{array}{llllllllllllllllll}5.66175 & 5.478209 & 5.66175 & 5.478209 & 5.686244 & 5.501367 & 6.012974 & 5.817265 & 5.834467 & 5.643961 & 5.834467 & 5.643961 & 7.726133 & 7.47889 & 7.726133 & 7.47889 & 7.776762 & 7.527356\end{array}$ $\begin{array}{lllllllllllllllllllll}9.991862 & 9.728823 & 9.991862 & 9.728823 & 10.13892 & 9.87247 & 10.68258 & 10.40157 & 10.29816 & 10.02669 & 10.29816 & 10.02669 & 13.566932 & 13.21024 & 13.56693 & 13.21024 & 13.70775 & 13.34754\end{array}$ $\begin{array}{llllllllllllllllll}10.064574 & 9.613056 & 10.06457 & 9.613056 & 10.21318 & 9.752743 & 10.76098 & 10.27647 & 10.37419 & 9.908021 & 10.37419 & 9.908021 & 13.663058 & 13.05315 & 13.66306 & 13.05315 & 13.80538 & 13.18778\end{array}$ $\begin{array}{llllllllllllllllll}9.75034 & 9.258464 & 9.75034 & 9.258464 & 9.892934 & 9.39127 & 10.42419 & 9.896091 & 10.05067 & 9.542119 & 10.05067 & 9.542119 & 13.236519 & 12.5736 & 13.23652 & 12.5736 & 13.37384 & 12.70237\end{array}$ $\begin{array}{llllllllllllllllllll}9.630163 & 9.345727 & 9.630163 & 9.345727 & 9.76735 & 9.478592 & 10.29318 & 9.988909 & 9.926632 & 9.633213 & 9.926632 & 9.633213 & 13.076011 & 12.69043 & 13.07601 & 12.69043 & 13.20975 & 12.82005\end{array}$ $\begin{array}{llllllllllllllllllllll}9.506784 & 9.220012 & 9.506784 & 9.220012 & 9.640109 & 9.348763 & 10.16003 & 9.853179 & 9.799934 & 9.504336 & 9.799934 & 9.504336 & 12.908818 & 12.51973 & 12.90882 & 12.51973 & 13.0399 & 12.64659\end{array}$ 9.2 $\begin{array}{lllllllllllllllll}8.842302 & 8.655581 & 8.842302 & 8.655581 & 8.956712 & 8.768408 & 9.443264 & 9.244467 & 9.11457 & 8.922247 & 9.11457 & 8.922247 & 12.013345 & 11.75881 & 12.01335 & 11.75881 & 12.13047 \\ 11.8739\end{array}$ $\begin{array}{llllllllllllllllllll}8.583639 & 8.152887 & 8.583639 & 8.152887 & 8.690856 & 8.251898 & 9.16434 & 8.702247 & 8.84774 & 8.402766 & 8.84774 & 8.402766 & 11.659406 & 11.08321 & 11.65522 & 11.08321 & 11.77653 & 11.18778\end{array}$ $\begin{array}{lllllllllllllllllll}8.220053 & 7.94823 & 8.220053 & 7.94823 & 8.317138 & 8.04123 & 8.772434 & 8.481403 & 8.473195 & 8.191835 & 8.473195 & 8.191835 & 11.173663 & 10.80721 & 11.17366 & 10.80721 & 11.27797 & 10.90741\end{array}$ $\begin{array}{llllllllllllllllll}7.743133 & 7.39182 & 7.743133 & 7.39182 & 7.827546 & 7.469177 & 8.25833 & 7.881039 & 7.980392 & 7.616946 & 7.980392 & 7.616946 & 10.532387 & 10.05943 & 10.53239 & 10.05943 & 10.62693 & 10.14784\end{array}$ $\begin{array}{llllllllllllllllllll}7.538214 & 7.173045 & 7.538214 & 7.173045 & 7.616887 & 7.244289 & 8.037496 & 7.645287 & 7.769484 & 7.39185 & 7.769484 & 7.39185 & 10.255177 & 9.763379 & 10.25518 & 9.763379 & 10.34555 & 9.847345\end{array}$ $\begin{array}{lllllllllllllllllll}7.283553 & 7.025629 & 7.283553 & 7.025629 & 7.355373 & 7.093315 & 7.763166 & 7.486813 & 7.507179 & 7.240192 & 7.507179 & 7.240192 & 9.91104 & 9.563526 & 9.91104 & 9.563526 & 9.996318 & 9.644771\end{array}$ $\begin{array}{llllllllllllllllll}6.952114 & 6.740977 & 6.952114 & 6.740977 & 7.015568 & 6.800776 & 7.406352 & 7.180085 & 7.165248 & 6.947115 & 7.165248 & 6.947115 & 9.463884 & 9.178636 & 9.463884 & 9.178636 & 9.54272 & 9.254119\end{array}$ $\begin{array}{llllllllllllllllll}6.776433 & 6.401548 & 6.776433 & 6.401548 & 6.834185 & 6.451683 & 7.216389 & 6.813832 & 6.984107 & 6.596675 & 6.984107 & 6.596675 & 9.22744 & 8.721965 & 9.22744 & 8.721965 & 9.302242 & 8.790244\end{array}$ $\begin{array}{lllllllllllllllll}6.449977 & 6.215528 & 6.449977 & 6.215528 & 6.498177 & 6.260511 & 6.863998 & 6.613229 & 6.647191 & 6.404669 & 6.647191 & 6.404669 & 8.788114 & 8.471503 & 8.788114 & 8.471503 & 8.855894 \\ 8.535907\end{array}$ $\begin{array}{llllllllllllllllllll}6.375633 & 6.054776 & 6.375633 & 6.054776 & 6.420675 & 6.095823 & 6.78326 & 6.440254 & 6.571042 & 6.238817 & 6.571042 & 6.238817 & 8.687462 & 8.254591 & 8.687462 & 8.254591 & 8.753265 & 8.315935\end{array}$ $\begin{array}{llllllllllllllllll}6.23875 & 5.915062 & 6.23875 & 5.915062 & 6.280045 & 5.952782 & 6.635757 & 6.290085 & 6.43003 & 6.09505 & 6.43003 & 6.09505 & 8.502514 & 8.065198 & 8.502514 & 8.065198 & 8.565547 & 8.123983\end{array}$ $\begin{array}{lllllllllllllllllll}6.036883 & 5.691196 & 6.036883 & 5.691196 & 6.073773 & 5.722822 & 6.418883 & 6.04865 & 6.221707 & 5.863685 & 6.221707 & 5.863685 & 8.229912 & 7.764298 & 8.229912 & 7.764298 & 8.289341 & 7.818425\end{array}$ $\begin{array}{llllllllllllllllllll}5.825201 & 5.539573 & 5.825201 & 5.539573 & 5.856249 & 5.566927 & 6.190751 & 5.885089 & 6.003647 & 5.707186 & 6.003647 & 5.707186 & 7.94397 & 7.560253 & 7.94397 & 7.560253 & 7.999085 & 7.611185\end{array}$ $\begin{array}{lllllllllllllllllllllll}5.606445 & 5.459431 & 5.606445 & 5.459431 & 5.632109 & 5.484042 & 5.955144 & 5.798473 & 5.777327 & 5.624996 & 5.777327 & 5.624996 & 7.65011 & 7.451491 & 7.65011 & 7.451491 & 7.700907 & 7.500621\end{array}$ $\begin{array}{lllllllllllllllllll}9.516303 & 9.29759 & 9.516303 & 9.29759 & 9.653142 & 9.43138 & 10.1715 & 9.937835 & 9.806486 & 9.581244 & 9.806486 & 9.581244 & 12.926498 & 12.62908 & 12.9265 & 12.62908 & 13.05874 & 12.75837\end{array}$ $\begin{array}{lllllllllllllllll}9.468007 & 9.03344 & 9.468007 & 9.03344 & 9.60461 & 9.160885 & 10.12043 & 9.653645 & 9.757494 & 9.308644 & 9.757494 & 9.308644 & 12.859003 & 12.27267 & 12.859 & 12.27267 & 12.99094 \\ 12.39695\end{array}$ $\begin{array}{lllllllllllllllllll}9.311872 & 8.892563 & 9.311872 & 8.892563 & 9.44407 & 9.016512 & 9.952219 & 9.502165 & 9.597068 & 9.16375 & 9.597068 & 9.16375 & 12.647269 & 12.08169 & 12.64727 & 12.08169 & 12.77608 & 12.20333\end{array}$ $\begin{array}{llllllllllllllllllll}9.07583 & 8.840119 & 9.07583 & 8.840119 & 9.201636 & 8.96247 & 9.697804 & 9.445778 & 9.353515 & 9.110537 & 9.353515 & 9.110537 & 12.329126 & 12.00918 & 12.32913 & 12.00918 & 12.45311 & 12.12985\end{array}$ $\begin{array}{llllllllllllllllllll}9.04845 & 8.705589 & 9.04845 & 8.705589 & 9.17224 & 8.823671 & 9.667705 & 9.300502 & 9.326197 & 8.972196 & 9.326197 & 8.972196 & 12.29106 & 11.82726 & 12.29106 & 11.82726 & 12.41404 & 11.94497\end{array}$ $\begin{array}{llllllllllllllllllll}8.680027 & 8.417495 & 8.680027 & 8.417495 & 8.793208 & 8.528237 & 9.270179 & 8.990175 & 8.946097 & 8.674561 & 8.946097 & 8.674561 & 11.794881 & 11.43953 & 11.79488 & 11.43953 & 11.91004 & 11.55151\end{array}$ $\begin{array}{llllllllllllllllllll}8.478034 & 8.208081 & 8.478034 & 8.208081 & 8.585881 & 8.311928 & 9.052617 & 8.763966 & 8.737922 & 8.45961 & 8.737922 & 8.45961 & 11.522126 & 11.15568 & 11.52213 & 11.15568 & 11.63327 & 11.26301\end{array}$ $\begin{array}{lllllllllllllllllll}8.210734 & 7.939329 & 8.210734 & 7.939329 & 8.310886 & 8.035862 & 8.764236 & 8.474179 & 8.462237 & 8.182057 & 8.462237 & 8.182057 & 11.161899 & 10.79411 & 11.1619 & 10.79411 & 11.2674 & 10.89587\end{array}$

 $\begin{array}{lllllllllllllllllll}7.596204 & 7.208729 & 7.596204 & 7.208729 & 7.679961 & 7.284722 & 8.102122 & 7.68604 & 7.828503 & 7.427762 & 7.828503 & 7.427762 & 10.332873 & 9.811012 & 10.33287 & 9.811012 & 10.42601 & 9.897392\end{array}$ $\begin{array}{llllllllllllllllll}7.227354 & 6.872315 & 7.227354 & 6.872315 & 7.301973 & 6.939708 & 7.705195 & 7.323903 & 7.448138 & 7.081043 & 7.448138 & 7.081043 & 9.834823 & 9.356491 & 9.834823 & 9.356491 & 9.920888 & 9.436332\end{array}$ $\begin{array}{lllllllllllllllllll}7.012531 & 6.764936 & 7.012531 & 6.764936 & 7.08049 & 6.829297 & 7.473176 & 7.208174 & 7.22683 & 6.970587 & 7.22683 & 6.970587 & 9.545091 & 9.211135 & 9.545091 & 9.211135 & 9.62642 & 9.288795\end{array}$ $\begin{array}{lllllllllllllllll}6.759755 & 6.597182 & 6.759755 & 6.597182 & 6.821379 & 6.65638 & 7.20113 & 7.027252 & 6.966214 & 6.798512 & 6.966214 & 6.798512 & 9.203707 & 8.983298 & 9.203707 & 8.983298 & 9.280165\end{array} 9.057422$ $\begin{array}{lllllllllllllllll}6.601791 & 6.406632 & 6.601791 & 6.406632 & 6.657635 & 6.45925 & 7.029831 & 6.820883 & 6.803189 & 6.60184 & 6.803189 & 6.60184 & 8.99187 & 8.727507 & 8.99187 & 8.727507 & 9.064349 \\ 8.797032\end{array}$ $\begin{array}{lllllllllllllllllll}6.417235 & 6.045278 & 6.417235 & 6.045278 & 6.467398 & 6.088211 & 6.830584 & 6.431363 & 6.613259 & 6.228702 & 6.613259 & 6.228702 & 8.742529 & 8.241096 & 8.742529 & 8.241096 & 8.811007 & 8.30324\end{array}$ $\begin{array}{llllllllllllllllll}6.169307 & 5.961824 & 6.169307 & 5.961824 & 6.211907 & 6.002935 & 6.562761 & 6.34166 & 6.357372 & 6.142423 & 6.357372 & 6.142423 & 8.409078 & 8.128768 & 8.409078 & 8.128768 & 8.47207 & 8.18938\end{array}$ $\begin{array}{lllllllllllllllllll}6.101351 & 5.81336 & 6.101351 & 5.81336 & 6.141663 & 5.850486 & 6.489298 & 6.181797 & 6.287531 & 5.989679 & 6.287531 & 5.989679 & 8.317215 & 7.927738 & 8.317215 & 7.927738 & 8.378648 & 7.985425\end{array}$ $\begin{array}{lllllllllllllllllll}5.912238 & 5.643866 & 5.912238 & 5.643866 & 5.949295 & 5.67782 & 6.286642 & 5.999923 & 6.092133 & 5.81436 & 6.092133 & 5.81436 & 8.061795 & 7.699339 & 8.061795 & 7.699339 & 8.12023 & 7.75418\end{array}$ $\begin{array}{lllllllllllllllllllll}5.791556 & 5.432112 & 5.791556 & 5.432112 & 5.824816 & 5.460294 & 6.156442 & 5.77149 & 5.968368 & 5.595305 & 5.968368 & 5.595305 & 7.897833 & 7.415194 & 7.897833 & 7.415194 & 7.953694 & 7.465584\end{array}$ $\begin{array}{lllllllllllllllllll}5.574965 & 5.288301 & 5.574965 & 5.288301 & 5.602971 & 5.312325 & 5.923336 & 5.616363 & 5.74469 & 5.447135 & 5.74469 & 5.447135 & 7.605989 & 7.221112 & 7.605989 & 7.221112 & 7.657696 & 7.268472\end{array}$ $\begin{array}{lllllllllllllllllll}5.583548 & 5.417735 & 5.583548 & 5.417735 & 5.606592 & 5.439991 & 5.929078 & 5.75266 & 5.753593 & 5.581869 & 5.753593 & 5.581869 & 7.620734 & 7.396315 & 7.620734 & 7.396315 & 7.670055 & 7.443956\end{array}$ $\begin{array}{lllllllllllllllllll}12.593255 & 12.32078 & 12.59326 & 12.32078 & 12.79812 & 12.52239 & 13.47934 & 13.1887 & 12.98683 & 12.70654 & 12.98683 & 12.70654 & 17.070918 & 16.69939 & 17.07092 & 16.69939 & 17.25955 & 16.88467\end{array}$ $\begin{array}{llllllllllllllllllll}12.732925 & 12.24761 & 12.73293 & 12.24761 & 12.94167 & 12.44789 & 13.62978 & 13.10992 & 13.13032 & 12.62992 & 13.13032 & 12.62992 & 17.260443 & 16.60275 & 17.26044 & 16.60275 & 17.45183 & 16.78663\end{array}$ $\begin{array}{lllllllllllllllllll}2.284694 & 11.95547 & 12.28469 & 11.95547 & 12.44912 & 12.11695 & 13.11778 & 12.7675 & 12.64499 & 12.30688 & 12.64499 & 12.30688 & 16.7249 & 16.27417 & 16.7249 & 16.27417 & 16.88686 & 16.43266\end{array}$ $\begin{array}{llllllllllllllllll}6.062555 & 5.867121 & 6.062555 & 5.867121 & 6.086303 & 5.890523 & 6.437557 & 6.230199 & 6.249483 & 6.047621 & 6.249483 & 6.047621 & 8.270433 & 8.004447 & 8.270433 & 8.004447 & 8.323804 & 8.056211\end{array}$ $\begin{array}{lllllllllllllllllll}6.088905 & 5.901833 & 6.088905 & 5.901833 & 6.114644 & 5.92657 & 6.466771 & 6.267949 & 6.276507 & 6.083637 & 6.276507 & 6.083637 & 8.305503 & 8.050528 & 8.305503 & 8.050528 & 8.360001 & 8.103245\end{array}$ $\begin{array}{lllllllllllllllll}11.818433 & 11.51682 & 11.81843 & 11.51682 & 11.97166 & 11.66811 & 12.61562 & 12.29525 & 12.16195 & 11.85238 & 12.16195 & 11.85238 & 16.09983 & 15.68601 & 16.09983 & 15.68601 & 16.25261\end{array} 15.83597$ $\begin{array}{lllllllllllllllll}5.67758 & 5.523932 & 5.67758 & 5.523932 & 5.703661 & 5.548919 & 6.030848 & 5.867084 & 5.850931 & 5.691599 & 5.850931 & 5.691599 & 7.746445\end{array}$ $\begin{array}{llllllllllllll}6.196067 & 6.017456 & 6.196067 & 6.017456 & 6.213711 & 6.036422 & 6.574922 & 6.386687 & 6.387377 & 6.203433 & 6.387377 & 6.203433 & 8.456176\end{array}$ $\begin{array}{lllllllllllll}5.577536 & 5.41328 & 5.577536 & 5.41328 & 5.596767 & 5.432767 & 5.920115 & 5.746003 & 5.747393 & 5.57706 & 5.747393 & 5.57706 & 7.614907\end{array}$ $\begin{array}{lllllllllllll}5.577536 & 5.41328 & 5.577536 & 5.41328 & 5.596767 & 5.432767 & 5.920115 & 5.746003 & 5.747393 & 5.57706 & 5.747393 & 5.57706 & 7.614907 \\ 12.57998 & 11.96624 & 12.57998 & 11.96624 & 12.77489 & 12.14821 & 13.4613 & 12.80193 & 12.98201 & 12.34778 & 12.98201 & 12.34778 & 17.04009\end{array}$ $\begin{array}{llllllllllllll}12.57998 & 11.96624 & 12.57998 & 11.96624 & 12.77489 & 12.14821 & 13.4613 & 12.80193 & 12.98201 & 12.34778 & 12.98201 & 12.34778 & 17.04009 \\ 6.306024 & 6.04373 & 6.306024 & 6.04373 & 6.352904 & 6.086593 & 6.710475 & 6.429678 & 6.498309 & 6.227086 & 6.498309 & 6.227086 & 8.59324\end{array}$ $\begin{array}{llllllllllllll}5.946443 & 5.602592 & 5.946443 & 5.602592 & 5.988052 & 5.63863 & 6.325773 & 5.957265 & 6.126774 & 5.770613 & 6.126774 & 5.770613 & 8.106993\end{array}$ $\begin{array}{llllllllllllllll}6.691995 & 6.358738 & 6.691995 & 6.358738 & 6.741291 & 6.403397 & 7.121568 & 6.765059 & 6.898251 & 6.553441 & 6.898251 & 6.553441 & 9.114845\end{array}$ $\begin{array}{lllllllllllllll}6.779508 & 6.542903 & 6.779508 & 6.542903 & 6.82135 & 6.583508 & 7.209687 & 6.958017 & 6.990017 & 6.745399 & 6.990017 & 6.745399 & 9.235819\end{array}$ $\begin{array}{llllllllllllll}6.52204 & 6.243565 & 6.52204 & 6.243565 & 6.541599 & 6.265109 & 6.92256 & 6.62856 & 6.726898 & 6.438576 & 6.726898 & 6.438576 & 8.89302\end{array}$ $\begin{array}{lllllllllllll}6.720767 & 6.347368 & 6.720767 & 6.347368 & 6.769833 & 6.391336 & 7.151981 & 6.752534 & 6.928237 & 6.541734 & 6.928237 & 6.541734 & 9.153614\end{array}$ $\begin{array}{lllllllllllllll}6.162902 & 5.994087 & 6.162902 & 5.994087 & 6.213492 & 6.042034 & 6.560923 & 6.380265 & 6.349206 & 6.175021 & 6.349206 & 6.175021 & 8.398702\end{array}$ $\begin{array}{lllllllllllll}5.660634 & 5.423052 & 5.660634 & 5.423052 & 5.68026 & 5.441441 & 6.008552 & 5.75544 & 5.83355 & 5.5866 & 5.83355 & 5.5866 & 7.727201\end{array}$ $\begin{array}{lllllllllllll}18.078876 & 17.33275 & 18.07888 & 17.33275 & 18.38412 & 17.62519 & 19.36008 & 18.5607 & 18.64874 & 17.87849 & 18.64874 & 17.87849 & 24.48964 \\ 5.06502 & 532754\end{array}$ $\begin{array}{lllllllllllllll}5.66502 & 5.327165 & 5.66502 & 5.327165 & 5.694293 & 5.351678 & 6.019773 & 5.657972 & 5.838165 & 5.487506 & 5.838165 & 5.487506 & 7.726948\end{array}$ $\begin{array}{llllllllllllll}5.680201 & 5.335191 & 5.680201 & 5.335191 & 5.709605 & 5.35982 & 6.035969 & 5.666551 & 5.853874 & 5.495819 & 5.853874 & 5.495819 & 7.747458\end{array}$ $\begin{array}{llllllllllllll}5.78422 & 5.627829 & 5.78422 & 5.627829 & 5.810409 & 5.652403 & 6.144029 & 5.977008 & 5.961354 & 5.799214 & 5.961354 & 5.799214 & 7.891115\end{array}$ $\begin{array}{lllllllllllll}16.786774 & 16.18817 & 16.78677 & 16.18817 & 17.09052 & 16.48053 & 17.99461 & 17.35262 & 17.33039 & 16.71261 & 17.33039 & 16.71261 & 22.69587\end{array}$ $\begin{array}{llllllllllllll}16.724092 & 16.13896 & 16.72409 & 16.13896 & 16.99208 & 16.39621 & 17.89684 & 17.26954 & 17.24276 & 16.63876 & 17.24276 & 16.63876 & 22.68163\end{array}$ $\begin{array}{lllllllllllll}24.953771 & 24.01398 & 24.95377 & 24.01398 & 25.43448 & 24.47603 & 26.77223 & 25.76339 & 25.77249 & 24.80119 & 25.77249 & 24.80119 & 33.69694\end{array}$ | 6.4383 | 6.27452 | 6.4383 | 6.2781 | 6.463211 | 6.299078 | 6.845863 | 6.66749 | 6.638263 | 6.469099 | 6.638263 | 6.469099 | 8.780137 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{llllllllllllllllllllllll}6.703369 & 6.449696 & 6.703369 & 6.449696 & 6.754231 & 6.496732 & 7.1345 & 6.863008 & 6.909366 & 6.647241 & 6.909366 & 6.647241 & 9.130728 & 8.787742 & 9.130728 & 8.787742 & 9.201731 & 8.855005\end{array}$




Y Source Scaling Factor AA
$389648 \quad 373805165.27 \%$
$389498 \quad 374079858.99 \%$
$389398 \quad 374273361.72 \%$
$378579 \quad 373238656.05 \%$
3872313740475 61.32\%
$378821 \quad 373413653.61 \%$
$390456373840163.46 \%$
$389285 \quad 374265659.27 \%$
390278 3738221 61.65\%
$387154 \quad 374141555.97 \%$ $387349 \quad 374083162.34 \%$ $390005 \quad 374038958.22 \%$
$388555 \quad 374171957.36 \%$
$389478 \quad 374134758.33 \%$ $387541 \quad 374248155.88 \%$ $378848 \quad 373400452.39 \%$ $390388 \quad 3740918$ 60.36\% $390475 \quad 373817658.94 \%$ $381635373843372.96 \%$ $380863373299163.34 \%$ $378541373393852.82 \%$ 3792713732975 53.82\% $379853 \quad 373118765.31 \%$ $384770373936565.85 \%$ $389448 \quad 3738624$ 63.30\% $383095 \quad 373986973.47 \%$ $379660 \quad 3734797$ 48.81\% $380681373479549.62 \%$ 3867243740057 61.64\% $388765 \quad 374176059.29 \%$ $383099 \quad 374081774.26 \%$ $390224 \quad 374033060.74 \%$ $380154 \quad 3733793$ 46.37\% $389538 \quad 3740963$ 59.27\% $388714373726060.14 \%$ 3786493736024 51.94\% $389879373930363.70 \%$ 378441 3735152 50.43\% $388749 \quad 3737794$ 63.31\% $383262 \quad 373968071.09 \%$ $389624 \quad 3738317$ 66.42\% $382778 \quad 3739398$ 69.37\% 3827573737606 71.20\% $382820373809373.93 \%$ $389389 \quad 373888766.46 \%$ $382180 \quad 373910070.83 \%$ $379361 \quad 3740015$ 67.75\% $380824 \quad 373517047.74 \%$ $383174 \quad 3739290$ 71.19\% $381835 \quad 373798477.16 \%$ $389535374105459.12 \%$ $379332 \quad 3734589$ 44.60\% 3897143737893 59.82\% $379760 \quad 3736916$ 53.67\% $389686 \quad 374143658.31 \%$ $387943 \quad 374204159.16 \%$ 3872553739936 60.47\% 3892353740749 59.99\% 3795173732375 64.42\% $380014373375847.68 \%$ $379495 \quad 373707552.77 \%$ $380299 \quad 374016174.21 \%$ $380257 \quad 374040373.17 \%$ $389875 \quad 374185358.82 \%$ 3819883739995 73.99\% 3792793735517 42.85\% $383239 \quad 373998973.20 \%$ 3903533739073 61.04\% $381187 \quad 373411842.83 \%$ 380461 3731193 67.15\% $380049 \quad 373303165.52 \%$ 3891063738800 63.80\% 3871113740236 59.79\% 3897963738044 64.05\% $379594 \quad 373836758.36 \%$ $390160 \quad 373905863.17 \%$ $382425 \quad 373831770.11 \%$ $379699 \quad 3732970$ 58.51\% $379666373142673.80 \%$ $379935373683354.23 \%$ 3871563740295 59.85\% $390248 \quad 3737371$ 57.20\% 3905383737763 61.06\% $387420 \quad 374055159.79 \%$ $379821 \quad 373652451.42 \%$ $389624 \quad 3738615$ 62.35\% $378750373389652.23 \%$
$6.5001846 .237591 \quad 6.500184 \quad 6.237591$ $\begin{array}{lllllllllllllllllll}5.753265 & 5.585127 & 5.753265 & 5.585127 & 5.778568 & 5.609181 & 6.110578 & 5.931304 & 5.929218 & 5.754769 & 5.929218 & 5.754769 & 7.84985 & 7.623249 & 7.84985 & 7.623249 & 7.901582 & 7.672994\end{array}$ $\begin{array}{lllllllllllllllllllll}5.743524 & 5.384378 & 5.743524 & 5.384378 & 5.775838 & 5.412423 & 6.104799 & 5.720774 & 5.918498 & 5.545913 & 5.918498 & 5.545913 & 7.833573 & 7.350437 & 7.833573 & 7.350437 & 7.888566 & 7.400393\end{array}$ $\begin{array}{lllllllllllllllllll}8.979351 & 8.708506 & 8.979351 & 8.708506 & 9.058064 & 8.787146 & 9.551892 & 9.265882 & 9.215623 & 8.939464 & 9.215623 & 8.939464 & 12.30834 & 11.93183 & 12.30834 & 11.93183 & 12.40099 & 12.02316\end{array}$ $\begin{array}{llllllllllllllllll}6.851174 & 6.495284 & 6.851174 & 6.495284 & 6.903008 & 6.541654 & 7.292017 & 6.911009 & 7.062728 & 6.694763 & 7.062728 & 6.694763 & 9.32995 & 8.849345 & 9.32995 & 8.849345 & 9.402645 & 8.916683\end{array}$ $\begin{array}{llllllllllllllllll}11.507046 & 11.16827 & 11.50705 & 11.16827 & 11.65375 & 11.31196 & 12.28103 & 11.92057 & 11.83984 & 11.49199 & 11.83984 & 11.49199 & 15.68077 & 15.21681 & 15.68077 & 15.21681 & 15.82792 & 15.36038\end{array}$ $\begin{array}{lllllllllllllllll}6.122016 & 5.903514 & 6.122016 & 5.903514 & 6.138136 & 5.921411 & 6.495454 & 6.265245 & 6.31105 & 6.085863 & 6.31105 & 6.085863 & 8.355909 & 8.056046 & 8.355909 & 8.056046 & 8.405975 \\ 8.105505\end{array}$ $\begin{array}{lllllllllllllllllll}5.754815 & 5.440334 & 5.754815 & 5.440334 & 5.787754 & 5.469492 & 6.117143 & 5.780939 & 5.929974 & 5.604044 & 5.929974 & 5.604044 & 7.84896 & 7.425221 & 7.84896 & 7.425221 & 7.904315 & 7.476215\end{array}$ $\begin{array}{llllllllllllllll}6.200423 & 6.009779 & 6.200423 & 6.009779 & 6.217167 & 6.028285 & 6.578937 & 6.378369 & 6.391938 & 6.195939 & 6.391938 & 6.195939 & 8.462574 & 8.199738 & 8.462574 & 8.199738 \\ 8.513499 & 8.25033\end{array}$ $\begin{array}{lllllllllllllllllll}6.514296 & 6.303681 & 6.514296 & 6.303681 & 6.563127 & 6.34983 & 6.932618 & 6.707495 & 6.71373 & 6.495857 & 6.71373 & 6.495857 & 8.875135 & 8.590592 & 8.875135 & 8.590592 & 8.94371 & 8.656233\end{array}$ $\begin{array}{lllllllllllllllll}6.69001 & 6.372219 & 6.69001 & 6.372219 & 6.739566 & 6.417397 & 7.119592 & 6.779642 & 6.89603 & 6.56724 & 6.89603 & 6.56724 & 9.112324 & 8.683305 & 9.112324 & 8.683305 & 9.182677 \\ 8.749106\end{array}$ $\begin{array}{lllllllllllllllllll}5.786288 & 5.53354 & 5.786288 & 5.53354 & 5.808012 & 5.553313 & 6.143237 & 5.873737 & 5.963656 & 5.701535 & 5.963656 & 5.701535 & 7.896384 & 7.555539 & 7.896384 & 7.555539 & 7.946643 & 7.602802\end{array}$ $\begin{array}{lllllllllllllllllll}6.008373 & 5.718768 & 6.008373 & 5.718768 & 6.046573 & 5.753207 & 6.389335 & 6.079686 & 6.191573 & 5.89185 & 6.191573 & 5.89185 & 8.191724 & 7.800807 & 8.191724 & 7.800807 & 8.251445 & 7.856463\end{array}$ $\begin{array}{lllllllllllllllllllll}5.699275 & 5.535876 & 5.699275 & 5.535876 & 5.726096 & 5.561574 & 6.054353 & 5.880177 & 5.87332 & 5.703781 & 5.87332 & 5.703781 & 7.775616 & 7.555346 & 7.775616 & 7.555346 & 7.827687 & 7.605523\end{array}$ $\begin{array}{lllllllllllllllll}6.168884 & 5.852648 & 6.168884 & 5.852648 & 6.214346 & 5.892424 & 6.564093 & 6.224965 & 6.356394 & 6.029403 & 6.356394 & 6.029403 & 8.407905 & 7.981393 & 8.407905 & 7.981393 & 8.472178 \\ 8.040505\end{array}$ $\begin{array}{llllllllllllllllll}11.575231 & 11.30484 & 11.57523 & 11.30484 & 11.72247 & 11.45102 & 12.35356 & 12.06693 & 11.90995 & 11.63279 & 11.90995 & 11.63279 & 15.774 & 15.40181 & 15.774 & 15.40181 & 15.92182 & 15.5476\end{array}$ $\begin{array}{lllllllllllllllllllllll}5.657899 & 5.382632 & 5.657899 & 5.382632 & 5.677921 & 5.401121 & 6.005936 & 5.712693 & 5.830752 & 5.544917 & 5.830752 & 5.544917 & 7.723153 & 7.352338 & 7.723153 & 7.352338 & 7.771604 & 7.397732\end{array}$ $\begin{array}{lllllllllllllllll}6.197628 & 5.898562 & 6.197628 & 5.898562 & 6.213207 & 5.916302 & 6.575427 & 6.259613 & 6.389778 & 6.079889 & 6.389778 & 6.079889 & 8.457945 & 8.051234 & 8.457945 & 8.051234 & 8.508415 \\ 8.100417\end{array}$ $\begin{array}{llllllllllllllllllllll}15.14745 & 14.57306 & 15.14745 & 14.57306 & 15.41144 & 14.82565 & 16.22902 & 15.61292 & 15.63355 & 15.04123 & 15.63355 & 15.04123 & 20.495391 & 19.71775 & 20.49539 & 19.71775 & 20.73336 & 19.94617\end{array}$ $\begin{array}{lllllllllllllllllll}19.374678 & 18.43988 & 19.37468 & 18.43988 & 19.70883 & 18.75354 & 20.75417 & 19.7494 & 19.99129 & 19.025 & 19.99129 & 19.025 & 26.22815 & 24.96922 & 26.22815 & 24.96922 & 26.52977 & 25.25387\end{array}$ $\begin{array}{llllllllllllllllll}10.457104 & 10.21301 & 10.4571 & 10.21301 & 10.57761 & 10.33359 & 11.14941 & 10.89152 & 10.7518 & 10.50217 & 10.7518 & 10.50217 & 14.27451 & 13.93658 & 14.27451 & 13.93658 & 14.40041 & 14.06122\end{array}$ $\begin{array}{lllllllllllllllll}12.37385 & 11.85708 & 12.37385 & 11.85708 & 12.53419 & 12.00937 & 13.20828 & 12.65576 & 12.73304 & 12.20123 & 12.73304 & 12.20123 & 16.85756 & 16.15438 & 16.85756 & 16.15438 & 17.01733 \\ 16.3068\end{array}$ $\begin{array}{lllllllllllllllll}11.627721 & 11.33825 & 11.62772 & 11.33825 & 11.75825 & 11.46858 & 12.39458 & 12.08881 & 11.95348 & 11.65826 & 11.95348 & 11.65826 & 15.87861 & 15.47639 & 15.87861 & 15.47639 & 16.01659 \\ 15.6129\end{array}$ $\begin{array}{llllllllllllllllll} & 9.020965 & 8.657525 & 9.020965 & 8.657525 & 9.125244 & 8.755887 & 9.62685 & 9.237627 & 9.302715 & 8.92727 & 9.302715 & 8.92727 & 12.255423 & 11.76417 & 12.25542 & 11.76417 & 12.36955 \\ 111.87271\end{array}$ $\begin{array}{llllllllllllllllll}6.422677 & 6.199413 & 6.422677 & 6.199413 & 6.44553 & 6.222889 & 6.818985 & 6.582555 & 6.622608 & 6.391269 & 6.622608 & 6.391269 & 8.747003 & 8.454013 & 8.747003 & 8.454013 & 8.802581 & 8.508291\end{array}$ $\begin{array}{lllllllllllllllll}10.713698 & 10.22919 & 10.7137 & 10.22919 & 10.86648 & 10.37505 & 11.45348 & 10.93527 & 11.05022 & 10.54973 & 11.05022 & 10.54973 & 14.522892 & 13.87719 & 14.52289 & 13.87719 & 14.68312\end{array} 14.02055$ $\begin{array}{llllllllllllllllll}14.998728 & 14.422 & 14.99873 & 14.422 & 15.23744 & 14.65122 & 16.04809 & 15.43094 & 15.45959 & 14.86573 & 15.45959 & 14.86573 & 20.35178 & 19.56829 & 20.35178 & 19.56829 & 20.57232 & 19.78026\end{array}$ $\begin{array}{lllllllllllllllllllll}21.843027 & 21.09793 & 21.84303 & 21.09793 & 22.25488 & 21.49563 & 23.42591 & 22.62699 & 22.55047 & 21.78184 & 22.55047 & 21.78184 & 29.521439 & 28.51335 & 29.52144 & 28.51335 & 29.88124 & 28.86098\end{array}$ $\begin{array}{lllllllllllllllllll}7.213003 & 6.911242 & 7.213003 & 6.911242 & 7.271577 & 6.965277 & 7.680092 & 7.357203 & 7.436555 & 7.124888 & 7.436555 & 7.124888 & 9.81843 & 9.410165 & 9.81843 & 9.410165 & 9.897108 & 9.484413\end{array}$ $\begin{array}{llllllllllllllllll}5.996224 & 5.658046 & 5.996224 & 5.658046 & 6.032837 & 5.689614 & 6.375597 & 6.013473 & 6.179649 & 5.829448 & 6.179649 & 5.829448 & 8.174852 & 7.719218 & 8.174852 & 7.719218 & 8.233832 & 7.773081\end{array}$ $\begin{array}{llllllllllllllllllllllll}9.634167 & 9.347644 & 9.634167 & 9.347644 & 9.76448 & 9.475316 & 10.29346 & 9.988076 & 9.933063 & 9.637343 & 9.933063 & 9.637343 & 13.080905 & 12.69173 & 13.08091 & 12.69173 & 13.21174 & 12.81922\end{array}$ $\begin{array}{llllllllllllllllllllll}5.725249 & 5.499051 & 5.725249 & 5.499051 & 5.74577 & 5.518923 & 6.077684 & 5.837075 & 5.900402 & 5.665345 & 5.900402 & 5.665345 & 7.814407 & 7.50965 & 7.814407 & 7.50965 & 7.863603 & 7.556611\end{array}$ $\begin{array}{llllllllllllllllll}16.666942 & 16.11567 & 16.66694 & 16.11567 & 16.93732 & 16.37805 & 17.83843 & 17.24924 & 17.18546 & 16.61777 & 17.18546 & 16.61777 & 22.59828 & 21.84909 & 22.59828 & 21.84909 & 22.84702 & 22.09025\end{array}$ $\begin{array}{lllllllllllllllllll}5.719552 & 5.544159 & 5.719552 & 5.544159 & 5.744978 & 5.567976 & 6.074925 & 5.887699 & 5.894359 & 5.712384 & 5.894359 & 5.712384 & 7.803905 & 7.567673 & 7.803905 & 7.567673 & 7.855452 & 7.616994\end{array}$ $\begin{array}{lllllllllllllllllllll}6.934071 & 6.666412 & 6.934071 & 6.666412 & 6.960131 & 6.692172 & 7.363816 & 7.079551 & 7.153017 & 6.875279 & 7.153017 & 6.875279 & 9.449114 & 9.087371 & 9.449114 & 9.087371 & 9.510609 & 9.146536\end{array}$ $\begin{array}{lllllllllllllllllll}12.086104 & 11.66562 & 12.0861 & 11.66562 & 12.25769 & 11.83537 & 12.9137 & 12.46776 & 12.44472 & 12.01354 & 12.44472 & 12.01354 & 16.439614 & 15.8613 & 16.43961 & 15.8613 & 16.60457 & 16.02287\end{array}$ $\begin{array}{llllllllllllllllll}6.069163 & 5.861868 & 6.069163 & 5.861868 & 6.089947 & 5.882803 & 6.442564 & 6.222789 & 6.256371 & 6.041628 & 6.256371 & 6.041628 & 8.281179 & 7.982714 & 8.281179 & 7.982714 & 8.333146 & 8.032862\end{array}$ $\begin{array}{lllllllllllllllll}10.245316 & 9.881677 & 10.24532 & 9.881677 & 10.3709 & 10.00377 & 10.92995 & 10.54292 & 10.5381 & 10.16494 & 10.5381 & 10.16494 & 13.972028 & 13.47365 & 13.97203 & 13.47365 & 14.09984 \\ 10.59761\end{array}$ $\begin{array}{llllllllllllllllll}6.698413 & 6.548603 & 6.698413 & 6.548603 & 6.724444 & 6.575209 & 7.113592 & 6.955287 & 6.908152 & 6.753658 & 6.908152 & 6.753658 & 9.131208 & 8.926206 & 9.131208 & 8.926206 & 9.190696 & 8.98495\end{array}$ $\begin{array}{llllllllllllllllllll}10.793119 & 10.16854 & 10.79312 & 10.16854 & 10.94729 & 10.31131 & 11.54751 & 10.86893 & 11.13291 & 10.487 & 11.13291 & 10.487 & 14.638865 & 13.79691 & 14.63887 & 13.79691 & 14.79043 & 13.93809\end{array}$ $\begin{array}{llllllllllllllllll}6.445127 & 6.227959 & 6.445127 & 6.227959 & 6.465923 & 6.249455 & 6.841405 & 6.611538 & 6.645853 & 6.420949 & 6.645853 & 6.420949 & 8.790876 & 8.495851 & 8.790876 & 8.495851 & 8.845816 & 8.549436\end{array}$ $\begin{array}{llllllllllllllllll}11.783769 & 11.23273 & 11.78377 & 11.23273 & 11.96235 & 11.40171 & 12.60533 & 12.0149 & 12.15634 & 11.58748 & 12.15634 & 11.58748 & 15.97271 & 15.22741 & 15.97271 & 15.22741 & 16.14355 & 15.38954\end{array}$ $\begin{array}{llllllllllllllllllll}14.622063 & 13.79026 & 14.62206 & 13.79026 & 14.86732 & 14.01738 & 15.66055 & 14.76641 & 15.09395 & 14.23415 & 15.09395 & 14.23415 & 19.784613 & 18.66425 & 19.78461 & 18.66425 & 20.0102 & 18.87464\end{array}$ $\begin{array}{llllllllllllllllll}13.548995 & 12.8115 & 13.549 & 12.8115 & 13.76926 & 13.01558 & 14.50572 & 13.71305 & 13.98371 & 13.22175 & 13.98371 & 13.22175 & 18.342501 & 17.34861 & 18.3425 & 17.34861 & 18.54753 & 17.5402\end{array}$ $\begin{array}{lllllllllllllllll}6.388453 & 6.13848 & 6.388453 & 6.13848 & 6.412024 & 6.162189 & 6.783142 & 6.518105 & 6.577428 & 6.327204 & 6.577428 & 6.327204 & 8.699813 & 8.371818 & 8.699813 & 8.371818 & 8.755476 \\ 8.425777\end{array}$ $\begin{array}{llllllllllllllllll}13.035097 & 12.24125 & 13.0351 & 12.24125 & 13.24741 & 12.43613 & 13.95457 & 13.1015 & 13.44947 & 12.62987 & 13.44947 & 12.62987 & 17.654913 & 16.58356 & 17.65491 & 16.58356 & 17.85158 & 16.766\end{array}$ $\begin{array}{llllllllllllllllll}13.035157 & 12.24125 & 13.0351 & 12.24125 & 13.24741 & 12.43613 & 13.95457 & 13.1015 & 13.44947 & 12.62987 & 13.44947 & 12.62987 & 17.654913 & 16.58756 & 17.65491 & 16.58356 & 11.85158 & 16.766 \\ 11.715121 & 11.25586 & 11.71512 & 11.25586 & 11.90018 & 11.432 & 12.53428 & 12.04159 & 12.07667 & 11.60259 & 12.07667 & 11.60259 & 15.893696 & 15.27302 & 15.8937 & 15.27302 & 16.06558 & 15.43718\end{array}$ $\begin{array}{llllllllllllllllllll}23.286528 & 22.62291 & 23.28653 & 22.62291 & 23.74215 & 23.06564 & 24.98717 & 24.27528 & 24.04711 & 23.36214 & 24.04711 & 23.36214 & 31.448265 & 30.55145 & 31.44827 & 30.55145 & 31.84129 & 30.93332\end{array}$ $\begin{array}{llllllllllllllllll}11.382181 & 10.68183 & 11.38218 & 10.68183 & 11.54912 & 10.83497 & 12.17214 & 11.4202 & 11.74258 & 11.01814 & 11.74258 & 11.01814 & 15.430666 & 14.48755 & 15.43067 & 14.48755 & 15.59312 & 14.63776\end{array}$ $\begin{array}{lllllllllllllllllllll}15.938556 & 15.47718 & 15.93856 & 15.47718 & 16.22156 & 15.75156 & 17.08096 & 16.58656 & 16.45267 & 15.97733 & 16.45267 & 15.97733 & 21.556945 & 20.93118 & 21.55695 & 20.93118 & 21.81041 & 21.17738\end{array}$ $\begin{array}{lllllllllllllllllll}5.718972 & 5.558528 & 5.718972 & 5.558528 & 5.744499 & 5.582556 & 6.074381 & 5.903127 & 5.89379 & 5.727425 & 5.89379 & 5.727425 & 7.803005 & 7.586738 & 7.803005 & 7.586738 & 7.85459 & 7.636296\end{array}$ $\begin{array}{lllllllllllllllllll}13.023478 & 12.54891 & 13.02348 & 12.54891 & 13.21223 & 12.73134 & 13.91907 & 13.4123 & 13.41393 & 12.92539 & 13.41393 & 12.92539 & 17.70389 & 17.0578 & 17.70389 & 17.0578 & 17.88426 & 17.23198\end{array}$ $\begin{array}{lllllllllllllllll}6.487073 & 6.223266 & 6.487073 & 6.223266 & 6.506509 & 6.243155 & 6.884948 & 6.60532 & 6.689244 & 6.415628 & 6.689244 & 6.415628 & 8.848764 & 8.491498 & 8.848764 & 8.491498 & 8.90334 \\ 8.544155\end{array}$ $\begin{array}{lllllllllllllllllll}16.23212 & 15.5307 & 16.23212 & 15.5307 & 16.51477 & 15.80117 & 17.38842 & 16.63746 & 16.74428 & 16.02213 & 16.74428 & 16.02213 & 21.981499 & 21.02864 & 21.9815 & 21.02864 & 22.23477 & 21.2712\end{array}$ $\begin{array}{llllllllllllllllllllllll}5.612504 & 5.464328 & 5.612504 & 5.464328 & 5.637577 & 5.488369 & 5.961159 & 5.803248 & 5.78358 & 5.629961 & 5.78358 & 5.629961 & 7.658753 & 7.458761 & 7.658753 & 7.458761 & 7.709286 & 7.507615\end{array}$ $\begin{array}{lllllllllllllllllll}6.16244 & 5.860067 & 6.16244 & 5.860067 & 6.204685 & 5.898545 & 6.555302 & 6.232089 & 6.350429 & 6.037487 & 6.350429 & 6.037487 & 8.399637 & 7.991413 & 8.399637 & 7.991413 & 8.462427 & 8.050022\end{array}$ $\begin{array}{llllllllllllllllllll}6.916905 & 6.487345 & 6.916905 & 6.487345 & 6.96685 & 6.531343 & 7.360608 & 6.90111 & 7.131319 & 6.686943 & 7.131319 & 6.686943 & 9.419225 & 8.839214 & 9.419225 & 8.839214 & 9.491608 & 8.90541\end{array}$ $\begin{array}{lllllllllllllllllllll}5.850448 & 5.663467 & 5.850448 & 5.663467 & 5.877641 & 5.689036 & 6.214942 & 6.015341 & 6.029876 & 5.835676 & 6.029876 & 5.835676 & 7.980437 & 7.729009 & 7.980437 & 7.729009 & 8.033871 & 7.780069\end{array}$ $\begin{array}{llllllllllllllllllll}12.2498 & 11.9772 & 12.2498 & 11.9772 & 12.40449 & 12.13014 & 13.07235 & 12.78309 & 12.60282 & 12.32397 & 12.60282 & 12.32397 & 16.69654 & 16.32047 & 16.69654 & 16.32047 & 16.85225 & 16.47383\end{array}$ $\begin{array}{lllllllllllllllllll}5.816858 & 15.39634 & 15.81686 & 15.39634 & 16.06562 & 15.64014 & 16.92195 & 16.4735 & 16.30465 & 15.8722 & 16.30465 & 15.8722 & 21.46008 & 20.88624 & 21.46008 & 20.88624 & 21.69147 & 21.11245\end{array}$ $\begin{array}{llllllllllllllllll}15.061462 & 14.29864 & 15.06146 & 14.29864 & 15.3126 & 14.53777 & 16.12504 & 15.30928 & 15.53104 & 14.74589 & 15.53104 & 14.74589 & 20.415173 & 19.37761 & 20.41517 & 19.37761 & 20.64359 & 19.59508\end{array}$
 $\begin{array}{lllllllllllllllllll}11.521725 & 11.02523 & 11.52173 & 11.02523 & 11.7031 & 11.19686 & 12.32767 & 11.79499 & 11.87968 & 11.36727 & 11.87968 & 11.36727 & 15.626649 & 14.82289 & 15.62665 & 14.82289 & 15.7958 & 14.98171\end{array}$ $\begin{array}{lllllllllllllllllll}5.661032 & 5.485302 & 5.661032 & 5.485302 & 5.686583 & 5.50933 & 6.012943 & 5.825572 & 5.833797 & 5.65195 & 5.833797 & 5.65195 & 7.72436 & 7.486616 & 7.72436 & 7.486616 & 7.775514 & 7.535692\end{array}$ $\begin{array}{lllllllllllllllllllll}11.620969 & 11.03104 & 11.62097 & 11.03104 & 11.80183 & 11.20005 & 12.43372 & 11.80062 & 11.98617 & 11.37737 & 11.98617 & 11.37737 & 15.75376 & 14.95641 & 15.75376 & 14.95641 & 15.92416 & 15.11675\end{array}$ $\begin{array}{lllllllllllllllll}13.921498 & 13.33348 & 13.9215 & 13.33348 & 14.13619 & 13.54045 & 14.88968 & 14.26201 & 14.34564 & 13.74074 & 14.34564 & 13.74074 & 18.902061 & 18.10084 & 18.90206 & 18.10084 & 19.10267\end{array} 18.29379$ $\begin{array}{lllllllllllllllllll}10.381346 & 9.919552 & 10.38135 & 9.919552 & 10.52676 & 10.05788 & 11.09604 & 10.60186 & 10.70629 & 10.22947 & 10.70629 & 10.22947 & 14.074376 & 13.46066 & 14.07438 & 13.46066 & 14.21857 & 13.5979\end{array}$ $\begin{array}{llllllllllllllllll}5.99116 & 5.782502 & 5.99116 & 5.782502 & 6.009416 & 5.801233 & 6.358041 & 6.13708 & 6.1753 & 5.959312 & 6.1753 & 5.959312 & 8.17751 & 7.893977 & 8.17751 & 7.893977 & 8.227581 & 7.942666\end{array}$ $\begin{array}{llllllllllllllllllllll} & \\ 25.247453 & 24.63299 & 25.24745 & 24.63299 & 25.74351 & 25.11768 & 27.09454 & 26.43565 & 26.07788 & 25.44327 & 26.07788 & 25.44327 & 34.083048 & 33.25299 & 34.08305 & 33.25299 & 34.51126 & 33.67116\end{array}$ $\begin{array}{lllllllllllllllllllllllll}14.170764 & 13.93096 & 14.17076 & 13.93096 & 14.36282 & 14.12331 & 15.13428 & 14.88157 & 14.58933 & 14.3455 & 14.58933 & 14.3455 & 19.28511 & 18.95016 & 19.28511 & 18.95016 & 19.47353 & 19.1378\end{array}$ $\begin{array}{llllllllllllllllllll}15.499766 & 15.14983 & 15.49977 & 15.14983 & 15.7359 & 15.38191 & 16.57617 & 16.20283 & 15.9734 & 15.61284 & 15.9734 & 15.61284 & 21.04374 & 20.56792 & 21.04374 & 20.56792 & 21.26582 & 20.78558\end{array}$ $\begin{array}{llllllllllllllllll}6.420498 & 6.258902 & 6.420498 & 6.258902 & 6.445413 & 6.284357 & 6.825952 & 6.647255 & 6.619828 & 6.453466 & 6.619828 & 6.453466 & 8.755961 & 8.53437 & 8.755961 & 8.53437 & 8.812636 & 8.590239\end{array}$ $\begin{array}{llllllllllllllllllll}6.947367 & 6.586688 & 6.947367 & 6.586688 & 7.000625 & 6.633938 & 7.394893 & 7.008571 & 7.161963 & 6.789449 & 7.161963 & 6.789449 & 9.460349 & 8.972719 & 9.460349 & 8.972719 & 9.534438 & 9.041213\end{array}$ $\begin{array}{llllllllllllllllll}6.429867 & 6.172614 & 6.429867 & 6.172614 & 6.449158 & 6.192375 & 6.82414 & 6.551479 & 6.629898 & 6.363092 & 6.629898 & 6.363092 & 8.771461 & 8.423026 & 8.771461 & 8.423026 & 8.825499 & 8.475227\end{array}$ $\begin{array}{lllllllllllllllll}13.865361 & 13.43434 & 13.86536 & 13.43434 & 14.09363 & 13.65909 & 14.84226 & 14.38393 & 14.2968 & 13.85454 & 14.2968 & 13.85454 & 18.797826 & 18.20645 & 18.79783 & 18.20645 & 19.00646 \\ 18.4107\end{array}$ $\begin{array}{llllllllllllllllll}6.09738 & 5.872762 & 6.09738 & 5.872762 & 6.116693 & 5.892297 & 6.471548 & 6.233376 & 6.285726 & 6.052875 & 6.285726 & 6.052875 & 8.309826 & 8.015772 & 8.320106 & 8.015772 & 8.371589 & 8.06557\end{array}$ $\begin{array}{llllllllllllllllll}14.172769 & 13.50765 & 14.17277 & 13.50765 & 14.41029 & 13.73136 & 15.17834 & 14.46416 & 14.62749 & 13.94079 & 14.62749 & 13.94079 & 19.182735 & 18.28453 & 19.18274 & 18.28453 & 19.40069 & 18.49088\end{array}$ $\begin{array}{llllllllllllllllll}13.771185 & 13.52686 & 13.77119 & 13.52686 & 13.96453 & 13.71946 & 14.71324 & 14.45429 & 14.18166 & 13.93089 & 14.18166 & 13.93089 & 18.72916 & 18.39316 & 18.72916 & 18.39316 & 18.91643 & 18.57858\end{array}$ $\begin{array}{llllllllllllllllll}11.540601 & 11.312 & 11.5406 & 11.312 & 11.67021 & 11.44316 & 12.30162 & 12.06179 & 11.86349 & 11.63191 & 11.86349 & 11.63191 & 15.76055 & 15.43858 & 15.76055 & 15.43858 & 15.89737 & 15.57532\end{array}$ $\begin{array}{lllllllllllllllllll}16.836785 & 16.12368 & 16.83679 & 16.12368 & 17.13525 & 16.40939 & 18.04076 & 17.27686 & 17.37158 & 16.63675 & 17.37158 & 16.63675 & 22.789659 & 21.82244 & 22.78966 & 21.82244 & 23.0556 & 22.07725\end{array}$ $\begin{array}{llllllllllllllllllll}6.917186 & 6.559308 & 6.917186 & 6.559308 & 6.969874 & 6.606138 & 7.362552 & 6.979272 & 7.130887 & 6.761205 & 7.130887 & 6.761205 & 9.41937 & 8.935611 & 9.41937 & 8.935611 & 9.492979 & 9.003714\end{array}$ $\begin{array}{lllllllllllllllllll}6.484598 & 6.119505 & 6.484598 & 6.119505 & 6.501312 & 6.137701 & 6.880682 & 6.494075 & 6.687352 & 6.308044 & 6.687352 & 6.308044 & 8.845651 & 8.352064 & 8.845651 & 8.352064 & 8.898991 & 8.403073\end{array}$ $\begin{array}{lllllllllllllllllll}6.484598 & 6.119505 & 6.484598 & 6.119505 & 6.501312 & 6.137701 & 6.880682 & 6.494075 & 6.687352 & 6.308044 & 6.687352 & 6.308044 & 8.845651 & 8.352064 & 8.845651 & 8.352064 & 8.898991 & 8.403073 \\ 6.271372 & 5.937669 & 6.271372 & 5.937669 & 6.286782 & 5.954586 & 6.653475 & 6.300246 & 6.466 & 6.119421 & 6.466 & 6.119421 & 8.558366 & 8.10686 & 8.558366 & 8.10686 & 8.609309 & 8.155741\end{array}$ $\begin{array}{lllllllllllllllllll}6.271372 & 5.937669 & 6.271372 & 5.937669 & 6.286782 & 5.954586 & 6.653475 & 6.300246 & 6.466 & 6.119421 & 6.466 & 6.119421 & 8.558366 & 8.10686 & 8.558366 & 8.10686 & 8.609309 & 8.155741 \\ 6.765542 & 6.374382 & 6.765542 & 6.374382 & 6.814883 & 6.418227 & 7.199673 & 6.781121 & 6.974596 & 6.569752 & 6.974596 & 6.569752 & 9.214182 & 8.686475 & 9.214182 & 8.686475 & 9.285098 & 8.751676\end{array}$ $\begin{array}{llllllllllllllllllll}6.765542 & 6.374382 & 6.765542 & 6.374382 & 6.814883 & 6.418227 & 7.199673 & 6.781121 & 6.974596 & 6.569752 & 6.974596 & 6.569752 & 9.214182 & 8.686475 & 9.214182 & 8.686475 & 9.285098 & 8.751676 \\ 16.672305 & 15.8302 & 16.67231 & 15.8302 & 16.96259 & 16.10574 & 17.86002 & 16.95811 & 17.19897 & 16.33089 & 17.19897 & 16.33089 & 22.576504 & 21.43468 & 22.5765 & 21.43468 & 22.83664 & 21.68177\end{array}$ $\begin{array}{lllllllllllllllllll}6.360041 & 6.163367 & 6.360041 & 6.163367 & 6.381523 & 6.185757 & 6.751515 & 6.543582 & 6.557416 & 6.353916 & 6.557416 & 6.353916 & 8.675701 & 8.398262 & 8.675701 & 8.407982 & 8.730248 & 8.461475\end{array}$ $\begin{array}{llllllllllllllllll}11.108779 & 10.85128 & 11.10878 & 10.85128 & 11.24458 & 10.98631 & 11.85094 & 11.5782 & 11.42652 & 11.1628 & 11.42652 & 11.1628 & 15.14926 & 14.79412 & 15.14926 & 14.79412 & 15.28769 & 14.93088\end{array}$

 2026_ALT1_C 2026_ALT1_ 2026_NP_C 2026_NP_N 2026_ALT3_ 2026_ALT3_ 2026_ALT4_ 2026_ALT4_ 2026_ALT5_ 2026_ALT5_ 2026_PP_CA 2026_PP_N 2033_ALT1_C 2033_ALT1_ 2033_NP_C 2033_NP_N 2033_ALT3_ 2033_ALT3_
Source Scaling Factor
$390276 \quad 3738162$ 59.71\%
$380498 \quad 374024971.71 \%$
$378867 \quad 3731455$ 67.16\%
$378709 \quad 373431747.39 \%$
$379694373691153.48 \%$
387129 374158754.88\%
$382074374033771.02 \%$
$382074-374033771.02 \%$
$\begin{array}{ll}384631 & 373911964.48 \% \\ 387444 & 374246957.38 \%\end{array}$ $386969 \quad 374059360.13 \%$ $390180 \quad 373822863.46 \%$ $384377 \quad 373936961.76 \%$ 387724 3740376 60.93\% $390207373791060.67 \%$ $390631373763359.67 \%$ $390365373764759.52 \%$ 389921 3738609 63.36\% 389883 3738053 62.97\% $390052 \quad 373736857.48 \%$ 3895993738178 67.30\% $387995374085361.10 \%$ $378996 \quad 373924161.11 \%$ $389600 \quad 373836065.75 \%$ $390315 \quad 3739619$ 63.06\% $388103374168361.72 \%$ 3902243738014 59.99\% 3879263742882 53.52\% $388691374043157.45 \%$ $378469 \quad 3734936$ 47.55\% $387340 \quad 3741495$ 57.15\% $386718 \quad 3739983$ 60.06\% 3801863733726 46.74\% 381264 3732980 58.63\% 3880113741615 62.29\% 3881123742445 57.15\% 3871723741938 56.89\% $390062373825064.78 \%$ 389026 3737038 56.95\% 389481 3741039 59.45\% 380158 3734275 44.52\% $387982 \quad 3740075$ 61.37\% 3788163733895 51.97\% 3797453733311 52.16\% $380440 \quad 373391145.84 \%$ 3876113742700 56.91\% $387731374175358.82 \%$ $388870 \quad 373787062.12 \%$ $389981 \quad 3738882$ 62.72\% $388635 \quad 3741379$ 62.59\% 3880883740588 65.25\% $387556373998161.80 \%$ 387009 3743355 63.72\% $387670374041162.28 \%$ $390403374022962.46 \%$ $382216 \quad 373918170.99 \%$ $378878 \quad 373212367.87 \%$ 3894253742800 61.54\% 3793203739551 62.95\% 3805193733982 47.13\% 3786263738189 54.76\% $381827 \quad 373800477.17 \%$ $388688 \quad 374033460.14 \%$ $388894 \quad 374073359.15 \%$ $388832374031157.23 \%$ 3816033740192 75.18\% 3875063739696 61.56\% $390444 \quad 373903359.18 \%$ $378938 \quad 373181764.15 \%$ $390594 \quad 373824758.36 \%$ 388725 3741155 64.49\% $380203373655158.47 \%$ 3901953739970 62.25\% 3881923740542 65.51\% 383107 3737969 68.84\% $389940374037358.26 \%$ $390373374026062.41 \%$ $390533 \quad 374034762.24 \%$ $389282 \quad 3739139$ 62.47\% $378807 \quad 3734759$ 45.24\% 388084 3742865 53.61\% $388917 \quad 373769362.88 \%$ $379706374018271.54 \%$ $388856 \quad 3738266$ 61.73\% $380807 \quad 3733760$ 50.19\% $379507 \quad 3732828$ 59.16\% 3900213738204 64.71\% 3880053742146 59.13\% $\begin{array}{lllllllllllllllllll} \\ 11.734444 & 11.35337 & 11.73444 & 11.35337 & 11.92104 & 11.53324 & 12.55687 & 12.1487 & 12.10009 & 11.70735 & 12.10009 & 11.70735 & 15.911746 & 15.39501 & 15.91175 & 15.39501 & 16.0851 & 15.56247\end{array}$ $\begin{array}{lllllllllllllllll}10.070878 & 9.885933 & 10.07088 & 9.885933 & 10.16145 & 9.979031 & 10.71535 & 10.52225 & 10.33844 & 10.15135 & 10.33844 & 10.15135 & 13.79769 & 13.53578 & 13.79769 & 13.53578 & 13.90323 \\ 13.3 .64198\end{array}$ $\begin{array}{llllllllllllllllll}11.134997 & 10.84495 & 11.135 & 10.84495 & 11.27418 & 10.98216 & 11.88148 & 11.57352 & 11.4551 & 11.15802 & 11.4551 & 11.15802 & 15.17961 & 14.78037 & 15.17961 & 14.78037 & 15.32022 & 14.91852\end{array}$ $\begin{array}{llllllllllllllllll}15.879982 & 15.25473 & 15.87998 & 15.25473 & 16.15324 & 15.51805 & 17.00836 & 16.3398 & 16.37928 & 15.73612 & 16.37928 & 15.73612 & 21.510571 & 20.65949 & 21.51057 & 20.65949 & 21.75637 & 20.89632\end{array}$ $\begin{array}{lllllllllllllllll}6.498683 & 6.246953 & 6.498683 & 6.246953 & 6.54819 & 6.292461 & 6.916517 & 6.646927 & 6.697521 & 6.437272 & 6.697521 & 6.437272 & 8.853629 & 8.513691 & 8.853629 & 8.513691 & 8.922403 \\ 8.578616\end{array}$ $\begin{array}{llllllllllllllllll}11.104524 & 10.59122 & 11.10452 & 10.59122 & 11.27293 & 10.74996 & 11.87771 & 11.32727 & 11.45203 & 10.92231 & 11.45203 & 10.92231 & 15.059479 & 14.36532 & 15.05948 & 14.36532 & 15.21989 & 14.51733\end{array}$ $\begin{array}{llllllllllllllllll}9.276391 & 8.934975 & 9.276391 & 8.934975 & 9.386557 & 9.039055 & 9.901613 & 9.535747 & 9.566757 & 9.21445 & 9.566757 & 9.21445 & 12.599238 & 12.13726 & 12.59924 & 12.13726 & 12.71817 & 12.25076\end{array}$ $\begin{array}{lllllllllllllllllllll}6.236336 & 5.879331 & 6.236336 & 5.879331 & 6.283402 & 5.919894 & 6.636717 & 6.25377 & 6.426241 & 6.056903 & 6.426241 & 6.056903 & 8.498413 & 8.017359 & 8.498413 & 8.017359 & 8.564007 & 8.077052\end{array}$ $\begin{array}{lllllllllllllllllll} \\ 6.881993 & 6.605929 & 6.881993 & 6.605929 & 6.93571 & 6.655436 & 7.32585 & 7.030336 & 7.094219 & 6.808828 & 7.094219 & 6.808828 & 9.371507 & 8.99855 & 9.371507 & 8.99855 & 9.44529 & 9.068221\end{array}$ $\begin{array}{llllllllllllllllll}6.212093 & 6.027927 & 6.212093 & 6.027927 & 6.229428 & 6.046625 & 6.591632 & 6.397636 & 6.403729 & 6.214357 & 6.403729 & 6.214357 & 8.478655 & 8.225096 & 8.478655 & 8.225096 & 8.529911 & 8.275852\end{array}$ $\begin{array}{lllllllllllllllll}9.370515 & 9.051859 & 9.370515 & 9.051859 & 9.483665 & 9.160946 & 10.00338 & 9.662868 & 9.663945 & 9.334694 & 9.663945 & 9.334694 & 12.725648 & 12.29437 & 12.72565 & 12.29437 & 12.84673 \\ 10.25 .41109\end{array}$ $\begin{array}{llllllllllllllllll}6.608084 & 6.245923 & 6.608084 & 6.245923 & 6.652527 & 6.285117 & 7.029522 & 6.641944 & 6.812134 & 6.437457 & 6.812134 & 6.437457 & 9.002392 & 8.513598 & 9.002392 & 8.513598 & 9.069771 & 8.575646\end{array}$ $\begin{array}{lllllllllllllllllll}6.339662 & 6.091802 & 6.339662 & 6.091802 & 6.356581 & 6.110066 & 6.726903 & 6.465188 & 6.536636 & 6.280814 & 6.536636 & 6.280814 & 8.650237 & 8.311365 & 8.650237 & 8.311365 & 8.702437 & 8.362455\end{array}$ $\begin{array}{llllllllllllllllll}6.201106 & 5.944846 & 6.201106 & 5.944846 & 6.216022 & 5.961609 & 6.578399 & 6.307804 & 6.392541 & 6.127061 & 6.392541 & 6.127061 & 8.464834 & 8.116255 & 8.464834 & 8.116255 & 8.514845 & 8.165159\end{array}$ $\begin{array}{llllllllllllllllllll}6.380266 & 6.021011 & 6.380266 & 6.021011 & 6.396394 & 6.038635 & 6.769575 & 6.389251 & 6.579158 & 6.206151 & 6.579158 & 6.206151 & 8.704813 & 8.218584 & 8.704813 & 8.218584 & 8.757035 & 8.268552\end{array}$ $\begin{array}{lllllllllllllllll}6.285478 & 6.050044 & 6.285478 & 6.050044 & 6.304942 & 6.07029 & 6.671172 & 6.421919 & 6.48058 & 6.236502 & 6.48058 & 6.236502 & 8.575023 & 8.2557 & 8.575023 & 8.2557 & 8.62807 \\ 8.307241\end{array}$ $\begin{array}{llllllllllllllllll}6.382234 & 6.160364 & 6.382234 & 6.160364 & 6.400946 & 6.179817 & 6.773153 & 6.538395 & 6.580323 & 6.350786 & 6.580323 & 6.350786 & 8.707669 & 8.405776 & 8.707669 & 8.405776 & 8.761007 & 8.457795\end{array}$ $\begin{array}{llllllllllllllllll}6.553627 & 6.212211 & 6.553627 & 6.212211 & 6.571237 & 6.23118 & 6.954523 & 6.593237 & 6.758925 & 6.405069 & 6.758925 & 6.405069 & 8.938532 & 8.475172 & 8.938532 & 8.475172 & 8.992874 & 8.527471\end{array}$ $\begin{array}{lllllllllllllllllllll}6.487863 & 6.267929 & 6.487863 & 6.267929 & 6.508734 & 6.289256 & 6.886805 & 6.653801 & 6.69024 & 6.462341 & 6.69024 & 6.462341 & 8.848544 & 8.550201 & 8.848544 & 8.550201 & 8.903867 & 8.604013\end{array}$ $\begin{array}{lllllllllllllllllll}6.451246 & 6.071362 & 6.451246 & 6.071362 & 6.49405 & 6.108832 & 6.862167 & 6.455615 & 6.650073 & 6.25665 & 6.650073 & 6.25665 & 8.789891 & 8.27797 & 8.789891 & 8.27797 & 8.855316 & 8.337796\end{array}$ $\begin{array}{llllllllllllllllll}12.1191 & 11.71219 & 12.1191 & 11.71219 & 12.30859 & 11.89705 & 12.96454 & 12.53066 & 12.49106 & 12.07234 & 12.49106 & 12.07234 & 16.447481 & 15.89256 & 16.44748 & 15.89256 & 16.62387 & 16.06406\end{array}$ $\begin{array}{lllllllllllllllll}6.437228 & 6.21597 & 6.437228 & 6.21597 & 6.458303 & 6.237872 & 6.833169 & 6.599032 & 6.637545 & 6.408367 & 6.637545 & 6.408367 & 8.780241 & 8.479738 & 8.780241 & 8.479738 & 8.835236 \\ 8.533388\end{array}$ $\begin{array}{lllllllllllllllllll} \\ 5.849977 & 5.661114 & 5.849977 & 5.661114 & 5.868855 & 5.679818 & 6.20888 & 6.008296 & 6.029658 & 5.833597 & 6.029658 & 5.833597 & 7.984416 & 7.711667 & 7.984416 & 7.711667 & 8.033792 & 7.75911\end{array}$ $\begin{array}{llllllllllllllllllllll} \\ 6.223947 & 5.926309 & 6.223947 & 5.926309 & 6.265572 & 5.964637 & 6.62021 & 6.30238 & 6.414454 & 6.106534 & 6.414454 & 6.106534 & 8.482804 & 8.080394 & 8.482804 & 8.080394 & 8.545825 & 8.139542\end{array}$ $\begin{array}{llllllllllllllllll}6.292646 & 6.078884 & 6.292646 & 6.078884 & 6.309421 & 6.097247 & 6.676874 & 6.451588 & 6.487747 & 6.267562 & 6.487747 & 6.267562 & 8.586957 & 8.293472 & 8.586957 & 8.293472 & 8.638688 & 8.344547\end{array}$ $\begin{array}{lllllllllllllllllll}5.951571 & 5.701596 & 5.951571 & 5.701596 & 5.992163 & 5.739236 & 6.33054 & 6.063364 & 6.132158 & 5.873182 & 6.132158 & 5.873182 & 8.114392 & 7.777402 & 8.114392 & 7.777402 & 8.174742 & 7.83433\end{array}$ $\begin{array}{lllllllllllllllllll}6.077306 & 5.842259 & 6.077306 & 5.842259 & 6.108678 & 5.871907 & 6.458264 & 6.207443 & 6.264378 & 6.019858 & 6.264378 & 6.019858 & 8.28648 & 7.971077 & 8.28648 & 7.971077 & 8.343647 & 8.025346\end{array}$ $\begin{array}{llllllllllllllllllll}10.204329 & 9.875206 & 10.20433 & 9.875206 & 10.32764 & 9.995828 & 10.88473 & 10.53482 & 10.49502 & 10.15742 & 10.49502 & 10.15742 & 13.919221 & 13.46179 & 13.91922 & 13.46179 & 14.04556 & 13.5848\end{array}$ $\begin{array}{llllllllllllllllll}6.435993 & 6.227348 & 6.435993 & 6.227348 & 6.483165 & 6.271795 & 6.848448 & 6.625458 & 6.632666 & 6.417071 & 6.632666 & 6.417071 & 8.769865 & 8.487517 & 8.769865 & 8.487517 & 8.837017 & 8.55179\end{array}$ $\begin{array}{llllllllllllllllllll}7.21984 & 6.911115 & 7.21984 & 6.911115 & 7.278707 & 6.965245 & 7.687555 & 7.357171 & 7.443673 & 7.12486 & 7.443673 & 7.12486 & 9.827458 & 9.409683 & 9.827458 & 9.409683 & 9.906336 & 9.484003\end{array}$ $\begin{array}{lllllllllllllllllll}16.663597 & 16.11671 & 16.6636 & 16.11671 & 16.93337 & 16.37848 & 17.83455 & 17.24986 & 17.18212 & 16.61856 & 17.18212 & 16.61856 & 22.59433 & 21.85117 & 22.59433 & 21.85117 & 22.84277 & 22.09203\end{array}$ $\begin{array}{lllllllllllllllllllll}21.938742 & 21.31767 & 21.93874 & 21.31767 & 22.33898 & 21.70661 & 23.51952 & 22.85339 & 22.64939 & 22.00712 & 22.64939 & 22.00712 & 29.65913 & 28.77072 & 29.65913 & 28.77072 & 30.01392 & 29.1145\end{array}$ $\begin{array}{llllllllllllllllllll}6.254911 & 5.969052 & 6.254911 & 5.969052 & 6.297191 & 6.008039 & 6.653416 & 6.348163 & 6.446235 & 6.150776 & 6.446235 & 6.150776 & 8.524977 & 8.138061 & 8.524977 & 8.138061 & 8.588515 & 8.197843\end{array}$ $\begin{array}{lllllllllllllllllllll}5.985878 & 5.778042 & 5.985878 & 5.778042 & 6.025345 & 5.815639 & 6.366184 & 6.144599 & 6.167736 & 5.952897 & 6.167736 & 5.952897 & 8.161577 & 7.879959 & 8.161577 & 7.879959 & 8.221647 & 7.937568\end{array}$ $\begin{array}{lllllllllllllllllll}6.446397 & 6.122941 & 6.446397 & 6.122941 & 6.496471 & 6.16714 & 6.861443 & 6.514582 & 6.643418 & 6.309078 & 6.643418 & 6.309078 & 8.782241 & 8.34578 & 8.782241 & 8.34578 & 8.850893 & 8.409139\end{array}$
 $\begin{array}{lllllllllllllllllll}6.869209 & 6.659628 & 6.869209 & 6.659628 & 6.892072 & 6.683575 & 7.292863 & 7.071362 & 7.085854 & 6.869022 & 7.085854 & 6.869022 & 9.363114 & 9.077666 & 9.363114 & 9.077666 & 9.422544 & 9.136033\end{array}$ $\begin{array}{llllllllllllllllllll}5.732312 & 5.575364 & 5.732312 & 5.575364 & 5.758158 & 5.599632 & 6.088751 & 5.921173 & 5.907609 & 5.744923 & 5.907609 & 5.744923 & 7.820874 & 7.609282 & 7.820874 & 7.609282 & 7.87272 & 7.65911\end{array}$ $\begin{array}{llllllllllllllllllllllll}17.164132 & 16.53689 & 17.16413 & 16.53689 & 17.45236 & 16.81452 & 18.37816 & 17.70678 & 17.70135 & 17.05535 & 17.70135 & 17.05535 & 23.25954 & 22.40812 & 23.25954 & 22.40812 & 23.52123 & 22.66024\end{array}$ $\begin{array}{llllllllllllllllll}6.445539 & 6.205969 & 6.445539 & 6.205969 & 6.484494 & 6.242925 & 6.853601 & 6.598035 & 6.644486 & 6.396046 & 6.644486 & 6.396046 & 8.783903 & 8.460845 & 8.783903 & 8.460845 & 8.847439 & 8.521466\end{array}$ $\begin{array}{llllllllllllllllll}11.34769 & 11.04577 & 11.34769 & 11.04577 & 11.48924 & 11.18537 & 12.10824 & 11.7876 & 11.67394 & 11.36423 & 11.67394 & 11.36423 & 15.46976 & 15.05507 & 15.46976 & 15.05507 & 15.61293 & 15.19555\end{array}$ $\begin{array}{llllllllllllllllllll}14.504578 & 14.12769 & 14.50458 & 14.12769 & 14.718 & 14.33668 & 15.5052 & 15.10306 & 14.94255 & 14.55447 & 14.94255 & 14.55447 & 19.70832 & 19.19507 & 19.70832 & 19.19507 & 19.91143 & 19.39353\end{array}$ $\begin{array}{lllllllllllllllllllll}18.224092 & 17.61686 & 18.22409 & 17.61686 & 18.53602 & 17.91947 & 19.51863 & 18.86924 & 18.79937 & 18.17356 & 18.79937 & 18.17356 & 24.68197 & 23.85778 & 24.68197 & 23.85778 & 24.96366 & 24.13072\end{array}$ $\begin{array}{llllllllllllllll}6.118671 & 5.782419 & 6.118671 & 5.782419 & 6.163723 & 5.821358 & 6.51057 & 6.149927 & 6.304489 & 5.956706 & 6.304489 & 5.956706 & 8.339809\end{array}$ $\begin{array}{lllllllllllll}6.314782 & 6.001363 & 6.314782 & 6.001363 & 6.359191 & 6.041936 & 6.7183 & 6.383301 & 6.508066 & 6.183558 & 6.508066 & 6.183558 & 8.605208\end{array}$ $\begin{array}{llllllllllllll}6.704994 & 6.515853 & 6.704994 & 6.515853 & 6.730386 & 6.541812 & 7.120211 & 6.919995 & 6.915185 & 6.719364 & 6.915185 & 6.719364 & 9.140042\end{array}$ $\begin{array}{llllllllllllll}6.202013 & 5.977153 & 6.202013 & 5.977153 & 6.221863 & 5.99764 & 6.582899 & 6.344759 & 6.394118 & 6.160991 & 6.394118 & 6.160991 & 8.461601\end{array}$ $\begin{array}{llllllllllllll}6.09155 & 5.745139 & 6.09155 & 5.745139 & 6.128328 & 5.776635 & 6.476779 & 6.105737 & 6.278302 & 5.919411 & 6.278302 & 5.919411 & 8.304194\end{array}$ $\begin{array}{lllllllllllll}6.375217 & 6.066097 & 6.375217 & 6.066097 & 6.415128 & 6.101909 & 6.77963 & 6.44896 & 6.571564 & 6.25139 & 6.571564 & 6.25139 & 8.688071\end{array}$ $\begin{array}{llllllllllllll}6.705904 & 6.40029 & 6.705904 & 6.40029 & 6.750864 & 6.441351 & 7.133539 & 6.806941 & 6.913165 & 6.597299 & 6.913165 & 6.597299 & 9.135317\end{array}$ $\begin{array}{lllllllllllll}6.128209 & 5.955042 & 6.128209 & 5.955042 & 6.177984 & 6.002189 & 6.523641 & 6.338351 & 6.31349 & 6.134733 & 6.31349 & 6.134733 & 8.351654\end{array}$ $\begin{array}{lllllllllllll}6.634831 & 6.265713 & 6.634831 & 6.265713 & 6.68042 & 6.305632 & 7.05857 & 6.66342 & 6.839521 & 6.457908 & 6.839521 & 6.457908 & 9.038603\end{array}$ $\begin{array}{llllllllllllll}5.694324 & 5.4656 & 5.694324 & 5.4656 & 5.714124 & 5.484401 & 6.044415 & 5.800852 & 5.868447 & 5.630674 & 5.868447 & 5.630674 & 7.772783\end{array}$ $\begin{array}{lllllllllllll} \\ 12.920992 & 12.134 & 12.92099 & 12.134 & 13.13034 & 12.32644 & 13.83169 & 12.98624 & 13.33158 & 12.519 & 13.33158 & 12.519 & 17.50128\end{array}$ $\begin{array}{llllllllllllll}9.788845 & 9.524754 & 9.788845 & 9.524754 & 9.883296 & 9.618917 & 10.42055 & 10.14155 & 10.05192 & 9.782687 & 10.05192 & 9.782687 & 13.4009\end{array}$ $\begin{array}{lllllllllllllll}5.731192 & 5.372679 & 5.731192 & 5.372679 & 5.763262 & 5.400626 & 6.091566 & 5.708311 & 5.905727 & 5.533798 & 5.905727 & 5.533798 & 7.816978\end{array}$ $\begin{array}{lllllllllllll}12.035352 & 11.81465 & 12.03535 & 11.81465 & 12.22489 & 12.00324 & 12.87651 & 12.64233 & 12.40686 & 12.17995 & 12.40686 & 12.17995 & 16.328408\end{array}$ $\begin{array}{lllllllllllll}18.901381 & 18.22695 & 18.90138 & 18.22695 & 19.2308 & 18.54531 & 20.24913 & 19.52712 & 19.50165 & 18.806 & 19.50165 & 18.806 & 25.58789\end{array}$ $\begin{array}{llllllllllllll}11.414164 & 10.73081 & 11.41416 & 10.73081 & 11.58164 & 10.88996 & 12.2004 & 11.47161 & 11.75604 & 11.05379 & 11.75604 & 11.05379 & 15.51546\end{array}$ $\begin{array}{lllllllllllll}15.881693 & 15.40624 & 15.88169 & 15.40624 & 16.16335 & 15.67886 & 17.01981 & 16.51015 & 16.39381 & 15.90379 & 16.39381 & 15.90379 & 21.48055\end{array}$ $\begin{array}{lllllllllllll}6.09752 & 5.87937 & 6.09752 & 5.87937 & 6.128481 & 5.908738 & 6.479453 & 6.24669 & 6.285382 & 6.058508 & 6.285382 & 6.058508 & 8.314031\end{array}$ $\begin{array}{llllllllllllll}5.991123 & 5.787617 & 5.991123 & 5.787617 & 6.021612 & 5.816423 & 6.366346 & 6.1491 & 6.175415 & 5.963876 & 6.175415 & 5.963876 & 8.169558\end{array}$ $\begin{array}{llllllllllllll}6.061803 & 5.81555 & 6.061803 & 5.81555 & 6.091323 & 5.843721 & 6.440712 & 6.178201 & 6.248808 & 5.99247 & 6.248808 & 5.99247 & 8.265601\end{array}$
 $\begin{array}{llllllllllllllllllllll}6.75336 & 6.50225 & 6.75336 & 6.50225 & 6.797489 & 6.544425 & 7.183368 & 6.915838 & 6.962508 & 6.702914 & 6.962508 & 6.702914 & 9.199851 & 8.859427 & 9.191744 & 15.16005 & 15.98916 & 15.32426\end{array}$
 $\begin{array}{lllllllllllllllllll}5.961292 & 5.796722 & 5.961292 & 5.796722 & 5.97889 & 5.815169 & 6.325902 & 6.152159 & 6.144342 & 5.974699 & 6.144342 & 5.974699 & 8.137518 & 7.91203 & 8.137518 & 7.91203 & 8.187009 & 7.960812\end{array}$ $\begin{array}{llllllllllllllllll}10.099412 & 9.819838 & 10.09941 & 9.819838 & 10.19757 & 9.918123 & 10.75168 & 10.45682 & 10.37101 & 10.08665 & 10.37101 & 10.08665 & 13.82526 & 13.43492 & 13.82526 & 13.43492 & 13.93534 & 13.54389\end{array}$ $\begin{array}{lllllllllllllllllll}6.138468 & 5.825042 & 6.138468 & 5.825042 & 6.153594 & 5.842429 & 6.512357 & 6.181314 & 6.328534 & 6.003449 & 6.328534 & 6.003449 & 8.37791 & 7.952374 & 8.37791 & 7.952374 & 8.427708 & 8.000742\end{array}$ $\begin{array}{llllllllllllllllll}6.043174 & 5.756114 & 6.043174 & 5.756114 & 6.077677 & 5.786625 & 6.424014 & 6.116679 & 6.228477 & 5.930704 & 6.228477 & 5.930704 & 8.239424 & 7.853531 & 8.239424 & 7.853531 & 8.297763 & 7.907571\end{array}$ $\begin{array}{lllllllllllllllllllll}17.618984 & 17.15891 & 17.61898 & 17.15891 & 17.93903 & 17.47264 & 18.8855 & 18.39407 & 18.18302 & 17.70954 & 18.18302 & 17.70954 & 23.83443 & 23.20787 & 23.83443 & 23.20787 & 24.11738 & 23.48469\end{array}$ $\begin{array}{llllllllllllllllll}5.825408 & 5.58634 & 5.825408 & 5.58634 & 5.845926 & 5.605893 & 6.183912 & 5.929452 & 6.004122 & 5.755779 & 6.004122 & 5.755779 & 7.950328 & 7.628208 & 7.950328 & 7.628208 & 8.000294 & 7.675686\end{array}$ $\begin{array}{lllllllllllllllllll}6.310734 & 6.032827 & 6.310734 & 6.032827 & 6.349257 & 6.067854 & 6.710256 & 6.413068 & 6.504662 & 6.216684 & 6.504662 & 6.216684 & 8.601744 & 8.227289 & 8.601744 & 8.227289 & 8.663984 & 8.285612\end{array}$ $\begin{array}{lllllllllllllllll}12.896075 & 12.29046 & 12.89608 & 12.29046 & 13.09756 & 12.47943 & 13.80099 & 13.1505 & 13.30941 & 12.68341 & 13.30941 & 12.68341 & 17.464813 & 16.64854 & 17.46481 & 16.64854 & 17.65579\end{array} 16.82898$ $\begin{array}{lllllllllllllllllll}5.807772 & 5.557145 & 5.807772 & 5.557145 & 5.829833 & 5.577196 & 6.166228 & 5.898922 & 5.985771 & 5.725854 & 5.985771 & 5.725854 & 7.925537 & 7.587639 & 7.925537 & 7.587639 & 7.976138 & 7.635202\end{array}$ $\begin{array}{llllllllllllllllllllll}5.698034 & 5.457654 & 5.698034 & 5.457654 & 5.717985 & 5.476479 & 6.048444 & 5.792441 & 5.872286 & 5.622424 & 5.872286 & 5.622424 & 7.777707 & 7.454297 & 7.777707 & 7.454297 & 7.826422 & 7.500406\end{array}$ $\begin{array}{lllllllllllllllllllllll}5.634111 & 5.413237 & 5.634111 & 5.413237 & 5.653381 & 5.431396 & 5.980156 & 5.744865 & 5.805999 & 5.57641 & 5.805999 & 5.57641 & 7.691611 & 7.39449 & 7.691611 & 7.39449 & 7.73947 & 7.439914\end{array}$ $\begin{array}{llllllllllllllllll}6.158206 & 5.968591 & 6.158206 & 5.968591 & 6.182554 & 5.99239 & 6.539369 & 6.338189 & 6.348358 & 6.153022 & 6.348358 & 6.153022 & 8.400201 & 8.141171 & 8.400201 & 8.141171 & 8.454578 & 8.194001\end{array}$ $\begin{array}{lllllllllllllllllll}11.218134 & 10.89361 & 11.21813 & 10.89361 & 11.36386 & 11.03653 & 11.97497 & 11.6298 & 11.54404 & 11.21103 & 11.54404 & 11.21103 & 15.282271 & 14.83731 & 15.28227 & 14.83731 & 15.42739 & 14.97909\end{array}$ $\begin{array}{llllllllllllllllllll}5.87327 & 5.668376 & 5.87327 & 5.668376 & 5.911651 & 5.705148 & 6.246038 & 6.027609 & 6.05123 & 5.838974 & 6.05123 & 5.838974 & 8.009252 & 7.732452 & 8.009252 & 7.732452 & 8.067927 & 7.788727\end{array}$ $\begin{array}{lllllllllllllllll}6.74762 & 6.500706 & 6.74762 & 6.500706 & 6.772513 & 6.525766 & 7.165186 & 6.90323 & 6.959667 & 6.703375 & 6.959667 & 6.703375 & 9.197494 & 8.863701 & 9.197494 & 8.863701 & 9.256913 \\ 8.921156\end{array}$ $\begin{array}{llllllllllllllllll}11.513073 & 11.31992 & 11.51307 & 11.31992 & 11.69285 & 11.49772 & 12.31695 & 12.11108 & 11.8692 & 11.67033 & 11.8692 & 11.67033 & 15.619208 & 15.35596 & 15.61921 & 15.35596 & 15.78716 & 15.52171\end{array}$ $\begin{array}{lllllllllllllllllll}11.513073 & 11.31992 & 11.51307 & 11.31992 & 11.69285 & 11.49772 & 12.31695 & 12.11108 & 11.8692 & 11.67033 & 11.8692 & 11.67033 & 15.619208 & 15.35596 & 15.61921 & 15.35596 & 15.78716 & 15.52171 \\ 6.67022 & 6.514402 & 6.67022 & 6.514402 & 6.696669 & 6.541497 & 7.083834 & 6.919233 & 6.878488 & 6.712915 & 6.878488 & 6.712915 & 9.093681 & 8.873838 & 9.093681 & 8.873838 & 9.153062 & 8.932375\end{array}$ $\begin{array}{llllllllllllllllllll}6.67022 & 6.514402 & 6.67022 & 6.514402 & 6.696669 & 6.541497 & 7.083834 & 6.919233 & 6.878488 & 6.712915 & 6.878488 & 6.712915 & 9.093681 & 8.873838 & 9.093681 & 8.873838 & 9.153062 & 8.932375 \\ 20.273452 & 19.81328 & 20.27345 & 19.81328 & 20.63594 & 20.17 & 21.72723 & 21.23583 & 20.92379 & 20.44898 & 20.92379 & 20.44898 & 27.42606 & 26.80154 & 27.42606 & 26.80154 & 27.749 & 27.11846\end{array}$ $\begin{array}{llllllllllllllllll}20.273452 & 19.81328 & 20.27345 & 19.81328 & 20.63594 & 20.17 & 21.72723 & 21.23583 & 20.92379 & 20.44898 & 20.92379 & 20.44898 & 27.42606 & 26.80154 & 27.42606 & 26.80154 & 27.749 & 27.11846 \\ 12.968137 & 12.30893 & 12.96814 & 12.30893 & 13.14232 & 12.47129 & 13.84807 & 13.14189 & 13.34842 & 12.66934 & 13.34842 & 12.66934 & 17.65507 & 16.76079 & 17.65507 & 16.76079 & 17.82637 & 16.92172\end{array}$ $\begin{array}{lllllllllllllllllll}6.301945 & 6.095452 & 6.301945 & 6.095452 & 6.320184 & 6.114426 & 6.687648 & 6.469393 & 6.497121 & 6.284106 & 6.497121 & 6.284106 & 8.599215 & 8.316887 & 8.599215 & 8.316887 & 8.651676 & 8.368258\end{array}$ $\begin{array}{lllllllllllllllllllll}6.108891 & 5.834427 & 6.108891 & 5.834427 & 6.150413 & 5.872518 & 6.49801 & 6.204687 & 6.294989 & 6.011145 & 6.294989 & 6.011145 & 8.327439 & 7.956436 & 8.327439 & 7.956436 & 8.389459 & 8.014692\end{array}$

|  | 0.0004 | 0.0003 | 0.0003 | 0.0003 | 0.0010 | 0.0010 | 0.0003 | 0.0003 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0014 | 0.0013 | 0.0014 | 0.0013 | 0.0040 | 0.0038 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction Due to Inclusion of Tier 3 OGV: | 15.74\% | 15.74\% | 15.74\% | 15.74\% | 17.02\% | 17.02\% | 16.12\% | 16.12\% | 11.96\% | 11.96\% | 11.96\% | 11.96\% | 52.47\% | 52.47\% | 52.47\% | 52.47\% | 48.91\% | 48.91\% |
|  | 9450_3 | 50_3 | 389450_3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



$382973 \quad 373959773.28 \%$
379841 3740022 71.14\%
389258 3739250 63.11\%
$388234 \quad 374286754.90 \%$
$382152 \quad 373782476.19 \%$
$378944 \quad 373480546.24 \%$
$389533 \quad 374121259.42 \%$
$388859 \quad 3742514$ 60.12\%
$389020 \quad 373987257.07 \%$ $389472 \quad 3740264$ 59.68\% 379181 3735610 45.05\% $387188 \quad 3740575$ 62.24\% 389579 3738221 67.15\% 3794073739022 61.65\% 3903993739915 62.89\% $381871373862077.40 \%$ $380385 \quad 373311260.10 \%$ $389036 \quad 374124162.87 \%$ $379775 \quad 373105165.89 \%$ $379822 \quad 3735045$ 50.73\% 383537 3739930 65.63\% $387465 \quad 374234555.80 \%$ $389765 \quad 374070157.37 \%$ $390098 \quad 374023059.97 \%$ $382957 \quad 3740576$ 73.32\% 3906233740004 62.70\% $380096373497451.38 \%$ 389847 374175159.98\% 380473 3734491 45.03\% $389894 \quad 373896064.24 \%$ $383041373943372.36 \%$ $379899 \quad 373974072.38 \%$ 389193 3738664 64.13\% 3847043739154 63.97\% $381437 \quad 373411250.78 \%$ $390296373736256.95 \%$ 3894923740248 59.65\% $389517 \quad 373960062.43 \%$ 389536 3740757 59.38\% $390248 \quad 3737686$ 60.75\% $389459 \quad 373768958.96 \%$ $382217 \quad 373879572.74 \%$ 3801943736308 59.05\% 3888543740055 57.44\% 386767 3739844 59.28\% $388039373864365.44 \%$ 380825 3733609 51.44\% $381497 \quad 373303053.49 \%$ 3873623740183 59.38\% $388668373749266.40 \%$ 3805073736370 51.39\% $380478 \quad 373607651.89 \%$ $387306 \quad 3739448$ 61.31\% $386955374043062.21 \%$ 386883 3740498 59.42\% $387067 \quad 374109756.92 \%$ $381098373525252.19 \%$ 381167 3735184 55.92\% $387129374030060.17 \%$ 381405 3733242 55.91\% 381411 3733508 55.35\% 381414 3733803 54.37\% $387721 \quad 374219955.16 \%$ 3832623736996 66.32\% 382659 3737519 68.63\% $382237373749276.70 \%$ $381821 \quad 3737471$ 80.22\% $382575373503159.68 \%$ $382628.5 \quad 373507159.94 \%$ $382704.9 \quad 3735128$ 63.89\% $382767.5 \quad 373506558.03 \%$ $382828.6 \quad 373510758.53 \%$ $382858.8373509758 .21 \%$ $382915.1 \quad 373516258.85 \%$ $383713373558465.28 \%$ $383722.9 \quad 3735566$ 63.02\% $383697.5373555163 .62 \%$ 383513.63735351 64.00\% $382977.5 \quad 373508549.38 \%$ $383145.9373471253 .52 \%$ $383112.8 \quad 373469266.18 \%$ $383065.6 \quad 373477358.27 \%$ $382925.9 \quad 373471265.95 \%$ $382903.6 \quad 373475562.71 \%$ $382664.8 \quad 373464355.64 \%$ $382810.4 \quad 373427361.49 \%$ $382837.4 \quad 373418267.27 \%$
$\begin{array}{llllllllllllllllll}160081 & 10.82583 & 11.16008 & 10.82583 & 11.32303 & 10.98482 & 11.93352 & 11.57683 & 11.51145 & 11.16703 & 11.51145 & 11.16703 & 15.134378 & 14.67964 & 15.13438 & 14.67964 & 15.29275 & 14.83391\end{array}$ $\begin{array}{lllllllllllllllll}11.80826 & 11.53227 & 11.80826 & 11.53227 & 11.9964 & 11.71597 & 12.6357 & 12.34043 & 12.17498 & 11.89058 & 12.17498 & 11.89058 & 16.014197 & 15.63964 & 16.0142 & 15.63964 & 16.18865 \\ 15.80998\end{array}$ $\begin{array}{llllllllllllllllll}6.129088 & 5.972726 & 6.129088 & 5.972726 & 6.154069 & 5.997294 & 6.508889 & 6.343138 & 6.318124 & 6.157391 & 6.318124 & 6.157391 & 8.360467 & 8.146084 & 8.360467 & 8.146084 & 8.414914 & 8.199348\end{array}$ $\begin{array}{lllllllllllllllllllll}5.82178 & 5.651318 & 5.82178 & 5.651318 & 5.85886 & 5.687287 & 6.190557 & 6.009103 & 5.997958 & 5.821732 & 5.997958 & 5.821732 & 7.940146 & 7.70892 & 7.940146 & 7.70892 & 7.997781 & 7.764749\end{array}$ $\begin{array}{llllllllllllllllll}15.907384 & 14.96063 & 15.90738 & 14.96063 & 16.1887 & 15.22133 & 17.04719 & 16.02975 & 16.4216 & 15.44345 & 16.4216 & 15.44345 & 21.513012 & 20.23663 & 21.51301 & 20.23663 & 21.76565 & 20.47224\end{array}$ $\begin{array}{lllllllllllllllllll}11.708973 & 11.24002 & 11.70897 & 11.24002 & 11.86678 & 11.39173 & 12.50393 & 12.00329 & 12.05283 & 11.57012 & 12.05283 & 11.57012 & 15.939486 & 15.30095 & 15.93949 & 15.30095 & 16.09448 & 15.44984\end{array}$ $\begin{array}{lllllllllllllllllll}5.679653 & 5.53984 & 5.679653 & 5.53984 & 5.705242 & 5.564317 & 6.032731 & 5.883645 & 5.853118 & 5.708188 & 5.853118 & 5.708188 & 7.749552 & 7.560848 & 7.749552 & 7.560848 & 7.800878 & 7.610511\end{array}$ $\begin{array}{llllllllllllllllllllllll}5.798975 & 5.538171 & 5.798975 & 5.538171 & 5.834404 & 5.570715 & 6.165432 & 5.886955 & 5.974937 & 5.705186 & 5.974937 & 5.705186 & 7.908912 & 7.556207 & 7.908912 & 7.556207 & 7.965692 & 7.609593\end{array}$
 $\begin{array}{lllllllllllllllllllll}5.873891 & 5.659474 & 5.873891 & 5.659474 & 5.899008 & 5.68248 & 6.238377 & 6.009527 & 6.054081 & 5.832053 & 6.054081 & 5.832053 & 8.013718 & 7.724089 & 8.013718 & 7.724089 & 8.066289 & 7.773959\end{array}$ $\begin{array}{lllllllllllllllll}13.604367 & 13.02171 & 13.60437 & 13.02171 & 13.81171 & 13.2216 & 14.54837 & 13.92655 & 14.01726 & 13.41787 & 14.01726 & 13.41787 & 18.476445 & 17.68206 & 18.47645 & 17.68206 & 18.67087 \\ 17.86916\end{array}$ $\begin{array}{lllllllllllllllllll}6.816111 & 6.516403 & 6.816111 & 6.516403 & 6.868115 & 6.56371 & 7.254843 & 6.934005 & 7.026133 & 6.716495 & 7.026133 & 6.716495 & 9.282863 & 8.877655 & 9.282863 & 8.877655 & 9.355323 & 8.945606\end{array}$ $\begin{array}{llllllllllllllllll}6.479022 & 6.268832 & 6.479022 & 6.268832 & 6.499995 & 6.29055 & 6.877481 & 6.655018 & 6.68099 & 6.46323 & 6.68099 & 6.46323 & 8.836676 & 8.551269 & 8.836676 & 8.551269 & 8.891958 & 8.60527\end{array}$ $\begin{array}{llllllllllllllllllll}12.790607 & 12.51084 & 12.79061 & 12.51084 & 12.99643 & 12.71487 & 13.68791 & 13.39091 & 13.18658 & 12.90007 & 13.18658 & 12.90007 & 17.347752 & 16.96246 & 17.34775 & 16.96246 & 17.53746 & 17.14976\end{array}$ $\begin{array}{lllllllllllllllllll}5.755151 & 5.541918 & 5.755151 & 5.541918 & 5.774348 & 5.559976 & 6.108521 & 5.881381 & 5.931445 & 5.709947 & 5.931445 & 5.709947 & 7.855601 & 7.568538 & 7.855601 & 7.568538 & 7.904399 & 7.614971\end{array}$ $\begin{array}{llllllllllllllllllllllll}14.083772 & 13.49853 & 14.08377 & 13.49853 & 14.32293 & 13.72586 & 15.0846 & 14.4565 & 14.53377 & 13.92993 & 14.53377 & 13.92993 & 19.064017 & 18.273 & 19.06402 & 18.273 & 19.28183 & 18.48078\end{array}$ $\begin{array}{llllllllllllllllllllllll} & 17.030186 & 16.46755 & 17.03019 & 16.46755 & 17.30544 & 16.73293 & 18.22673 & 17.6238 & 17.56047 & 16.97967 & 17.56047 & 16.97967 & 23.09059 & 22.32979 & 23.09059 & 22.32979 & 23.34446 & 22.57468\end{array}$ $\begin{array}{lllllllllllllllllllll}5.895869 & 5.668537 & 5.895869 & 5.668537 & 5.927132 & 5.697573 & 6.265824 & 6.022905 & 6.076702 & 5.840378 & 6.076702 & 5.840378 & 8.039985 & 7.734883 & 8.039985 & 7.734883 & 8.095721 & 7.787599\end{array}$ $\begin{array}{llllllllllllllllll}11.264101 & 10.98535 & 11.2641 & 10.98535 & 11.38374 & 11.10479 & 12.00122 & 11.70672 & 11.57595 & 11.29151 & 11.57595 & 11.29151 & 15.39431 & 15.00729 & 15.39431 & 15.00729 & 15.52386 & 15.1353\end{array}$ $\begin{array}{llllllllllllllllllll}15.958998 & 15.56824 & 15.959 & 15.56824 & 16.22136 & 15.828 & 17.08313 & 16.66785 & 16.45577 & 16.05423 & 16.45577 & 16.05423 & 21.635913 & 21.10104 & 21.63591 & 21.10104 & 21.8759 & 21.33728\end{array}$ $\begin{array}{lllllllllllllllll}10.067396 & 9.676476 & 10.0674 & 9.676476 & 10.20414 & 9.806604 & 10.75762 & 10.33883 & 10.38269 & 9.978928 & 10.38269 & 9.978928 & 13.662532 & 13.13408 & 13.66253 & 13.13408 & 13.80008 \\ 13.26554\end{array}$ $\begin{array}{llllllllllllllllll}6.224822 & 5.918263 & 6.224822 & 5.918263 & 6.271085 & 5.959264 & 6.623954 & 6.295352 & 6.414287 & 6.097216 & 6.414287 & 6.097216 & 8.48336 & 8.069908 & 8.48336 & 8.069908 & 8.548467 & 8.130115\end{array}$ $\begin{array}{llllllllllllllllllll}5.699991 & 5.539778 & 5.699991 & 5.539778 & 5.722949 & 5.561796 & 6.052438 & 5.881903 & 5.873913 & 5.708093 & 5.873913 & 5.708093 & 7.779314 & 7.562403 & 7.779314 & 7.562403 & 7.829446 & 7.610841\end{array}$ $\begin{array}{llllllllllllllllllllllll} \\ 5.807953 & 5.559391 & 5.807953 & 5.559391 & 5.829135 & 5.579652 & 6.165871 & 5.901374 & 5.98614 & 5.727934 & 5.98614 & 5.727934 & 7.925973 & 7.591075 & 7.925973 & 7.591075 & 7.976174 & 7.638709\end{array}$ $\begin{array}{lllllllllllllllllllll} \\ 10.111834 & 9.66226 & 10.11183 & 9.66226 & 10.25269 & 9.796519 & 10.80711 & 10.32611 & 10.42724 & 9.962711 & 10.42724 & 9.962711 & 13.723294 & 13.11536 & 13.72329 & 13.11536 & 13.86293 & 13.24846\end{array}$ $\begin{array}{llllllllllllllllll}5.664822 & 5.477274 & 5.664822 & 5.477274 & 5.683014 & 5.494351 & 6.012057 & 5.812199 & 5.837987 & 5.643159 & 5.837987 & 5.643159 & 7.733585 & 7.48111 & 7.733585 & 7.48111 & 7.781188 & 7.526585\end{array}$ $\begin{array}{lllllllllllllllllll}17.6568 & 17.11144 & 17.6568 & 17.11144 & 17.96129 & 17.40821 & 18.91274 & 18.3298 & 18.21451 & 17.65256 & 18.21451 & 17.65256 & 23.9116 & 23.17069 & 23.9116 & 23.17069 & 24.18569 & 23.43722\end{array}$ $\begin{array}{llllllllllllllllll}5.664978 & 5.491198 & 5.664978 & 5.491198 & 5.690337 & 5.515015 & 6.016986 & 5.831648 & 5.837848 & 5.657951 & 5.837848 & 5.657951 & 7.729919 & 7.494938 & 7.729919 & 7.494938 & 7.78101 & 7.543935\end{array}$ $\begin{array}{llllllllllllllllllll}19.39438 & 18.78737 & 19.39438 & 18.78737 & 19.73962 & 19.12363 & 20.78325 & 20.13413 & 20.01387 & 19.38784 & 20.01387 & 19.38784 & 26.24335 & 25.4198 & 26.24335 & 25.4198 & 26.55107 & 25.71886\end{array}$ $\begin{array}{llllllllllllllllll}6.203827 & 5.971175 & 6.203827 & 5.971175 & 6.224504 & 5.99202 & 6.585325 & 6.338607 & 6.395807 & 6.154641 & 6.395807 & 6.154641 & 8.447267 & 8.139805 & 8.447267 & 8.139805 & 8.49998 & 8.199948\end{array}$ $\begin{array}{lllllllllllllllllll}11.370232 & 10.86685 & 11.37023 & 10.86685 & 11.53723 & 11.02585 & 12.15918 & 11.62033 & 11.72915 & 11.20944 & 11.72915 & 11.20944 & 15.404359 & 14.73523 & 15.40436 & 14.73523 & 15.56671 & 14.88973\end{array}$ $\begin{array}{lllllllllllllllll}12.175872 & 11.83668 & 12.17587 & 11.83668 & 12.37152 & 12.02686 & 13.03057 & 12.6676 & 12.55507 & 12.20539 & 12.55507 & 12.20539 & 16.509364 & 16.04941 & 16.50936 & 16.04941 & 16.69033 \\ 16.252521\end{array}$ $\begin{array}{llllllllllllllll}6.470974 & 6.250159 & 6.470974 & 6.250159 & 6.495808 & 6.274986 & 6.871475 & 6.637424 & 6.66031 & 6.438489 & 6.66031 & 6.438489 & 8.808224 & 8.515732 & 8.808224 & 8.515732 \\ 8.865064 & 8.571076\end{array}$ $\begin{array}{lllllllllllllllllll}9.149587 & 8.810521 & 9.149587 & 8.810521 & 9.256332 & 8.911894 & 9.764901 & 9.401932 & 9.435819 & 9.08566 & 9.435819 & 9.08566 & 12.428565 & 11.96993 & 12.42857 & 11.96993 & 12.54488 & 12.08114\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}28.323572 & 27.25047 & 28.32357 & 27.25047 & 28.90474 & 27.8099 & 30.41501 & 29.26293 & 29.26375 & 28.15513 & 29.26375 & 28.15513 & 38.202145 & 36.74169 & 38.20215 & 36.74169 & 38.69642 & 37.2172\end{array}$ $\begin{array}{llllllllllllllllll}6.454476 & 6.105583 & 6.454476 & 6.105583 & 6.470947 & 6.123529 & 6.848524 & 6.479114 & 6.65601 & 6.293548 & 6.65601 & 6.293548 & 8.805242 & 8.333485 & 8.805242 & 8.333485 & 8.858206 & 8.384228\end{array}$ $\begin{array}{lllllllllllllllllllllll}5.872659 & 5.667842 & 5.872659 & 5.667842 & 5.897686 & 5.690845 & 6.236998 & 6.018435 & 6.052787 & 5.840834 & 6.052787 & 5.840834 & 8.01215 & 7.735241 & 8.01215 & 7.735241 & 8.064655 & 7.785182\end{array}$ $\begin{array}{lllllllllllllllllllllllll}5.982255 & 5.795354 & 5.982255 & 5.795354 & 6.006191 & 5.818262 & 6.352471 & 6.153737 & 6.166169 & 5.973259 & 6.166169 & 5.973259 & 8.161755 & 7.907478 & 8.161755 & 7.907478 & 8.214554 & 7.958438\end{array}$

 $\begin{array}{lllllllllllllllllll}6.631295 & 6.353535 & 6.631295 & 6.353535 & 6.652327 & 6.374472 & 7.039134 & 6.744318 & 6.839031 & 6.550941 & 6.839031 & 6.550941 & 9.042448 & 8.666665 & 9.042448 & 8.666665 & 9.09902 & 8.720946\end{array}$ $\begin{array}{llllllllllllllllll}13.609653 & 12.74201 & 13.60965 & 12.74201 & 13.83577 & 12.9489 & 14.57327 & 13.64058 & 14.04423 & 13.14784 & 14.04423 & 13.14784 & 18.426314 & 17.25641 & 18.42631 & 17.25641 & 18.63424 & 17.44852\end{array}$ $\begin{array}{llllllllllllllllllllll}17.952455 & 17.23878 & 17.95246 & 17.23878 & 18.28257 & 17.55492 & 19.24583 & 18.48043 & 18.52788 & 17.79194 & 18.52788 & 17.79194 & 24.281477 & 23.31522 & 24.28148 & 23.31522 & 24.57187 & 23.59378\end{array}$ $\begin{array}{llllllllllllllllll}6.069914 & 5.866913 & 6.069914 & 5.866913 & 6.098125 & 5.894475 & 6.448451 & 6.232415 & 6.257242 & 6.046107 & 6.257242 & 6.046107 & 8.277326 & 8.004285 & 8.277326 & 8.004285 & 8.332983 & 8.057872\end{array}$ $\begin{array}{lllllllllllllllllll}7.219033 & 6.846814 & 7.219033 & 6.846814 & 7.277095 & 6.898635 & 7.68617 & 7.287483 & 7.442894 & 7.058579 & 7.442894 & 7.058579 & 9.826735 & 9.323267 & 9.826735 & 9.323267 & 9.905219 & 9.395998\end{array}$ $\begin{array}{lllllllllllllllllll}6.671477 & 6.369374 & 6.671477 & 6.369374 & 6.70614 & 6.402206 & 7.090663 & 6.768881 & 6.879531 & 6.566351 & 6.879531 & 6.566351 & 9.090794 & 8.682865 & 9.090794 & 8.682865 & 9.154195 & 8.742925\end{array}$ $\begin{array}{lllllllllllllllllllllll}20.147364 & 19.50845 & 20.14736 & 19.50845 & 20.50657 & 19.85601 & 21.591 & 20.90614 & 20.79238 & 20.1331 & 20.79238 & 20.1331 & 27.25847 & 26.33246 & 27.25847 & 26.33246 & 27.57871 & 26.64147\end{array}$ $\left.\begin{array}{llllllllllllllllllll}26\end{array}\right)$ $\begin{array}{lllllllllllllllllllll}6.849496 & 6.434157 & 6.849496 & 6.434157 & 6.899044 & 6.477843 & 7.288863 & 6.844464 & 7.061583 & 6.631797 & 7.061583 & 6.631797 & 9.327838 & 8.767413 & 9.327838 & 8.767413 & 9.399511 & 8.833024\end{array}$ $\begin{array}{llllllllllllllllll}6.817606 & 6.620608 & 6.817606 & 6.620608 & 6.843862 & 6.646909 & 7.240304 & 7.031462 & 7.032013 & 6.828267 & 7.032013 & 6.828267 & 9.291862 & 9.024015 & 9.291862 & 9.024015 & 9.352471 & 9.083156\end{array}$ $\begin{array}{lllllllllllllllllllll}19.429188 & 18.89834 & 19.42919 & 18.89834 & 19.78849 & 19.25171 & 20.83127 & 20.26542 & 20.05482 & 19.50913 & 20.05482 & 19.50913 & 26.271449 & 25.54622 & 26.27145 & 25.54622 & 26.58725 & 25.85574\end{array}$ $\begin{array}{llllllllllllllllll}19.82883 & 19.39862 & 19.82883 & 19.39862 & 20.1984 & 19.76379 & 21.26212 & 20.80396 & 20.46863 & 20.02675 & 20.46863 & 20.02675 & 26.806887 & 26.2183 & 26.80689 & 26.2183 & 27.13093 & 26.53755\end{array}$ $\begin{array}{lllllllllllllllllll}6.877622 & 6.613419 & 6.877622 & 6.613419 & 6.923506 & 6.657285 & 7.316283 & 7.034916 & 7.090946 & 6.818084 & 7.090946 & 6.818084 & 9.367821 & 9.009085 & 9.367821 & 9.009085 & 9.437953 & 9.076311\end{array}$ $\begin{array}{llllllllllllllllll}6.948563 & 6.681502 & 6.948563 & 6.681502 & 7.002871 & 6.732111 & 7.396852 & 7.111235 & 7.163128 & 6.887064 & 7.163128 & 6.887064 & 9.461482 & 9.100465 & 9.461482 & 9.100465 & 9.536071 & 9.171258\end{array}$ $\begin{array}{lllllllllllllllllll}6.95252 & 6.676458 & 6.95252 & 6.676458 & 7.007389 & 6.726862 & 7.401386 & 7.105733 & 7.167056 & 6.881806 & 7.167056 & 6.881806 & 9.466858 & 9.093785 & 9.466858 & 9.093785 & 9.541725 & 9.164428\end{array}$ $\begin{array}{lllllllllllllllllll}6.653857 & 6.42794 & 6.653857 & 6.42794 & 6.704572 & 6.475469 & 7.081887 & 6.840199 & 6.858106 & 6.624486 & 6.858106 & 6.624486 & 9.063608 & 8.758381 & 9.063608 & 8.758381 & 9.134158 & 8.825676\end{array}$ $\begin{array}{lllllllllllllllllllll}25.091781 & 24.27619 & 25.09178 & 24.27619 & 25.59188 & 24.76011 & 26.93233 & 26.05711 & 25.9173 & 25.07533 & 25.9173 & 25.07533 & 33.868004 & 32.76617 & 33.868 & 32.76617 & 34.2971 & 33.18153\end{array}$
 $\begin{array}{lllllllllllllllllll}6.92435 & 6.573121 & 6.92435 & 6.573121 & 6.977461 & 6.620411 & 7.370386 & 6.994206 & 7.138158 & 6.775396 & 7.138158 & 6.775396 & 9.429143 & 8.954304 & 9.429143 & 8.954304 & 9.502976 & 9.022719\end{array}$ $\begin{array}{lllllllllllllllllllll}23.486728 & 22.70539 & 23.48673 & 22.70539 & 23.92723 & 23.13136 & 25.18951 & 24.35121 & 24.25517 & 23.4471 & 24.25517 & 23.4471 & 31.72772 & 30.6748 & 31.72772 & 30.6748 & 32.11505 & 31.049\end{array}$ $\begin{array}{llllllllllllllllllll}25.28543 & 24.1015 & 25.28543 & 24.1015 & 25.77686 & 24.56692 & 27.13166 & 25.85899 & 26.11741 & 24.89354 & 26.11741 & 24.89354 & 34.13732 & 32.54269 & 34.13732 & 32.54269 & 34.56355 & 32.9473\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}26.34425 & 25.40245 & 26.34425 & 25.40245 & 26.86785 & 25.9066 & 28.27678 & 27.26547 & 27.21459 & 26.24202 & 27.21459 & 26.24202 & 35.552049 & 34.28075 & 35.55205 & 34.28075 & 36.00258 & 34.71487\end{array}$ $\begin{array}{llllllllllllllllll}6.126225 & 5.916594 & 6.126225 & 5.916594 & 6.168258 & 5.95703 & 6.516688 & 6.29324 & 6.3128 & 6.095629 & 6.3128 & 6.095629 & 8.350949 & 8.067759 & 8.350949 & 8.067759 & 8.413315 & 8.127693\end{array}$ $\begin{array}{lllllllllllllllllllll}13.770357 & 13.13757 & 13.77036 & 13.13757 & 13.986 & 13.34107 & 14.738 & 14.05894 & 14.21489 & 13.56091 & 14.21489 & 13.56091 & 18.641915 & 17.78802 & 18.64192 & 17.78802 & 18.84671 & 17.98226\end{array}$ $\begin{array}{llllllllllllllllllll}15.121422 & 14.39588 & 15.12142 & 14.39588 & 15.3793 & 14.63819 & 16.19845 & 15.41895 & 15.61037 & 14.86077 & 15.61037 & 14.86077 & 20.455627 & 19.47733 & 20.45563 & 19.47733 & 20.69108 & 19.69994\end{array}$ $\begin{array}{lllllllllllllllllll}16.675203 & 15.86388 & 16.6752 & 15.86388 & 16.97482 & 16.14628 & 17.87381 & 17.00236 & 17.2163 & 16.37841 & 17.2163 & 16.37841 & 22.543879 & 21.44935 & 22.5392 & 21.44935 & 22.80686 & 21.70255\end{array}$ $\begin{array}{lllllllllllllllll}17.323432 & 16.59443 & 17.32343 & 16.59443 & 17.64089 & 16.89711 & 18.57302 & 17.7905 & 17.88608 & 17.1333 & 17.88608 & 17.1333 & 23.415454 & 22.43118 & 23.41545 & 22.43118 & 23.69657 \\ 22.69978\end{array}$ $\begin{array}{llllllllllllllllll}15.679763 & 14.56747 & 15.67976 & 14.56747 & 15.92526 & 14.76125 & 16.78267 & 15.55747 & 16.18972 & 15.01227 & 16.18972 & 15.01227 & 21.21868 & 19.72204 & 21.13288 & 19.68684 & 21.39438 & 19.89847\end{array}$
 $\begin{array}{llllllllllllllllll}15.248498 & 14.13683 & 15.2485 & 14.13683 & 15.48141 & 14.34533 & 16.31716 & 15.12202 & 15.74445 & 14.59523 & 15.74445 & 14.59523 & 20.6386 & 19.14184 & 20.6386 & 19.14184 & 20.86327 & 19.34613\end{array}$ $\begin{array}{llllllllllllllllll}14.215407 & 13.54329 & 14.21541 & 13.54329 & 14.41978 & 13.73417 & 15.20232 & 14.48084 & 14.67563 & 13.98149 & 14.67563 & 13.98149 & 19.25265 & 18.34556 & 19.25265 & 18.34556 & 19.45532 & 18.53006\end{array}$ $\begin{array}{llllllllllllllllllll}14.102384 & 13.29418 & 14.10238 & 13.29418 & 14.30415 & 13.47885 & 15.08076 & 14.21256 & 14.55892 & 13.72399 & 14.55892 & 13.72399 & 19.100577 & 18.01037 & 19.10058 & 18.01037 & 19.30112 & 18.19512\end{array}$ $\begin{array}{llllllllllllllllll}13.870676 & 13.13325 & 13.87068 & 13.13325 & 14.06575 & 13.31351 & 14.83052 & 14.0043 & 14.31914 & 13.54245 & 14.31914 & 13.54245 & 18.789654 & 17.79471 & 18.78965 & 17.79471 & 18.98529 & 17.92723\end{array}$ $\begin{array}{lllllllllllllllll}13.857627 & 12.92839 & 13.85763 & 12.92839 & 14.05321 & 13.09412 & 14.81705 & 13.80812 & 14.30581 & 13.3355 & 14.30581 & 13.3355 & 18.771487 & 17.50564 & 18.77149 & 17.50564 & 18.96717\end{array} 17.68417$ $\begin{array}{lllllllllllllllll}11.661543 & 10.92911 & 11.66154 & 10.92911 & 11.80286 & 11.05713 & 12.45258 & 11.66717 & 12.03681 & 11.27989 & 12.03681 & 11.27989 & 15.815289 & 14.82668 & 15.81529 & 14.82668 & 15.96809\end{array} 14.96759$ $\begin{array}{llllllllllllllllllllll}11.593901 & 10.92636 & 11.5939 & 10.92636 & 11.73307 & 11.05411 & 12.37942 & 11.66409 & 11.96692 & 11.27708 & 11.96692 & 11.27708 & 15.724538 & 14.82301 & 15.72454 & 14.82301 & 15.87581 & 14.96378\end{array}$ $\begin{array}{lllllllllllllllllll}11.649364 & 10.97551 & 11.64936 & 10.97551 & 11.79011 & 11.10439 & 12.43925 & 11.71699 & 12.02414 & 11.32797 & 12.02414 & 11.32797 & 15.799258 & 14.88905 & 15.79926 & 14.88905 & 15.95173 & 15.03079\end{array}$ $\begin{array}{llllllllllllllllllll}11.783678 & 11.34839 & 11.78368 & 11.34839 & 11.92666 & 11.48493 & 12.58299 & 12.11703 & 12.16248 & 11.71229 & 12.16248 & 11.71229 & 15.981615 & 15.38896 & 15.98162 & 15.34676 & 16.13615 & 15.53674\end{array}$ $\begin{array}{llllllllllllllllll}13.1693 & 12.68705 & 13.1693 & 12.68705 & 13.34282 & 12.83915 & 14.07281 & 13.55658 & 13.59306 & 12.98372 & 13.59306 & 12.98372 & 17.847981 & 17.17206 & 17.84798 & 17.17235 & 18.02808 & 17.19655\end{array}$ $\begin{array}{lllllllllllllllllllll}12.637953 & 12.23713 & 12.63795 & 12.23713 & 12.79595 & 12.39127 & 13.49921 & 13.07186 & 13.04692 & 12.6332 & 13.04692 & 12.6332 & 17.131582 & 16.58736 & 17.13158 & 16.58736 & 17.30011 & 16.7387\end{array}$ $\begin{array}{lllllllllllllllllll}12.760652 & 12.41538 & 12.76065 & 12.41538 & 12.92201 & 12.57278 & 13.63142 & 13.26281 & 13.17335 & 12.8167 & 13.17335 & 12.8167 & 17.297257 & 16.82945 & 17.29726 & 16.82945 & 17.46825 & 16.98059\end{array}$ $\begin{array}{lllllllllllllllllll}12.905726 & 12.46792 & 12.90573 & 12.46668 & 13.0697 & 12.62439 & 13.78683 & 13.31747 & 13.32273 & 12.86994 & 13.32273 & 12.86994 & 17.494235 & 16.89864 & 17.49424 & 16.89864 & 17.66753 & 17.06575\end{array}$ $\begin{array}{lllllllllllllllllll}13.713942 & 13.03669 & 13.71394 & 13.03669 & 13.8982 & 13.20706 & 14.65749 & 13.93019 & 14.15863 & 13.45876 & 14.15863 & 13.45876 & 18.580105 & 17.66703 & 18.58011 & 17.66703 & 18.76952 & 17.83094\end{array}$ $\begin{array}{lllllllllllllllllll}13.75754 & 13.05405 & 13.75754 & 13.05405 & 13.94381 & 13.22573 & 14.70504 & 13.9389 & 14.20352 & 13.45908 & 14.20352 & 13.45908 & 18.638627 & 17.68128 & 18.63863 & 17.67894 & 18.82925 & 17.84398\end{array}$ $\begin{array}{llllllllllllllllllll}14.964848 & 14.28733 & 14.96485 & 14.28733 & 15.1849 & 14.49383 & 16.00767 & 15.28031 & 15.45126 & 14.75101 & 15.45126 & 14.75101 & 20.260587 & 19.34711 & 20.26059 & 19.34711 & 20.47687 & 19.55163\end{array}$ $\begin{array}{llllllllllllllllll}14.698299 & 13.87497 & 14.6983 & 13.87815 & 14.90829 & 14.06053 & 15.71887 & 14.83746 & 15.17754 & 14.31269 & 15.17754 & 14.31269 & 19.900733 & 18.79113 & 19.90073 & 18.79564 & 20.1103 & 18.97756\end{array}$ $\begin{array}{llllllllllllllllll}14.71052 & 13.90733 & 14.71052 & 13.90789 & 14.91863 & 14.04122 & 15.73063 & 14.86858 & 15.18974 & 14.30159 & 15.18974 & 14.30159 & 19.917674 & 18.79046 & 19.91767 & 18.83551 & 20.12648 & 18.98141\end{array}$

| Reduction to Peak Concentration due to Inclusion of T3 OGVs (ppm): | 0.0004 | 0.0003 | 0.0003 | 0.0003 | 0.0010 | 0.0010 | 0.0003 | 0.0003 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0014 | 0.0013 | 0.0014 | 0.0013 | 0.0040 | 0.0038 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction Due to Inclusion of Tier 3 OGV: | 15.74\% | 15.74\% | 15.74\% | 15.74\% | 17.02\% | 17.02\% | 16.12\% | 16.12\% | 11.96\% | 11.96\% | 11.96\% | 11.96\% | 52.47\% | 52.47\% | 52.47\% | ${ }_{389200 \_374}^{52.47 \%}$ | 48.91\% | $\rfloor_{382683.8 \_3}^{48.91 \%}$ |
|  | 389450_3 | 9450 _3 | 89450 | 9950 | 382683. | 2683.8_3 | 389450 | 9450 | 382683.8 | 683.8_3 | 382683.8 | 683.8_3 | 389450 | 200 |  |  | 268 |  |
| Peak |  | 3350 | 9850 | 3350 | 734051.76 | 734051.76 | 9850 | 9850 | 734051.76 | 734051.76 | 734051.76 | 734051.76 | 850 | 0100 | 9850 | 0100 | 734051.7 | 7340 |




|  |  |
| :--- | :--- |
|  | Source |
| 382763.3 | $373408768.92 \%$ | $382485.1373396354 .21 \%$ $382173.4 \quad 3733819$ 61.41\% $382203.6 \quad 373374062.10 \%$ $382087.1 \quad 373371960.26 \%$ $382088.9 \quad 373364561.97 \%$ $382015.6 \quad 373364360.88 \%$ $\begin{array}{ll}382015.6 & 373364360.88 \% \\ 382015.2 & 373360860.06 \%\end{array}$ $382530.1 \quad 373508960.33 \%$ $382552.6 \quad 373506058.45 \%$ $382601.8 \quad 373505159.43 \%$ $382666.7 \quad 373510061.56 \%$ $382736.2 \quad 373509661.12 \%$ $382798 \quad 373508658.47 \%$ $382887 \quad 373512958.39 \%$ $382957.1373518458 .08 \%$ $382999.1 \quad 373520657.95 \%$ $383041.1 \quad 373522857.89 \%$ $383083.1 \quad 373525157.81 \%$ $383125.1 \quad 373527359.07 \%$ $383167 \quad 373529558.75 \%$ $383209 \quad 373531759.17 \%$ $\begin{array}{ll}383209 & 373531759.17 \%\end{array}$ $\begin{array}{ll}383251 & 373533959.32 \% \\ 383293 & 373536258.90 \%\end{array}$ $383335 \quad 373538458.64 \%$ $383377 \quad 373540658.52 \%$ $383419373542858.74 \%$ $383461373545159.15 \%$ $383503373547360.74 \%$ $383545 \quad 373549560.44 \%$ $383587 \quad 373551760.62 \%$ $383629 \quad 3735539$ 62.55\% $383671 \quad 373556263.52 \%$ 383666.93735518 61.20\% $383636.2 \quad 373548459.71 \%$ $383605.5 \quad 373545160.53 \%$ $383574.9373541761 .64 \%$ $383544.2373538462 .08 \%$ $383468.9 \quad 373532963.59 \%$ $383424.2 \quad 3735306$ 62.98\% $383379.6 \quad 373528462.50 \%$ $383334.9 \quad 373526262.15 \%$ 383290.23735240 61.51\% $383245.6373521860 .90 \%$ $383200.9 \quad 373519659.90 \%$ $383156.2 \quad 373517457.78 \%$ $383111.5 \quad 373515252.64 \%$ $383066.9 \quad 373513052.50 \%$ $383022.2373510751 .16 \%$ 382996.23735044 47.12\% 383014.93735002 47.66\% $383033.7 \quad 373496147.23 \%$ $383052.4 \quad 373491948.00 \%$ $383071.1 \quad 373487850.24 \%$ $383089.8 \quad 373483650.58 \%$ $383108.5 \quad 373479552.57 \%$ $383127.2 \quad 373475452.11 \%$ $383089.2373473363 .11 \%$ $383030.6373475860 .59 \%$ $382995.7 \quad 373474360.32 \%$ $382960.8 \quad 373472762.71 \%$ $382863.8 \quad 3734736$ 62.22\% $382824 \quad 373471861.15 \%$ 382784.23734699 60.16\% $382744.4373468159 .88 \%$ $382704.6373466259 .78 \%$ $382683 \quad 3734597$ 54.91\% $382701.2373455156 .58 \%$ $382719.4 \quad 373450458.05 \%$ $382737.6 \quad 373445860.29 \%$ $382755.8 \quad 373441259.65 \%$ $382774 \quad 3734365$ 58.07\% $382792.2373431962 .41 \%$ $382823.9 \quad 373422755.78 \%$ $382812.7 \quad 373415066.40 \%$ $382788373411967.40 \%$ $382723.6 \quad 373406967.84 \%$ $382683.8 \quad 373405271.20 \%$ $382644.1 \quad 373403470.33 \%$ $382604.3 \quad 3734016$ 67.48\% $382564.6 \quad 373399959.00 \%$ $382524.8 \quad 373398154.88 \%$ $382440.6 \quad 373394353.03 \%$ $382396 \quad 373392253.12 \%$ $382351.5 \quad 373390156.14 \%$ $382307373388158.34 \%$ $382262.4373386059 .35 \%$

 $\begin{array}{lllllllllllllllllll}17.472457 & 16.56512 & 17.47246 & 16.56512 & 17.75481 & 16.82845 & 18.70892 & 17.73439 & 18.04552 & 17.10849 & 18.04552 & 17.10849 & 23.629017 & 22.40439 & 23.62902 & 22.40439 & 23.89503 & 22.65445\end{array}$ $\begin{array}{lllllllllllllllllll}20.96263 & 20.16001 & 20.96263 & 19.96785 & 21.34095 & 20.52378 & 22.47399 & 21.34074 & 21.65385 & 20.82512 & 21.65385 & 20.82512 & 28.316148 & 27.23128 & 28.31615 & 27.10543 & 28.65549 & 27.55766\end{array}$ $\begin{array}{lllllllllllllllllllllll}20.833456 & 19.94388 & 20.83346 & 19.93849 & 21.20678 & 20.3005 & 22.33371 & 21.37429 & 21.52045 & 20.60192 & 21.52045 & 20.60192 & 28.143102 & 26.94105 & 28.1431 & 26.93288 & 28.47901 & 27.26238\end{array}$ $\begin{array}{lllllllllllllllllll}22.539331 & 21.6734 & 22.53933 & 21.6734 & 22.95931 & 22.07718 & 24.17399 & 23.24554 & 23.28469 & 22.3911 & 23.28469 & 22.3911 & 30.432893 & 29.26212 & 30.43289 & 29.26212 & 30.80468 & 29.61973\end{array}$ $\begin{array}{lllllllllllllllllllllll}22.86062 & 21.74795 & 22.86062 & 21.74795 & 23.28806 & 22.1527 & 24.51974 & 23.32521 & 23.61724 & 22.46829 & 23.61724 & 22.46829 & 30.864561 & 29.36232 & 30.86456 & 29.36232 & 31.24251 & 29.72107\end{array}$ $\begin{array}{llllllllllllllllllllll}24.216324 & 23.15399 & 24.21632 & 23.15399 & 24.68108 & 23.59723 & 25.98239 & 24.84213 & 25.01926 & 23.92255 & 25.01926 & 23.92255 & 32.684365 & 31.24972 & 32.68437 & 31.24972 & 33.09095 & 31.63798\end{array}$ $\begin{array}{lllllllllllllllllllll}24.366371 & 23.23192 & 24.35898 & 23.23133 & 24.83208 & 23.67691 & 26.13605 & 24.92526 & 25.16665 & 24.00246 & 25.16665 & 24.00246 & 32.876205 & 31.35374 & 32.87621 & 31.35374 & 33.28559 & 31.74348\end{array}$

 $\begin{array}{llllllllllllllllllll}16.300365 & 15.01851 & 16.30037 & 14.91931 & 16.5631 & 15.14975 & 17.45235 & 15.69101 & 16.83164 & 15.31089 & 16.83164 & 15.31089 & 22.051517 & 20.19398 & 22.05152 & 19.85168 & 22.2986 & 20.06721\end{array}$ $\begin{array}{lllllllllllllllll}15.630287 & 14.52142 & 15.63029 & 14.52142 & 15.87378 & 14.74047 & 16.72893 & 15.44014 & 16.13883 & 14.89948 & 16.13883 & 14.89948 & 21.151877 & 19.65964 & 21.15188 & 19.53954 & 21.38451 \\ 19.9 .74998\end{array}$ $\begin{array}{lllllllllllllllll}15.423504 & 14.35507 & 15.4235 & 14.35507 & 15.66071 & 14.56911 & 16.50553 & 15.26375 & 15.92544 & 14.73111 & 15.92544 & 14.73111 & 20.873951 & 19.43541 & 20.87395 & 19.31931 & 21.10197 \\ 19.5262\end{array}$ $\begin{array}{llllllllllllllllll}14.620903 & 13.76861 & 14.6209 & 13.76861 & 14.83625 & 13.9661 & 15.63976 & 14.72418 & 15.09508 & 14.21436 & 15.09508 & 14.21436 & 19.796762 & 18.64797 & 19.79676 & 18.64797 & 20.00805 & 18.84415\end{array}$ $\begin{array}{lllllllllllllllll}14.173924 & 13.39245 & 14.17392 & 13.39245 & 14.37727 & 13.57955 & 15.15771 & 14.31836 & 14.63293 & 13.8254 & 14.63293 & 13.8254 & 19.196854 & 18.14288 & 19.19685 & 18.14288 & 19.39879\end{array} 18.32915$ $\begin{array}{llllllllllllllllll}13.886757 & 13.05706 & 13.88676 & 13.052 & 14.08245 & 13.2304 & 14.84802 & 13.95157 & 14.33599 & 13.47351 & 14.33599 & 13.47351 & 18.810907 & 17.68516 & 18.81091 & 17.68516 & 19.00691 & 17.86636\end{array}$ $\begin{array}{llllllllllllllllllll}13.68909 & 12.73839 & 13.68909 & 12.72892 & 13.88053 & 12.90004 & 14.63548 & 13.60397 & 14.13139 & 13.13909 & 14.13139 & 13.13909 & 18.545182 & 17.25109 & 18.54518 & 17.25109 & 18.73754 & 17.4249\end{array}$ $\begin{array}{llllllllllllllllll}13.556454 & 12.59268 & 13.55645 & 12.56198 & 13.74355 & 12.72863 & 14.49209 & 13.42399 & 13.99475 & 12.96657 & 13.99475 & 12.96657 & 18.366494 & 17.02661 & 18.36649 & 17.02661 & 18.55583 & 17.19691\end{array}$ $\begin{array}{lllllllllllllllll}13.464195 & 12.42508 & 13.4642 & 12.40247 & 13.64852 & 12.56569 & 14.39256 & 13.25247 & 13.89972 & 12.80141 & 13.89972 & 12.80141 & 18.241966 & 16.81236 & 18.24197 & 16.81236 & 18.42939\end{array} 16.98007$ $\begin{array}{lllllllllllllllll}13.401048 & 12.27907 & 13.40105 & 12.26375 & 13.584 & 12.42349 & 14.32479 & 13.10314 & 13.83464 & 12.65828 & 13.83464 & 12.65828 & 18.156519 & 16.62531 & 18.15652 & 16.62531 & 18.34278 \\ 16.79112\end{array}$ $\begin{array}{llllllllllllllllllll}13.305666 & 12.12473 & 13.30567 & 12.11557 & 13.48693 & 12.27177 & 14.22246 & 12.94373 & 13.73601 & 12.50534 & 13.73601 & 12.50534 & 18.027897 & 16.42539 & 18.0279 & 16.42539 & 18.21257 & 16.58742\end{array}$ $\begin{array}{llllllllllllllllllll}13.179691 & 12 & 13.17969 & 11.98848 & 13.35892 & 12.14133 & 14.08751 & 12.80692 & 13.60556 & 12.37453 & 13.60556 & 12.37453 & 17.85833 & 16.25339 & 17.85833 & 16.25339 & 18.04107 & 16.4126\end{array}$ $\begin{array}{lllllllllllllllll}13.049787 & 11.88423 & 13.04979 & 11.86743 & 13.22659 & 12.01774 & 13.94813 & 12.67696 & 13.4712 & 12.24969 & 13.4712 & 12.24969 & 17.683181 & 16.0615 & 17.68318 & 16.0615 & 17.86373 \\ 16.21924\end{array}$ $\begin{array}{lllllllllllllllll}12.92703 & 11.83732 & 12.92703 & 11.7786 & 13.10109 & 11.92754 & 13.81616 & 12.58185 & 13.3445 & 12.15784 & 13.3445 & 12.15784 & 17.517488 & 15.96975 & 17.51749 & 15.83395 & 17.69581 \\ 15.98897\end{array}$ $\begin{array}{lllllllllllllllllllllll}12.794924 & 11.73613 & 12.79492 & 11.73613 & 12.96604 & 11.88483 & 13.67412 & 12.53665 & 13.20791 & 12.11389 & 13.20791 & 12.11389 & 17.339683 & 15.9122 & 17.33968 & 15.6106 & 17.51555 & 15.88862\end{array}$ | 12.665631 | 11.6436 | 12.66563 | 11.62461 | 12.83379 | 11.77028 | 13.53498 | 12.41641 | 13.07405 | 11.99878 | 13.07405 | 11.99878 | 17.166055 | 15.76202 | 17.16606 | 15.56302 | 17.33947 | 15.8714 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{llllllllllllllll}12.54718 & 11.53463 & 12.54718 & 11.45422 & 12.71233 & 11.59574 & 13.40737 & 12.2329 & 12.95161 & 11.82239 & 12.95161 & 11.82239 & 17.006722 & 15.53331 & 17.00672 & 15.49041 \\ 17.47 .17781 & 15.68471\end{array}$ $\begin{array}{llllllllllllllllll}12.420321 & 11.43867 & 12.42032 & 11.43867 & 12.58245 & 11.51489 & 13.2708 & 12.148 & 12.82035 & 11.74102 & 12.82035 & 11.74102 & 16.836322 & 15.42731 & 16.83632 & 15.42531 & 17.0049 & 15.57706\end{array}$ $\begin{array}{llllllllllllllllll}12.311365 & 11.33242 & 12.31137 & 11.33242 & 12.47045 & 11.45117 & 13.1533 & 12.08096 & 12.70789 & 11.67648 & 12.70789 & 11.67648 & 16.689568 & 15.34345 & 16.68957 & 15.34345 & 16.85593 & 15.49203\end{array}$ $\begin{array}{llllllllllllllllll}12.210426 & 11.2521 & 12.21043 & 11.2521 & 12.3665 & 11.38871 & 13.04434 & 12.01531 & 12.60385 & 11.61346 & 12.60385 & 11.61346 & 16.553519 & 15.26147 & 16.55352 & 15.26147 & 16.71773 & 15.4089\end{array}$ $\begin{array}{lllllllllllllllll}12.100617 & 11.18072 & 12.10062 & 11.18072 & 12.25367 & 11.31574 & 12.92591 & 11.93853 & 12.49045 & 11.53955 & 12.49045 & 11.53955 & 16.405787 & 15.16559 & 16.40579 & 15.16559 & 16.56765\end{array} 15.31169$ $\begin{array}{llllllllllllllllll}11.981973 & 11.13034 & 11.98197 & 11.13034 & 12.13203 & 11.26368 & 12.79809 & 11.88406 & 12.36774 & 11.48773 & 12.36774 & 11.48773 & 16.246383 & 15.09748 & 16.24638 & 15.09748 & 16.40588 & 15.24249\end{array}$ $\begin{array}{llllllllllllllllllll}11.85453 & 11.07477 & 11.85453 & 11.07477 & 12.00163 & 11.20638 & 12.66093 & 11.82403 & 12.2358 & 11.43051 & 12.2358 & 11.43051 & 16.075254 & 15.0225 & 16.07525 & 15.0225 & 16.23239 & 15.16631\end{array}$ $\begin{array}{llllllllllllllllll}11.758487 & 11.00761 & 11.75849 & 11.00761 & 11.90266 & 11.13745 & 12.55722 & 11.75165 & 12.13679 & 11.36114 & 12.13679 & 11.36114 & 15.945809 & 14.93212 & 15.94581 & 14.93212 & 16.1008 & 15.07457\end{array}$ $\begin{array}{llllllllllllllllll}11.675552 & 10.97814 & 11.67555 & 10.97814 & 11.81705 & 11.10666 & 12.46744 & 11.71955 & 12.05096 & 11.33075 & 12.05096 & 11.33075 & 15.834923 & 14.8927 & 15.83492 & 14.8927 & 15.98792 & 15.02533\end{array}$ $\begin{array}{llllllllllllllllll}11.699802 & 10.96813 & 11.6998 & 10.96813 & 11.8419 & 11.09621 & 12.49351 & 11.70861 & 12.07585 & 11.32032 & 12.07585 & 11.32032 & 15.867955 & 14.87953 & 15.86796 & 14.87953 & 16.02132 & 15.00689\end{array}$ $\begin{array}{llllllllllllllllll}11.73936 & 11.1228 & 11.73936 & 11.1228 & 11.88192 & 11.255 & 12.53581 & 11.87537 & 12.1169 & 11.48019 & 12.1169 & 11.48019 & 15.921152 & 15.08734 & 15.92115 & 14.99805 & 16.07511 & 15.22096\end{array}$ $\begin{array}{lllllllllllllllll}11.76654 & 11.2604 & 11.76654 & 11.2604 & 11.90937 & 11.39433 & 12.56481 & 12.0238 & 12.14501 & 11.61717 & 12.14501 & 11.61717 & 15.957794 & 15.26608 & 15.95779 & 14.95121 & 16.11219\end{array} 15.19349$ $\begin{array}{llllllllllllllllll}11.78124 & 11.31861 & 11.78124 & 11.31861 & 11.92422 & 11.45287 & 12.58046 & 12.08314 & 12.16014 & 11.67937 & 12.16014 & 11.67937 & 15.977943 & 15.34579 & 15.97794 & 15.03 & 16.13238 & 15.2016\end{array}$ $\begin{array}{lllllllllllllllll}11.872542 & 11.40615 & 11.87254 & 11.40615 & 12.01834 & 11.54458 & 12.67901 & 12.17984 & 12.25401 & 11.77277 & 12.25401 & 11.77277 & 16.101443 & 15.46771 & 16.10144 & 15.33161 & 16.25798 \\ 16.56129\end{array}$ $\begin{array}{lllllllllllllllll}11.984777 & 11.44897 & 11.98478 & 11.44897 & 12.1334 & 11.58678 & 12.79992 & 12.22416 & 12.37007 & 11.81525 & 12.37007 & 11.81525 & 16.25236 & 15.52326 & 16.25236 & 15.36686 & 16.41107 \\ 1.25 .61514\end{array}$ $\begin{array}{lllllllllllllllllll}12.101352 & 11.49359 & 12.10135 & 11.49359 & 12.25275 & 11.63211 & 12.92539 & 12.27193 & 12.49064 & 11.86136 & 12.49064 & 11.86136 & 16.409083 & 15.58359 & 16.40908 & 15.48059 & 16.56996 & 15.6301\end{array}$ $\begin{array}{lllllllllllllllll}12.226093 & 11.54801 & 12.22609 & 11.54801 & 12.3802 & 11.68977 & 13.05949 & 12.33249 & 12.61967 & 11.91071 & 12.61967 & 11.91071 & 16.576895 & 15.66023 & 16.5769 & 15.64903 & 16.74017 \\ 15.8004\end{array}$ $\begin{array}{llllllllllllllllllll}12.352384 & 11.60937 & 12.35238 & 11.60937 & 12.50907 & 11.74917 & 13.19513 & 12.39527 & 12.75026 & 11.97601 & 12.75026 & 11.97601 & 16.747045 & 15.7337 & 16.74705 & 15.7337 & 16.91251 & 15.8854\end{array}$ $\begin{array}{lllllllllllllllllllllll}2.464004 & 11.77701 & 12.464 & 11.77701 & 12.62301 & 11.91706 & 13.31498 & 12.57194 & 12.86546 & 12.15036 & 12.86546 & 12.15036 & 16.897808 & 15.9603 & 16.89781 & 15.9603 & 17.06521 & 16.11405\end{array}$ $\begin{array}{lllllllllllllllll}12.580446 & 11.97878 & 12.58045 & 11.97878 & 12.74124 & 12.11827 & 13.43961 & 12.78364 & 12.98574 & 12.35402 & 12.98574 & 12.35402 & 17.055329 & 16.22532 & 17.05533 & 16.22532 & 17.22444 \\ 16.38338\end{array}$ $\begin{array}{llllllllllllllllllllll}12.724234 & 12.11436 & 12.72423 & 12.11436 & 12.88661 & 12.26647 & 13.59316 & 12.93978 & 13.13457 & 12.50217 & 13.13457 & 12.50217 & 17.249541 & 16.42551 & 17.24954 & 16.42433 & 17.42 & 16.56437\end{array}$ $\begin{array}{lllllllllllllllllll}12.724234 & 12.1136 & 12.72423 & 12.11436 & 12.88661 & 12.26647 & 13.59316 & 12.93978 & 13.13457 & 12.50217 & 13.13457 & 12.50217 & 17.249541 & 16.42551 & 17.24954 & 16.42433 & 17.42 & 16.56437 \\ 12.938109 & 12.21001 & 12.93811 & 12.21001 & 13.10373 & 12.36448 & 13.82292 & 13.04261 & 13.35448 & 12.60017 & 13.35448 & 12.60017 & 17.537642 & 16.5554 & 17.53764 & 16.55472 & 17.71055 & 16.69598\end{array}$ $\begin{array}{llllllllllllllllllllllll}13.076742 & 12.38232 & 13.07674 & 12.38232 & 13.24535 & 12.54043 & 13.97211 & 13.22828 & 13.49716 & 12.76753 & 13.49716 & 12.76753 & 17.724554 & 16.78765 & 17.72455 & 16.7799 & 17.89944 & 16.86101\end{array}$ $\begin{array}{llllllllllllllllll}13.135597 & 12.53359 & 13.1356 & 12.53359 & 13.30682 & 12.67583 & 14.03599 & 13.39113 & 13.55786 & 12.90759 & 13.55786 & 12.90759 & 17.801854 & 16.96549 & 17.80402 & 16.96945 & 17.98086 & 17.11836\end{array}$ $\begin{array}{llllllllllllllllll}13.093126 & 12.49648 & 13.09313 & 12.49648 & 13.26426 & 12.65811 & 13.98996 & 13.35141 & 13.51527 & 12.73431 & 13.51527 & 12.73431 & 17.747276 & 16.93876 & 17.74728 & 16.93876 & 17.92523 & 16.8601\end{array}$ $\begin{array}{lllllllllllllllllll}12.964625 & 12.49727 & 12.96463 & 12.49727 & 13.12915 & 12.65692 & 13.84852 & 13.31883 & 13.38038 & 12.71921 & 13.38038 & 12.71921 & 17.572459 & 16.93955 & 17.57246 & 16.93955 & 17.74717 & 16.87033\end{array}$ $\begin{array}{lllllllllllllllllll}12.93346 & 12.40124 & 12.93576 & 12.4017 & 13.09843 & 12.48352 & 13.81658 & 13.16876 & 13.3504 & 12.72583 & 13.3504 & 12.72583 & 17.53347 & 16.8123 & 17.53347 & 16.7426 & 17.70724 & 16.87923\end{array}$ $\begin{array}{lllllllllllllllllll}12.880106 & 12.33998 & 12.88225 & 12.34001 & 13.0433 & 12.47977 & 13.75887 & 13.16499 & 13.29539 & 12.72248 & 13.29539 & 12.72248 & 17.461725 & 16.73024 & 17.46173 & 16.73024 & 17.63422 & 16.8747\end{array}$ $\left.\begin{array}{llllllllllllllllllll}12.82\end{array}\right)$ $\begin{array}{llllllllllllllllllll}12.784798 & 12.27677 & 12.78502 & 12.2769 & 12.94577 & 12.43081 & 13.65654 & 13.11344 & 13.19755 & 12.67292 & 13.19755 & 12.67292 & 17.332026 & 16.64408 & 17.33203 & 16.64408 & 17.50288 & 16.80782\end{array}$ $\begin{array}{llllllllllllllllll}12.735415 & 12.24801 & 12.73542 & 12.24801 & 12.89567 & 12.40074 & 13.60383 & 13.08308 & 13.14694 & 12.64233 & 13.14694 & 12.64233 & 17.264291 & 16.60184 & 17.26429 & 16.60184 & 17.43452 & 16.7655\end{array}$ $\begin{array}{lllllllllllllllll}12.684418 & 12.3193 & 12.68442 & 12.3193 & 12.84367 & 12.38842 & 13.54922 & 13.0702 & 13.09461 & 12.6299 & 13.09461 & 12.6299 & 17.194754 & 16.58396 & 17.19475 & 16.58619 & 17.36415\end{array} 16.74766$ $\begin{array}{lllllllllllllllll}12.824488 & 12.4468 & 12.82449 & 12.4468 & 12.98732 & 12.59314 & 13.69996 & 13.28428 & 13.2389 & 12.83748 & 13.2389 & 12.83748 & 17.384201 & 16.85507 & 17.3842 & 16.85507 & 17.55629\end{array} 17.02215$ $\begin{array}{lllllllllllllllllll}13.147241 & 12.63835 & 13.14724 & 12.63835 & 13.29351 & 12.76774 & 14.02235 & 13.46821 & 13.54946 & 13.01479 & 13.54946 & 13.01479 & 17.789091 & 17.08835 & 17.78909 & 17.08835 & 17.96631 & 17.25793\end{array}$ $\begin{array}{llllllllllllllllll}13.363387 & 12.87673 & 13.36339 & 12.87673 & 13.53733 & 13.04256 & 14.27892 & 13.74683 & 13.77316 & 13.28184 & 13.77316 & 13.28184 & 18.080039 & 17.45114 & 18.08004 & 17.43501 & 18.26147 & 17.60938\end{array}$ $\begin{array}{llllllllllllllllllll}13.547339 & 12.9613 & 13.54734 & 12.9613 & 13.7265 & 13.12928 & 14.47748 & 13.84862 & 13.98648 & 13.38077 & 13.98648 & 13.38077 & 18.347173 & 17.56614 & 18.35665 & 17.56614 & 18.5284 & 17.71678\end{array}$ $\begin{array}{llllllllllllllllllll}13.957446 & 13.2779 & 13.95745 & 13.2779 & 14.14948 & 13.45581 & 14.92081 & 14.18636 & 14.41029 & 13.70672 & 14.41029 & 13.70672 & 18.906809 & 17.99063 & 18.90681 & 17.99063 & 19.10185 & 18.14373\end{array}$ $\begin{array}{llllllllllllllllll}14.173311 & 13.41418 & 14.17331 & 13.41418 & 14.37113 & 13.59644 & 15.15363 & 14.33834 & 14.63361 & 13.84866 & 14.63361 & 13.84866 & 19.196539 & 18.17387 & 19.19654 & 18.17387 & 19.39604 & 18.34761\end{array}$ $\begin{array}{lllllllllllllllll}14.386917 & 13.65448 & 14.38692 & 13.65448 & 14.59051 & 13.84338 & 15.38397 & 14.5976 & 14.85434 & 14.09696 & 14.85434 & 14.09696 & 19.483665 & 18.49686 & 19.48367 & 18.49686 & 19.6876\end{array} 18.68441$ $\begin{array}{lllllllllllllllll}14.585192 & 13.762 & 14.58519 & 13.762 & 14.79445 & 13.95374 & 15.59797 & 14.71333 & 15.05911 & 14.20801 & 15.05911 & 14.20801 & 19.750534 & 18.64159 & 19.75053 & 18.64159 & 19.95864\end{array} 18.83489$ $\begin{array}{llllllllllllllllll}14.759136 & 14.08725 & 14.75914 & 14.08725 & 14.97391 & 14.28756 & 15.78597 & 15.06408 & 15.23833 & 14.54443 & 15.23833 & 14.54443 & 19.984663 & 19.07821 & 19.98466 & 19.07821 & 20.19672 & 19.27817\end{array}$ $\begin{array}{lllllllllllllllllll}14.980543 & 14.29517 & 14.98054 & 14.29517 & 15.20011 & 14.50095 & 16.02407 & 15.2881 & 15.46776 & 14.75925 & 15.46776 & 14.75925 & 20.281841 & 19.35798 & 20.28184 & 19.35798 & 20.49801 & 19.56223\end{array}$ $\begin{array}{lllllllllllllllll}14.94336 & 14.23001 & 14.94336 & 14.23001 & 15.16191 & 14.43385 & 15.98403 & 15.21785 & 15.4295 & 14.6922 & 15.4295 & 14.6922 & 20.231232 & 19.26978 & 20.23123 & 19.26978 & 20.44669\end{array} 19.47267$ $\begin{array}{lllllllllllllllllllll}14.899646 & 14.13907 & 14.89965 & 14.13907 & 15.11717 & 14.34052 & 15.93717 & 15.11992 & 15.38462 & 14.59858 & 15.38462 & 14.59858 & 20.172036 & 19.14706 & 20.17204 & 19.14706 & 20.38666 & 19.34809\end{array}$ $\begin{array}{llllllllllllllllllll}14.857754 & 14.0481 & 14.85775 & 14.0481 & 15.074 & 14.18322 & 15.89185 & 15.02175 & 15.3415 & 14.43826 & 15.3415 & 14.43826 & 20.115209 & 19.02455 & 20.11521 & 19.02455 & 20.32892 & 19.21522\end{array}$ $\begin{array}{lllllllllllllllllllll}14.829943 & 13.99353 & 14.82994 & 13.99514 & 15.04496 & 14.149 & 15.86165 & 14.9627 & 15.31301 & 14.40651 & 15.31301 & 14.40651 & 20.077668 & 18.95344 & 20.07767 & 18.95344 & 20.29056 & 19.14232\end{array}$ $\begin{array}{lllllllllllllllllllll}14.781205 & 13.99702 & 14.78121 & 13.99893 & 14.99463 & 14.15916 & 15.80893 & 14.96641 & 15.26282 & 14.41745 & 15.26282 & 14.41745 & 20.012182 & 18.95514 & 20.01218 & 18.95803 & 20.22401 & 19.153\end{array}$ $\begin{array}{lllllllllllllllllll}14.738564 & 13.96118 & 14.73856 & 13.96748 & 14.95024 & 14.15658 & 15.76262 & 14.93412 & 15.21882 & 14.23078 & 15.21882 & 14.23078 & 19.954703 & 18.91323 & 19.9547 & 18.91564 & 20.16538 & 19.10387\end{array}$ $\begin{array}{llllllllllllllllll}14.707491 & 13.89321 & 14.70749 & 13.89486 & 14.91665 & 14.02854 & 15.72808 & 14.85497 & 15.1872 & 14.28859 & 15.1872 & 14.28859 & 19.913235 & 18.74153 & 19.91324 & 18.81813 & 20.12256 & 18.93525\end{array}$ $\begin{array}{llllllllllllllllll}14.884935 & 13.95453 & 14.88633 & 13.99132 & 15.09749 & 14.10656 & 15.91998 & 14.95858 & 15.37093 & 14.34104 & 15.37093 & 14.34104 & 20.153798 & 18.93465 & 20.1538 & 18.94746 & 20.36406 & 19.08505\end{array}$ $\begin{array}{llllllllllllllllllllll}15.076011 & 14.08415 & 15.08203 & 14.17075 & 15.25777 & 14.21808 & 16.13069 & 15.15212 & 15.52296 & 14.4556 & 15.52296 & 14.4556 & 20.414149 & 19.15901 & 20.41671 & 19.18853 & 20.62985 & 19.28468\end{array}$ $\begin{array}{llllllllllllllllllll}15.503986 & 14.52671 & 15.52933 & 14.65768 & 15.70678 & 14.68531 & 16.61231 & 15.67656 & 15.98507 & 14.92827 & 15.98507 & 14.92827 & 21.013116 & 19.80232 & 21.01791 & 19.8423 & 21.23809 & 19.89398\end{array}$ $\begin{array}{lllllllllllllllllllll}15.785217 & 14.90313 & 15.78896 & 14.99278 & 15.99828 & 15.05934 & 16.89199 & 16.03785 & 16.25473 & 15.30586 & 16.25473 & 15.30586 & 21.364759 & 20.26671 & 21.36689 & 20.29262 & 21.59133 & 20.41455\end{array}$ $\begin{array}{llllllllllllllllllll}16.132256 & 15.32365 & 16.13645 & 15.35453 & 16.37647 & 15.51437 & 17.26674 & 16.42782 & 16.66104 & 15.75992 & 16.66104 & 15.75992 & 21.833696 & 20.77438 & 21.8337 & 20.77852 & 22.06473 & 20.97535\end{array}$ $\begin{array}{llllllllllllllllllllll}16.474962 & 15.68991 & 16.47496 & 15.69472 & 16.7287 & 15.92757 & 17.63213 & 16.79483 & 17.01492 & 16.19361 & 17.01492 & 16.19361 & 22.288868 & 21.22843 & 22.28887 & 21.23573 & 22.53332 & 21.45983\end{array}$ $\begin{array}{llllllllllllllllllll}16.824115 & 15.97258 & 16.82412 & 15.97258 & 17.08763 & 16.21828 & 18.00883 & 17.09439 & 17.37556 & 16.49617 & 17.37556 & 16.49617 & 22.757969 & 21.60883 & 22.75797 & 21.60883 & 23.00987 & 21.84581\end{array}$ $\begin{array}{lllllllllllllllllllllll}17.144656 & 16.32163 & 17.14466 & 16.32163 & 17.41763 & 16.57737 & 18.35509 & 17.47117 & 17.70674 & 16.85706 & 17.70674 & 16.85706 & 23.188742 & 22.07734 & 23.18874 & 22.07734 & 23.44773 & 22.32186\end{array}$ $\begin{array}{llllllllllllllllllll}17.851339 & 16.9557 & 17.85134 & 16.9557 & 18.14414 & 17.2301 & 19.1176 & 18.15596 & 18.43716 & 17.51237 & 18.43716 & 17.51237 & 24.13765 & 22.92844 & 24.13765 & 22.92844 & 24.41163 & 23.18693\end{array}$ $\begin{array}{llllllllllllllllll}18.267661 & 17.53648 & 18.26766 & 17.53648 & 18.57191 & 17.82667 & 19.5667 & 18.78243 & 18.86747 & 18.11295 & 18.86747 & 18.11295 & 24.696934 & 23.70821 & 24.69693 & 23.70821 & 24.97963 & 23.97877\end{array}$ $\begin{array}{llllllllllllllllll}18.708598 & 18.20215 & 18.7086 & 18.20215 & 19.02542 & 18.51115 & 20.04267 & 19.50095 & 19.32329 & 18.80141 & 19.32329 & 18.80141 & 25.289197 & 24.60141 & 25.2892 & 24.60141 & 25.58136 & 24.88628\end{array}$ $\begin{array}{llllllllllllllllllll}19.230838 & 18.85843 & 19.23084 & 18.85843 & 19.56191 & 19.185 & 20.60599 & 20.20877 & 19.86314 & 19.4803 & 19.86314 & 19.4803 & 25.990466 & 25.48243 & 25.99047 & 25.48243 & 26.29361 & 25.78093\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}19.761394 & 19.2525 & 19.76139 & 19.2525 & 20.10731 & 19.59067 & 21.17846 & 20.63421 & 20.41162 & 19.88721 & 20.41162 & 19.88721 & 26.703235 & 26.01214 & 26.70324 & 26.01214 & 27.01756 & 26.31927\end{array}$

| Reduction to Peak Concentration due to Inclusion of T3 OGVs (ppm): | 0.0004 | 0.0003 | 0.0003 | 0.0003 | 0.0010 | 0.0010 | 0.0003 | 0.0003 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0014 | 0.0013 | 0.0014 | 0.0013 | 0.0040 | 0.0038 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction Due to Inclusion of Tier 3 OGV | 15.74\% | 15.74\% | 15.74\% | 15.74\% | 17.02\% | 17.02\% | 16.12\% | 16.12\% | 11.96\% | 11.96\% | 11.96\% | 11.96\% | 52.47\% | 52.47\% | 52.47\% | 52.47\% | 48.91\% | 48.91\% |
|  | 389450_3 | 389450_3 | 389450_3 | 389950 3350 | 382683.8 734051.76 | 382683.8 _3 73405176 | 389500_3 | 389500_37 | 382683.8_3 734051.76 | 382683.8_3 | 382683.8_3 ${ }^{\text {3 }}$ | 382683.8_3 | 389450_3 |  | 389450 | 389200_37 | 382683.8 734051.76 | 7382683.8_3 |



$382217.9 \quad 373384060.05 \%$ $382188.5 \quad 373378063.15 \%$ $382165.1 \quad 373372959.79 \%$ $382125.9 \quad 373372660.50 \%$ $382088373368261.23 \%$ $382052.3 \quad 373364461.27 \%$ $381977.3 \quad 373360761.01 \%$ $382569.5373511962 .32 \%$ $382609 \quad 373515064.56 \%$ $382648.5 \quad 373518165.71 \%$ $382515.2 \quad 373511161.01 \%$ $382740.6 \quad 373516363.59 \%$ $382744.4 \quad 373521366.38 \%$ $382678.6 \quad 373521867.41 \%$ $382807.6 \quad 3735167$ 64.81\% $382780.1 \quad 373524866.12 \%$ $382843.3 \quad 373520263.60 \%$ $382875.1 \quad 373514458.78 \%$ $382891.3 \quad 373519162.05 \%$ $382854.2 \quad 373525162.71 \%$ $382907.6 \quad 3735238$ 63.03\% $382975.7 \quad 373525062.28 \%$ $383017.7 \quad 373527362.10 \%$ $383059.7 \quad 373529560.74 \%$ $383101.7 \quad 373531759.05 \%$ $383143.7 \quad 373533958.05 \%$ $383185.7 \quad 373536159.12 \%$ $383227.7 \quad 373538460.71 \%$ $383269.7 \quad 3735406$ 62.53\% $383311.7 \quad 373542864.40 \%$ $383353.6373545065 .23 \%$ $383395.6 \quad 373547366.02 \%$ $383437.6 \quad 373549566.67 \%$ $383479.6 \quad 373551767.15 \%$ $383521.6 \quad 373553967.40 \%$ $383563.6 \quad 373556167.24 \%$ $383605.6 \quad 373558466.51 \%$ $383647.6 \quad 3735606$ 65.50\% $383689.6 \quad 373562868.52 \%$ $382952.3 \quad 373529562.32 \%$ $382994.3 \quad 373531763.09 \%$ $383036.3 \quad 373533963.57 \%$ $383078.3 \quad 373536163.77 \%$ $383120.3 \quad 373538364.00 \%$ $383162.3 \quad 3735406$ 64.76\% $383204.3 \quad 373542865.65 \%$ $383246.3 \quad 373545066.95 \%$ $383288.3 \quad 373547268.43 \%$ $383330.3 \quad 373549569.73 \%$ $383372.3 \quad 3735517$ 71.01\% $383414.3 \quad 373553972.24 \%$ $383456.3 \quad 373556173.09 \%$ $383498.3 \quad 373558372.70 \%$ $383540.2 \quad 373560672.35 \%$ $383582.2 \quad 373562872.04 \%$ $383624.2 \quad 373565071.70 \%$ $383666.2 \quad 373567271.22 \%$ $382886.9 \quad 373531766.47 \%$ $382928.9 \quad 373533966.88 \%$ $382970.9 \quad 373536167.77 \%$ $383012.9 \quad 373538368.85 \%$ $383054.9 \quad 3735405$ 69.31\% $383096.9 \quad 3735428$ 69.67\% $383138.9373545069 .84 \%$ $383180.9 \quad 373547270.39 \%$ $383222.9 \quad 373549471.13 \%$ $383264.9 \quad 373551771.95 \%$ $383306.9 \quad 373553971.68 \%$ $383348.9 \quad 373556171.58 \%$ $383390.9 \quad 373558371.52 \%$ $383432.9 \quad 373560571.56 \%$ $383474.9 \quad 373562871.63 \%$ $383516.9 \quad 373565071.79 \%$ $383558.9 \quad 373567271.49 \%$ $383600.9373569470 .93 \%$ $383642.9 \quad 373571670.26 \%$ $383741.9 \quad 373562068.95 \%$ $383785.6 \quad 3735644$ 69.54\% $383722.6 \quad 3735678$ 69.74\% $383829.2 \quad 373566969.67 \%$ $383785 \quad 373570468.44 \%$ $383736.7 \quad 3735726$ 67.96\% $383759.7 \quad 373553863.89 \%$ $383722.8 \quad 373550862.53 \%$ $383788.9 \quad 373550068.82 \%$ $383816.4373556568 .48 \%$ $383748.2 \quad 373546568.69 \%$
20.359598 19.6659 20.3596 19.6659 $\quad 20.72186$ $\begin{array}{lllllllllllllllllll}20.904486 & 20.05502 & 20.90449 & 19.96555 & 21.28045 & 20.41539 & 22.41079 & 21.40396 & 21.59387 & 20.71664 & 21.59387 & 20.71664 & 28.238383 & 27.09034 & 28.23838 & 26.96907 & 28.57615 & 27.41425\end{array}$ $\begin{array}{lllllllllllllllllllll}21.28217 & 20.61945 & 21.28217 & 20.61945 & 21.66822 & 20.99504 & 22.81811 & 22.10894 & 21.98476 & 21.30105 & 21.98476 & 21.30105 & 28.745095 & 27.84689 & 28.7451 & 27.84689 & 29.09068 & 28.18268\end{array}$ $\begin{array}{lllllllllllllllllllllllll}21.799973 & 21.08815 & 21.79997 & 21.08815 & 22.19984 & 21.47589 & 23.37644 & 22.61415 & 22.52001 & 21.78577 & 22.52001 & 21.78577 & 29.440465 & 28.47646 & 29.44047 & 28.47646 & 29.79681 & 28.82179\end{array}$ $\begin{array}{lllllllllllllllllllll}22.698918 & 21.7151 & 22.69892 & 21.7151 & 23.12263 & 22.11948 & 24.34572 & 23.29012 & 23.44996 & 22.43433 & 23.44996 & 22.43433 & 30.647389 & 29.31808 & 30.64739 & 29.31808 & 31.02222 & 29.67638\end{array}$ $\begin{array}{lllllllllllllllllll}23.514171 & 22.4504 & 23.51417 & 22.4504 & 23.95957 & 22.8744 & 25.22488 & 24.08304 & 24.29318 & 23.1948 & 24.29318 & 23.1948 & 31.741778 & 30.30522 & 31.74178 & 30.30522 & 32.13359 & 30.67873\end{array}$ $\begin{array}{lllllllllllllllllllll}24.989148 & 23.9525 & 24.98095 & 23.9524 & 25.47422 & 24.41729 & 26.80715 & 25.70313 & 25.81773 & 24.74813 & 25.81773 & 24.74813 & 33.711677 & 32.32193 & 33.71168 & 32.32193 & 34.13417 & 32.72686\end{array}$ $\begin{array}{lllllllllllllllllll}16.933298 & 15.41349 & 16.9333 & 15.40568 & 17.21357 & 15.65054 & 18.13549 & 16.31639 & 17.4869 & 15.73865 & 17.4869 & 15.73865 & 22.899274 & 20.62676 & 22.89927 & 20.62676 & 23.15999 & 20.85511\end{array}$
 $\begin{array}{llllllllllllllllllllllll}16.726327 & 15.20806 & 16.72633 & 15.20806 & 17.00109 & 15.43899 & 17.91248 & 16.23822 & 17.27348 & 15.55433 & 17.27348 & 15.55433 & 22.620053 & 20.38474 & 22.62005 & 20.38474 & 22.87661 & 20.60961\end{array}$ $\begin{array}{llllllllllllllllllll}17.34328 & 15.90788 & 17.34328 & 15.90788 & 17.63645 & 16.13114 & 18.57889 & 16.68213 & 17.91051 & 16.08882 & 17.91051 & 16.08882 & 23.44943 & 21.08082 & 23.44943 & 21.08082 & 23.71948 & 21.31654\end{array}$ $\begin{array}{llllllllllllllllll}15.140059 & 14.02208 & 15.14006 & 13.97838 & 15.37123 & 14.18328 & 16.20094 & 14.95166 & 15.6321 & 14.43151 & 15.6321 & 14.43151 & 20.492415 & 18.92796 & 20.49242 & 18.92796 & 20.7154 & 19.12943\end{array}$ $\begin{array}{llllllllllllllllll}15.628553 & 14.58125 & 15.62855 & 14.58125 & 15.87508 & 14.80433 & 16.72937 & 15.60331 & 16.13763 & 14.49213 & 16.13763 & 14.49213 & 21.146646 & 19.00444 & 21.14665 & 19.00444 & 21.38087 & 19.20809\end{array}$ $\begin{array}{lllllllllllllllllll}16.736119 & 15.3655 & 16.73612 & 15.3655 & 17.01247 & 15.60314 & 17.92404 & 16.43487 & 17.28363 & 15.66155 & 17.28363 & 15.66155 & 22.632164 & 20.18 & 22.63216 & 19.9773 & 22.88952 & 20.26249\end{array}$ $\begin{array}{lllllllllllllllll}14.461419 & 13.77538 & 14.46142 & 13.77538 & 14.67451 & 13.97464 & 15.46905 & 14.73269 & 14.93016 & 14.22193 & 14.93016 & 14.22193 & 19.5815 & 18.54177 & 19.5815 & 18.41657 & 19.79042\end{array} 18.60993$ $\begin{array}{lllllllllllllllllllllllll}15.466559 & 14.33496 & 15.46656 & 14.33496 & 15.71015 & 14.55253 & 16.5555 & 15.33855 & 15.96991 & 14.7471 & 15.96991 & 14.7471 & 20.928221 & 19.15559 & 20.92822 & 19.15559 & 21.15982 & 19.36215\end{array}$ $\begin{array}{lllllllllllllllllllllll}14.339812 & 13.68158 & 14.33981 & 13.66888 & 14.55052 & 13.86666 & 15.33847 & 14.61877 & 14.80441 & 14.11166 & 14.80441 & 14.11166 & 19.417663 & 18.51121 & 19.41766 & 18.42511 & 19.62451 & 18.70687\end{array}$ $\begin{array}{lllllllllllllllllll}14.025294 & 13.16119 & 14.02529 & 13.16119 & 14.2253 & 13.31003 & 14.9978 & 14.02843 & 14.47932 & 13.5234 & 14.47932 & 13.5234 & 18.996718 & 17.74972 & 18.99672 & 17.74972 & 19.19584 & 17.93171\end{array}$ $\begin{array}{llllllllllllllllll}14.083759 & 13.20112 & 14.08376 & 13.20112 & 14.28666 & 13.38554 & 15.06176 & 14.11379 & 14.53969 & 13.62779 & 14.53969 & 13.62779 & 19.074365 & 17.77685 & 19.07437 & 17.75025 & 19.2754 & 17.93366\end{array}$ $\begin{array}{lllllllllllllllll}14.503956 & 13.75703 & 14.50396 & 13.75703 & 14.72037 & 13.95872 & 15.51648 & 14.7149 & 14.97424 & 14.12739 & 14.97424 & 14.12739 & 19.637075 & 18.53056 & 19.63708 & 18.53056 & 19.84804 \\ 18.937\end{array}$ $\begin{array}{llllllllllllllllll}14.015532 & 13.33844 & 14.01553 & 13.16571 & 14.21847 & 13.34833 & 14.98946 & 14.0739 & 14.46907 & 13.58825 & 14.46907 & 13.58825 & 18.981924 & 17.83147 & 18.98192 & 17.83147 & 19.18242 & 18.01718\end{array}$ $\begin{array}{llllllllllllllllll}13.774569 & 12.85586 & 13.77457 & 12.65972 & 13.9693 & 12.83109 & 14.72862 & 13.53079 & 14.22031 & 13.06757 & 14.22031 & 13.06757 & 18.658395 & 17.15683 & 18.6584 & 17.15683 & 18.85316 & 17.33167\end{array}$ $\begin{array}{lllllllllllllllll}13.687258 & 12.57889 & 13.68726 & 12.56483 & 13.87961 & 12.73417 & 14.63445 & 13.42887 & 14.13043 & 12.84752 & 14.13043 & 12.84752 & 18.540201 & 16.85468 & 18.5402 & 16.85468 & 18.73317\end{array} 17.02518$ $\begin{array}{llllllllllllllllllll}13.627998 & 12.4826 & 13.628 & 12.36247 & 13.81845 & 12.52663 & 14.57042 & 13.21078 & 14.06932 & 12.76028 & 14.06932 & 12.76028 & 18.460454 & 16.74975 & 18.46045 & 16.70585 & 18.65206 & 16.91875\end{array}$ $\begin{array}{llllllllllllllllllll}13.535542 & 12.41343 & 13.53554 & 12.35225 & 13.72394 & 12.51595 & 14.47102 & 13.19978 & 13.97379 & 12.7502 & 13.97379 & 12.7502 & 18.335922 & 16.63443 & 18.33592 & 16.51193 & 18.52597 & 16.80174\end{array}$ $\begin{array}{lllllllllllllllllll}13.413893 & 12.33992 & 13.41389 & 12.292 & 13.59994 & 12.45399 & 14.34044 & 13.1349 & 13.84776 & 12.68841 & 13.84776 & 12.68841 & 18.17237 & 16.56397 & 18.17237 & 16.50067 & 18.36022 & 16.66593\end{array}$ $\begin{array}{llllllllllllllllll}13.279263 & 12.23501 & 13.27926 & 12.23501 & 13.46266 & 12.39553 & 14.19581 & 13.07361 & 13.70834 & 12.6299 & 13.70834 & 12.6299 & 17.99143 & 16.53425 & 17.99143 & 16.32535 & 18.17688 & 16.66789\end{array}$ $\begin{array}{llllllllllllllllll}13.151991 & 12.04874 & 13.15199 & 12.04874 & 13.33246 & 12.20521 & 14.05901 & 12.87338 & 13.57702 & 12.43731 & 13.57702 & 12.43731 & 17.819649 & 16.30673 & 17.81965 & 16.20493 & 18.0028 & 16.46962\end{array}$ $\begin{array}{llllllllllllllllll}13.013139 & 11.89309 & 13.01314 & 11.89309 & 13.19046 & 12.04644 & 13.90967 & 12.7062 & 13.43351 & 12.27621 & 13.43351 & 12.27621 & 17.632559 & 16.07538 & 17.63256 & 16.06798 & 17.81319 & 16.23519\end{array}$ $\begin{array}{lllllllllllllllll}12.866514 & 11.81431 & 12.86651 & 11.81431 & 13.04061 & 11.96586 & 13.75199 & 12.62146 & 13.28178 & 12.19474 & 13.28178 & 12.19474 & 17.435519 & 16.01668 & 17.43552 & 16.01668 & 17.61332\end{array} 16.17573$ $\begin{array}{lllllllllllllllllll}12.737308 & 11.64685 & 12.73731 & 11.64685 & 12.90823 & 11.79433 & 13.61284 & 12.4411 & 13.14815 & 12.02139 & 13.14815 & 12.02139 & 17.261815 & 15.79189 & 17.26182 & 15.79189 & 17.43714 & 15.94769\end{array}$ $\begin{array}{lllllllllllllllllll}12.604128 & 11.51932 & 12.60413 & 11.51932 & 12.77184 & 11.6632 & 13.46944 & 12.30354 & 13.01036 & 11.88972 & 13.01036 & 11.88972 & 17.082878 & 15.62036 & 17.08288 & 15.62036 & 17.25561 & 15.77343\end{array}$ $\begin{array}{lllllllllllllllll}12.482781 & 11.45758 & 12.48278 & 11.45758 & 12.64729 & 11.59998 & 13.33866 & 12.23706 & 12.885 & 11.82589 & 12.885 & 11.82589 & 16.919635 & 15.53731 & 16.91964 & 15.53731 & 17.08989\end{array} 15.68912$ $\begin{array}{llllllllllllllllll}12.375666 & 11.38601 & 12.37567 & 11.38601 & 12.53696 & 11.52682 & 13.22303 & 12.16009 & 12.77456 & 11.75182 & 12.77456 & 11.75182 & 16.775257 & 15.44107 & 16.77526 & 15.44107 & 16.94318 & 15.59165\end{array}$ $\begin{array}{lllllllllllllllll}12.262104 & 11.31005 & 12.2621 & 11.31005 & 12.42022 & 11.44919 & 13.10053 & 12.07838 & 12.65734 & 11.67316 & 12.65734 & 11.67316 & 16.622455 & 15.33912 & 16.62246 & 15.33912 & 16.78796\end{array} 15.48817$ $\begin{array}{lllllllllllllllllll}12.140117 & 11.25156 & 12.14012 & 11.25156 & 12.29509 & 11.38894 & 12.96908 & 12.01524 & 12.53124 & 11.61288 & 12.53124 & 11.61288 & 16.458397 & 15.26025 & 16.4584 & 15.26025 & 16.62148 & 15.40806\end{array}$ $\begin{array}{lllllllllllllllll}12.009957 & 11.19588 & 12.00996 & 11.19588 & 12.16182 & 11.33144 & 12.82895 & 11.95507 & 12.39654 & 11.55561 & 12.39654 & 11.55561 & 16.283643 & 15.18508 & 16.28364 & 15.18508 & 16.44419\end{array} 15.33169$ $\begin{array}{lllllllllllllllll}11.896047 & 11.12914 & 11.89605 & 11.12914 & 12.04484 & 11.26284 & 12.70612 & 11.88309 & 12.27886 & 11.48671 & 12.27886 & 11.48671 & 16.130394 & 15.09519 & 16.13039 & 15.09519 & 16.28867\end{array} 15.23873$ $\begin{array}{llllllllllllllllll}11.796478 & 11.03628 & 11.79648 & 11.03628 & 11.94224 & 11.16769 & 12.59861 & 11.78308 & 12.1762 & 11.39064 & 12.1762 & 11.39064 & 15.996232 & 14.97039 & 15.99623 & 14.97039 & 16.15236 & 15.1138\end{array}$ $\begin{array}{llllllllllllllllll}13.895393 & 13.14377 & 13.89539 & 13.14377 & 14.09506 & 13.33008 & 14.85995 & 14.05412 & 14.34513 & 13.45922 & 14.34513 & 13.45922 & 18.819761 & 17.66379 & 18.81976 & 17.66379 & 19.01785 & 17.84746\end{array}$ $\begin{array}{llllllllllllllllll}13.766367 & 12.95219 & 13.76637 & 12.95219 & 13.96236 & 13.13328 & 14.72079 & 13.84767 & 14.21213 & 13.35382 & 14.21213 & 13.35382 & 18.645598 & 17.52526 & 18.6456 & 17.36266 & 18.8411 & 17.70697\end{array}$ $\begin{array}{llllllllllllllllll}13.716229 & 12.81901 & 13.71623 & 12.81901 & 13.91043 & 12.99692 & 14.66645 & 13.70418 & 14.16051 & 13.11361 & 14.16051 & 13.11361 & 18.578249 & 17.21443 & 18.57825 & 17.15813 & 18.7724 & 17.39148\end{array}$ $\begin{array}{llllllllllllllllllllll}13.62997 & 12.65984 & 13.62997 & 12.65984 & 13.82208 & 12.83324 & 14.57367 & 13.53248 & 14.07131 & 13.02852 & 14.07131 & 13.02852 & 18.462116 & 17.1026 & 18.46212 & 17.1026 & 18.65463 & 17.27786\end{array}$ $\begin{array}{llllllllllllllllll}13.525936 & 12.5936 & 13.52594 & 12.5936 & 13.7157 & 12.76471 & 14.46163 & 13.46085 & 13.96355 & 12.93255 & 13.96355 & 12.93255 & 18.322565 & 16.97686 & 18.32257 & 16.97686 & 18.51301 & 17.15004\end{array}$ $\begin{array}{llllllllllllllllll}13.388737 & 12.38375 & 13.38874 & 12.38375 & 13.57582 & 12.54889 & 14.31429 & 13.2344 & 13.82132 & 12.74994 & 13.82132 & 12.74994 & 18.138342 & 16.73882 & 18.13834 & 16.73882 & 18.3265 & 16.90819\end{array}$ $\begin{array}{llllllllllllllllll}13.273744 & 12.23285 & 13.27374 & 12.23285 & 13.45792 & 12.39458 & 14.1905 & 13.07213 & 13.70275 & 12.62762 & 13.70275 & 12.62762 & 17.983183 & 16.57929 & 17.98318 & 16.46919 & 18.16906 & 16.63476\end{array}$ $\begin{array}{lllllllllllllllllllllllll}13.125687 & 12.04653 & 13.12569 & 12.04653 & 13.30661 & 12.20447 & 14.03144 & 12.87197 & 13.54977 & 12.43479 & 13.54977 & 12.43479 & 17.783613 & 16.3286 & 17.78361 & 16.276 & 17.9668 & 16.43909\end{array}$ $\begin{array}{llllllllllllllllllll}12.975407 & 11.95633 & 12.97541 & 11.95633 & 13.15302 & 12.11232 & 13.86983 & 12.77501 & 13.39432 & 12.34147 & 13.39432 & 12.34147 & 17.581496 & 16.20729 & 17.5815 & 16.08529 & 17.76188 & 16.35927\end{array}$ $\begin{array}{lllllllllllllllll}12.840928 & 11.81128 & 12.84093 & 11.81128 & 13.01531 & 11.96366 & 13.725 & 12.61875 & 13.25516 & 12.1914 & 13.25516 & 12.1914 & 17.400863 & 16.01249 & 17.40086 & 16.01249 & 17.57863 \\ 16.16 .17187\end{array}$ $\begin{array}{lllllllllllllllllll}12.708764 & 11.70951 & 12.70876 & 11.70951 & 12.8799 & 11.85918 & 13.58267 & 12.50904 & 13.11848 & 12.08624 & 13.11848 & 12.08624 & 17.223226 & 15.87558 & 17.22323 & 15.87558 & 17.39843 & 16.03296\end{array}$ $\begin{array}{lllllllllllllllll}12.582355 & 11.54788 & 12.58236 & 11.54788 & 12.75023 & 11.69333 & 13.44647 & 12.33482 & 12.98782 & 11.91912 & 12.98782 & 11.91912 & 17.053265 & 15.65854 & 17.05327 & 15.65854 & 17.22587 \\ 1.25 .81249\end{array}$ $\begin{array}{lllllllllllllllll}12.468689 & 11.39386 & 12.46869 & 11.39386 & 12.63329 & 11.53544 & 13.32382 & 12.16889 & 12.87055 & 11.75975 & 12.87055 & 11.75975 & 16.90013 & 15.45161 & 16.90013 & 15.45161 & 17.07034\end{array} 15.60257$ $\begin{array}{lllllllllllllllll}12.355377 & 11.23629 & 12.35538 & 11.23629 & 12.51675 & 11.37401 & 13.20158 & 11.99916 & 12.75364 & 11.59668 & 12.75364 & 11.59668 & 16.74749 & 15.24011 & 16.74749 & 15.24011 & 16.91543 \\ 15.38792\end{array}$ $\begin{array}{llllllllllllllllll}12.233953 & 11.09479 & 12.23395 & 11.09479 & 12.39213 & 11.22879 & 13.0707 & 11.84663 & 12.62818 & 11.45038 & 12.62818 & 11.45038 & 16.584205 & 15.04997 & 16.58421 & 15.04997 & 16.74955 & 15.19495\end{array}$ $\begin{array}{lllllllllllllllllllll}12.104331 & 11.01862 & 12.10433 & 11.01862 & 12.25934 & 11.15017 & 12.93111 & 11.7643 & 12.49409 & 11.37192 & 12.49409 & 11.37192 & 16.410085 & 14.94728 & 16.41009 & 14.94728 & 16.57294 & 15.09048\end{array}$ $\begin{array}{lllllllllllllllll}11.976255 & 10.95938 & 11.97626 & 10.95938 & 12.12812 & 11.08921 & 12.79317 & 11.7004 & 12.36157 & 11.31085 & 12.36157 & 11.31085 & 16.237986 & 14.86745 & 16.23799 & 14.86745 & 16.39835 \\ 1.3 .00938\end{array}$ $\begin{array}{lllllllllllllllll}11.877124 & 10.88642 & 11.87712 & 10.88642 & 12.02588 & 11.01448 & 12.68607 & 11.62183 & 12.25938 & 11.23539 & 12.25938 & 11.23539 & 16.104501 & 14.76938 & 16.1045 & 14.76938 & 16.26253 \\ 1.4 .90992\end{array}$ $\begin{array}{llllllllllllllllllll}14.680251 & 13.80038 & 14.68025 & 13.80038 & 14.90308 & 14.005 & 15.70772 & 14.7629 & 15.15664 & 14.24793 & 15.15664 & 14.24793 & 19.872619 & 18.44438 & 19.87262 & 18.44438 & 20.08801 & 18.72273\end{array}$ $\begin{array}{llllllllllllllllll}14.381949 & 13.55839 & 14.38195 & 13.55839 & 14.59609 & 13.7571 & 15.3857 & 14.50222 & 14.8334 & 13.9974 & 14.8334 & 13.9974 & 19.452393 & 18.29505 & 19.45239 & 18.29505 & 19.661 & 18.4892\end{array}$ $\begin{array}{llllllllllllllllll}14.164004 & 13.32621 & 14.164 & 13.32388 & 14.37216 & 13.51632 & 15.15063 & 14.24939 & 14.59325 & 13.75509 & 14.59325 & 13.75509 & 19.139563 & 18.01551 & 19.13956 & 18.01551 & 19.34328 & 18.2355\end{array}$ $\begin{array}{lllllllllllllllllllll}13.959204 & 13.18059 & 13.9592 & 13.18059 & 14.16106 & 13.35893 & 14.92931 & 14.08391 & 14.38575 & 13.59603 & 14.38575 & 13.59603 & 18.870095 & 17.72025 & 18.8701 & 17.72025 & 19.0694 & 18.02678\end{array}$ $\begin{array}{lllllllllllllllllllll}13.720341 & 12.9997 & 13.72034 & 12.9997 & 13.91629 & 13.18366 & 14.67204 & 13.90004 & 14.14322 & 13.41988 & 14.14322 & 13.41988 & 18.554943 & 17.5684 & 18.55494 & 17.3236 & 18.74953 & 17.79341\end{array}$ $\begin{array}{llllllllllllllllll}13.491362 & 12.82114 & 13.49136 & 12.82114 & 13.68131 & 12.99956 & 14.42507 & 13.70702 & 13.91001 & 13.23552 & 13.91001 & 13.23552 & 18.252662 & 17.36966 & 18.25266 & 17.28626 & 18.44261 & 17.54945\end{array}$ $\begin{array}{llllllllllllllllll}13.346451 & 12.7325 & 13.34645 & 12.7325 & 13.53304 & 12.90792 & 14.26909 & 13.61112 & 13.77752 & 13.14424 & 13.77752 & 13.14424 & 18.081349 & 17.2502 & 18.08135 & 17.1403 & 18.26893 & 17.42789\end{array}$ $\begin{array}{lllllllllllllllllll}13.239626 & 12.55327 & 13.23963 & 12.55327 & 13.4236 & 12.72424 & 14.15409 & 13.41812 & 13.6672 & 12.95899 & 13.6672 & 12.95899 & 17.937524 & 17.00911 & 17.93752 & 16.90421 & 18.12293 & 17.18333\end{array}$ $\begin{array}{llllllllllllllllll}13.103121 & 12.29712 & 13.10312 & 12.29712 & 13.28408 & 12.46234 & 14.00739 & 13.14257 & 13.52623 & 12.6939 & 13.52623 & 12.6939 & 17.75336 & 16.66483 & 17.75336 & 16.66483 & 17.93639 & 16.83427\end{array}$ $\begin{array}{llllllllllllllllll}12.958792 & 12.09576 & 12.95879 & 12.09576 & 13.13656 & 12.25601 & 13.85223 & 12.9257 & 13.37696 & 12.48559 & 13.37696 & 12.48559 & 17.559162 & 16.39441 & 17.55916 & 16.39441 & 17.73943 & 16.55976\end{array}$ $\begin{array}{llllllllllllllllll}12.827258 & 11.94171 & 12.82726 & 11.94171 & 13.00199 & 12.09807 & 13.71068 & 12.75971 & 13.2408 & 12.3262 & 13.2408 & 12.3262 & 17.382517 & 16.18744 & 17.38252 & 16.18744 & 17.56034 & 16.34981\end{array}$ $\begin{array}{llllllllllllllllll}12.703511 & 11.81689 & 12.70351 & 11.80016 & 12.87514 & 11.95299 & 13.57738 & 12.60723 & 13.11286 & 12.17976 & 13.11286 & 12.17976 & 17.216149 & 15.99738 & 17.21615 & 15.99738 & 17.39152 & 16.15685\end{array}$ $\begin{array}{llllllllllllllllll}12.578969 & 11.66079 & 12.57897 & 11.66079 & 12.74748 & 11.80991 & 13.44324 & 12.45696 & 12.9841 & 12.03571 & 12.9841 & 12.03571 & 17.048651 & 15.81009 & 17.04865 & 15.81009 & 17.22158 & 15.96666\end{array}$ $\begin{array}{lllllllllllllllllll}12.465291 & 11.52196 & 12.46529 & 11.52196 & 12.63065 & 11.66755 & 13.32064 & 12.30739 & 12.86675 & 11.89212 & 12.86675 & 11.89212 & 16.895697 & 15.62358 & 16.8957 & 15.62358 & 17.06621 & 15.77738\end{array}$ $\begin{array}{llllllllllllllllll}12.381063 & 11.39402 & 12.38106 & 11.39402 & 12.54358 & 11.53616 & 13.2295 & 12.16939 & 12.77994 & 11.75979 & 12.77994 & 11.75979 & 16.782268 & 15.45183 & 16.78227 & 15.45183 & 16.95081 & 15.60297\end{array}$ $\begin{array}{lllllllllllllllllll}12.241707 & 11.32553 & 12.24171 & 11.32553 & 12.40079 & 11.46633 & 13.07949 & 12.09586 & 12.63602 & 11.68893 & 12.63602 & 11.68893 & 16.59452 & 15.35951 & 16.59452 & 15.35951 & 16.76043 & 15.50954\end{array}$ $\begin{array}{llllllllllllllllll}12.118895 & 11.23678 & 12.1189 & 11.23678 & 12.27489 & 11.3749 & 12.94719 & 12.00775 & 12.50901 & 11.59741 & 12.50901 & 11.59741 & 16.429569 & 15.24003 & 16.42957 & 15.24003 & 16.59301 & 15.38808\end{array}$ $\begin{array}{lllllllllllllllll}11.987132 & 11.10024 & 11.98713 & 11.10024 & 12.14005 & 11.23448 & 12.80534 & 11.86155 & 12.37257 & 11.45638 & 12.37257 & 11.45638 & 16.252663 & 15.05644 & 16.25266 & 15.05644 & 16.41353 \\ 15.20156\end{array}$ $\begin{array}{lllllllllllllllllllll}11.897103 & 10.97463 & 11.8971 & 10.96548 & 12.04714 & 11.09607 & 12.70804 & 11.71721 & 12.27979 & 11.31708 & 12.27979 & 11.31708 & 16.131432 & 14.87539 & 16.13143 & 14.87539 & 16.29025 & 15.01773\end{array}$ $\begin{array}{llllllllllllllllll}11.89263 & 10.97463 & 1.8971 & 10.96548 & 12.04714 & 11.09607 & 12.70804 & 11.71721 & 12.27979 & 11.31708 & 12.27979 & 1.31708 & 16.131432 & 14.87539 & 16.13143 & 14.87539 & 16.29025 & 15.01773 \\ 11.622698 & 10.78673 & 11.6227 & 10.78673 & 11.76322 & 10.91183 & 12.41088 & 11.51412 & 11.99672 & 11.13225 & 11.99672 & 11.13225 & 15.762808 & 14.63577 & 15.76281 & 14.63577 & 15.91496 & 14.77411\end{array}$ $\begin{array}{lllllllllllllllllllll}11.507863 & 10.70404 & 11.50786 & 10.70404 & 11.6455 & 10.8271 & 12.28717 & 11.42507 & 11.87796 & 11.04674 & 11.87796 & 11.04674 & 15.608424 & 14.5246 & 15.60842 & 14.5246 & 15.75842 & 14.66131\end{array}$ $\begin{array}{llllllllllllllllll}11.711363 & 10.8544 & 11.71136 & 10.8544 & 11.85542 & 10.98236 & 12.50723 & 11.58772 & 12.08827 & 11.20199 & 12.08827 & 11.20199 & 15.881472 & 14.72648 & 15.88147 & 14.72648 & 16.03605 & 14.86668\end{array}$ $\begin{array}{lllllllllllllllllll}11.384737 & 10.58937 & 11.38474 & 10.58937 & 11.51953 & 10.71039 & 12.15464 & 11.30197 & 11.75046 & 10.92767 & 11.75046 & 10.92767 & 15.443181 & 14.371 & 15.44318 & 14.371 & 15.5908 & 14.50575\end{array}$ $\begin{array}{lllllllllllllllll}11.558229 & 10.76841 & 11.55823 & 10.76841 & 11.69806 & 10.89411 & 12.342 & 11.49503 & 11.9299 & 11.11308 & 11.9299 & 11.11308 & 15.6758 & 14.61094 & 15.6758 & 14.61094 & 15.82715\end{array} 14.74939$ $\begin{array}{llllllllllllllllll}11.699659 & 10.83825 & 11.69966 & 10.66792 & 11.84355 & 10.7912 & 12.49469 & 11.57558 & 12.07611 & 11.00896 & 12.07611 & 11.00896 & 15.865771 & 14.47627 & 15.86577 & 14.47627 & 16.02021 & 14.61271\end{array}$ $\begin{array}{llllllllllllllllll}11.401733 & 10.76861 & 11.40173 & 10.69336 & 11.53509 & 10.81492 & 12.17178 & 11.41279 & 11.76831 & 11.0359 & 11.76831 & 11.0359 & 15.466603 & 14.51061 & 15.4666 & 14.51061 & 15.61366 & 14.62262\end{array}$ $\begin{array}{llllllllllllllllll}11.458763 & 10.85918 & 11.45876 & 10.85918 & 11.59354 & 10.98437 & 12.23317 & 11.59118 & 11.82716 & 11.20778 & 11.82716 & 11.20778 & 15.54351 & 14.73297 & 15.54351 & 14.73297 & 15.69167 & 14.85137\end{array}$ $\begin{array}{llllllllllllllllllll}11.201037 & 10.85271 & 11.20104 & 10.85271 & 11.32833 & 10.97804 & 11.9549 & 11.58436 & 11.56081 & 11.20093 & 11.56081 & 11.20093 & 15.197409 & 14.72437 & 15.19741 & 14.72437 & 15.33994 & 14.8634\end{array}$ $\begin{array}{llllllllllllllllll}11.254279 & 10.62804 & 11.25428 & 10.62804 & 11.38398 & 10.74824 & 12.01296 & 11.3426 & 11.61579 & 10.93845 & 11.61579 & 10.93845 & 15.268456 & 14.38414 & 15.26846 & 14.38414 & 15.41264 & 14.51828\end{array}$ $\begin{array}{lllllllllllllllllll}11.252886 & 10.99471 & 11.25289 & 10.99471 & 11.38132 & 11.12301 & 12.01063 & 11.73705 & 11.61436 & 11.34815 & 11.61436 & 11.34815 & 15.267362 & 14.91482 & 15.26736 & 14.91482 & 15.41087 & 15.05645\end{array}$

| Reduction to Peak Concentration due to Inclusion of T3 OGVs (ppm): | 0.0004 | 0.0003 | 0.0003 | 0.0003 | 0.0010 | 0.0010 | 0.0003 | 0.0003 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0014 | 0.0013 | 0.0014 | 0.0013 | 0.0040 | 0.0038 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction Due to Inclusion of Tier 3 OGV | 15.74\% | 15.74\% | 15.74\% | 15.74\% | 17.02\% | 17.02\% | 16.12\% | 16.12\% | 11.96\% | 11.96\% | 11.96\% | 11.96\% | 52.47\% | 52.47\% | 52.47\% | 52.47\% | 48.91\% | 48.91\% |
|  | 389450_3 | 389450_3 | 389450_3 | 389950 3350 | 382683.8 734051.76 | 382683.8 _3 73405176 | 389500_3 | 389500_37 | 382683.8_3 734051.76 | 382683.8_3 | 382683.8_3 ${ }^{\text {3 }}$ | 382683.8_3 | 389450_3 |  | 389450 | 389200_37 | 382683.8 734051.76 | 7382683.8_3 |

 2026_ALT1_C 2026_ALT1_ 2026_NP_C 2026_NP_N 2026_ALT3_ 2026_ALT3_ 2026_ALT4_ 2026_ALT4_ 2026_ALT5_ 2026_ALT5_ 2026_PP_CA 2026_PP_N 2033_ALT1_C 2033_ALT1_ 2033_NP_C 2033_NP_N 2033_ALT3_ 2033_ALT3_ Y Source Scaling Factor A $\begin{array}{ll}\mathrm{3} & \\ 383816.1 & 373545969.86 \% \\ 383850.5 & 3735504\end{array}$ $383850.5 \quad 373550467.87 \%$ $383864.2 \quad 373555568.45 \%$ $383857.3 \quad 373561168.50 \%$ $383773.5 \quad 373542268.08 \%$ $383673 \quad 373545162.71 \%$ $383642.4 \quad 373541763.61 \%$ $383611.7 \quad 373538467.33 \%$ $\begin{array}{ll}383611.7 & 373538467.33 \% \\ 383581.1 & 373535067.12 \%\end{array}$ $\begin{array}{ll}383581.1 & 373535067.12 \% \\ 383550.4 & 373531766.41 \%\end{array}$ $383709.9 \quad 373541768.89 \%$ $383679.2 \quad 373538369.10 \%$ $383648.6 \quad 373535068.51 \%$ $383617.9 \quad 3735316$ 68.07\% $383587.2 \quad 373528367.74 \%$ $383746.7 \quad 373538370.66 \%$ $383716.1 \quad 373534972.23 \%$ $383685.4 \quad 373531672.88 \%$ $383654.7 \quad 373528373.13 \%$ $383624.1 \quad 373524973.33 \%$ $383491.1 \quad 373528465.21 \%$ $383446.4 \quad 373526264.48 \%$ $383401.7 \quad 373524064.41 \%$ $383357.1 \quad 373521763.47 \%$ $383312.4 \quad 373519562.83 \%$ $383267.7 \quad 373517362.07 \%$ $383223.1 \quad 373515161.57 \%$ $383178.4 \quad 373512957.14 \%$ $383133.7 \quad 373510752.31 \%$ $383089.1373508552 .36 \%$ $383044.4 \quad 373506349.55 \%$ $383513.3 \quad 3735239$ 67.91\% $383468.6 \quad 3735217$ 67.61\% $383423.9 \quad 3735195$ 67.14\% $383379.3 \quad 373517366.81 \%$ $383334.6 \quad 373515066.30 \%$ $383289.9 \quad 373512867.27 \%$ $383245.2 \quad 3735106$ 64.33\% $383200.6 \quad 373508457.35 \%$ $383155.9 \quad 373506253.09 \%$ $383111.2 \quad 373504054.32 \%$ $383066.6 \quad 373501848.63 \%$ $383580.1 \quad 373521671.44 \%$ $383535.4 \quad 373519470.56 \%$ $383490.8 \quad 3735172$ 69.50\% $383446.1373515068 .13 \%$ $383401.4 \quad 373512867.69 \%$ $383356.8 \quad 3735106$ 66.74\% $383312.1373508465 .76 \%$ $383267.4 \quad 373506163.00 \%$ $383222.8 \quad 373503960.17 \%$ $383178.1 \quad 373501754.56 \%$ $383133.4 \quad 373499556.58 \%$ $383088.8 \quad 373497348.59 \%$ $383116.6 \quad 373489853.69 \%$ $383135.3 \quad 373485754.81 \%$ $383154 \quad 373481655.20 \%$ $383172.7 \quad 373477456.02 \%$ $383191.4 \quad 373473358.01 \%$ $383162.2373491964 .60 \%$ 383180.93734878 67.56\% $383199.6 \quad 3734836$ 68.95\% $383218.3 \quad 373479569.31 \%$ $383237373475369.24 \%$ $383207.8 \quad 373494065.55 \%$ $383226.5 \quad 3734898$ 69.87\% $383245.2 \quad 373485769.59 \%$ $383263.9 \quad 3734815$ 67.82\% $383282.6 \quad 373477466.53 \%$ $383171.7 \quad 3734669$ 62.05\% $383219.4373465468 .43 \%$ $383164.4 \quad 373460671.54 \%$ $383245.2 \quad 373461170.96 \%$ $383286.9 \quad 373470373.15 \%$ $383190.2 \quad 373456467.44 \%$ $383069.6 \quad 373466767.58 \%$ $383045.9 \quad 3734708$ 64.35\% 383057.13734619 67.96\% $383002.7 \quad 3734683$ 64.65\% $383013.9373459365 .90 \%$ $383113.7 \quad 373455267.84 \%$ 382959.53734657 62.77\% $382935.8 \quad 373469863.69 \%$ $383126.3 \quad 3734636$ 69.55\% $382881.5 \quad 373468965.55 \%$ $382864.9 \quad 373464164.88 \%$ $382929.6373461964 .29 \%$
$\begin{array}{llllllllllllllllllllll}11.132521 & 10.82405 & 11.13252 & 10.82405 & 11.25734 & 10.9206 & 11.88061 & 11.55306 & 11.49008 & 11.13396 & 11.49008 & 11.13396 & 15 & 105573 & 14.63698 & 15.10557 & 14.63698 & 15.24641 & 14.77433\end{array}$ $\begin{array}{lllllllllllllllllllll}11.132521 & 10.82405 & 11.13252 & 10.82405 & 11.25754 & 10.9206 & 11.88061 & 11.55306 & 11.49008 & 11.13396 & 11.49008 & 11.13396 & 15.105573 & 14.63698 & 15.10557 & 14.63698 & 15.24641 & 14.77433 \\ 11.09728 & 10.78366 & 11.09188 & 10.78016 & 11.15558 & 10.87143 & 11.77338 & 11.50636 & 11.38657 & 11.09298 & 11.38657 & 11.09298 & 14.971366 & 14.58447 & 14.97137 & 14.58447 & 15.1105 & 14.72152\end{array}$ $\begin{array}{lllllllllllllllll}11.060551 & 10.65682 & 11.06055 & 10.60786 & 11.18517 & 10.72815 & 11.80406 & 11.32116 & 11.41527 & 10.91712 & 11.41527 & 10.91712 & 15.00866 & 14.35707 & 15.00866 & 14.35707 & 15.14878 \\ 1.44 .49104\end{array}$ $\begin{array}{llllllllllllllllll}11.191791 & 10.56808 & 11.19179 & 10.52152 & 11.32075 & 10.64017 & 11.94611 & 11.22844 & 11.55091 & 10.85759 & 11.55091 & 10.85759 & 15.18454 & 14.28003 & 15.18454 & 14.28003 & 15.32781 & 14.41312\end{array}$ $\begin{array}{llllllllllllllllll}11.263319 & 10.84794 & 11.26332 & 10.84694 & 11.39123 & 10.93855 & 12.0214 & 11.57749 & 11.62538 & 11.16248 & 11.62538 & 11.16248 & 15.2814 & 14.67429 & 15.2814 & 14.67429 & 15.4247 & 14.81205\end{array}$ $\begin{array}{llllllllllllllllllll}11.468713 & 11.12297 & 11.46871 & 11.12297 & 11.60377 & 11.25451 & 12.24378 & 11.87523 & 11.83704 & 11.48081 & 11.83704 & 11.48081 & 15.557751 & 15.08711 & 15.55775 & 15.08711 & 15.70605 & 15.2163\end{array}$ $\begin{array}{llllllllllllllllllll}11.48236 & 11.19333 & 11.48236 & 11.19333 & 11.6176 & 11.32661 & 12.25832 & 11.95099 & 11.85104 & 11.55352 & 11.85104 & 11.55352 & 15.576433 & 15.1817 & 15.57643 & 15.1817 & 15.72487 & 15.31567\end{array}$ $\begin{array}{lllllllllllllllllllll}11.506187 & 11.17343 & 11.50619 & 11.17343 & 11.64147 & 11.30622 & 12.28366 & 11.92951 & 11.8758 & 11.53276 & 11.8758 & 11.53276 & 15.608613 & 15.15542 & 15.60861 & 15.15542 & 15.75723 & 15.29452\end{array}$ $\begin{array}{llllllllllllllllllll}11.506187 & 11.17343 & 11.50619 & 11.17343 & 11.64147 & 11.30622 & 12.28366 & 11.92951 & 11.8758 & 11.53276 & 11.8758 & 11.53276 & 15.608613 & 15.15542 & 15.60861 & 15.15542 & 15.75723 & 15.29452 \\ 11.611333 & 11.1466 & 11.61133 & 11.1466 & 11.74903 & 11.27873 & 12.39679 & 11.90054 & 11.98459 & 11.50479 & 11.98459 & 11.50479 & 15.749876 & 15.11982 & 15.74988 & 15.11982 & 15.90051 & 15.26143\end{array}$ $\begin{array}{llllllllllllllllllll}11.611333 & 11.1466 & 11.61133 & 11.1466 & 11.74903 & 11.27873 & 12.39679 & 11.90054 & 11.98459 & 11.50479 & 11.98459 & 11.50479 & 15.749876 & 15.11982 & 15.74988 & 15.11982 & 15.90051 & 15.26143 \\ 11.700224 & 11.13622 & 11.70022 & 11.13622 & 11.84005 & 11.26761 & 12.49246 & 11.88906 & 12.07646 & 11.49414 & 12.07646 & 11.49414 & 15.869562 & 15.10603 & 15.86956 & 15.10603 & 16.02184 & 15.25005\end{array}$ $\begin{array}{llllllllllllllllll}11.700224 & 11.13622 & 11.70022 & 11.13622 & 11.84005 & 11.26761 & 12.49246 & 11.88906 & 12.07646 & 11.49414 & 12.07646 & 11.49414 & 15.869562 & 15.10603 & 15.86956 & 15.10603 & 16.02184 & 15.25005 \\ 11.331197 & 10.98141 & 11.3312 & 10.98141 & 11.46154 & 11.10865 & 12.09489 & 11.72228 & 11.69518 & 11.33454 & 11.69518 & 11.33454 & 15.373054 & 14.89709 & 15.37305 & 14.89709 & 15.51807 & 15.03812\end{array}$ $\begin{array}{lllllllllllllllll}11.420252 & 10.98945 & 11.42025 & 10.98945 & 11.55309 & 11.1166 & 12.19091 & 11.73074 & 11.78702 & 11.34285 & 11.78702 & 11.34285 & 15.493104 & 14.90806 & 15.4931 & 14.90806 & 15.63992\end{array} 15.0491$ $\begin{array}{lllllllllllllllll}11.513095 & 11.00941 & 11.5131 & 10.98814 & 11.64808 & 11.11513 & 12.29081 & 11.72921 & 11.88305 & 11.3414 & 11.88305 & 11.3414 & 15.617898 & 14.90659 & 15.6179 & 14.90659 & 15.76651\end{array} 15.04753$ $\begin{array}{llllllllllllllllll}11.600604 & 11.00417 & 11.6006 & 10.99756 & 11.73735 & 11.12489 & 12.38484 & 11.74649 & 11.97369 & 11.35095 & 11.97369 & 11.35095 & 15.735546 & 14.91963 & 15.73555 & 14.91963 & 15.88562 & 15.06076\end{array}$ $\begin{array}{llllllllllllllllll}11.668794 & 11.00453 & 11.66879 & 10.99789 & 11.80692 & 11.12499 & 12.45807 & 11.74571 & 12.04422 & 11.35108 & 12.04422 & 11.35108 & 15.827256 & 14.92064 & 15.82726 & 14.92064 & 15.97864 & 15.06162\end{array}$ $\begin{array}{lllllllllllllllll}11.354893 & 10.86159 & 11.35489 & 10.86159 & 11.48494 & 10.98058 & 12.11992 & 11.59281 & 11.72005 & 11.17874 & 11.72005 & 11.17874 & 15.404665 & 14.69488 & 15.40467 & 14.69488 & 15.54974 \\ 14.8326\end{array}$ $\begin{array}{llllllllllllllllllllll}11.422514 & 10.88685 & 11.42251 & 10.88685 & 11.55433 & 11.00805 & 12.19277 & 11.61977 & 11.78981 & 11.21003 & 11.78981 & 11.21003 & 15.495831 & 14.73543 & 15.49583 & 14.73543 & 15.64227 & 14.87358\end{array}$ $\begin{array}{llllllllllllllllllll}11.471115 & 10.92072 & 11.47112 & 10.92072 & 11.60439 & 11.02387 & 12.24519 & 11.6561 & 11.83979 & 11.20774 & 11.83979 & 11.20774 & 15.561581 & 14.73269 & 15.56158 & 14.73269 & 15.70912 & 14.87065\end{array}$ $\begin{array}{lllllllllllllllll}11.531626 & 10.94033 & 11.53163 & 10.94033 & 11.66599 & 11.05292 & 12.31012 & 11.67711 & 11.90245 & 11.24262 & 11.90245 & 11.24262 & 15.642981 & 14.77849 & 15.64298 & 14.77849 & 15.79147 \\ 14.91706\end{array}$ $\begin{array}{lllllllllllllllll}11.592489 & 10.93671 & 11.59249 & 10.93671 & 11.72761 & 11.06119 & 12.37519 & 11.6729 & 11.96548 & 11.27995 & 11.96548 & 11.27995 & 15.725085 & 14.82835 & 15.72509 & 14.82835 & 15.87444 \\ 14.96748\end{array}$ $\begin{array}{llllllllllllllllll}11.798031 & 11.20671 & 11.79803 & 11.20671 & 11.9409 & 11.3375 & 12.5981 & 11.9647 & 12.17716 & 11.56481 & 12.17716 & 11.56481 & 16.001565 & 15.20132 & 16.00157 & 15.19811 & 16.15609 & 15.34249\end{array}$ $\begin{array}{llllllllllllllllll}11.879724 & 11.27211 & 11.87972 & 11.27211 & 12.02467 & 11.40573 & 12.68607 & 12.03493 & 12.26152 & 11.63289 & 12.26152 & 11.63289 & 16.111619 & 15.28944 & 16.11162 & 15.28944 & 16.26775 & 15.43328\end{array}$ $\begin{array}{llllllllllllllllll}11.97471 & 11.32654 & 11.97471 & 11.32654 & 12.12151 & 11.46173 & 12.78806 & 12.09334 & 12.35982 & 11.68993 & 12.35982 & 11.68993 & 16.239461 & 15.36303 & 16.23946 & 15.36303 & 16.39723 & 15.50853\end{array}$ $\begin{array}{lllllllllllllllllllll}12.055753 & 11.39479 & 12.05575 & 11.39479 & 12.20409 & 11.52062 & 12.875 & 12.15527 & 12.44353 & 11.75018 & 12.44353 & 11.75018 & 16.348811 & 15.44165 & 16.34881 & 15.44165 & 16.50792 & 15.58356\end{array}$ $\begin{array}{llllllllllllllllllll}12.135689 & 11.55717 & 12.13569 & 11.55717 & 12.28503 & 11.69405 & 12.96042 & 12.33804 & 12.52619 & 11.92628 & 12.52619 & 11.92628 & 16.45697 & 15.67116 & 16.45697 & 15.67116 & 16.6171 & 15.80987\end{array}$ $\begin{array}{llllllllllllllllll}12.206747 & 11.76771 & 12.20675 & 11.76771 & 12.35714 & 11.89955 & 13.03639 & 12.5544 & 12.59944 & 12.13497 & 12.59944 & 12.13497 & 16.553372 & 15.94277 & 16.55337 & 15.94277 & 16.71456 & 16.07897\end{array}$ $\begin{array}{llllllllllllllllll}12.442341 & 11.96553 & 12.44234 & 11.9414 & 12.59795 & 12.08844 & 13.28966 & 12.75312 & 12.84291 & 12.32609 & 12.84291 & 12.32609 & 16.870841 & 16.19254 & 16.87084 & 16.19254 & 17.03627 & 16.32841\end{array}$ $\begin{array}{llllllllllllllllll}12.695371 & 12.11609 & 12.69537 & 12.11111 & 12.85572 & 12.26165 & 13.56121 & 12.93533 & 13.10378 & 12.50071 & 13.10378 & 12.50071 & 17.211357 & 16.42169 & 17.21136 & 16.42169 & 17.37965 & 16.55943\end{array}$ $\begin{array}{lllllllllllllllllll}12.902066 & 12.2176 & 12.90207 & 12.2176 & 13.06494 & 12.37081 & 13.78304 & 13.04991 & 13.3164 & 12.59772 & 13.3164 & 12.59772 & 17.489975 & 16.56613 & 17.48998 & 16.55442 & 17.66009 & 16.70951\end{array}$ $\begin{array}{llllllllllllllllll}13.021427 & 12.31454 & 13.02143 & 12.31454 & 13.18619 & 12.45872 & 13.91144 & 13.15431 & 13.43922 & 12.69816 & 13.43922 & 12.69816 & 17.651005 & 16.67945 & 17.65101 & 16.67945 & 17.82276 & 16.83885\end{array}$ $\begin{array}{lllllllllllllllllllll}13.073943 & 12.44482 & 13.07394 & 12.44482 & 13.24094 & 12.54241 & 13.96839 & 13.28218 & 13.49326 & 12.78355 & 13.49326 & 12.78355 & 17.718348 & 16.78878 & 17.71835 & 16.85288 & 17.89536 & 16.95529\end{array}$ $\begin{array}{lllllllllllllllllllll}11.788327 & 11.11505 & 11.78833 & 11.11505 & 11.92953 & 11.24447 & 12.58675 & 11.86525 & 12.16739 & 11.47214 & 12.16739 & 11.47214 & 15.98884 & 15.07869 & 15.98884 & 15.07869 & 16.14251 & 15.2217\end{array}$ $\begin{array}{lllllllllllllllll}11.857205 & 11.2127 & 11.85721 & 11.2127 & 12.00009 & 11.34391 & 12.66084 & 11.97001 & 12.23837 & 11.57318 & 12.23837 & 11.57318 & 16.081918 & 15.21023 & 16.08192 & 15.21023 & 16.23692\end{array} 15.35486$ $\begin{array}{llllllllllllllllll}11.943519 & 11.37367 & 11.94352 & 11.37367 & 12.08781 & 11.50828 & 12.75334 & 12.14298 & 12.32774 & 11.73961 & 12.32774 & 11.73961 & 16.198257 & 15.42706 & 16.19826 & 15.42706 & 16.35452 & 15.57453\end{array}$ $\begin{array}{lllllllllllllllll}12.008844 & 11.49095 & 12.00884 & 11.49095 & 12.15414 & 11.62814 & 12.82324 & 12.26895 & 12.39517 & 11.86051 & 12.39517 & 11.86051 & 16.286651 & 15.58571 & 16.28665 & 15.58571 & 16.44395 \\ 15.73523\end{array}$ $\begin{array}{lllllllllllllllll}12.12727 & 11.60152 & 12.12727 & 11.60152 & 12.27478 & 11.74025 & 12.9503 & 12.38724 & 12.51764 & 11.96922 & 12.51764 & 11.96922 & 16.446275 & 15.72753 & 16.44628 & 15.72753 & 16.60555 \\ 15.8786\end{array}$ $\begin{array}{lllllllllllllllll}12.230966 & 11.7505 & 12.23097 & 11.7505 & 12.38039 & 11.87687 & 13.06147 & 12.5311 & 12.62469 & 12.11355 & 12.62469 & 12.11355 & 16.586443 & 15.91591 & 16.58644 & 15.91591 & 16.74741\end{array} 16.06931$ $\begin{array}{lllllllllllllllll}12.385637 & 11.93412 & 12.38564 & 11.93412 & 12.53815 & 12.02357 & 13.22749 & 12.68553 & 12.78442 & 12.2622 & 12.78442 & 12.2622 & 16.795293 & 16.11044 & 16.79529 & 16.11044 & 16.9589\end{array} 16.26619$ $\begin{array}{llllllllllllllllllllll}12.583836 & 12.01987 & 12.58384 & 11.99945 & 12.7401 & 12.14575 & 13.4402 & 12.81409 & 12.98949 & 12.38585 & 12.98949 & 12.38585 & 17.062201 & 16.27249 & 17.0622 & 16.27249 & 17.22917 & 16.43026\end{array}$ $\begin{array}{llllllllllllllllll}12.755798 & 12.13598 & 12.7558 & 12.12921 & 12.91527 & 12.27896 & 13.62472 & 12.9538 & 13.16736 & 12.51944 & 13.16736 & 12.51944 & 17.29394 & 16.44803 & 17.29394 & 16.44803 & 17.46013 & 16.58993\end{array}$ $\begin{array}{llllllllllllllllll}12.86313 & 12.27078 & 12.86313 & 12.27078 & 13.02509 & 12.42427 & 13.74012 & 13.10633 & 13.27814 & 12.66543 & 13.27814 & 12.66543 & 17.438692 & 16.63891 & 17.43869 & 16.63891 & 17.60641 & 16.78468\end{array}$ $\begin{array}{llllllllllllllllll}12.913341 & 12.4017 & 12.91334 & 12.4017 & 13.07465 & 12.46517 & 13.79453 & 13.23557 & 13.32702 & 12.70664 & 13.32702 & 12.70664 & 17.502566 & 16.68967 & 17.50668 & 16.69047 & 17.67578 & 16.85412\end{array}$ $\begin{array}{llllllllllllllllll}11.666104 & 11.08532 & 11.6661 & 11.02288 & 11.80239 & 11.10995 & 12.454 & 11.83265 & 12.04153 & 11.33772 & 12.04153 & 11.33772 & 15.824661 & 14.90417 & 15.82466 & 14.90417 & 15.97508 & 15.04405\end{array}$ $\begin{array}{llllllllllllllllll}11.72669 & 11.21005 & 11.72669 & 11.14072 & 11.86447 & 11.26904 & 12.51916 & 11.94827 & 12.10391 & 11.49889 & 12.10391 & 11.49889 & 15.906654 & 15.11385 & 15.90665 & 15.11385 & 16.05818 & 15.25654\end{array}$ $\begin{array}{lllllllllllllllll}11.819826 & 11.31243 & 11.81983 & 11.31243 & 11.95994 & 11.44461 & 12.61937 & 12.0764 & 12.19986 & 11.67626 & 12.19986 & 11.67626 & 16.032566 & 15.34528 & 16.03257 & 15.34528 & 16.18593\end{array} 15.4911$ $\begin{array}{llllllllllllllllll}11.945842 & 11.42261 & 11.94584 & 11.42261 & 12.08838 & 11.55687 & 12.75468 & 12.1946 & 12.33033 & 11.79019 & 12.33033 & 11.79019 & 16.202049 & 15.49388 & 16.20205 & 15.49388 & 16.3576 & 15.64158\end{array}$ $\begin{array}{llllllllllllllllllllll}12.063995 & 11.52021 & 12.064 & 11.52021 & 12.20869 & 11.65643 & 12.88138 & 12.29929 & 12.45245 & 11.8907 & 12.45245 & 11.8907 & 16.361448 & 15.62624 & 16.36145 & 15.62624 & 16.51896 & 15.77548\end{array}$ $\begin{array}{llllllllllllllllll}12.15806 & 11.61543 & 12.15806 & 11.61543 & 12.30457 & 11.75269 & 12.98231 & 12.40101 & 12.54961 & 11.98938 & 12.54961 & 11.98938 & 16.488483 & 15.75451 & 16.48848 & 15.75451 & 16.64761 & 15.90511\end{array}$ $\begin{array}{llllllllllllllllll}12.236918 & 11.70798 & 12.23692 & 11.70798 & 12.38482 & 11.84692 & 13.0668 & 12.50021 & 12.631 & 12.08491 & 12.631 & 12.08491 & 16.595191 & 15.87976 & 16.59519 & 15.87976 & 16.75552 & 16.03184\end{array}$ $\begin{array}{llllllllllllllllll}12.297334 & 11.87713 & 12.29733 & 11.87713 & 12.44613 & 12.01975 & 13.13138 & 12.68201 & 12.69323 & 12.24722 & 12.69323 & 12.24722 & 16.677339 & 16.09151 & 16.67734 & 16.09151 & 16.83843 & 16.24637\end{array}$ $\begin{array}{lllllllllllllllllll}12.409312 & 12.03346 & 12.40931 & 12.03346 & 12.56014 & 12.07691 & 13.25149 & 12.74219 & 12.80903 & 12.3176 & 12.80903 & 12.3176 & 16.82831 & 16.1841 & 16.82831 & 16.1841 & 16.9913 & 16.34002\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}2.540042 & 12.1548 & 12.54004 & 12.07491 & 12.69341 & 12.2223 & 13.39186 & 12.89472 & 12.94436 & 12.46353 & 12.94436 & 12.46353 & 17.004176 & 16.37513 & 17.00418 & 16.37513 & 17.16932 & 165339\end{array}$ $\begin{array}{llllllllllllllllllllll}12.631857 & 12.26631 & 12.63186 & 12.26631 & 12.78744 & 12.41906 & 13.49067 & 13.10117 & 13.0392 & 12.66112 & 13.0392 & 12.66112 & 17.127866 & 16.63274 & 17.12787 & 16.63274 & 17.29133 & 16.77619\end{array}$ $\begin{array}{llllllllllllllllll}12.728368 & 12.39014 & 12.72837 & 12.38933 & 12.88456 & 12.3469 & 13.59483 & 13.22202 & 13.13629 & 12.57652 & 13.13629 & 12.57652 & 17.254377 & 16.53549 & 17.25804 & 16.52104 & 17.42354 & 16.68268\end{array}$ $\begin{array}{lllllllllllllllllll}12.728368 & 12.39014 & 12.72837 & 12.38933 & 12.88456 & 12.3469 & 13.59483 & 13.22202 & 13.13629 & 12.57652 & 13.13629 & 12.57652 & 17.254377 & 16.53549 & 17.25804 & 16.52104 & 17.42354 & 16.68268 \\ 12.677719 & 12.22708 & 12.67772 & 12.22708 & 12.83487 & 12.30459 & 13.54086 & 13.06022 & 13.08637 & 12.54507 & 13.08637 & 12.54507 & 17.187141 & 16.47813 & 17.18808 & 16.47857 & 17.35567 & 16.63961\end{array}$ $\begin{array}{llllllllllllllllll}12.624784 & 12.22076 & 12.62478 & 12.22076 & 12.78175 & 12.29088 & 13.48433 & 13.05399 & 13.03265 & 12.5311 & 13.03265 & 12.5311 & 17.115727 & 16.4577 & 17.11573 & 16.45908 & 17.2835 & 16.61929\end{array}$ $\begin{array}{llllllllllllllllll}12.565825 & 12.14074 & 12.56583 & 12.14074 & 12.7218 & 12.29295 & 13.42127 & 12.96823 & 12.97207 & 12.53138 & 12.97207 & 12.53138 & 17.035351 & 16.434 & 17.03535 & 16.4585 & 17.20225 & 16.59307\end{array}$ $\begin{array}{llllllllllllllllll}12.516646 & 12.10196 & 12.51665 & 12.10196 & 12.67132 & 12.25331 & 13.36835 & 12.9266 & 12.92153 & 12.49317 & 12.92153 & 12.49317 & 16.968658 & 16.40588 & 16.96866 & 16.40588 & 17.13458 & 16.53046\end{array}$ $\begin{array}{lllllllllllllllllll}12.495426 & 12.09166 & 12.49543 & 12.08242 & 12.64927 & 12.23297 & 13.34538 & 12.90541 & 12.89987 & 12.47322 & 12.89987 & 12.47322 & 16.939755 & 16.37917 & 16.93976 & 16.37917 & 17.10516 & 16.47442\end{array}$ $\begin{array}{lllllllllllllllllll}12.525061 & 12.15151 & 12.52506 & 12.15151 & 12.67845 & 12.30139 & 13.37615 & 12.97759 & 12.92937 & 12.54265 & 12.92937 & 12.54265 & 16.982701 & 16.47783 & 16.9827 & 16.47783 & 17.14795 & 16.61459\end{array}$ $\begin{array}{llllllllllllllllll}12.467387 & 12.05814 & 12.46739 & 12.05814 & 12.61981 & 12.20597 & 13.31445 & 12.87728 & 12.8701 & 12.44633 & 12.8701 & 12.44633 & 16.904115 & 16.35174 & 16.90412 & 16.35165 & 17.06848 & 16.48376\end{array}$ $\begin{array}{lllllllllllllllll}12.46787 & 12.05814 & 12.46739 & 12.05814 & 12.61981 & 12.2597 & 13.31445 & 12.8778 & 12.8701 & 12.44633 & 12.8701 & 12.44633 & 16.904115 & 16.35174 & 16.90412 & 16.35165 & 11.06848 \\ 12.429739 & 12.01553 & 12.42974 & 12.01553 & 12.5812 & 12.16229 & 13.27397 & 12.8315 & 12.83145 & 12.40265 & 12.83145 & 12.40265 & 16.852965 & 16.29369 & 16.85297 & 16.29369 & 17.01663 \\ 16.42693\end{array}$ $\begin{array}{lllllllllllllllll}12.406962 & 12.02152 & 12.40696 & 12.02152 & 12.55765 & 12.16827 & 13.24938 & 12.83796 & 12.80818 & 12.40924 & 12.80818 & 12.40924 & 16.821901 & 16.30103 & 16.8219 & 16.30103 & 16.98505 \\ 12.46 .4364\end{array}$ $\begin{array}{llllllllllllllllll}12.385057 & 12.02923 & 12.38506 & 12.02923 & 12.53478 & 12.17578 & 13.22558 & 12.84611 & 12.78575 & 12.4176 & 12.78575 & 12.4176 & 16.792105 & 16.31079 & 16.79211 & 16.31079 & 16.95473 & 16.44848\end{array}$ $\begin{array}{llllllllllllllllllll}12.36946 & 12.00631 & 12.36946 & 12.00631 & 12.51813 & 12.15121 & 13.20794 & 12.82041 & 12.76837 & 12.39294 & 12.76837 & 12.39294 & 16.774311 & 16.28264 & 16.77431 & 16.28264 & 16.93599 & 16.43977\end{array}$ $\begin{array}{llllllllllllllllll}12.347292 & 11.99707 & 12.34729 & 11.99707 & 12.49521 & 12.14113 & 13.18401 & 12.81013 & 12.74571 & 12.38367 & 12.74571 & 12.38367 & 16.744089 & 16.27001 & 16.74409 & 16.27001 & 16.90534 & 16.42675\end{array}$ $\begin{array}{llllllllllllllll}12.326626 & 12.00182 & 12.32663 & 12.00182 & 12.47374 & 12.14549 & 13.16164 & 12.81498 & 12.72458 & 12.38886 & 12.72458 & 12.38886 & 16.715925 & 16.27616 & 16.71593 & 16.27616\end{array} 16.87665 \quad 16.43278$ $\begin{array}{lllllllllllllllllll}12.305575 & 12.00965 & 12.30558 & 12.00965 & 12.45171 & 12.15296 & 13.13872 & 12.82313 & 12.70301 & 12.39723 & 12.70301 & 12.39723 & 16.687544 & 16.28643 & 16.68754 & 16.28643 & 16.84762 & 16.44305\end{array}$ $\begin{array}{llllllllllllllllll}12 & 12.278979 & 11.9912 & 12.27898 & 11.9912 & 12.42411 & 12.13371 & 13.10989 & 12.80311 & 12.67571 & 12.37844 & 12.67571 & 12.37844 & 16.651514 & 16.26127 & 16.65151 & 16.26127 & 16.81104\end{array} 16.41729$ $\begin{array}{lllllllllllllllllllllll}12.583209 & 12.1982 & 12.58321 & 12.1982 & 12.73938 & 12.3406 & 13.44004 & 13.01892 & 12.99068 & 12.58295 & 12.99068 & 12.58295 & 17.05751 & 16.52086 & 17.05751 & 16.52086 & 17.22481 & 16.68354\end{array}$ $\begin{array}{lllllllllllllllll}12.4789 & 12.10897 & 12.4789 & 12.10897 & 12.6314 & 12.2586 & 13.32708 & 12.93285 & 12.88322 & 12.50038 & 12.88322 & 12.50038 & 16.917117 & 16.41654 & 16.91712 & 16.41654 & 17.08193\end{array} 16.56237$ $\begin{array}{lllllllllllllllllll}12.656726 & 12.26399 & 12.65673 & 12.26399 & 12.81396 & 12.41691 & 13.51869 & 13.09943 & 13.06671 & 12.6607 & 13.06671 & 12.6607 & 17.15677 & 16.62521 & 17.15677 & 16.62521 & 17.32517 & 16.7885\end{array}$ $\begin{array}{lllllllllllllllll}12.444538 & 12.10291 & 12.44454 & 12.10291 & 12.59521 & 12.25156 & 13.28949 & 12.92586 & 12.84795 & 12.49001 & 12.84795 & 12.49001 & 16.870912 & 16.40826 & 16.87091 & 16.40826 & 17.03466\end{array} 16.56267$ $\begin{array}{llllllllllllllll}12.295992 & 11.9964 & 12.29599 & 11.9964 & 12.44183 & 12.14016 & 13.12858 & 12.80956 & 12.69384 & 12.38409 & 12.69384 & 12.38409 & 16.673114 & 16.26693 & 16.67311 & 16.26693\end{array} 16.83314 \quad 16.42367$ $\begin{array}{llllllllllllllllll}12.63226 & 12.28048 & 12.63226 & 12.28048 & 12.78778 & 12.42978 & 13.49172 & 13.1166 & 13.04179 & 12.67532 & 13.04179 & 12.67532 & 17.123795 & 16.64695 & 17.1238 & 16.64695 & 17.29119 & 16.80628\end{array}$ $\begin{array}{llllllllllllllllllll}12.961535 & 12.56335 & 12.97828 & 12.56335 & 13.12078 & 12.7174 & 13.84057 & 13.4154 & 13.3746 & 12.96427 & 13.3746 & 12.96427 & 17.559486 & 17.02156 & 17.55949 & 17.02156 & 17.73402 & 17.19025\end{array}$ $\begin{array}{llllllllllllllllllll}13.063505 & 12.58134 & 13.06351 & 12.58134 & 13.20779 & 12.73018 & 13.93219 & 13.42893 & 13.46281 & 12.97736 & 13.46281 & 12.97736 & 17.675327 & 17.04075 & 17.67533 & 17.04075 & 17.85113 & 17.19429\end{array}$ $\begin{array}{llllllllllllllll}13.038903 & 12.62888 & 13.0389 & 12.62888 & 13.20614 & 12.78985 & 13.93047 & 13.49171 & 13.46126 & 13.03789 & 13.46126 & 13.03789 & 17.671582 & 17.11659 & 17.67158 & 17.11659\end{array} 17.84764 \quad 17.28662$ $\begin{array}{lllllllllllllllllll}13.363554 & 12.87345 & 13.36355 & 12.87345 & 13.53692 & 13.03919 & 14.27921 & 13.75406 & 13.77338 & 13.28738 & 13.77338 & 13.28738 & 18.079395 & 17.44395 & 18.0794 & 17.44751 & 18.26089 & 17.61795\end{array}$ $\begin{array}{lllllllllllllllllll}13.300499 & 12.8295 & 13.3005 & 12.8295 & 13.47387 & 12.99461 & 14.21196 & 13.70723 & 13.73176 & 13.24541 & 13.73176 & 13.24541 & 18.023488 & 17.38672 & 18.02349 & 17.38672 & 18.20446 & 17.56024\end{array}$ $\begin{array}{lllllllllllllllllll}12.867434 & 12.58192 & 12.89041 & 12.58192 & 13.02947 & 12.73405 & 13.74506 & 13.4333 & 13.28375 & 12.98235 & 13.28375 & 12.98235 & 17.439787 & 17.04226 & 17.43979 & 17.04226 & 17.61225 & 17.21121\end{array}$ $\begin{array}{lllllllllllllllll}13.625099 & 13.03482 & 13.6251 & 13.03482 & 13.80584 & 13.20402 & 14.56102 & 13.92752 & 14.06712 & 13.45719 & 14.06712 & 13.45719 & 18.460882 & 17.66443 & 18.46088 & 17.66443 & 18.64788 \\ 17.82448\end{array}$ $\begin{array}{llllllllllllllllllll}13.690128 & 13.03502 & 13.69013 & 13.03502 & 13.87335 & 13.20493 & 14.6316 & 13.92812 & 14.13414 & 13.45712 & 14.13414 & 13.45712 & 18.54828 & 17.66488 & 18.54828 & 17.66488 & 18.73698 & 17.82659\end{array}$ $\begin{array}{llllllllllllllllll}12.748798 & 12.42932 & 12.7488 & 12.42932 & 12.90943 & 12.58677 & 13.61845 & 13.27775 & 13.16137 & 12.83149 & 13.16137 & 12.83149 & 17.281021 & 16.84759 & 17.28102 & 16.84759 & 17.45161 & 17.00206\end{array}$ $\begin{array}{lllllllllllllllllllll}13.932441 & 13.20984 & 13.93244 & 13.20984 & 14.12323 & 13.38536 & 14.8936 & 14.11726 & 14.38466 & 13.63792 & 14.38466 & 13.63792 & 18.873099 & 17.89913 & 18.8731 & 17.89913 & 19.06732 & 18.06366\end{array}$ $\begin{array}{llllllllllllllllll}14.07883 & 13.34478 & 14.07883 & 13.34478 & 14.27299 & 13.52397 & 15.05111 & 14.26283 & 14.53633 & 13.77746 & 14.53633 & 13.77746 & 19.069341 & 18.08025 & 19.06934 & 18.08025 & 19.26639 & 18.26445\end{array}$ $\begin{array}{lllllllllllllllllllll}13.820364 & 13.16777 & 13.82036 & 13.16777 & 14.00625 & 13.34022 & 14.77151 & 14.07073 & 14.26912 & 13.59407 & 14.26912 & 13.59407 & 18.722994 & 17.84287 & 18.72299 & 17.84287 & 18.91406 & 18.0215\end{array}$

| Reduction to Peak Concentration due to Inclusion of T3 OGVs (ppm): | 0.0004 | 0.0003 | 0.0003 | 0.0003 | 0.0010 | 0.0010 | 0.0003 | 0.0003 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0014 | 0.0013 | 0.0014 | 0.0013 | 0.0040 | 0.0038 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction Due to Inclusion of Tier 3 OGV | 15.74\% | 15.74\% | 15.74\% | 15.74\% | 17.02\% | 17.02\% | 16.12\% | 16.12\% | 11.96\% | 11.96\% | 11.96\% | 11.96\% | 52.47\% | 52.47\% | 52.47\% | 52.47\% | 48.91\% | 48.91\% |
|  | 389450_3 | 389450_3 | 389450_3 | 389950 3350 | 382683.8 734051.76 | 382683.8 _3 73405176 | 389500_3 | 389500_37 | 382683.8_3 734051.76 | 382683.8_3 | 382683.8_3 ${ }^{\text {3 }}$ | 382683.8_3 | 389450_3 |  | 389450 | 389200_37 | 382683.8 734051.76 | 7382683.8_3 |

 2026_ALT1_C 2026_ALT1_ 2026_NP_C 2026_NP_N 2026_ALT3_ 2026_ALT3_ 2026_ALT4_ 2026_ALT4_ 2026_ALT5_ 2026_ALT5_ 2026_PP_CA 2026_PP_N 2033_ALT1_C 2033_ALT1_ 2033_NP_C 2033_NP_N 2033_ALT3_ 2033_ALT3_
$X \quad Y \quad$ Source Scaling Factor $382820.5 \quad 373461962.11 \%$ $382913 \quad 373457262.70 \%$ $382765.6 \quad 373463560.47 \%$ $382746.9 \quad 373457160.70 \%$ $382847.7 \quad 373456361.86 \%$ $382768.1 \quad 373452659.69 \%$ $382784.2373447660 .66 \%$ 382802.4 $\begin{array}{ll}382802.4 & 373443061.33 \% \\ 382820.6 & 3734384 \\ 59.32 \%\end{array}$ $\begin{array}{ll}382820.6 & 373438459.32 \% \\ 382838.8 & 373433759.13 \%\end{array}$ $382857 \quad 373429158.37 \%$ $382830.7 \quad 373449556.52 \%$ $382848.9 \quad 373444856.32 \%$ $382867.1 \quad 373440256.52 \%$ $382885.3 \quad 3734356$ 61.11\% $382903.5 \quad 373430962.12 \%$ $382877.3 \quad 373451357.66 \%$ $382895.5 \quad 373446758.55 \%$ $382913.7 \quad 373442060.96 \%$ $382931.9 \quad 373437464.03 \%$ $382950.1373432864 .49 \%$ $382871.9373424158 .63 \%$ $382885.3 \quad 3734196$ 62.19\% $382919.8373425560 .94 \%$ $382933.3 \quad 373421063.49 \%$ $382967.8 \quad 373427061.16 \%$ $382981.2373422462 .78 \%$ $382876.7 \quad 373415168.55 \%$ $382827.3 \quad 373408868.06 \%$ $382925.8 \quad 373414162.65 \%$ $382891.4 \quad 373408864.12 \%$ $382842 \quad 3734025$ 64.04\% $382970 \quad 373412164.71 \%$ $382930.7 \quad 3734057$ 64.27\% $382881.3 \quad 373399563.89 \%$ $382783.6373404162 .79 \%$ $382704.1 \quad 3734006$ 67.80\% $382624.7 \quad 373397166.64 \%$ $382545.2 \quad 373393559.95 \%$ $382804 \quad 373399664.27 \%$ $382724.5 \quad 373396065.71 \%$ 3826453733925 67.23\% $382565.5 \quad 373389058.39 \%$ $382824.3 \quad 373395065.39 \%$ $382744.8 \quad 373391564.49 \%$ $382665.3 \quad 373387962.49 \%$ $382585.8 \quad 3733844$ 59.94\% $382461.5 \quad 373389754.38 \%$ $382417 \quad 373387757.23 \%$ $382372.5373385658 .19 \%$ $382328373383658.98 \%$ $382283.4 \quad 3733815$ 60.21\% $382238.9 \quad 373379461.88 \%$ $382194.4 \quad 3733774$ 63.14\% $382482.5 \quad 373385255.30 \%$ $382438373383158.76 \%$ $382393.5373381159 .60 \%$ $382349373379060.08 \%$ $382304.4 \quad 373377060.71 \%$ $382259.9 \quad 373374961.69 \%$ $382215.4 \quad 373372861.49 \%$ $382503.5 \quad 373380759.99 \%$ $382459 \quad 373378657.50 \%$ $382414.5 \quad 373376558.22 \%$ $382369.9 \quad 373374558.93 \%$ $382325.4 \quad 373372457.57 \%$ $382280.9 \quad 373370457.49 \%$ 382236.43733683 57.91\% 382173.93733684 61.77\% $382096.2 \quad 373366961.09 \%$ $382183 \quad 3733635$ 60.61\% 382105.43733620 61.67\% $382256.9 \quad 373361162.57 \%$ $382308.6373364861 .36 \%$ $382192.2 \quad 373358562.41 \%$ $382114.5 \quad 373357160.40 \%$ $382137.1 \quad 373372060.26 \%$ $382053.5373359458 .51 \%$ $382054.7373354456 .53 \%$ 382118.93733507 61.04\% $382171.4373353063 .16 \%$ $382056 \quad 373349455.38 \%$
 $\begin{array}{llllllllllllllllll}14.303046 & 13.51818 & 14.30305 & 13.51818 & 14.50377 & 13.70282 & 15.29331 & 14.45031 & 14.76821 & 13.95657 & 14.76821 & 13.95657 & 19.370358 & 18.313 & 19.37036 & 18.313 & 19.57227 & 18.45237 \\ 13.973687 & 13.32114 & 13.97369 & 13.32114 & 14.16297 & 13.49029 & 14.93642 & 14.22844 & 14.42783 & 13.74622 & 14.42783 & 13.74622 & 18.928922 & 18.03991 & 18.92892 & 18.04909 & 19.12277 & 18.22234\end{array}$ $\begin{array}{lllllllllllllllll}14.540338 & 13.7643 & 14.54034 & 13.7643 & 14.74809 & 13.95583 & 15.54951 & 14.71583 & 15.01295 & 14.21072 & 15.01295 & 14.21072 & 19.689675 & 18.64411 & 19.68968 & 18.64411 & 19.89681 \\ 18.83737\end{array}$ $\begin{array}{lllllllllllllllllll}14.690083 & 13.87519 & 14.69008 & 13.87519 & 14.90216 & 14.06907 & 15.71109 & 14.83504 & 15.16761 & 14.32572 & 15.16761 & 14.32572 & 19.8911 & 18.79287 & 19.8911 & 18.79287 & 20.10134 & 18.98816\end{array}$ $\begin{array}{lllllllllllllllllll}14.294273 & 13.53401 & 14.29427 & 13.53401 & 14.49299 & 13.71715 & 15.28272 & 14.46615 & 14.75927 & 13.97319 & 14.75927 & 13.97319 & 19.359 & 18.33491 & 19.359 & 18.33491 & 19.55995 & 18.39391\end{array}$ $\begin{array}{llllllllllllllllllll}14.654597 & 13.87318 & 14.6546 & 13.87318 & 14.86509 & 14.06649 & 15.67248 & 14.83266 & 15.13127 & 14.32386 & 15.13127 & 14.32386 & 19.843087 & 18.78985 & 19.84309 & 18.78985 & 20.05236 & 18.98503\end{array}$ $\begin{array}{llllllllllllllllll}14.659691 & 13.88948 & 14.65969 & 13.88948 & 14.86941 & 14.08186 & 15.67742 & 14.8495 & 15.13669 & 14.34074 & 15.13669 & 14.34074 & 19.849983 & 18.81201 & 19.84998 & 18.81201 & 20.05902 & 19.00652\end{array}$ $\begin{array}{llllllllllllllllll}14.627075 & 13.83199 & 14.62708 & 13.83248 & 14.8355 & 14.02254 & 15.64212 & 14.78771 & 15.10329 & 14.24474 & 15.10329 & 14.24474 & 19.805959 & 18.73464 & 19.80596 & 18.73539 & 20.0141 & 18.87201\end{array}$ $\begin{array}{lllllllllllllllllllll}14.56006 & 13.72056 & 14.56006 & 13.76368 & 14.76658 & 13.90854 & 15.56982 & 14.7138 & 15.03432 & 14.16669 & 15.03432 & 14.16669 & 19.71519 & 18.58439 & 19.71519 & 18.64242 & 19.92209 & 18.77587\end{array}$ $\begin{array}{lllllllllllllllllllll}14.490168 & 13.67225 & 14.49017 & 13.75697 & 14.69468 & 13.831 & 15.49441 & 14.70678 & 14.96227 & 14.08726 & 14.96227 & 14.08726 & 19.621047 & 18.48433 & 19.62105 & 18.6329 & 19.82642 & 18.67174\end{array}$ $\begin{array}{lllllllllllllllll}14.443646 & 13.64235 & 14.44365 & 13.68649 & 14.64628 & 13.82867 & 15.44392 & 14.63047 & 14.91445 & 14.08575 & 14.91445 & 14.08575 & 19.558574 & 18.47909 & 19.55857 & 18.53817 & 19.76262 \\ 18.689616\end{array}$ $\begin{array}{llllllllllllllllll}14.476617 & 13.58409 & 14.47662 & 13.63819 & 14.67906 & 13.7674 & 15.47897 & 14.57785 & 14.94745 & 14.02467 & 14.94745 & 14.02467 & 19.604442 & 18.403 & 19.60444 & 18.4755 & 19.80805 & 18.59072\end{array}$ $\begin{array}{lllllllllllllllll}14.428139 & 13.58384 & 14.42814 & 13.63256 & 14.6294 & 13.76686 & 15.42658 & 14.57162 & 14.898 & 14.02483 & 14.898 & 14.02483 & 19.538783 & 18.40203 & 19.53878 & 18.46743 & 19.742\end{array} 18.58979$ $\begin{array}{llllllllllllllllll}14.347841 & 13.57529 & 14.34784 & 13.57529 & 14.54727 & 13.75773 & 15.34021 & 14.51023 & 14.81552 & 13.96893 & 14.81552 & 13.96893 & 19.430038 & 18.38969 & 19.43004 & 18.38969 & 19.63182 & 18.51497\end{array}$ $\begin{array}{llllllllllllllllll}14.261639 & 13.55167 & 14.26164 & 13.55167 & 14.45876 & 13.73301 & 15.24732 & 14.48514 & 14.72649 & 13.9903 & 14.72649 & 13.9903 & 19.31356 & 18.35713 & 19.31356 & 18.35713 & 19.51373 & 18.54216\end{array}$ $\begin{array}{lllllllllllllllllllll}14.208071 & 13.5597 & 14.20807 & 13.5597 & 14.40324 & 13.74268 & 15.18927 & 14.49361 & 14.67141 & 14.00078 & 14.67141 & 14.00078 & 19.241633 & 18.3678 & 19.24163 & 18.3678 & 19.44039 & 18.55432\end{array}$ $\begin{array}{lllllllllllllllllll}14.24328 & 13.46551 & 14.24328 & 13.46551 & 14.43835 & 13.57149 & 15.22683 & 14.39127 & 14.70609 & 13.82827 & 14.70609 & 13.82827 & 19.291004 & 18.24354 & 19.291 & 18.24354 & 19.4889 & 18.33105\end{array}$ $\begin{array}{llllllllllllllllllll}14.178487 & 13.46763 & 14.17849 & 13.46763 & 14.37241 & 13.64737 & 15.15707 & 14.39368 & 14.64009 & 13.90495 & 14.64009 & 13.90495 & 19.203301 & 18.24559 & 19.2033 & 18.24559 & 19.40086 & 18.43087\end{array}$ $\begin{array}{lllllllllllllllll}14.082387 & 13.44781 & 14.08239 & 13.44781 & 14.27428 & 13.6276 & 15.05374 & 14.37281 & 14.54118 & 13.88502 & 14.54118 & 13.88502 & 19.073093 & 18.21773 & 19.07309 & 18.21773 & 19.26928 \\ 18.4032\end{array}$ $\begin{array}{lllllllllllllllllll}13.994733 & 13.35512 & 13.99473 & 13.35512 & 14.18435 & 13.53264 & 14.95939 & 14.27307 & 14.45088 & 13.78945 & 14.45088 & 13.78945 & 18.954826 & 18.09257 & 18.95483 & 18.09257 & 19.14921 & 18.27624\end{array}$ $\begin{array}{llllllllllllllllll}13.950584 & 13.34351 & 13.95058 & 13.34351 & 14.13816 & 13.51987 & 14.91122 & 14.25998 & 14.40538 & 13.77764 & 14.40538 & 13.77764 & 18.895524 & 18.07709 & 18.89552 & 18.07709 & 19.0887 & 18.26012\end{array}$ $\begin{array}{llllllllllllllllll}14.450634 & 13.71164 & 14.45063 & 13.74365 & 14.65227 & 13.89641 & 15.45072 & 14.69125 & 14.92177 & 14.02942 & 14.92177 & 14.02942 & 19.56835 & 18.57257 & 19.56835 & 18.61501 & 19.77203 & 18.59409\end{array}$ $\begin{array}{llllllllllllllllll}14.443379 & 13.78467 & 14.44338 & 13.78467 & 14.64376 & 13.97145 & 15.44218 & 14.73494 & 14.91428 & 14.23414 & 14.91428 & 14.23414 & 19.55898 & 18.66985 & 19.55898 & 18.66985 & 19.76196 & 18.81944\end{array}$ $\begin{array}{lllllllllllllllllllll}14.275601 & 13.66412 & 14.2756 & 13.66412 & 14.46993 & 13.84669 & 15.26038 & 14.60413 & 14.74136 & 14.1092 & 14.74136 & 14.1092 & 19.33347 & 18.5091 & 19.33347 & 18.5091 & 19.53241 & 18.69761\end{array}$ $\begin{array}{llllllllllllllllllllll}14.240038 & 13.66807 & 14.24004 & 13.66807 & 14.43286 & 13.85007 & 15.22172 & 14.608 & 14.7048 & 14.11339 & 14.7048 & 14.11339 & 19.285871 & 18.51355 & 19.28587 & 18.51392 & 19.48383 & 18.70209\end{array}$ $\begin{array}{llllllllllllllllll}14.133719 & 13.55807 & 14.13372 & 13.55807 & 14.32041 & 13.73396 & 15.10472 & 14.48717 & 14.59465 & 13.99962 & 14.59465 & 13.99962 & 19.145455 & 18.36892 & 19.14546 & 18.36892 & 19.33951 & 18.55339\end{array}$ $\begin{array}{lllllllllllllllll}14.108781 & 13.56125 & 14.10878 & 13.56125 & 14.29393 & 13.73628 & 15.07734 & 14.49008 & 14.56912 & 13.99993 & 14.56912 & 13.99993 & 19.112032 & 18.37313 & 19.11203 & 18.37313 & 19.30517 \\ 18.55231\end{array}$ $\begin{array}{lllllllllllllllll}14.556834 & 13.85364 & 14.55683 & 13.85364 & 14.75939 & 14.03994 & 15.56404 & 14.80912 & 15.03175 & 14.29667 & 15.03175 & 14.29667 & 19.711582 & 18.7625 & 19.71158 & 18.7625 & 19.91653 \\ 18.95537\end{array}$ $\begin{array}{lllllllllllllllll}4.910171 & 13.99984 & 14.91177 & 14.01898 & 15.12104 & 14.16629 & 15.94645 & 14.98768 & 15.39654 & 14.41417 & 15.39654 & 14.41417 & 20.188286 & 18.98341 & 20.18829 & 18.9846 & 20.39809\end{array} 19.15268$ $\begin{array}{llllllllllllllllll}14.295096 & 13.74291 & 14.2951 & 13.74291 & 14.48987 & 13.92745 & 15.28138 & 14.68931 & 14.76158 & 14.1915 & 14.76158 & 14.1915 & 19.359899 & 18.61324 & 19.3599 & 18.61324 & 19.55914 & 18.80353\end{array}$ $\begin{array}{llllllllllllllllllll}14.558739 & 13.87028 & 14.55874 & 13.87135 & 14.76 & 14.05825 & 15.56522 & 14.82774 & 15.03407 & 14.30411 & 15.03407 & 14.30411 & 19.714389 & 18.78449 & 19.71439 & 18.78612 & 19.91888 & 18.97745\end{array}$ $\begin{array}{llllllllllllllllllll}14.959963 & 14.09636 & 14.95996 & 14.09649 & 15.17057 & 14.29002 & 15.99705 & 15.07019 & 15.44921 & 14.5567 & 15.44921 & 14.5567 & 20.253668 & 19.08871 & 20.25367 & 19.0889 & 20.46577 & 19.2861\end{array}$ $\begin{array}{llllllllllllllllll}14.121432 & 13.61063 & 14.12143 & 13.61235 & 14.3093 & 13.79016 & 15.09276 & 14.54745 & 14.58247 & 14.05497 & 14.58247 & 14.05497 & 19.126808 & 18.43598 & 19.12681 & 18.43858 & 19.32153 & 18.62283\end{array}$ $\begin{array}{lllllllllllllllll}14.348247 & 13.79672 & 14.34825 & 13.79762 & 14.54336 & 13.98182 & 15.33786 & 14.74775 & 14.81642 & 14.24757 & 14.81642 & 14.24757 & 19.431876 & 18.68512 & 19.43188 & 18.68649 & 19.63171 \\ 18.87611\end{array}$ $\begin{array}{lllllllllllllllll}14.752211 & 13.98639 & 14.75221 & 13.98833 & 14.95678 & 14.17638 & 15.77262 & 14.9531 & 15.23448 & 14.44348 & 15.23448 & 14.44348 & 19.97477 & 18.94052 & 19.97477 & 18.94346 & 20.18235 \\ 19.19 .13527\end{array}$ $\begin{array}{llllllllllllllllllllll}15.226007 & 14.27446 & 15.22601 & 14.2748 & 15.44234 & 14.44909 & 16.28488 & 15.26371 & 15.72096 & 14.70959 & 15.72096 & 14.70959 & 20.610387 & 19.32767 & 20.61039 & 19.32792 & 20.82866 & 19.52965\end{array}$ $\begin{array}{llllllllllllllllllll}15.73352 & 14.86816 & 15.73352 & 14.87214 & 15.96584 & 15.08403 & 16.83182 & 15.90731 & 16.24889 & 15.35469 & 16.24889 & 15.35469 & 21.292387 & 20.12471 & 21.29239 & 20.13075 & 21.52098 & 20.3388\end{array}$ $\begin{array}{lllllllllllllllll}16.418913 & 15.59973 & 16.41891 & 15.59973 & 16.67003 & 15.83444 & 17.57098 & 16.69163 & 16.95714 & 16.11072 & 16.95714 & 16.11072 & 22.213762 & 21.10834 & 22.21376 & 21.10834 & 22.45661\end{array} 21.33719$ $\begin{array}{lllllllllllllllllll}17.134846 & 16.26136 & 17.13485 & 16.26136 & 17.40616 & 16.51379 & 18.34356 & 17.4051 & 17.69673 & 16.79498 & 17.69673 & 16.79498 & 23.17618 & 21.99719 & 23.17618 & 21.99719 & 23.43423 & 22.23963\end{array}$ $\begin{array}{llllllllllllllllll}15.229269 & 14.30677 & 15.22927 & 14.30989 & 15.44659 & 14.50606 & 16.2871 & 15.30021 & 15.72777 & 14.77435 & 15.72777 & 14.77435 & 20.615408 & 19.37141 & 20.61541 & 19.37615 & 20.83287 & 19.5731\end{array}$ $\begin{array}{lllllllllllllllllll}15.679308 & 14.81352 & 15.67931 & 14.81352 & 15.90956 & 15.02703 & 16.77291 & 15.84386 & 16.19296 & 15.29824 & 16.19296 & 15.29824 & 21.219497 & 20.0515 & 21.2195 & 20.0515 & 21.44665 & 20.2567\end{array}$ $\begin{array}{lllllllllllllllllll}16.313941 & 15.49813 & 16.31394 & 15.49813 & 16.5616 & 15.72981 & 17.45745 & 16.58198 & 16.8487 & 16.00595 & 16.8487 & 16.00595 & 22.072816 & 20.97151 & 22.07282 & 20.97151 & 22.31323 & 21.19809\end{array}$ $\begin{array}{lllllllllllllllllllllll}17.068558 & 16.17047 & 17.06856 & 16.17047 & 17.33697 & 16.41957 & 18.2713 & 17.30654 & 17.6283 & 16.70107 & 17.6283 & 16.70107 & 23.087284 & 21.87506 & 23.08728 & 21.87506 & 23.34351 & 22.1153\end{array}$ $\begin{array}{lllllllllllllllllll}15.175143 & 14.22159 & 15.17514 & 14.22159 & 15.38996 & 14.41728 & 16.22807 & 15.20425 & 15.67202 & 14.67991 & 15.67202 & 14.67991 & 20.542943 & 19.25783 & 20.54294 & 19.25783 & 20.75881 & 19.4475\end{array}$ $\begin{array}{llllllllllllllllll}15.678731 & 14.79568 & 15.67873 & 14.79568 & 15.90693 & 15.00681 & 16.77108 & 15.82337 & 16.19267 & 15.27987 & 16.19267 & 15.27987 & 21.219379 & 20.02866 & 21.21938 & 20.02866 & 21.44561 & 20.23991\end{array}$ $\begin{array}{llllllllllllllllllll}16.179398 & 15.35072 & 16.1794 & 15.35072 & 16.42319 & 15.57853 & 17.31224 & 16.42316 & 16.70972 & 15.85388 & 16.70972 & 15.85388 & 21.891968 & 20.77291 & 21.89197 & 20.77291 & 22.12953 & 20.99654\end{array}$ $\begin{array}{llllllllllllllllllllll}16.928913 & 16.04823 & 16.92891 & 16.04823 & 17.19348 & 16.29418 & 18.1207 & 17.17491 & 17.48414 & 16.57501 & 17.48414 & 16.57501 & 22.899714 & 21.71018 & 22.89971 & 21.71018 & 23.1529 & 21.94796\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}17.837715 & 16.92621 & 17.83772 & 16.92621 & 18.12879 & 17.19836 & 19.10208 & 18.12324 & 18.42334 & 17.48213 & 18.42334 & 17.48213 & 24.119803 & 22.8894 & 24.1198 & 22.8894 & 24.3929 & 23.14651\end{array}$ $\begin{array}{lllllllllllllllllll}18.192912 & 17.3817 & 18.19291 & 17.3817 & 18.49419 & 17.66698 & 19.48549 & 18.61508 & 18.7904 & 17.95318 & 18.7904 & 17.95318 & 24.596807 & 23.50054 & 24.59681 & 23.50054 & 24.87758 & 23.7676\end{array}$ $\begin{array}{llllllllllllllllll}18.636283 & 18.06271 & 18.63628 & 18.06271 & 18.95006 & 18.36698 & 19.964 & 19.34996 & 19.24875 & 18.65741 & 19.24875 & 18.65741 & 25.19241 & 24.41471 & 25.19241 & 24.41471 & 25.48247 & 24.69622\end{array}$ $\begin{array}{lllllllllllllllllllll}19.125204 & 18.73834 & 19.1252 & 18.73834 & 19.45259 & 19.06102 & 20.49145 & 20.07887 & 19.75406 & 19.35624 & 19.75406 & 19.35624 & 25.84899 & 25.32128 & 25.84899 & 25.32128 & 26.1495 & 25.61695\end{array}$ $\begin{array}{llllllllllllllllllll}19.653621 & 19.11038 & 19.65362 & 19.11038 & 19.99577 & 19.44404 & 21.06162 & 20.48057 & 20.30033 & 19.74038 & 20.30033 & 19.74038 & 26.558949 & 25.8215 & 26.55895 & 25.8215 & 26.87054 & 26.12531\end{array}$ $\begin{array}{llllllllllllllllllll}20.233484 & 19.61745 & 20.23348 & 19.61745 & 20.59148 & 19.9656 & 21.68708 & 21.02061 & 20.89969 & 20.26439 & 20.89969 & 20.26439 & 27.337598 & 26.50273 & 27.3376 & 26.50273 & 27.66143 & 26.81737\end{array}$
 $\begin{array}{lllllllllllllllllll}17.794203 & 16.78866 & 17.7942 & 16.78866 & 18.08293 & 17.05588 & 19.05434 & 17.97422 & 18.37852 & 17.34012 & 18.37852 & 17.34012 & 24.061647 & 22.70501 & 24.06165 & 22.70501 & 24.33325 & 22.95873\end{array}$ $\begin{array}{lllllllllllllllllll}18.158718 & 17.24926 & 18.15872 & 17.24926 & 18.45792 & 17.52978 & 19.44782 & 18.4715 & 18.75516 & 17.81631 & 18.75516 & 17.81631 & 24.5513 & 23.3231 & 24.5513 & 23.3231 & 24.83076 & 23.58685\end{array}$ $\begin{array}{llllllllllllllllll}18.555623 & 17.91903 & 18.55562 & 17.91903 & 18.86596 & 18.21839 & 19.87614 & 19.19438 & 19.1655 & 18.50899 & 19.1655 & 18.50899 & 25.084306 & 24.22205 & 25.08431 & 24.22205 & 25.37217 & 24.50008\end{array}$ $\begin{array}{lllllllllllllllllllllll}19.010758 & 18.596 & 19.01076 & 18.596 & 19.33417 & 18.91414 & 20.36753 & 19.92493 & 19.63589 & 19.20922 & 19.63589 & 19.20922 & 25.695601 & 25.13042 & 25.6956 & 25.13042 & 25.99327 & 25.42285\end{array}$ $\begin{array}{llllllllllllllllllll}19.539683 & 19.07168 & 19.53968 & 19.07168 & 19.87774 & 19.40352 & 20.9381 & 20.43833 & 20.18254 & 19.70053 & 20.18254 & 19.70053 & 26.40612 & 25.76952 & 26.40612 & 25.76952 & 26.71498 & 26.07212\end{array}$ $\begin{array}{llllllllllllllllllllllll}20.097577 & 19.55944 & 20.09758 & 19.55944 & 20.45109 & 19.9054 & 21.54009 & 20.95863 & 20.75938 & 20.20447 & 20.75938 & 20.20447 & 27.155536 & 26.42477 & 27.15554 & 26.42477 & 27.47612 & 26.73795\end{array}$ $\begin{array}{lllllllllllllllllllllllll}20.736866 & 19.77597 & 20.73687 & 19.77141 & 21.10733 & 20.12792 & 22.22942 & 21.19323 & 21.42069 & 20.42834 & 21.42069 & 20.42834 & 28.013645 & 26.7159 & 28.01365 & 26.70796 & 28.34751 & 27.03367\end{array}$ $\begin{array}{lllllllllllllllllllll}17.718599 & 16.72719 & 17.7186 & 16.72719 & 18.00436 & 16.99201 & 18.97235 & 17.9074 & 18.30057 & 17.27679 & 18.30057 & 17.27679 & 23.960407 & 22.62241 & 23.96041 & 22.62241 & 24.22999 & 22.87444\end{array}$ $\begin{array}{lllllllllllllllllll}18.079978 & 17.11321 & 18.07998 & 17.11321 & 18.37623 & 17.38937 & 19.36241 & 18.32437 & 18.67393 & 17.6758 & 18.67393 & 17.6758 & 24.445673 & 23.14042 & 24.44567 & 23.14042 & 24.72319 & 23.40097\end{array}$ $\begin{array}{llllllllllllllllllll}18.462699 & 17.75275 & 18.4627 & 17.75275 & 18.76957 & 18.04681 & 19.77534 & 19.01458 & 19.06953 & 18.33716 & 19.06953 & 18.33716 & 24.959712 & 23.99893 & 24.95971 & 23.99893 & 25.24525 & 24.27309\end{array}$ $\begin{array}{lllllllllllllllllll}18.912636 & 18.46706 & 18.91264 & 18.46706 & 19.23218 & 18.78065 & 20.2609 & 19.78508 & 19.53465 & 19.07584 & 19.53465 & 19.07584 & 25.564237 & 24.9577 & 25.56424 & 24.9577 & 25.85931 & 25.24688\end{array}$ $\begin{array}{llllllllllllllllll}19.449427 & 19.05644 & 19.44943 & 19.05644 & 19.78382 & 19.38672 & 20.84003 & 20.42122 & 20.08945 & 19.68503 & 20.08945 & 19.68503 & 26.285292 & 25.74939 & 26.28529 & 25.74939 & 26.59166 & 26.05117\end{array}$ $\begin{array}{lllllllllllllllllll}19.955049 & 19.4949 & 19.95505 & 19.4949 & 20.3039 & 19.83846 & 21.38578 & 20.89484 & 20.61204 & 20.13795 & 20.61204 & 20.13795 & 26.964452 & 26.3383 & 26.96445 & 26.3383 & 27.28169 & 26.64981\end{array}$ $\begin{array}{llllllllllllllllllll}20.609014 & 19.74075 & 20.60901 & 19.74075 & 20.9752 & 20.09081 & 22.09098 & 21.15992 & 21.28861 & 20.39206 & 21.28861 & 20.39206 & 27.842278 & 26.66848 & 27.84228 & 26.66848 & 28.1731 & 26.98508\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}21.30009 & 20.66379 & 21.30009 & 20.66379 & 21.68585 & 21.03997 & 22.83699 & 22.15644 & 22.00332 & 21.34706 & 22.00332 & 21.34706 & 28.769392 & 27.90644 & 28.76939 & 27.90644 & 29.11504 & 28.24295\end{array}$ $\begin{array}{lllllllllllllllllllll}22.59737 & 21.63572 & 22.59737 & 21.63572 & 23.01804 & 22.03776 & 24.23607 & 23.20441 & 23.34496 & 22.35229 & 23.34496 & 22.35229 & 30.511137 & 29.21169 & 30.51114 & 29.21169 & 30.88373 & 29.56815\end{array}$ $\begin{array}{llllllllllllllllllllll}21.367685 & 20.6928 & 21.36769 & 20.6928 & 21.7542 & 21.06833 & 22.90916 & 22.18678 & 22.07321 & 21.37722 & 22.07321 & 21.37722 & 28.86077 & 27.9458 & 28.86077 & 27.9458 & 29.20728 & 28.28217\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}22.648433 & 21.59303 & 22.64843 & 21.59303 & 23.06969 & 21.99318 & 24.29061 & 23.15783 & 23.39786 & 22.30816 & 23.39786 & 22.30816 & 30.579997 & 29.15467 & 30.58 & 29.15467 & 30.95326 & 29.50991\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}20.419993 & 19.639 & 20.41999 & 19.639 & 20.78098 & 19.98672 & 21.88711 & 21.05072 & 21.09325 & 20.2875 & 21.09325 & 20.2875 & 27.587827 & 26.53038 & 27.58783 & 26.53038 & 27.91468 & 26.84517\end{array}$ $\begin{array}{lllllllllllllllllllllll}19.760452 & 19.2424 & 19.76045 & 19.2424 & 20.10338 & 19.57856 & 21.17551 & 20.62225 & 20.41097 & 19.87699 & 20.41097 & 19.87699 & 26.703366 & 25.99901 & 26.70337 & 25.99901 & 27.0163 & 26.3051\end{array}$ $\begin{array}{llllllllllllllllllllll}21.338898 & 20.64798 & 21.3389 & 20.64798 & 21.72424 & 21.02189 & 22.87789 & 22.13821 & 22.04348 & 21.33106 & 22.04348 & 21.33106 & 28.822245 & 27.88549 & 28.82225 & 27.88549 & 29.16799 & 28.22089\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}22.655835 & 21.52248 & 22.65584 & 21.52248 & 23.07676 & 21.92026 & 24.29822 & 23.08149 & 23.40551 & 22.23529 & 23.40551 & 22.23529 & 30.590048 & 29.05997 & 30.59005 & 29.05997 & 30.96327 & 29.41361\end{array}$ $\begin{array}{llllllllllllllllllllll}21.692227 & 20.9625 & 21.69223 & 20.9625 & 22.0891 & 21.34685 & 23.26015 & 22.47861 & 22.40871 & 21.65578 & 22.40871 & 21.65578 & 29.295813 & 28.30776 & 29.29581 & 28.30776 & 29.64982 & 28.65044\end{array}$ $\begin{array}{llllllllllllllllllllll}23.675796 & 22.61573 & 23.66896 & 22.61506 & 24.11805 & 23.04277 & 25.39147 & 24.2602 & 24.45328 & 23.36526 & 24.45328 & 23.36526 & 31.950126 & 30.52644 & 31.95013 & 30.52644 & 32.34476 & 30.90308\end{array}$ $\begin{array}{lllllllllllllllllllll}23.831725 & 22.71433 & 23.82527 & 22.71424 & 24.28057 & 23.14459 & 25.55997 & 24.36715 & 24.61476 & 23.4678 & 24.61476 & 23.4678 & 32.16024 & 30.65966 & 32.16024 & 30.65966 & 32.55808 & 31.03827\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}22.801317 & 21.6065 & 22.80132 & 21.6065 & 23.22552 & 22.00595 & 24.45478 & 23.17178 & 23.55595 & 22.32231 & 23.55595 & 22.32231 & 30.785841 & 29.17289 & 30.78584 & 29.17289 & 31.16172 & 29.52791\end{array}$ $\begin{array}{llllllllllllllllllll}21.753475 & 21.09645 & 21.75348 & 21.09645 & 22.14882 & 21.48156 & 23.32419 & 22.62131 & 22.47242 & 21.79502 & 22.47242 & 21.79502 & 29.379377 & 28.48783 & 29.37938 & 28.48783 & 29.73319 & 28.8321\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllllll}24.017159 & 22.76627 & 24.01061 & 22.76627 & 24.47444 & 23.19753 & 25.75946 & 24.42281 & 24.80827 & 23.52132 & 24.80827 & 23.52132 & 32.409822 & 30.73036 & 32.40982 & 30.73036 & 32.81121 & 31.10981\end{array}$

$\begin{array}{llllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$

 $\begin{array}{llllllllllllllllllllllllll}380950 & 3731350 & 16.60951 & 16.2649 & 22.38863 & 21.91812 & 22.38863 & 21.91812 & 22.00597 & 21.5419 & 22.00597 & 21.5419 & 22.24106 & 21.77405 & 16.60951 & 16.2649 & 22.38863 & 21.91812 & 22.38863 & 21.91812\end{array}$ $\begin{array}{llllllllllllllllllllll}381450 & 3731350 & 19.13417 & 18.37688 & 25.74233 & 24.72277 & 25.74233 & 24.72277 & 25.29541 & 24.29204 & 25.29541 & 24.29204 & 25.58336 & 24.56852 & 19.13417 & 18.37688 & 25.74233 & 24.72277 & 25.74233 & 24.72277\end{array}$ $\begin{array}{lllllllllllllllllllllll}381950 & 3731350 & 22.65187 & 21.67879 & 30.43075 & 29.1248 & 30.43075 & 29.1248 & 29.89442 & 28.61028 & 29.89442 & 28.61028 & 30.2503 & 28.95024 & 22.65187 & 21.67879 & 30.43075 & 29.1248 & 30.43075 & 29.1248\end{array}$ $\begin{array}{llllllllllllllllllllll}384450 & 3731350 & 19.80805 & 18.75982 & 26.67677 & 25.27166 & 26.67677 & 25.27166 & 26.05794 & 24.67811 & 26.05794 & 24.67811 & 26.32074 & 24.92338 & 19.80805 & 18.75982 & 26.67677 & 25.27166 & 26.67677 & 25.27166\end{array}$ $\begin{array}{lllllllllllllllllllllllll}380450 & 3731850 & 16.27374 & 15.90703 & 21.95073 & 21.45031 & 21.95073 & 21.45031 & 21.58135 & 21.08731 & 21.58135 & 21.08731 & 21.80715 & 21.30982 & 16.27374 & 15.90703 & 21.95073 & 21.45031 & 21.95073 & 21.45031\end{array}$ $\begin{array}{lllllllllllllllllllllllll}380950 & 3731850 & 18.73023 & 18.24723 & 25.21601 & 24.56378 & 25.21601 & 24.56378 & 24.78331 & 24.14086 & 24.78331 & 24.14086 & 25.05963 & 24.41061 & 18.73023 & 18.24723 & 25.21601 & 24.56378 & 25.21601 & 24.56378\end{array}$ $\begin{array}{llllllllllllllllllllllllll}381450 & 3731850 & 20.69007 & 20.03885 & 27.80945 & 26.934 & 27.80945 & 26.934 & 27.32317 & 26.46291 & 27.32317 & 26.46291 & 27.64356 & 26.77328 & 20.69007 & 20.03885 & 27.80945 & 26.934 & 27.80945 & 26.934\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllll}383450 & 3731850 & 18.28304 & 17.94754 & 24.6264 & 24.17048 & 24.6264 & 24.17048 & 24.09342 & 23.64944 & 24.09342 & 23.64944 & 24.34078 & 23.89413 & 18.28304 & 17.94754 & 24.6264 & 24.17048 & 24.6264 & 24.17048\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}383950 & 3731850 & 16.715 & 16.29715 & 22.54531 & 21.97838 & 22.54531 & 21.97838 & 22.02116 & 21.46791 & 22.02116 & 21.46791 & 22.23017 & 21.67296 & 16.715 & 16.29715 & 22.54531 & 21.97838 & 22.54531 & 21.97838\end{array}$ $\begin{array}{lllllllllllllllllllll}380450 & 3732350 & 17.13588 & 16.29429 & 23.09106 & 21.96213 & 23.09106 & 21.96213 & 22.69802 & 21.58776 & 22.69802 & 21.58776 & 22.94341 & 21.81905 & 17.13588 & 16.29429 & 23.09106 & 21.96213 & 23.09106 & 21.96213\end{array}$ $\begin{array}{llllllllllllllllllllll}380950 & 3732350 & 19.25561 & 18.82113 & 25.90761 & 25.32405 & 25.90761 & 25.32405 & 25.45762 & 24.88463 & 25.45762 & 24.88463 & 25.7466 & 25.16686 & 19.25561 & 18.82113 & 25.90761 & 25.32405 & 25.90761 & 25.32405\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}381450 & 3732350 & 21.6446 & 21.1775 & 29.0794 & 28.44974 & 29.0794 & 28.44974 & 28.56743 & 27.94842 & 28.56743 & 27.94842 & 28.9069 & 28.28115 & 21.6446 & 21.1775 & 29.0794 & 28.44974 & 29.0794 & 28.44974\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}381950 & 3732350 & 24.40334 & 22.43998 & 32.75457 & 30.13294 & 32.75457 & 30.13294 & 32.16936 & 29.59191 & 32.16936 & 29.59191 & 32.56219 & 29.94767 & 24.40334 & 22.43998 & 32.75457 & 30.13294 & 32.75457 & 30.13294\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382450 & 3732350 & 22.82196 & 22.49211 & 30.65461 & 30.16296 & 30.65461 & 30.16296 & 30.08175 & 29.59982 & 30.08175 & 29.59982 & 30.43678 & 29.95054 & 22.82196 & 22.49211 & 30.65461 & 30.16296 & 30.65461 & 30.16296\end{array}$ $\begin{array}{lllllllllllllllllllllllll}383450 & 3732350 & 16.05402 & 15.73552 & 21.6494 & 21.21393 & 21.6494 & 21.21393 & 21.17816 & 20.75322 & 21.17816 & 20.75322 & 21.38563 & 20.95888 & 16.05402 & 15.73552 & 21.6494 & 21.21393 & 21.6494 & 21.21393\end{array}$ $\begin{array}{lllllllllllllllllllllllll}383950 & 3732350 & 14.8691 & 14.49331 & 20.07462 & 19.55906 & 20.07462 & 19.55906 & 19.6132 & 19.11089 & 19.6132 & 19.11089 & 19.79289 & 19.28782 & 14.8691 & 14.49331 & 20.07462 & 19.55906 & 20.07462 & 19.55906\end{array}$ $\begin{array}{lllllllllllllllllllll}384450 & 3732350 & 13.98292 & 13.39435 & 18.89286 & 18.0773 & 18.89286 & 18.0773 & 18.45256 & 17.67125 & 18.45256 & 17.65226 & 18.61515 & 17.80745 & 13.98292 & 13.39435 & 18.89286 & 18.0773 & 18.89286 & 18.0773\end{array}$ $\begin{array}{lllllllllllllllllllllll}380450 & 3732850 & 17.6814 & 17.11866 & 23.81172 & 23.05591 & 23.81172 & 23.05591 & 23.40336 & 22.6606 & 23.40336 & 22.6606 & 23.66134 & 22.90972 & 17.6814 & 17.11866 & 23.81172 & 23.05591 & 23.81172 & 23.05591\end{array}$
 $\begin{array}{llllllllllllllllllllllll}381450 & 3732850 & 23.4469 & 22.46123 & 31.47855 & 29.96741 & 31.47855 & 29.96741 & 30.9246 & 29.43938 & 30.9246 & 29.43938 & 31.3005 & 29.79537 & 23.4469 & 22.46123 & 31.47855 & 29.96741 & 31.47855 & 29.96741\end{array}$ $\begin{array}{llllllllllllllllllllllllll}382450 & 3722850 & 20.22677 & 19.74786 & 27.19221 & 26.54586 & 27.19221 & 26.54586 & 26.67824 & 26.04378 & 26.67824 & 26.04378 & 26.98315 & 26.34254 & 20.22677 & 19.74786 & 27.19221 & 26.54586 & 27.19221 & 26.54586\end{array}$ $\begin{array}{lllllllllllllllllllllll}383950 & 3722850 & 13.40089 & 12.98136 & 18.10745 & 17.53558 & 18.10745 & 17.53558 & 17.69876 & 17.13845 & 17.69876 & 17.13845 & 17.8563 & 17.2927 & 13.40089 & 12.98136 & 18.10745 & 17.53558 & 18.10745 & 17.53558\end{array}$ $\begin{array}{llllllllllllllllllllllllll} & 1684450 & 3732850 & 12.71047 & 12.16577 & 17.18651 & 16.44775 & 17.18651 & 16.44775 & 16.79197 & 16.06884 & 16.79197 & 16.06884 & 16.9359 & 16.20722 & 12.71047 & 12.16577 & 17.18651 & 16.44775 & 17.18651 & 16.44775\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}384950 & 3732850 & 12.16621 & 11.75482 & 16.45952 & 15.89872 & 16.45952 & 15.89872 & 16.07951 & 15.52941 & 16.07951 & 15.52941 & 16.21364 & 15.66021 & 12.16621 & 11.75482 & 16.45952 & 15.89872 & 16.45952 & 15.89872\end{array}$ $\begin{array}{llllllllllllllllllll}380450 & 3733350 & 17.99906 & 17.30547 & 24.23079 & 23.29921 & 24.23079 & 23.29921 & 23.81354 & 22.89752 & 23.81354 & 22.89752 & 24.07918 & 23.15204 & 17.99906 & 17.30547 & 24.23079 & 23.29921 & 24.23079 & 23.29921\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllllll}380950 & 3733350 & 20.98385 & 20.58744 & 28.09835 & 27.58436 & 28.09835 & 27.58436 & 27.60856 & 27.10444 & 27.60856 & 27.10444 & 27.9329 & 27.42405 & 20.98385 & 20.58744 & 28.09835 & 27.58436 & 28.09835 & 27.58436\end{array}$ $\begin{array}{llllllllllllllllllllll}381450 & 3733350 & 24.6839 & 23.97323 & 33.11821 & 32.1616 & 33.11821 & 32.1616 & 32.53431 & 31.59408 & 32.53431 & 31.59408 & 32.93775 & 31.9869 & 24.6839 & 23.97323 & 33.11821 & 32.1616 & 33.11821 & 32.1616\end{array}$ $\begin{array}{llllllllllllllllllll}382450 & 3733350 & 19.62223 & 18.92358 & 26.37938 & 25.43918 & 26.37938 & 25.43918 & 25.88172 & 24.95812 & 25.88172 & 24.95812 & 26.17782 & 25.24389 & 19.62223 & 18.92358 & 26.37938 & 25.43918 & 26.37938 & 25.43918\end{array}$ $\begin{array}{llllllllllllllllllll}382950 & 3733350 & 15.41254 & 14.74289 & 20.77466 & 19.87072 & 20.77466 & 19.87072 & 20.35464 & 19.4676 & 20.35464 & 19.4676 & 20.56249 & 19.66673 & 15.41254 & 14.74289 & 20.77466 & 19.87072 & 20.77466 & 19.87072\end{array}$ $\begin{array}{lllllllllllllllllllllllll}383450 & 3733350 & 13.77123 & 12.95046 & 18.58997 & 17.48468 & 18.58997 & 17.48468 & 18.19481 & 17.10961 & 18.19481 & 17.10961 & 18.36716 & 17.27021 & 13.77123 & 12.95046 & 18.58997 & 17.48468 & 18.58997 & 17.48468\end{array}$ $\begin{array}{lllllllllllllllllllll}383950 & 3733350 & 12.53126 & 11.92438 & 16.93899 & 16.11793 & 16.93899 & 16.11793 & 16.56379 & 15.76046 & 16.56379 & 15.76046 & 16.7098 & 15.89959 & 12.53126 & 11.92438 & 16.93899 & 16.11793 & 16.93899 & 16.11793\end{array}$ $\begin{array}{llllllllllllllllllll}389450 & 3733350 & 8.506633 & 8.231094 & 11.5497 & 11.17241 & 11.5497 & 11.17241 & 11.28143 & 10.91209 & 11.28143 & 10.91209 & 11.35971 & 10.98889 & 8.506633 & 8.231094 & 11.5497 & 11.17241 & 11.5497 & 11.17241\end{array}$ $\begin{array}{llllllllllllllllllll}389950 & 3733350 & 8.093597 & 7.58754 & 10.99554 & 10.30913 & 10.99554 & 10.30913 & 10.74562 & 10.0783 & 10.74562 & 10.0783 & 10.81853 & 10.1468 & 8.093597 & 7.58754 & 10.99554 & 10.30913 & 10.99554 & 10.30913\end{array}$ $\begin{array}{lllllllllllllllllllllll}380450 & 3733850 & 18.67643 & 18.01257 & 24.98789 & 24.2269 & 24.98789 & 24.2268 & 24.55779 & 23.81556 & 24.55779 & 23.81556 & 24.83715 & 24.08749 & 18.67643 & 18.01257 & 24.98789 & 24.2325 & 24.98789 & 24.2325\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllllll}380950 & 3733850 & 22.30885 & 21.40768 & 29.96183 & 28.75316 & 29.96183 & 28.75316 & 29.43718 & 28.25085 & 29.43718 & 28.25085 & 29.79124 & 28.59012 & 22.30885 & 21.40768 & 29.96183 & 28.75316 & 29.96183 & 28.75316\end{array}$ $\begin{array}{llllllllllllllllllllllllll}381450 & 3733850 & 27.02371 & 26.53988 & 36.2291 & 35.57544 & 36.2291 & 35.57544 & 35.59418 & 34.95062 & 35.59418 & 34.95062 & 36.04691 & 35.39686 & 27.02371 & 26.53988 & 36.2291 & 35.57544 & 36.2291 & 35.57544\end{array}$ $\begin{array}{lllllllllllllllllll}382450 & 3733850 & 18.4747 & 17.53731 & 24.84248 & 23.58583 & 24.84248 & 23.58583 & 24.37432 & 23.13863 & 24.37432 & 23.13863 & 24.65108 & 23.39954 & 18.4747 & 17.53731 & 24.84248 & 23.58583 & 24.84248 \\ 23.58583\end{array}$

 | 383450 | 3733850 | 13.06543 | 12.47036 | 17.64027 | 16.8369 | 17.64027 | 16.8369 | 17.27103 | 16.48492 | 17.27103 | 16.48492 | 17.43442 | 16.64091 | 13.06543 | 12.47036 | 17.64027 | 16.8369 | 17.64027 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | 16.8369 $\begin{array}{lllllllllllllllllll}383950 & 3733850 & 11.87431 & 11.40814 & 16.0537 & 15.42285 & 16.0537 & 15.42285 & 15.70589 & 15.08823 & 15.70589 & 15.08823 & 15.8445 & 15.22154 & 11.87431 & 11.40814 & 16.0537 & 15.42285 & 16.0537 \\ 15.42285\end{array}$ $\begin{array}{lllllllllllllllllll}384950 & 3733850 & 10.60532 & 10.26677 & 14.36113 & 13.90222 & 14.36113 & 13.90222 & 14.03669 & 13.58714 & 14.03669 & 13.58714 & 14.14981 & 13.69667 & 10.60532 & 10.26677 & 14.36113 & 13.90222 & 14.36113\end{array} 13.90222$ $\begin{array}{lllllllllllllllllllllll}388450 & 3733850 & 9.193364 & 8.625655 & 12.47157 & 11.70477 & 12.47157 & 11.70477 & 12.17473 & 11.43312 & 12.17473 & 11.43312 & 12.26208 & 11.51495 & 9.193364 & 8.625655 & 12.47157 & 11.70477 & 12.47157 & 11.70477\end{array}$ $\begin{array}{lllllllllllllllllllll}388950 & 3733850 & 8.883075 & 8.468296 & 12.056 & 11.49283 & 12.056 & 11.49283 & 11.77292 & 11.22306 & 11.77292 & 11.22306 & 11.85594 & 11.30233 & 8.883075 & 8.468296 & 12.056 & 11.49283 & 12.056 & 11.49283\end{array}$ $\begin{array}{llllllllllllllllll}389450 & 3733850 & 8.645172 & 8.217495 & 11.73674 & 11.15632 & 11.73674 & 11.15632 & 11.46183 & 10.89509 & 11.46183 & 10.89509 & 11.54142 & 10.97068 & 8.645172 & 8.217495 & 11.73674 & 11.15632\end{array} 11.73674 \quad 11.15632$ $\begin{array}{llllllllllllllllll}389950 & 3733850 & 8.1616 & 7.809918 & 11.08712 & 10.60826 & 11.08712 & 10.60826 & 10.83156 & 10.36443 & 10.83156 & 10.36443 & 10.90481 & 10.43504 & 8.1616 & 7.809918 & 11.08712 & 10.60826\end{array} 11.08712 \quad 10.60826$ $\begin{array}{llllllllllllllllllllll}380450 & 3734350 & 19.62009 & 18.92515 & 26.37789 & 25.44228 & 26.37789 & 25.44228 & 25.92129 & 25.00251 & 25.92129 & 25.00251 & 26.22344 & 25.29457 & 19.62009 & 18.92515 & 26.37789 & 25.44228 & 26.37789 & 25.44228\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}380950 & 3734350 & 24.09348 & 23.40457 & 32.33025 & 31.4053 & 32.33025 & 31.4053 & 31.76637 & 30.85738 & 31.76637 & 30.85738 & 32.15951 & 31.23943 & 24.09348 & 23.40457 & 32.33025 & 31.4053 & 32.33025 & 31.4053\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}381450 & 3734350 & 29.80597 & 28.32043 & 39.92755 & 37.94195 & 39.92755 & 37.94195 & 39.23313 & 37.28031 & 39.23313 & 37.28031 & 39.74499 & 37.76468 & 29.80597 & 28.32043 & 39.92755 & 37.94195 & 39.92755 & 37.94195\end{array}$ $\begin{array}{llllllllllllllllllll}382950 & 3734350 & 14.27541 & 13.65786 & 19.24444 & 18.41619 & 19.24444 & 18.41619 & 18.86263 & 18.05027 & 18.86263 & 18.05027 & 19.05546 & 18.23308 & 14.27541 & 13.65786 & 19.24444 & 18.41619 & 19.24444 & 18.41619\end{array}$ $\begin{array}{lllllllllllllllllll}383450 & 3734350 & 12.51551 & 12.15586 & 16.90171 & 16.41597 & 16.90171 & 16.41597 & 16.55297 & 16.07642 & 16.55297 & 16.07642 & 16.70878 & 16.22764 & 12.51551 & 12.15586 & 16.90171 & 16.41597 & 16.90171\end{array} 16.41597$ $\begin{array}{llllllllllllllllllllll}383950 & 3734350 & 11.3393 & 10.99065 & 15.33338 & 14.8595 & 15.33338 & 14.8595 & 15.00568 & 14.54328 & 15.00568 & 14.54328 & 15.13765 & 14.67231 & 11.3393 & 10.99065 & 15.33338 & 14.8595 & 1533338 & 14.8595\end{array}$ $\begin{array}{llllllllllllllllllll}384950 & 3734350 & 10.21876 & 10.02307 & 13.84265 & 13.57469 & 13.84265 & 13.57469 & 13.53384 & 13.27222 & 13.53384 & 13.27222 & 13.64163 & 13.37906 & 10.21876 & 10.02307 & 13.84265 & 13.57469 & 13.84265 & 13.57469\end{array}$ $\begin{array}{llllllllllllllllll}386450 & 3734350 & 9.392417 & 9.076498 & 12.74148 & 12.31247 & 12.74148 & 12.31247 & 12.44704 & 12.02748 & 12.44704 & 12.02748 & 12.53775 & 12.11523 & 9.392417 & 9.076498 & 12.74148 & 12.31247 \\ 12.74148 & 12.31247\end{array}$ $\begin{array}{lllllllllllllllllllllll}387950 & 3734350 & 9.034588 & 8.698993 & 12.2616 & 11.80582 & 12.2616 & 11.80582 & 11.9716 & 11.52257 & 11.9716 & 11.52257 & 12.05574 & 11.61055 & 9.034588 & 8.698993 & 12.2616 & 11.80582 & 12.2616 & 11.80582\end{array}$ $\begin{array}{llllllllllllllllllll}389950 & 3734350 & 8.027142 & 7.612164 & 10.90628 & 10.34245 & 10.90628 & 10.34245 & 10.65262 & 10.10416 & 10.65262 & 10.10416 & 10.72364 & 10.17187 & 8.027142 & 7.612164 & 10.90628 & 10.34245 & 10.90628 & 10.34245\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}380450 & 3734850 & 20.63921 & 19.93253 & 27.72914 & 26.77886 & 27.72914 & 26.77886 & 27.25037 & 26.31621 & 27.25037 & 26.31621 & 27.57539 & 26.63032 & 20.63921 & 19.93253 & 27.72914 & 26.77886 & 27.72914 & 26.77886\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllllll}380950 & 3734850 & 25.21378 & 24.08995 & 33.81918 & 32.31348 & 33.81918 & 32.31348 & 33.23265 & 31.75372 & 33.23265 & 31.75372 & 33.64987 & 32.15185 & 25.21378 & 24.08995 & 33.81918 & 32.31348 & 33.81918 & 32.31348\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}381450 & 3734850 & 28.59525 & 27.74118 & 38.31012 & 37.16612 & 38.31012 & 37.16612 & 37.64286 & 36.5192 & 37.64286 & 36.5192 & 38.13217 & 36.99375 & 28.59525 & 27.74118 & 38.31012 & 37.16612 & 38.31012 & 37.16612\end{array}$ $\begin{array}{lllllllllllllllllllll}383450 & 3734850 & 12.12402 & 11.89668 & 16.37843 & 16.06904 & 16.37843 & 16.06904 & 16.04382 & 15.74176 & 16.04382 & 15.74176 & 16.1934 & 15.88944 & 12.12402 & 11.89668 & 16.37843 & 16.06904 & 16.37843 & 16.06904\end{array}$ $\begin{array}{llllllllllllllllllll}383950 & 3734850 & 11.01918 & 10.62401 & 14.8997 & 14.3647 & 14.8997 & 14.3647 & 14.58773 & 14.0659 & 14.58773 & 14.0659 & 14.71731 & 14.1914 & 11.01918 & 10.62401 & 14.8997 & 14.3647 & 14.8997 & 14.3647\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}387450 & 3734850 & 8.736754 & 8.405758 & 11.86077 & 11.41073 & 11.86077 & 11.41073 & 11.58327 & 11.14297 & 11.58327 & 11.14297 & 11.66384 & 11.22063 & 8.736754 & 8.405758 & 11.86077 & 11.41073 & 11.86077 & 11.41073\end{array}$ $\begin{array}{lllllllllllllllllll}388450 & 3734850 & 8.353771 & 8.094596 & 11.34576 & 10.99475 & 11.34576 & 10.99475 & 11.08007 & 10.73709 & 11.08007 & 10.73709 & 11.15525 & 10.81152 & 8.353771 & 8.094596 & 11.34576 & 10.99475 & 11.34576 \\ 10.99475\end{array}$ $\begin{array}{llllllllllllllllllll}388950 & 3734850 & 8.184158 & 7.709889 & 11.11582 & 10.47262 & 11.11582 & 10.47262 & 10.85368 & 10.23139 & 10.85368 & 10.23139 & 10.92689 & 10.30094 & 8.184158 & 7.709889 & 11.11582 & 10.47262 & 11.11582 & 10.47262\end{array}$ $\begin{array}{llllllllllllllllllll}389450 & 3734850 & 7.854457 & 7.518672 & 10.67242 & 10.21538 & 10.67242 & 10.21538 & 10.42381 & 9.977833 & 10.42381 & 9.977833 & 10.49296 & 10.04437 & 7.854457 & 7.518672 & 10.67242 & 10.21538 & 10.67242 & 10.21538\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}380450 & 3735350 & 20.62175 & 20.31189 & 27.70133 & 27.27812 & 27.70133 & 27.27812 & 27.22401 & 26.80743 & 27.22401 & 26.80743 & 27.55044 & 27.13148 & 20.62175 & 20.31189 & 27.70133 & 27.27812 & 27.70133 & 27.27812\end{array}$ $\begin{array}{lllllllllllllllllllllll}380950 & 3735350 & 24.17236 & 23.67333 & 32.41968 & 31.74814 & 32.41968 & 31.74814 & 31.85699 & 31.19704 & 31.85699 & 31.19704 & 32.25789 & 31.59061 & 24.17236 & 23.67333 & 32.41968 & 31.74814 & 32.41968 & 31.74814\end{array}$ $\begin{array}{llllllllllllllllllllll}381450 & 3735350 & 25.97544 & 25.37101 & 34.81382 & 34.00228 & 34.81382 & 34.00228 & 34.2081 & 33.41039 & 34.2081 & 33.41039 & 34.6476 & 33.84012 & 25.97544 & 25.37101 & 34.81382 & 34.00228 & 34.81382 & 34.00228\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}381950 & 3735350 & 25.92091 & 25.20954 & 34.73941 & 33.7852 & 34.73941 & 33.7852 & 34.1274 & 33.18972 & 34.1274 & 33.18972 & 34.56532 & 33.61583 & 25.92091 & 25.20954 & 34.73941 & 33.7852 & 34.73941 & 33.7852\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}382950 & 3735350 & 14.5947 & 13.72904 & 19.65701 & 18.55262 & 19.65701 & 18.55262 & 19.28144 & 18.17713 & 19.28144 & 18.12383 & 19.48752 & 18.39065 & 14.5947 & 13.77174 & 19.65701 & 18.55262 & 19.65701 & 18.55262\end{array}$ $\begin{array}{llllllllllllllllllll}383950 & 3735350 & 11.26254 & 10.76492 & 15.21977 & 14.54821 & 15.21977 & 14.54821 & 14.90899 & 14.25068 & 14.90899 & 14.25068 & 15.04602 & 14.38126 & 11.26254 & 10.76492 & 15.21977 & 14.54821 & 15.21977 & 14.54821\end{array}$ $\begin{array}{llllllllllllllllllll}384450 & 3735350 & 10.42854 & 10.14858 & 14.11048 & 13.72828 & 14.11048 & 13.72828 & 13.8139 & 13.43982 & 13.8139 & 13.43982 & 13.93287 & 13.55687 & 10.42854 & 10.14858 & 14.11048 & 13.72828 & 14.11048 & 13.72828\end{array}$ $\begin{array}{lllllllllllllllllll}384950 & 3735350 & 9.735844 & 9.530167 & 13.18681 & 12.90355 & 13.18681 & 12.90355 & 12.90457 & 12.62642 & 12.90457 & 12.62642 & 13.00979 & 12.73099 & 9.735844 & 9.530167 & 13.18681 & 12.90355 & 13.18681\end{array} 12.90355$ $\begin{array}{lllllllllllllllllll}387950 & 3735350 & 8.161708 & 7.799376 & 11.0865 & 10.59422 & 11.0865 & 10.59422 & 10.82761 & 10.34783 & 10.82761 & 10.34783 & 10.90061 & 10.41777 & 8.161708 & 7.799376 & 11.0865 & 10.59422 & 11.0865\end{array} 10.59422$ $\begin{array}{llllllllllllllllll}388450 & 3735350 & 7.984009 & 7.65276 & 10.8701 & 10.40601 & 10.8701 & 10.40601 & 10.61532 & 10.1647 & 10.61532 & 10.1647 & 10.68539 & 10.23343 & 7.984009 & 7.65276 & 10.8701 & 10.40601\end{array} 10.8701 \quad 10.40601$ $\begin{array}{lllllllllllllllllllll}388950 & 3735350 & 7.882258 & 7.535934 & 10.72847 & 10.23819 & 10.72847 & 10.23819 & 10.47654 & 10.0009 & 10.47654 & 10.0009 & 10.54566 & 10.0681 & 7.882258 & 7.535934 & 10.72847 & 10.23819 & 10.72847 & 10.23819\end{array}$ $\begin{array}{llllllllllllllllllllll}389450 & 3735350 & 7.516506 & 7.269797 & 10.21639 & 9.878679 & 10.21639 & 9.878679 & 9.979983 & 9.65118 & 9.979983 & 9.65118 & 10.04521 & 9.715342 & 7.516506 & 7.269797 & 10.21639 & 9.878679 & 10.21639 & 9.878679\end{array}$ $\begin{array}{llllllllllllllllllllll}380450 & 3735850 & 20.12762 & 19.35545 & 27.02415 & 25.98828 & 27.02415 & 25.98828 & 26.55915 & 25.53972 & 26.55915 & 25.53972 & 26.88279 & 25.85049 & 20.12762 & 19.35545 & 27.02415 & 25.98828 & 27.02415 & 25.98828\end{array}$ $\begin{array}{llllllllllllllllllllll}380950 & 3735850 & 22.00568 & 21.52918 & 29.52256 & 28.87977 & 29.52256 & 28.87977 & 29.0108 & 28.37975 & 29.0108 & 28.37975 & 29.37267 & 28.73517 & 22.00568 & 21.66828 & 29.52256 & 28.87977 & 29.52256 & 28.87977\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}381450 & 3735850 & 24.01381 & 23.47087 & 32.19415 & 31.46215 & 32.19415 & 31.46215 & 31.63419 & 30.91388 & 31.63419 & 30.91388 & 32.03713 & 31.30906 & 24.01381 & 23.47087 & 32.19415 & 31.46215 & 32.19415 & 31.46215\end{array}$ $\begin{array}{llllllllllllllllllll}382450 & 3735850 & 21.33535 & 19.99874 & 28.62383 & 26.83738 & 28.62383 & 26.83738 & 28.11118 & 26.35485 & 28.11118 & 26.35485 & 28.45917 & 26.67829 & 21.33535 & 19.99874 & 28.62383 & 26.83738 & 28.62383 & 26.83738\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}382950 & 3735850 & 16.64593 & 15.80588 & 22.38211 & 21.25533 & 22.38211 & 21.25533 & 21.96652 & 20.71904 & 21.96652 & 20.66314 & 22.21734 & 21.09817 & 16.64593 & 15.80588 & 22.38211 & 21.25533 & 22.38211 & 21.25533\end{array}$ $\begin{array}{lllllllllllllllllll}383450 & 3735850 & 13.0727 & 12.34175 & 17.62356 & 16.64262 & 17.62356 & 16.64262 & 17.28271 & 16.3199 & 17.28271 & 16.3199 & 17.4605 & 16.4859 & 13.0727 & 12.47595 & 17.62356 & 16.79822 & 17.62356 \\ 16.74612\end{array}$ $\begin{array}{llllllllllllllllllll}383950 & 3735850 & 11.40855 & 10.60983 & 15.40806 & 14.51939 & 15.40806 & 14.47126 & 15.0996 & 13.98039 & 15.0996 & 13.98039 & 15.24277 & 14.20681 & 11.40855 & 10.74708 & 15.40806 & 14.51939 & 15.40806 & 14.51939\end{array}$ $\begin{array}{lllllllllllllllllll}384450 & 3735850 & 10.37225 & 9.957022 & 14.02798 & 13.46672 & 14.02798 & 13.45511 & 13.7488 & 13.23116 & 13.73895 & 13.23116 & 13.86056 & 13.30555 & 10.37225 & 9.984622 & 14.02798 & 13.46672 & 14.02798 \\ 13.46672\end{array}$ $\begin{array}{lllllllllllllllllll}384950 & 3735850 & 9.678518 & 9.394504 & 13.10488 & 12.71826 & 13.10488 & 12.71826 & 12.82975 & 12.44995 & 12.82975 & 12.44995 & 12.9368 & 12.55441 & 9.678518 & 9.394504 & 13.10488 & 12.71826 & 13.10488 \\ 12.71826\end{array}$ $\begin{array}{llllllllllllllllllllllll}385450 & 3735850 & 9.161821 & 8.889507 & 12.41496 & 12.04422 & 12.41496 & 12.04422 & 12.14727 & 11.78316 & 12.14727 & 11.78316 & 12.24388 & 11.87733 & 9.161821 & 8.889507 & 12.41496 & 12.04422 & 12.41496 & 12.04422\end{array}$

| $\mathrm{C}_{0.0010}$ | 0.0009 | 0.0037 | 0.0035 | 0.0037 | 0.0034 | 0.0021 | 0.0019 | 0.0021 | 0.0019 | 0.0058 | 0.0055 | 0.0014 | 0.0013 | 0.0055 | 0.0052 | 0.0055 | 0.0052 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction | 48.55\% | 44.40\% | 44.40\% | 44.40\% | 44.40\% | 78.71\% | 78.71\% | 78.71\% | $78.71 \%$ $70.88 \%$ <br> $389200 \_374$ $382683.8 \_3$ |  | 70.88\% <br> 382683.8_3 <br> 734051.76 | 67.78\% | $\int_{3}^{67.78 \%}$ | 66.42\% | $\begin{aligned} & 66.42 \% \\ & 382683.8-3 \\ & 734051.76 \end{aligned}$ | 66.42\% | 66.42\% <br> 382683.8 734051.7 |
|  | 450_3 |  |  | 382683 |  | 389450_3 | 89200 | 389450_3 |  |  | 389450 |  |  | 382683.8 |  |  |


$\begin{array}{llllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$ 2033_ALT4_ 2033_ALT4_ 2033_ALTS_ 2033_ALT5_ 2033_PP_CA 2033_PP_N 2038_ALT1_ 2038_ALT1_ 2038_NP_C 2038_NP_N 2038_ALT3_ 2038_ALT3_ 2038_ALT4_ 2038_ALT4_ 2038_ALTS_ 2038_ALT5_ 2038_PP_CA 2038_PP_N $\begin{array}{llllllllllllllllllllllllllllll}385950 & 3735850 & 8.866633 & 8.535417 & 12.02074 & 11.57231 & 12.02074 & 11.57231 & 11.75532 & 11.31667 & 11.75532 & 11.31667 & 11.84569 & 11.40343 & 8.866633 & 8.535417 & 12.02074 & 11.57231 & 12.02074 & 11.57231\end{array}$ $\begin{array}{lllllllllllllllllllllllll}386450 & 3735850 & 8.439587 & 8.138731 & 11.44978 & 11.04057 & 11.44978 & 11.04057 & 11.19301 & 10.79262 & 11.19301 & 10.79262 & 11.27544 & 10.87243 & 8.439587 & 8.138731 & 11.44978 & 11.04057 & 11.44978 & 11.04057\end{array}$ | 386950 | 3735850 | 8.341175 | 8.062501 | 11.32507 | 10.94545 | 11.32507 | 10.94545 | 11.0685 | 10.69777 | 11.0685 | 10.69777 | 11.14629 | 10.77349 | 8.341175 | 8.062501 | 11.32507 | 10.94545 | 11.32507 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | 10.94545 | 388450 | 3735850 | 7.623989 | 7.29818 | 10.36128 | 9.917638 | 10.36128 | 9.917638 | 10.12101 | 9.688464 | 10.12101 | 9.688464 | 10.18756 | 9.752597 | 7.623989 | 7.29818 | 10.36128 | 9.917638 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $10.36128 ~ 9.917638$ $\begin{array}{lllllllllllllllllll}388950 & 3735850 & 7.398797 & 7.165474 & 10.05865 & 9.737931 & 10.05865 & 9.737931 & 9.826259 & 9.512967 & 9.826259 & 9.512967 & 9.889699 & 9.575723 & 7.398797 & 7.165474 & 10.05865 & 9.737931 & 10.05865\end{array} 9.737931$ $\begin{array}{lllllllllllllllllllllllllllllllllll}380450 & 3736350 & 19.59135 & 18.97044 & 26.30982 & 25.47257 & 26.30982 & 25.47257 & 25.85596 & 25.03214 & 25.85596 & 25.03214 & 26.16882 & 25.33621 & 19.59135 & 18.97044 & 26.30982 & 25.47257 & 26.30982 & 25.47257\end{array}$ $\begin{array}{lllllllllllllllllllllll}380950 & 3736350 & 21.24791 & 20.58007 & 28.523 & 27.12187 & 28.523 & 27.12187 & 28.02845 & 26.6493 & 28.02829 & 26.6493 & 28.3715 & 26.97551 & 21.24791 & 20.58007 & 28.523 & 27.12187 & 28.523 & 27.12187\end{array}$ $\begin{array}{lllllllllllllllllllllll}381450 & 3736350 & 22.32518 & 21.80473 & 29.94396 & 29.24259 & 29.94396 & 29.24259 & 29.42115 & 28.73137 & 29.42115 & 28.73137 & 29.79038 & 29.0931 & 22.32518 & 21.80473 & 29.94396 & 29.24259 & 29.94396 & 29.24259\end{array}$ $\begin{array}{llllllllllllllllllllllll}382450 & 3736350 & 19.73531 & 19.09861 & 26.49162 & 25.63663 & 26.49162 & 25.63663 & 26.0172 & 25.17626 & 26.0172 & 25.17626 & 26.33371 & 25.48252 & 19.73531 & 19.09861 & 26.49162 & 25.63663 & 26.49162 & 25.63663\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}382950 & 3736350 & 16.59078 & 15.53127 & 22.30358 & 20.88604 & 22.30358 & 20.88604 & 21.89443 & 20.50038 & 21.89443 & 20.50038 & 22.1468 & 20.7337 & 16.59078 & 15.53127 & 22.30358 & 20.88604 & 22.30358 & 20.88604\end{array}$ $\begin{array}{lllllllllllllllll}383950 & 3736350 & 11.64979 & 10.97026 & 15.72325 & 14.81113 & 15.72325 & 14.81113 & 15.41496 & 14.52006 & 15.41496 & 14.52006 & 15.56609 & 14.66042 & 11.64979 & 10.97026 & 15.72325\end{array} 14.81113 \quad 15.72325 \quad 14.81113$ $\begin{array}{llllllllllllllllllll}384450 & 3736350 & 10.37847 & 9.614067 & 14.0304 & 13.00481 & 14.0304 & 13.00481 & 13.74631 & 12.73979 & 13.74631 & 12.73979 & 13.87102 & 12.85215 & 10.37847 & 9.614067 & 14.0304 & 13.00481 & 14.0304 & 13.00481\end{array}$ $\begin{array}{llllllllllllllllllll}384950 & 3736350 & 9.412284 & 9.146145 & 12.74102 & 12.37959 & 12.74102 & 12.37959 & 12.4777 & 12.12263 & 12.4777 & 12.12263 & 12.58372 & 12.22591 & 9.412284 & 9.146145 & 12.74102 & 12.37959 & 12.74102 & 12.37959\end{array}$ $\begin{array}{lllllllllllllllllllll}385450 & 3736350 & 8.913611 & 8.731544 & 12.0765 & 11.82692 & 12.0765 & 11.82692 & 11.82105 & 11.57527 & 11.82105 & 11.57527 & 11.91662 & 11.66973 & 8.913611 & 8.731544 & 12.0765 & 11.82692 & 12.0765 & 11.82692\end{array}$ $\begin{array}{llllllllllllllllllll}385950 & 3736350 & 8.514833 & 8.223772 & 11.54468 & 11.15016 & 11.54468 & 11.15016 & 11.29362 & 10.90758 & 11.29362 & 10.90758 & 11.3807 & 10.99164 & 8.514833 & 8.223772 & 11.54468 & 11.15016 & 11.54468 & 11.15016\end{array}$ | 386450 | 3736350 | 8.410163 | 8.095781 | 11.40885 | 10.98288 | 11.40885 | 10.98288 | 11.15523 | 10.74007 | 11.15523 | 10.74007 | 11.2381 | 10.81986 | 8.410163 | 8.095781 | 11.40885 | 10.98288 | 11.40885 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | 10.98288 $\begin{array}{lllllllllllllllllllllllll}386950 & 3736350 & 8.09816 & 7.83314 & 10.9934 & 10.63294 & 10.9934 & 10.63294 & 10.74636 & 10.39492 & 10.74636 & 10.39492 & 10.82287 & 10.46931 & 8.09816 & 7.83314 & 10.9934 & 10.63294 & 10.9934 & 10.63294\end{array}$ $\begin{array}{llllllllllllllllllllllllll}387450 & 3736350 & 7.921414 & 7.643608 & 10.75725 & 10.38021 & 10.75725 & 10.38021 & 10.51196 & 10.14373 & 10.51196 & 10.14373 & 10.58481 & 10.21397 & 7.921414 & 7.643608 & 10.75725 & 10.38021 & 10.75725 & 10.38021\end{array}$ $\begin{array}{lllllllllllllllllll}387950 & 3736350 & 7.725915 & 7.444338 & 10.49653 & 10.11446 & 10.49653 & 10.11446 & 10.25515 & 9.882694 & 10.25515 & 9.882694 & 10.3241 & 9.949101 & 7.725915 & 7.444338 & 10.49653 & 10.11446 & 10.49653 \\ 10.4 & 10.11446\end{array}$ $\begin{array}{llllllllllllllllllllllll}388450 & 3736350 & 7.393157 & 7.123887 & 10.0494 & 9.684001 & 10.0494 & 9.684001 & 9.817388 & 9.462548 & 9.817388 & 9.462548 & 9.881403 & 9.524343 & 7.393157 & 7.123887 & 10.0494 & 9.684001 & 10.0494 & 9.684001\end{array}$ $\begin{array}{llllllllllllllllllll}388950 & 3736350 & 7.237419 & 6.931065 & 9.840581 & 9.423956 & 9.840581 & 9.423956 & 9.61356 & 9.208669 & 9.61356 & 9.208669 & 9.675186 & 9.268063 & 7.237419 & 6.931065 & 9.840581 & 9.423956 & 9.840581 & 9.423956\end{array}$ $\begin{array}{lllllllllllllllllll}380450 & 3736850 & 18.5658 & 17.96726 & 24.9473 & 24.13742 & 24.9473 & 24.13742 & 24.51802 & 23.72127 & 24.51802 & 23.72127 & 24.80919 & 24.00501 & 18.5658 & 17.96726 & 24.9473 & 24.13742 & 24.9473 \\ 24.13742\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}380950 & 3736850 & 19.56616 & 18.87954 & 26.27859 & 25.35197 & 26.27859 & 25.35197 & 25.82197 & 24.90991 & 25.82197 & 24.90991 & 26.13287 & 25.21139 & 19.56616 & 18.87954 & 26.27859 & 25.35197 & 26.27859 & 25.35197\end{array}$ $\begin{array}{lllllllllllllllllllll}381450 & 3736850 & 20.21239 & 19.58681 & 27.12502 & 26.28527 & 27.12502 & 26.28527 & 26.65119 & 25.82552 & 26.65119 & 25.82552 & 26.97993 & 26.14407 & 20.21239 & 19.58681 & 27.12502 & 26.28527 & 27.12502 & 26.28527\end{array}$ $\begin{array}{lllllllllllllllllllllll}382450 & 3736850 & 18.3376 & 17.58712 & 24.62564 & 23.61967 & 24.62564 & 23.61967 & 24.18516 & 23.19624 & 24.18516 & 23.19624 & 24.47556 & 23.47398 & 18.3376 & 17.58712 & 24.62564 & 23.61967 & 24.62564 & 23.61967\end{array}$ $\begin{array}{llllllllllllllllllll}382950 & 3736850 & 15.70092 & 14.60605 & 21.11336 & 19.64903 & 21.11336 & 19.64903 & 20.72759 & 19.28828 & 20.72759 & 19.28828 & 20.96444 & 19.50532 & 15.70092 & 14.60605 & 21.11336 & 19.64903 & 21.11336 & 19.64903\end{array}$ $\begin{array}{llllllllllllllllllllll}383450 & 3736850 & 13.62825 & 12.60942 & 18.35348 & 16.99024 & 18.35348 & 16.99024 & 18.00886 & 16.66937 & 18.00886 & 16.66937 & 18.20296 & 16.84525 & 13.62825 & 12.60942 & 18.35348 & 16.99024 & 18.35348 & 16.99024\end{array}$ $\begin{array}{llllllllllllllllllllll}383950 & 3736850 & 11.83129 & 11.332 & 15.95656 & 15.28665 & 15.95656 & 15.28665 & 15.65035 & 14.99231 & 15.65035 & 14.99231 & 15.80924 & 15.143 & 11.83129 & 11.332 & 15.95656 & 15.28665 & 15.95656 & 15.28665\end{array}$ $\begin{array}{llllllllllllllllllll}384450 & 3736850 & 10.44844 & 9.871662 & 14.11618 & 13.3423 & 14.11618 & 13.3423 & 13.83568 & 13.0769 & 13.83568 & 13.0769 & 13.96532 & 13.19736 & 10.44844 & 9.871662 & 14.11618 & 13.3423 & 14.11618 & 13.3423\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}384950 & 3736850 & 9.360047 & 8.921547 & 12.66573 & 12.07648 & 12.66573 & 12.07648 & 12.40817 & 11.82935 & 12.40817 & 11.82935 & 12.51598 & 11.93034 & 9.360047 & 8.921547 & 12.66573 & 12.07648 & 12.66573 & 12.07648\end{array}$ $\begin{array}{llllllllllllllllllllll}385950 & 3736850 & 8.290779 & 8.099007 & 11.24073 & 10.97939 & 11.24073 & 10.97939 & 11.00019 & 10.7446 & 11.00019 & 10.7446 & 11.08565 & 10.82863 & 8.290779 & 8.099007 & 11.24073 & 10.97939 & 11.24073 & 10.97939\end{array}$ $\begin{array}{llllllllllllllllllll}386450 & 3736850 & 7.98188 & 7.770315 & 10.828 & 10.54117 & 10.828 & 10.54117 & 10.59124 & 10.31229 & 10.59124 & 10.31229 & 10.67047 & 10.38961 & 7.98188 & 7.770315 & 10.828 & 10.54117 & 10.828 & 10.54117\end{array}$ $\begin{array}{lllllllllllllllllllll}387450 & 3736850 & 7.731168 & 7.41631 & 10.499 & 10.07296 & 10.499 & 10.07296 & 10.26281 & 9.848427 & 10.26281 & 9.848427 & 10.33439 & 9.916841 & 7.731168 & 7.41631 & 10.499 & 10.07296 & 10.499 & 10.07296\end{array}$ $\begin{array}{llllllllllllllllllllllll}387950 & 3736850 & 7.522511 & 7.293177 & 10.22077 & 9.908831 & 10.22077 & 9.908831 & 9.988099 & 9.683921 & 9.988099 & 9.683921 & 10.0554 & 9.749413 & 7.522511 & 7.293177 & 10.22077 & 9.908831 & 10.22077 & 9.908831\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}388450 & 3736850 & 7.14036 & 6.922288 & 9.705264 & 9.409583 & 9.705264 & 9.409583 & 9.483191 & 9.19614 & 9.483191 & 9.19614 & 9.545518 & 9.256604 & 7.14036 & 6.922288 & 9.705264 & 9.409583 & 9.705264 & 9.409583\end{array}$ $\begin{array}{lllllllllllllllllllllll}388950 & 3736850 & 6.92388 & 6.698619 & 9.415352 & 9.108078 & 9.415352 & 9.108078 & 9.19969 & 8.901347 & 9.19969 & 8.901347 & 9.258489 & 8.958897 & 6.92388 & 6.698619 & 9.415352 & 9.108078 & 9.415352 & 9.108078\end{array}$

 $\begin{array}{lllllllllllllllllll}380450 & 3737350 & 16.98872 & 16.56625 & 22.84319 & 22.26696 & 22.84319 & 22.26696 & 22.44987 & 21.77258 & 22.44987 & 21.77258 & 22.71076 & 22.13914 & 16.98872 & 16.56625 & 22.84319 & 22.26696 & 22.84319\end{array} 22.26696$ $\begin{array}{lllllllllllllllllllllll}380950 & 3737350 & 18.2613 & 17.62774 & 24.53559 & 23.68059 & 24.53559 & 23.68059 & 24.10853 & 23.26691 & 24.10853 & 23.26691 & 24.39507 & 23.54471 & 18.2613 & 17.62774 & 24.53559 & 23.68059 & 24.53559 & 23.68059\end{array}$
 $\begin{array}{llllllllllllllllllllll}381950 & 3737350 & 17.97487 & 17.23113 & 24.13869 & 23.14167 & 24.13869 & 23.14167 & 23.71264 & 22.73179 & 23.71264 & 22.73179 & 23.99824 & 23.00467 & 17.97487 & 17.23113 & 24.13869 & 23.14167 & 24.13869 & 23.14167\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382450 & 3737350 & 16.80194 & 16.15822 & 22.57631 & 21.71236 & 22.57631 & 21.71236 & 22.17146 & 21.32362 & 22.17146 & 21.32362 & 22.43256 & 21.57444 & 16.80194 & 16.15822 & 22.57631 & 21.71236 & 22.57631 & 21.71236\end{array}$ $\begin{array}{llllllllllllllllllll}382950 & 3737350 & 14.78972 & 14.02297 & 19.89495 & 18.86896 & 19.89495 & 18.86896 & 19.53255 & 18.52397 & 19.53255 & 18.52397 & 19.75331 & 18.73105 & 14.78972 & 14.02297 & 19.89495 & 18.86896 & 19.89495 & 18.86896\end{array}$ $\begin{array}{llllllllllllllllllll}383450 & 3737350 & 13.02545 & 12.45042 & 17.54581 & 16.77465 & 17.54581 & 16.77465 & 17.21739 & 16.46196 & 17.21739 & 16.46196 & 17.40144 & 16.63688 & 13.02545 & 12.45042 & 17.54581 & 16.77465 & 17.54581 & 16.77465\end{array}$ $\begin{array}{llllllllllllllllll}383950 & 3737350 & 11.61494 & 10.80431 & 15.66511 & 14.58141 & 15.66511 & 14.58141 & 15.36666 & 14.30119 & 15.36666 & 14.30119 & 15.52284 & 14.44255 & 11.61494 & 10.80431 & 15.66511 & 14.58141\end{array} 15.66511 \quad 14.58141$ $\begin{array}{llllllllllllllllllllll}384450 & 3737350 & 10.52146 & 9.983452 & 14.207 & 13.48538 & 14.207 & 13.48538 & 13.92925 & 13.22187 & 13.92925 & 13.22187 & 14.06343 & 13.34741 & 10.52146 & 9.983452 & 14.207 & 13.48538 & 14.207 & 13.48538\end{array}$ $\begin{array}{llllllllllllllllllllll} \\ 384950 & 3737350 & 9.419249 & 9.009571 & 12.73869 & 12.18775 & 12.73869 & 12.18775 & 12.48406 & 11.94246 & 12.48406 & 11.94246 & 12.59589 & 12.04802 & 9.419249 & 9.009571 & 12.73869 & 12.18775 & 12.73869 & 12.18775\end{array}$ $\begin{array}{lllllllllllllllllll}385450 & 3737350 & 8.594672 & 8.291856 & 11.64089 & 11.23133 & 11.64089 & 11.23133 & 11.40086 & 10.9988 & 11.40086 & 10.9988 & 11.49531 & 11.08956 & 8.594672 & 8.291856 & 11.64089 & 11.23133 & 11.64089\end{array} 11.23133$ $\begin{array}{lllllllllllllllllll}385950 & 3737350 & 8.234787 & 7.908776 & 11.16118 & 10.72055 & 11.16118 & 10.72055 & 10.92629 & 10.4933 & 10.92629 & 10.4933 & 11.01317 & 10.57601 & 8.234787 & 7.908776 & 11.16118 & 10.72055 & 11.16118\end{array} 10.72055$ $\begin{array}{llllllllllllllllllll}386950 & 3737350 & 7.706725 & 7.476329 & 10.45778 & 10.14553 & 10.45778 & 10.14553 & 10.22766 & 9.92423 & 10.22766 & 9.92423 & 10.30282 & 9.997287 & 7.706725 & 7.476329 & 10.45778 & 10.14553 & 10.45778 & 10.14553\end{array}$ $\begin{array}{lllllllllllllllllllllllll}387950 & 3737350 & 7.313286 & 7.092958 & 9.935432 & 9.63562 & 9.935432 & 9.63562 & 9.711466 & 9.419294 & 9.711466 & 9.419294 & 9.777647 & 9.483795 & 7.313286 & 7.092958 & 9.935432 & 9.63562 & 9.935432 & 9.63562\end{array}$

 $\begin{array}{lllllllllllllllllll}388950 & 3737350 & 6.99703 & 6.75841 & 9.514542 & 9.190492 & 9.514542 & 9.190492 & 9.297592 & 8.982718 & 9.297592 & 8.982718 & 9.35728 & 9.040494 & 6.99703 & 6.75841 & 9.514542 & 9.190492 & 9.514542\end{array} 9.190492$ $\begin{array}{lllllllllllllllllllllllll}389450 & 3737350 & 6.855006 & 6.585573 & 9.325896 & 8.958905 & 9.325896 & 8.958905 & 9.112245 & 8.756765 & 9.112245 & 8.756765 & 9.168901 & 8.811843 & 6.855006 & 6.585573 & 9.325896 & 8.958905 & 9.325896 & 8.958905\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}380450 & 3737850 & 16.0562 & 15.38064 & 21.5963 & 20.68207 & 21.5963 & 20.68207 & 21.22478 & 20.32433 & 21.22478 & 20.32433 & 21.46884 & 20.55987 & 16.0562 & 15.38064 & 21.5963 & 20.68207 & 21.5963 & 20.6820\end{array}$ $\begin{array}{llllllllllllllllllllll}380950 & 3737850 & 16.89644 & 16.56723 & 22.71052 & 22.26237 & 22.71052 & 22.26237 & 22.31419 & 21.87333 & 22.31419 & 21.87333 & 22.57593 & 22.13201 & 16.89644 & 16.56723 & 22.71052 & 22.26237 & 22.71052 & 22.26237\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllllll}381450 & 3737850 & 17.45849 & 16.43221 & 23.45261 & 22.07912 & 23.45261 & 22.07912 & 23.04221 & 21.6912 & 23.04221 & 21.6912 & 23.31743 & 21.94807 & 17.45849 & 16.43221 & 23.45261 & 22.07912 & 23.45261 & 22.07912\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllllll}381950 & 3737850 & 16.58642 & 15.76988 & 22.2877 & 21.19381 & 22.2877 & 21.19381 & 21.89359 & 20.81753 & 21.89359 & 20.81753 & 22.15191 & 21.06177 & 16.58642 & 15.76988 & 22.2877 & 21.19381 & 22.2877 & 21.19381\end{array}$ $\begin{array}{lllllllllllllllllllll}382450 & 3737850 & 15.48225 & 14.84787 & 20.81495 & 19.96369 & 20.81495 & 19.96369 & 20.44218 & 19.60569 & 20.44218 & 19.60569 & 20.67853 & 19.83179 & 15.48719 & 14.84984 & 20.81495 & 19.96369 & 20.81495 & 19.96369\end{array}$ $\begin{array}{lllllllllllllllllll}382950 & 3737850 & 13.96622 & 13.32899 & 18.79424 & 17.94041 & 18.79424 & 17.94041 & 18.45218 & 17.61308 & 18.45218 & 17.61308 & 18.65802 & 17.80801 & 13.96622 & 13.32899 & 18.79424 & 17.94041 & 18.79424 \\ 17.94041\end{array}$ $\begin{array}{llllllllllllllllllllll}383450 & 3737850 & 12.34728 & 11.62364 & 16.638 & 15.66878 & 16.638 & 15.66878 & 16.32752 & 15.3779 & 16.32752 & 15.3779 & 16.49996 & 15.53833 & 12.34728 & 11.62364 & 16.638 & 15.66878 & 16.638 & 15.66878\end{array}$ $\begin{array}{llllllllllllllllllllllll}383950 & 3737850 & 11.27081 & 10.8289 & 15.20255 & 14.60966 & 15.20255 & 14.60966 & 14.91462 & 14.33154 & 14.91462 & 14.33154 & 15.06585 & 14.47547 & 11.27081 & 10.8289 & 15.20255 & 14.60966 & 15.20255 & 14.60966\end{array}$ $\begin{array}{llllllllllllllllllllll}384450 & 3737850 & 10.09156 & 9.481898 & 13.62926 & 12.81179 & 13.62926 & 12.81179 & 13.36453 & 12.56201 & 13.36453 & 12.56201 & 13.49249 & 12.67989 & 10.09156 & 9.481898 & 13.62926 & 12.81179 & 13.62926 & 12.81179\end{array}$ $\begin{array}{lllllllllllllllllll}384950 & 3737850 & 9.457652 & 8.989733 & 12.78455 & 12.15612 & 12.78455 & 12.15612 & 12.53257 & 11.91452 & 12.53257 & 11.91452 & 12.64768 & 12.0221 & 9.457652 & 8.989733 & 12.78455 & 12.15612 & 12.78455\end{array} 12.15612$ $\begin{array}{llllllllllllllllllll}385450 & 3737850 & 8.727716 & 8.366531 & 11.8131 & 11.32622 & 11.8131 & 11.32622 & 11.57352 & 11.09547 & 11.57352 & 11.09547 & 11.67302 & 11.18995 & 8.727716 & 8.366531 & 11.8131 & 11.32622 & 11.8131 & 11.32622\end{array}$ $\begin{array}{llllllllllllllllll}385950 & 3737850 & 8.034104 & 7.806728 & 10.88933 & 10.57999 & 10.88933 & 10.57999 & 10.6625 & 10.35844 & 10.6625 & 10.35844 & 10.74758 & 10.44136 & 8.034104 & 7.806728 & 10.88933 & 10.57999\end{array} 10.88933 \quad 10.57999$ $\begin{array}{lllllllllllllllllll}386450 & 3737850 & 7.716595 & 7.489125 & 10.46609 & 10.15677 & 10.46609 & 10.15677 & 10.24351 & 9.940469 & 10.24351 & 9.940469 & 10.32186 & 10.01677 & 7.716595 & 7.489125 & 10.46609 & 10.15677 & 10.46609\end{array} 10.15677$ $\begin{array}{lllllllllllllllllll}386950 & 3737850 & 7.49519 & 7.248395 & 10.17052 & 9.836757 & 10.17052 & 9.836757 & 9.950722 & 9.624075 & 9.950722 & 9.624075 & 10.02453 & 9.695008 & 7.49519 & 7.248395 & 10.17052 & 9.836757 & 10.17052 \\ 9.836757\end{array}$ $\begin{array}{llllllllllllllllllllllll}387450 & 3737850 & 7.175628 & 6.993766 & 9.743777 & 9.496366 & 9.743777 & 9.496366 & 9.53048 & 9.289314 & 9.53048 & 9.289314 & 9.598159 & 9.355576 & 7.175628 & 6.993766 & 9.743777 & 9.496366 & 9.743777 & 9.496366\end{array}$ $\begin{array}{llllllllllllllllllllllllll}387950 & 3737850 & 7.126087 & 6.868742 & 9.679961 & 9.330591 & 9.679961 & 9.330591 & 9.464271 & 9.125209 & 9.464271 & 9.125209 & 9.529597 & 9.18849 & 7.126087 & 6.868742 & 9.679961 & 9.330591 & 9.679961 & 9.330591\end{array}$ $\begin{array}{llllllllllllllllllll}388450 & 3737850 & 6.817312 & 6.650529 & 9.266005 & 9.03575 & 9.266005 & 9.03575 & 9.059279 & 8.834937 & 9.059279 & 8.834937 & 9.119647 & 8.894429 & 6.817312 & 6.650529 & 9.266005 & 9.03575 & 9.266005 & 9.03575\end{array}$ 388950 3737850 6.895924 | .651005 | 9.376415 | 9.043852 | 9.376415 | 9.043852 | 9.163791 | 8.841688 | 9.163791 | 8.841688 | 9.223032 | 8.89912 | 6.895924 | 6.651005 | 9.376415 | 9.043852 | 9.376415 | 9.043852 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{lllllllllllllllllllllllll}389450 & 3737850 & 6.766168 & 6.535996 & 9.204342 & 8.891445 & 9.204342 & 8.891445 & 8.994598 & 8.691047 & 8.994598 & 8.691047 & 9.050959 & 8.745763 & 6.766168 & 6.535996 & 9.204342 & 8.891445 & 9.204342 & 8.891445\end{array}$ $\begin{array}{lllllllllllllllllllllll}380450 & 3738350 & 15.26488 & 14.89231 & 20.53003 & 20.02533 & 20.53003 & 20.02533 & 20.17483 & 19.67818 & 20.17483 & 19.67818 & 20.40725 & 19.90605 & 15.26488 & 14.89231 & 20.53003 & 20.02533 & 20.53003 & 20.02533\end{array}$ $\begin{array}{lllllllllllllllllllllll}380950 & 3738350 & 15.69099 & 15.05962 & 21.09396 & 20.24608 & 21.09396 & 20.24608 & 20.72654 & 19.89306 & 20.72654 & 19.89306 & 20.96838 & 20.12473 & 15.69099 & 15.05962 & 21.09396 & 20.24608 & 21.09396 & 20.24608\end{array}$ $\begin{array}{lllllllllllllllllllllllll}381450 & 3738350 & 16.15603 & 15.23976 & 21.71701 & 20.48789 & 21.71701 & 20.48789 & 21.33472 & 20.1265 & 21.33472 & 20.1265 & 21.58385 & 20.3604 & 16.15603 & 15.23976 & 21.71701 & 20.48789 & 21.71701 & 20.48789\end{array}$ $\begin{array}{lllllllllllllllllllllll}381950 & 3738350 & 15.32787 & 14.47108 & 20.60863 & 19.46159 & 20.60863 & 19.46159 & 20.24408 & 19.11528 & 20.24408 & 19.11528 & 20.47838 & 19.33441 & 15.32787 & 14.47108 & 20.60863 & 19.46159 & 20.60863 & 19.46159\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382450 & 3738350 & 14.42283 & 13.78805 & 19.40183 & 18.55042 & 19.40183 & 18.55042 & 19.05433 & 18.21718 & 19.05433 & 18.21718 & 19.27035 & 18.42266 & 14.42283 & 13.78805 & 19.40183 & 18.55042 & 19.40183 & 18.55042\end{array}$ $\begin{array}{llllllllllllllllllll}382950 & 3738350 & 13.2252 & 12.45594 & 17.80461 & 16.77506 & 17.80461 & 16.77506 & 17.48039 & 16.46933 & 17.48039 & 16.46933 & 17.6726 & 16.64797 & 13.2252 & 12.45594 & 17.80461 & 16.77506 & 17.80461 & 16.77506\end{array}$ $\begin{array}{lllllllllllllllllllllllll}383450 & 3738350 & 11.67989 & 11.25942 & 15.74497 & 15.18005 & 15.74497 & 15.18005 & 15.45254 & 14.89955 & 15.45254 & 14.89955 & 15.6136 & 15.05435 & 11.67989 & 11.25942 & 15.74497 & 15.18005 & 15.74497 & 15.18005\end{array}$ $\begin{array}{lllllllllllllllllll}383950 & 3738350 & 10.8333 & 10.43929 & 14.61655 & 14.0876 & 14.61655 & 14.0876 & 14.34094 & 13.82103 & 14.34094 & 13.82103 & 14.4849 & 13.9587 & 10.8333 & 10.43929 & 14.61655 & 14.0876 & 14.61655\end{array} 14.0876$ $\begin{array}{lllllllllllllllllll}384450 & 3738350 & 10.16029 & 9.475404 & 13.71949 & 12.80278 & 13.71949 & 12.80278 & 13.45527 & 12.55574 & 13.45527 & 12.55574 & 13.58543 & 12.67405 & 10.16029 & 9.475404 & 13.71949 & 12.80278 & 13.71949\end{array} 12.80278$ $\begin{array}{llllllllllllllllllll}384950 & 3738350 & 9.224855 & 8.811744 & 12.4722 & 11.9179 & 12.4722 & 11.9179 & 12.22827 & 11.68332 & 12.22827 & 11.68332 & 12.33999 & 11.78823 & 9.224855 & 8.811744 & 12.4722 & 11.9179 & 12.4722 & 11.9179\end{array}$ $\begin{array}{llllllllllllllllll}385450 & 3738350 & 8.993042 & 8.399302 & 12.16778 & 11.3713 & 12.16778 & 11.3713 & 11.923 & 11.14226 & 11.923 & 11.14226 & 12.02751 & 11.23726 & 8.993042 & 8.399302 & 12.16778 & 11.3713\end{array} 12.16778 \quad 11.3713$ $\begin{array}{lllllllllllllllllll}385950 & 3738350 & 8.194304 & 7.880463 & 11.09982 & 10.67684 & 11.09982 & 10.67684 & 10.87248 & 10.45662 & 10.87248 & 10.45662 & 10.96233 & 10.54199 & 8.194304 & 7.880463 & 11.09982 & 10.67684 & 11.09982 \\ 10.67684 & 10.67684\end{array}$ $\begin{array}{llllllllllllllllllll}386450 & 3738350 & 7.602166 & 7.373243 & 10.3098 & 9.998982 & 10.3098 & 9.998982 & 10.09351 & 9.788669 & 10.09351 & 9.788669 & 10.17157 & 9.864447 & 7.602166 & 7.373243 & 10.3098 & 9.998982 & 10.3098 & 9.998982\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}386950 & 3738350 & 7.34882 & 7.05151 & 9.972099 & 9.570522 & 9.972099 & 9.570522 & 9.758638 & 9.36732 & 9.758638 & 9.36732 & 9.831257 & 9.436566 & 7.34882 & 7.05151 & 9.972099 & 9.570522 & 9.972099 & 9.570522\end{array}$

| Red | 0.0010 | 0.0009 | 0.0037 | 0.0035 | 0.0037 | 0.0034 | 0.0021 | 0.0019 | 0.0021 | 0.0019 | 0.0058 | 0.0055 | 0.0014 | 0.0013 | 0.0055 | 0.0052 | 0.0055 | 0.0052 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction | 48.55\% | 48.55\% | 44.40\% | 44.40\% | 44.40\% | 44.40\% | 78.71\% | 78.71\% | 78.71\% | 78.71\% | 70.88\% | 70.88\% | 67.78\% | 67.78\% | 66.42\% | .42\% | 66.42\% | 66.42\% |
|  | 389450_3 | 50 |  |  | 382683.8 |  |  |  |  |  |  |  | 389450_3 | 450_37 |  |  |  |  |

$\begin{array}{llllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$ 2033_ALT4_ 2033_ALT4_ 2033_ALTS_ 2033_ALT5_ 2033_PP_CA 2033_PP_N 2038_ALT1_ 2038_ALT1_ 2038_NP_C 2038_NP_N 2038_ALT3_ 2038_ALT3_ 2038_ALT4_ 2038_ALT4_ 2038_ALT5_ 2038_ALT5_ 2038_PP_CA 2038_PP_N

| 387450 | 3738350 | 7.207476 | 6.920427 | 9.784413 | 9.39755 | 9.784413 | 9.39755 | 9.571803 | 9.194759 | 9.571803 | 9.194759 | 9.640996 | 9.260373 | 7.207476 | 6.920427 | 9.784413 | 9.39755 | 9.784413 | 9.39755 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{llllllllllllllllllllllll}387950 & 3738350 & 6.976532 & 6.694276 & 9.477133 & 9.095587 & 9.477133 & 9.095587 & 9.268814 & 8.897987 & 9.268814 & 8.897987 & 9.333105 & 8.959353 & 6.976532 & 6.694276 & 9.477133 & 9.095587 & 9.477133 & 9.095587\end{array}$ $\begin{array}{lllllllllllllllllllll}388450 & 3738350 & 6.666504 & 6.499772 & 9.060986 & 8.833097 & 9.060986 & 8.833097 & 8.860739 & 8.637762 & 8.860739 & 8.637762 & 8.920147 & 8.696137 & 6.666504 & 6.499772 & 9.060986 & 8.833097 & 9.060986 & 8.833097\end{array}$ $\begin{array}{llllllllllllllllllll}388950 & 3738350 & 6.783395 & 6.631169 & 9.215428 & 9.008142 & 9.215428 & 9.008142 & 9.009038 & 8.806649 & 9.009038 & 8.806649 & 9.067593 & 8.86462 & 6.783395 & 6.631169 & 9.215428 & 9.008142 & 9.215428 & 9.008142\end{array}$ $\begin{array}{llllllllllllllllllll}389450 & 3738350 & 6.62552 & 6.434038 & 9.012856 & 8.751644 & 9.012856 & 8.751644 & 8.809969 & 8.555929 & 8.809969 & 8.555929 & 8.865614 & 8.610438 & 6.62552 & 6.434038 & 9.012856 & 8.751644 & 9.012856 & 8.751644\end{array}$ $\begin{array}{lllllllllllllllllll}380450 & 3738850 & 13.88671 & 13.51576 & 18.68245 & 18.18331 & 18.68245 & 18.18331 & 18.36025 & 17.8692 & 18.36025 & 17.8692 & 18.56964 & 18.07292 & 13.88671 & 13.51576 & 18.68245 & 18.18331 & 18.68245\end{array} 18.18331$ $\begin{array}{llllllllllllllllllll}380950 & 3738850 & 14.51959 & 13.99578 & 19.52779 & 18.82468 & 19.52779 & 18.82468 & 19.18844 & 18.49729 & 19.18844 & 18.49729 & 19.40911 & 18.70948 & 14.51959 & 13.99578 & 19.52779 & 18.82468 & 19.52779 & 18.82468\end{array}$ $\begin{array}{lllllllllllllllllll}381450 & 3738850 & 14.34626 & 13.7383 & 19.29656 & 18.48126 & 19.29656 & 18.48126 & 18.95818 & 18.15595 & 18.95818 & 18.15595 & 19.1752 & 18.36256 & 14.34626 & 13.7383 & 19.29656 & 18.48126 & 19.29656\end{array} 18.48126$ $\begin{array}{lllllllllllllllllllll} \\ 381950 & 3738850 & 14.01596 & 13.17763 & 18.85656 & 17.73359 & 18.85656 & 17.73359 & 18.52201 & 17.41949 & 18.52201 & 17.41949 & 18.73176 & 17.6149 & 14.01596 & 13.17763 & 18.85656 & 17.73359 & 18.85656 & 17.73359\end{array}$ $\begin{array}{lllllllllllllllllllllll}382450 & 3738850 & 13.45432 & 12.84719 & 18.11 & 17.29497 & 18.11 & 17.29497 & 17.78547 & 16.98393 & 17.78547 & 16.98393 & 17.98296 & 17.17147 & 13.45432 & 12.84719 & 18.11 & 17.29497 & 18.11 & 17.29497\end{array}$ $\begin{array}{llllllllllllllllll}382950 & 3738850 & 12.50646 & 11.91283 & 16.84521 & 16.04951 & 16.84521 & 16.04951 & 16.53865 & 15.75702 & 16.53865 & 15.75702 & 16.71739 & 15.92574 & 12.50646 & 11.91283 & 16.84521 & 16.04951 \\ 16.46 .84521 & 16.04951\end{array}$ $\begin{array}{llllllllllllllllll}383450 & 3738850 & 11.41964 & 10.9694 & 15.39644 & 14.79217 & 15.39644 & 14.79217 & 15.11173 & 14.51935 & 15.11173 & 14.51935 & 15.26861 & 14.66923 & 11.41964 & 10.9694 & 15.39644 & 14.79217 \\ 1.45 .39644 & 14.79217\end{array}$ $\begin{array}{llllllllllllllllll}383950 & 3738850 & 10.49786 & 9.998743 & 14.16817 & 13.4989 & 14.16817 & 13.4989 & 13.9015 & 13.24433 & 13.9015 & 13.24433 & 14.03963 & 13.37418 & 10.49786 & 9.998743 & 14.16817 & 13.4989\end{array} 14.1681713 .4989$ $\begin{array}{llllllllllllllllllll}384450 & 3738850 & 9.881919 & 9.481915 & 13.34629 & 12.80919 & 13.34629 & 12.80919 & 13.09057 & 12.56437 & 13.09057 & 12.56437 & 13.21638 & 12.68402 & 9.881919 & 9.481915 & 13.34629 & 12.80919 & 13.34629 & 12.80919\end{array}$ $\begin{array}{llllllllllllllllll}384950 & 3738850 & 9.198574 & 8.586226 & 12.43508 & 11.61545 & 12.43508 & 11.61545 & 12.19409 & 11.38827 & 12.19409 & 11.38827 & 12.30642 & 11.48977 & 9.198574 & 8.586226 & 12.43508 & 11.61545 \\ 12.43508 & 11.61545\end{array}$ $\begin{array}{lllllllllllllllllllll}385450 & 3738850 & 8.529748 & 8.208725 & 11.54329 & 11.11052 & 11.54329 & 11.11052 & 11.31303 & 10.88933 & 11.31303 & 10.88933 & 11.41159 & 10.98362 & 8.529748 & 8.208725 & 11.54329 & 11.11052 & 11.54329 & 11.11052\end{array}$ $\begin{array}{lllllllllllllllllllllll}385950 & 3738850 & 8.211107 & 7.788808 & 11.11931 & 10.55171 & 11.11931 & 10.55171 & 10.89423 & 10.33612 & 10.89423 & 10.33612 & 10.98591 & 10.42118 & 8.211107 & 7.788808 & 11.11931 & 10.55171 & 11.11931 & 10.55171\end{array}$ $\begin{array}{lllllllllllllllllllllll}386450 & 3738850 & 7.833664 & 7.489648 & 10.61798 & 10.15328 & 10.61798 & 10.15328 & 10.39764 & 9.941918 & 10.39764 & 9.941918 & 10.48062 & 10.02055 & 7.833664 & 7.489648 & 10.61798 & 10.15328 & 10.61798 & 10.15328\end{array}$ $\begin{array}{lllllllllllllllllllll}386950 & 3738850 & 7.281696 & 7.025082 & 9.879847 & 9.531505 & 9.879847 & 9.531505 & 9.670842 & 9.330411 & 9.670842 & 9.330411 & 9.743629 & 9.400789 & 7.281696 & 7.025082 & 9.879847 & 9.531505 & 9.879847 & 9.531505\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllll}387450 & 3738850 & 6.999351 & 6.727021 & 9.502786 & 9.134359 & 9.502786 & 9.134359 & 9.298203 & 8.939537 & 9.298203 & 8.939537 & 9.365365 & 9.003885 & 6.999351 & 6.727021 & 9.502786 & 9.134359 & 9.502786 & 9.134359\end{array}$ $\begin{array}{lllllllllllllllllllllll}387950 & 3738850 & 6.795861 & 6.554038 & 9.231031 & 8.903762 & 9.231031 & 8.903762 & 9.03064 & 8.712004 & 9.03064 & 8.712004 & 9.093929 & 8.772824 & 6.795861 & 6.554038 & 9.231031 & 8.903762 & 9.231031 & 8.903762\end{array}$ $\begin{array}{llllllllllllllllllll}388450 & 3738850 & 6.572382 & 6.311042 & 8.931616 & 8.577485 & 8.931616 & 8.577485 & 8.73581 & 8.390887 & 8.73581 & 8.390887 & 8.795176 & 8.447743 & 6.572382 & 6.311042 & 8.931616 & 8.577485 & 8.931616 & 8.577485\end{array}$

 $\begin{array}{llllllllllllllllllll}389450 & 3738850 & 6.531322 & 6.269548 & 8.876711 & 8.519159 & 8.876711 & 8.519159 & 8.677753 & 8.330644 & 8.677753 & 8.330644 & 8.73315 & 8.384062 & 6.537032 & 6.269548 & 8.876711 & 8.519159 & 8.876711 & 8.519159\end{array}$ $\begin{array}{llllllllllllllllllllllll}380450 & 3739350 & 13.09099 & 12.6521 & 17.62083 & 17.03117 & 17.62083 & 17.03117 & 17.31617 & 16.73675 & 17.31617 & 16.73675 & 17.51021 & 16.92382 & 13.09099 & 12.6521 & 17.62083 & 17.03117 & 17.62083 & 17.03117\end{array}$ $\begin{array}{lllllllllllllllllll}380950 & 3739350 & 13.52906 & 12.97747 & 18.20667 & 17.46613 & 18.20667 & 17.46613 & 17.88905 & 17.16185 & 17.88905 & 17.16185 & 18.09049 & 17.35445 & 13.52906 & 12.97747 & 18.20667 & 17.46613 & 18.20667\end{array} 17.46613$ $\begin{array}{llllllllllllllllllll}381450 & 3739350 & 13.20439 & 12.86846 & 17.77318 & 17.31998 & 17.77318 & 17.31998 & 17.46082 & 17.01509 & 17.46082 & 17.01509 & 17.65573 & 17.20538 & 13.20439 & 12.86846 & 17.77318 & 17.31998 & 17.77318 & 17.31998\end{array}$ $\begin{array}{lllllllllllllllllll}381950 & 3739350 & 12.98637 & 12.24076 & 17.48168 & 16.4826 & 17.48168 & 16.4826 & 17.17162 & 16.19034 & 17.17162 & 16.19034 & 17.36209 & 16.3683 & 12.98637 & 12.24076 & 17.48168 & 16.4826 & 17.48168 \\ 16.4826\end{array}$ $\begin{array}{llllllllllllllllll}382450 & 3739350 & 12.45415 & 12.02099 & 16.77419 & 16.19059 & 16.77419 & 16.19059 & 16.4738 & 15.90028 & 16.4738 & 15.90028 & 16.65281 & 16.07299 & 12.45415 & 12.02099 & 16.77419 & 16.19059 \\ 16.47419 & 16.19059\end{array}$ $\begin{array}{lllllllllllllllllll}382950 & 3739350 & 11.78426 & 11.41 & 15.88234 & 15.37723 & 15.88234 & 15.37723 & 15.58308 & 15.09644 & 15.58308 & 15.09644 & 15.75905 & 15.25647 & 11.78426 & 11.41 & 15.88234 & 15.37723 & 15.88234 \\ 15.3 .37723\end{array}$ $\begin{array}{lllllllllllllllllllllll}383450 & 3739350 & 11.02268 & 10.53517 & 14.86572 & 14.21137 & 14.86572 & 14.21137 & 14.59112 & 13.94916 & 14.59112 & 13.94916 & 14.74094 & 14.09135 & 11.02268 & 10.53517 & 14.86572 & 14.21137 & 14.86572 & 14.21137\end{array}$ $\begin{array}{llllllllllllllllllllllll}383950 & 3739350 & 10.10728 & 9.558157 & 13.64537 & 12.90916 & 13.64537 & 12.90916 & 13.38906 & 12.66597 & 13.38906 & 12.66597 & 13.52051 & 12.78825 & 10.10728 & 9.558157 & 13.64537 & 12.90916 & 13.64537 & 12.90916\end{array}$ $\begin{array}{llllllllllllllllll}384450 & 3739350 & 9.55707 & 9.208436 & 12.91196 & 12.44229 & 12.91196 & 12.44229 & 12.66519 & 12.20531 & 12.66519 & 12.20531 & 12.78533 & 12.3207 & 9.55707 & 9.208436 & 12.91196 & 12.44229\end{array} 12.91196 \quad 12.44229$ $\begin{array}{lllllllllllllllllll}384950 & 3739350 & 9.001248 & 8.655448 & 12.17075 & 11.70579 & 12.17075 & 11.70579 & 11.93602 & 11.47886 & 11.93602 & 11.47886 & 12.04524 & 11.58274 & 9.001248 & 8.655448 & 12.17075 & 11.70579 & 12.17075 \\ 111.70579\end{array}$ $\begin{array}{llllllllllllllllllll}385450 & 3739350 & 8.53741 & 7.893005 & 11.55276 & 10.68935 & 11.55276 & 10.68935 & 11.32368 & 10.47682 & 11.32368 & 10.47682 & 11.42287 & 10.56526 & 8.53741 & 7.893005 & 11.55276 & 10.68935 & 11.55276 & 10.68935\end{array}$ $\begin{array}{llllllllllllllllllll}385950 & 3739350 & 7.980346 & 7.750138 & 10.80864 & 10.49706 & 10.80864 & 10.49706 & 10.59104 & 10.2848 & 10.59104 & 10.2848 & 10.67967 & 10.37062 & 7.980346 & 7.750138 & 10.80864 & 10.49706 & 10.80864 & 10.49706\end{array}$ $\begin{array}{lllllllllllllllllllllllll}386450 & 3739350 & 7.746123 & 7.329793 & 10.49655 & 9.936391 & 10.49655 & 9.936391 & 10.28164 & 9.731793 & 10.28164 & 9.731793 & 10.36517 & 9.809186 & 7.746123 & 7.329793 & 10.49655 & 9.936391 & 10.49655 & 9.936391\end{array}$ $\begin{array}{lllllllllllllllllllllll}386950 & 3739350 & 7.301872 & 6.977135 & 9.903396 & 9.464496 & 9.903396 & 9.464496 & 9.69735 & 9.266719 & 9.69735 & 9.266719 & 9.772296 & 9.337635 & 7.301872 & 6.977135 & 9.903396 & 9.464496 & 9.903396 & 9.464496\end{array}$ $\begin{array}{llllllllllllllllllllllll}387450 & 3739350 & 6.955151 & 6.700724 & 9.440956 & 9.09624 & 9.440956 & 9.09624 & 9.240444 & 8.904074 & 9.240444 & 8.904074 & 9.308307 & 8.969362 & 6.955151 & 6.700724 & 9.440956 & 9.09624 & 9.440956 & 9.09624\end{array}$ $\begin{array}{llllllllllllllllllllllll} \\ 387950 & 3739350 & 6.647825 & 6.473839 & 9.030335 & 8.79406 & 9.030335 & 8.79406 & 8.835827 & 8.605782 & 8.835827 & 8.605782 & 8.897827 & 8.666327 & 6.647825 & 6.473839 & 9.030335 & 8.79406 & 9.030335 & 8.79406\end{array}$ $\begin{array}{llllllllllllllllllll}388450 & 3739350 & 6.460771 & 6.193246 & 8.778982 & 8.417031 & 8.778982 & 8.417031 & 8.58858 & 8.235927 & 8.58858 & 8.235927 & 8.647606 & 8.292169 & 6.460771 & 6.193246 & 8.778982 & 8.417031 & 8.778982 & 8.417031\end{array}$ $\begin{array}{llllllllllllllllllll}388950 & 3739350 & 6.369675 & 6.150809 & 8.659508 & 8.362493 & 8.659508 & 8.362493 & 8.47018 & 8.180273 & 8.47018 & 8.180273 & 8.52655 & 8.234597 & 6.369675 & 6.150809 & 8.659508 & 8.362493 & 8.659508 & 8.362493\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}389450 & 3739350 & 6.212039 & 6.015912 & 8.449064 & 8.182268 & 8.449064 & 8.182268 & 8.263127 & 8.002963 & 8.263127 & 8.002963 & 8.316462 & 8.054756 & 6.212039 & 6.015912 & 8.449064 & 8.182268 & 8.449064 & 8.182268\end{array}$ $\begin{array}{llllllllllllllllll}380450 & 3739850 & 12.43778 & 11.80338 & 16.74839 & 15.8986 & 16.74839 & 15.8986 & 16.45937 & 15.62365 & 16.45937 & 15.62365 & 16.64117 & 15.79448 & 12.43778 & 11.80338 & 16.74839 & 15.8986\end{array} 16.7483915 .8986$ $\begin{array}{llllllllllllllllllllll}380950 & 3739850 & 12.26567 & 11.87611 & 16.51734 & 15.99294 & 16.51734 & 15.99294 & 16.22965 & 15.71421 & 16.22965 & 15.71421 & 16.40827 & 15.88708 & 12.26567 & 11.87611 & 16.51734 & 15.99294 & 16.51734 & 15.99294\end{array}$ $\begin{array}{llllllllllllllllllll}381450 & 3739850 & 12.26742 & 11.8712 & 16.52076 & 15.98727 & 16.52076 & 15.98727 & 16.23111 & 15.70612 & 16.23111 & 15.70612 & 16.4091 & 15.87819 & 12.26742 & 11.8712 & 16.52076 & 15.98727 & 16.52076 & 15.98727\end{array}$ $\begin{array}{lllllllllllllllllllllll} \\ 381950 & 3739850 & 12.15026 & 11.55427 & 16.36525 & 15.56553 & 16.36525 & 15.56553 & 16.07597 & 15.28896 & 16.07597 & 15.28896 & 16.25099 & 15.45405 & 12.15026 & 11.55427 & 16.36525 & 15.56553 & 16.36525 & 15.56553\end{array}$ $\begin{array}{llllllllllllllllllllllllll}382450 & 3739850 & 11.62916 & 11.171 & 15.67097 & 15.05446 & 15.67097 & 15.05446 & 15.39056 & 14.78408 & 15.39056 & 14.78408 & 15.55474 & 14.94127 & 11.62916 & 11.171 & 15.67097 & 15.05446 & 15.67097 & 15.05446\end{array}$ $\begin{array}{lllllllllllllllllll}382950 & 3739850 & 11.1018 & 10.77488 & 14.96915 & 14.5269 & 14.96915 & 14.5269 & 14.69726 & 14.26363 & 14.69726 & 14.26363 & 14.85005 & 14.41261 & 11.1018 & 10.77488 & 14.96915 & 14.5269 & 14.96915\end{array} 14.5269$ $\begin{array}{lllllllllllllllllllll}383450 & 3739850 & 10.6123 & 10.02924 & 14.31576 & 13.53403 & 14.31576 & 13.53403 & 14.05213 & 13.2846 & 14.05213 & 13.2846 & 14.19521 & 13.41801 & 10.6123 & 10.02924 & 14.31576 & 13.53403 & 14.31576 & 13.53403\end{array}$ $\begin{array}{llllllllllllllllllll}383950 & 3739850 & 9.728634 & 9.330002 & 13.13716 & 12.60195 & 13.13716 & 12.60195 & 12.89113 & 12.36604 & 12.89113 & 12.36604 & 13.01666 & 12.4853 & 9.728634 & 9.330002 & 13.13716 & 12.60195 & 13.13716 & 12.60195\end{array}$ $\begin{array}{llllllllllllllllllllllllll}384450 & 3739850 & 9.329751 & 8.81578 & 12.60729 & 11.91773 & 12.60729 & 11.91773 & 12.36721 & 11.69125 & 12.36721 & 11.69125 & 12.48372 & 11.79959 & 9.329751 & 8.81578 & 12.60729 & 11.91773 & 12.60729 & 11.91773\end{array}$ $\begin{array}{llllllllllllllllllll}384950 & 3739850 & 8.859481 & 8.540087 & 11.97939 & 11.54993 & 11.97939 & 11.54993 & 11.74982 & 11.32765 & 11.74982 & 11.32765 & 11.85742 & 11.43034 & 8.859481 & 8.540087 & 11.97939 & 11.54993 & 11.97939 & 11.54993\end{array}$ $\begin{array}{lllllllllllllllllll}385450 & 3739850 & 8.537525 & 7.953486 & 11.55117 & 10.7689 & 11.55117 & 10.7689 & 11.32378 & 10.55654 & 11.32378 & 10.55654 & 11.42389 & 10.6468 & 8.537525 & 7.953486 & 11.55117 & 10.7689 & 11.55117 \\ 10.50 .7689\end{array}$ $\begin{array}{llllllllllllllllllllll} \\ 385950 & 3739850 & 7.896221 & 7.486959 & 10.69449 & 10.14535 & 10.69449 & 10.14535 & 10.48055 & 9.940876 & 10.48055 & 9.940876 & 10.56853 & 10.02214 & 7.896221 & 7.486959 & 10.69449 & 10.14535 & 10.69449 & 10.14535\end{array}$ $\begin{array}{lllllllllllllllllll}386450 & 3739850 & 7.566628 & 7.326076 & 10.25407 & 9.929177 & 10.25407 & 9.929177 & 10.04595 & 9.727291 & 10.04595 & 9.727291 & 10.12755 & 9.805859 & 7.566628 & 7.326076 & 10.25407 & 9.929177 & 10.25407 \\ 9.9 .929177\end{array}$ $\begin{array}{lllllllllllllllllllllllll}386950 & 3739850 & 7.291088 & 6.920148 & 9.885812 & 9.386449 & 9.885812 & 9.386449 & 9.682626 & 9.192487 & 9.682626 & 9.192487 & 9.758972 & 9.263452 & 7.291088 & 6.920148 & 9.885812 & 9.386449 & 9.885812 & 9.386449\end{array}$ $\begin{array}{llllllllllllllllllllllllll}387450 & 3739850 & 6.956524 & 6.64716 & 9.439765 & 9.022519 & 9.439765 & 9.022519 & 9.242282 & 8.833426 & 9.242282 & 8.833426 & 9.311757 & 8.898819 & 6.956524 & 6.64716 & 9.439765 & 9.022519 & 9.439765 & 9.022519\end{array}$ $\begin{array}{lllllllllllllllllllllll}387950 & 3739850 & 6.615076 & 6.360775 & 8.983249 & 8.640175 & 8.983249 & 8.640175 & 8.792564 & 8.458752 & 8.792564 & 8.458752 & 8.855663 & 8.51892 & 6.615076 & 6.360775 & 8.983249 & 8.640175 & 8.983249 & 8.640175\end{array}$ $\begin{array}{lllllllllllllllllllllll}388450 & 3739850 & 6.336035 & 6.109189 & 8.609746 & 8.30285 & 8.609746 & 8.30285 & 8.424587 & 8.127156 & 8.424587 & 8.127156 & 8.482639 & 8.18308 & 6.336035 & 6.109189 & 8.609746 & 8.30285 & 8.609746 & 8.30285\end{array}$ $\begin{array}{llllllllllllllllllllllllll}388950 & 3739850 & 6.264456 & 6.042537 & 8.515522 & 8.215874 & 8.515522 & 8.215874 & 8.330447 & 8.038137 & 8.330447 & 8.038137 & 8.38641 & 8.091501 & 6.264456 & 6.042537 & 8.515522 & 8.215874 & 8.515522 & 8.215874\end{array}$ $\begin{array}{lllllllllllllllllllllll}389450 & 3739850 & 6.086198 & 5.934397 & 8.277675 & 8.071349 & 8.277675 & 8.071349 & 8.09741 & 7.895434 & 8.09741 & 7.895434 & 8.150067 & 7.946703 & 6.086198 & 5.934397 & 8.277675 & 8.071349 & 8.277675 & 8.071349\end{array}$ $\begin{array}{llllllllllllllllllll}380450 & 3740350 & 11.87241 & 11.47544 & 15.9949 & 15.46081 & 15.9949 & 15.46081 & 15.71852 & 15.19313 & 15.71852 & 15.19313 & 15.88912 & 15.3577 & 11.87241 & 11.47544 & 15.9949 & 15.46081 & 15.9949 & 15.46081\end{array}$ $\begin{array}{lllllllllllllllllll}380950 & 3740350 & 11.90276 & 11.30268 & 16.03376 & 15.22939 & 16.03376 & 15.22939 & 15.75462 & 14.96302 & 15.75462 & 14.96302 & 15.92609 & 15.12416 & 11.90276 & 11.30268 & 16.03376 & 15.22939 & 16.03376 \\ 15.25 .22939\end{array}$ $\begin{array}{llllllllllllllllllll}381450 & 3740350 & 11.47005 & 10.97133 & 15.45418 & 14.78402 & 15.45418 & 14.78402 & 15.18301 & 14.52504 & 15.18301 & 14.52504 & 15.34674 & 14.68102 & 11.47005 & 10.97133 & 15.45418 & 14.78402 & 15.45418 & 14.78402\end{array}$ $\begin{array}{llllllllllllllllll}381950 & 3740350 & 11.44427 & 10.91986 & 15.42246 & 14.71821 & 15.42246 & 14.71821 & 15.14922 & 14.4569 & 15.14922 & 14.4569 & 15.3111 & 14.61021 & 11.44427 & 10.91986 & 15.42246 & 14.71821\end{array} 15.42246 \quad 14.71821$ $\begin{array}{llllllllllllllllll}382450 & 3740350 & 11.03443 & 10.52622 & 14.87615 & 14.19322 & 14.87615 & 14.19322 & 14.61008 & 13.93853 & 14.61008 & 13.93853 & 14.76343 & 14.08389 & 11.03443 & 10.52622 & 14.87615 & 14.19322\end{array} 14.87615 \quad 14.19322$ $\begin{array}{lllllllllllllllllll}382950 & 3740350 & 10.56255 & 10.12813 & 14.2474 & 13.66247 & 14.2474 & 13.66247 & 13.98867 & 13.41558 & 13.98867 & 13.41558 & 14.13213 & 13.55296 & 10.56255 & 10.12813 & 14.2474 & 13.66247 & 14.2474 \\ 13.66247\end{array}$ $\begin{array}{llllllllllllllllllllll} \\ 383450 & 3740350 & 10.09484 & 9.504595 & 13.6223 & 12.83137 & 13.6223 & 12.83137 & 13.37237 & 12.59538 & 13.37237 & 12.59538 & 13.50691 & 12.71992 & 10.09484 & 9.504595 & 13.6223 & 12.83137 & 13.6223 & 12.83137\end{array}$ $\begin{array}{llllllllllllllllllllllll}383950 & 3740350 & 9.403597 & 9.194403 & 12.70195 & 12.41892 & 12.70195 & 12.41892 & 12.46456 & 12.18784 & 12.46456 & 12.18784 & 12.58462 & 12.30555 & 9.403597 & 9.194403 & 12.70195 & 12.41892 & 12.70195 & 12.41892\end{array}$ $\begin{array}{llllllllllllllllll}384450 & 3740350 & 8.799142 & 8.325561 & 11.89439 & 11.26003 & 11.89439 & 11.26003 & 11.66908 & 11.0465 & 11.66908 & 11.0465 & 11.77764 & 11.14703 & 8.799142 & 8.325561 & 11.89439 & 11.26003 \\ 11.89439 & 11.26003\end{array}$ $\begin{array}{lllllllllllllllllllll}384950 & 3740350 & 8.439251 & 8.230013 & 11.41394 & 11.13201 & 11.41394 & 11.13201 & 11.19608 & 10.91917 & 11.19608 & 10.91917 & 11.29771 & 11.01782 & 8.439251 & 8.230013 & 11.41394 & 11.13201 & 11.41394 & 11.13201\end{array}$ $\begin{array}{llllllllllllllllllll}385450 & 3740350 & 8.198273 & 7.862704 & 11.09511 & 10.64436 & 11.09511 & 10.64436 & 10.87783 & 10.43651 & 10.87783 & 10.43651 & 10.97304 & 10.52669 & 8.198273 & 7.862704 & 11.09511 & 10.64436 & 11.09511 & 10.64436\end{array}$ $\begin{array}{lllllllllllllllllllll}385950 & 3740350 & 7.849814 & 7.339646 & 10.62947 & 9.946715 & 10.62947 & 9.946715 & 10.41902 & 9.747613 & 10.41902 & 9.747613 & 10.50762 & 9.827127 & 7.849814 & 7.339646 & 10.62947 & 9.946715 & 10.62947 & 9.946715\end{array}$ $\begin{array}{lllllllllllllllllll}386450 & 3740350 & 7.453248 & 7.069781 & 10.10132 & 9.586673 & 10.10132 & 9.586673 & 9.89789 & 9.392253 & 9.89789 & 9.392253 & 9.978201 & 9.466341 & 7.453248 & 7.069781 & 10.10132 & 9.586673 & 10.10132\end{array} 9.586673$ $\begin{array}{lllllllllllllllllllllll}386950 & 3740350 & 7.172801 & 6.861555 & 9.725374 & 9.306666 & 9.725374 & 9.306666 & 9.52659 & 9.116482 & 9.52659 & 9.116482 & 9.601886 & 9.187294 & 7.172801 & 6.861555 & 9.725374 & 9.306666 & 9.725374 & 9.306666\end{array}$ $\begin{array}{lllllllllllllllllllllll}387450 & 3740350 & 6.955829 & 6.552992 & 9.43583 & 8.893985 & 9.43583 & 8.893985 & 9.240104 & 8.710289 & 9.240104 & 8.710289 & 9.31095 & 8.775439 & 6.955829 & 6.552992 & 9.43583 & 8.893985 & 9.43583 & 8.893985\end{array}$ $\begin{array}{llllllllllllllllllll}387950 & 3740350 & 6.640218 & 6.335018 & 9.014334 & 8.60363 & 9.014334 & 8.60363 & 8.824463 & 8.423275 & 8.824463 & 8.423275 & 8.889179 & 8.483808 & 6.640218 & 6.335018 & 9.014334 & 8.60363 & 9.014334 & 8.60363\end{array}$ $\begin{array}{lllllllllllllllllll}388450 & 3740350 & 6.258862 & 6.08063 & 8.503231 & 8.262586 & 8.503231 & 8.262586 & 8.322384 & 8.08868 & 8.322384 & 8.08868 & 8.380666 & 8.145023 & 6.258862 & 6.08063 & 8.503231 & 8.262586 & 8.503231 \\ 8.262586\end{array}$ $\begin{array}{lllllllllllllllllllllllll}388950 & 3740350 & 6.167039 & 5.939925 & 8.382484 & 8.07646 & 8.382484 & 8.07646 & 8.200892 & 7.904402 & 8.200892 & 7.904402 & 8.256298 & 7.95724 & 6.167039 & 5.939925 & 8.382484 & 8.07646 & 8.382484 & 8.07646\end{array}$ $\begin{array}{llllllllllllllllllllllll}389450 & 3740350 & 5.997524 & 5.802429 & 8.156171 & 7.892749 & 8.156171 & 7.892749 & 7.979326 & 7.722568 & 7.979326 & 7.722568 & 8.031669 & 7.772652 & 5.997524 & 5.802429 & 8.156171 & 7.892749 & 8.156171 & 7.892749\end{array}$ $\begin{array}{lllllllllllllllllll}380450 & 3740850 & 11.1731 & 10.82329 & 15.05981 & 14.58858 & 15.05981 & 14.58858 & 14.79882 & 14.33647 & 14.79882 & 14.33647 & 14.95664 & 14.48936 & 11.1731 & 10.82329 & 15.05981 & 14.58858 & 15.05981\end{array} 14.58858$ $\begin{array}{lllllllllllllllll}380950 & 3740850 & 10.97712 & 10.47438 & 14.79496 & 14.1209 & 14.79496 & 14.1209 & 14.53775 & 13.87515 & 14.53775 & 13.87515 & 14.69288 & 14.02188 & 10.97712 & 10.47438 & 14.79496\end{array} 14.1209 \quad 14.79496 \quad 14.1209$ $\begin{array}{llllllllllllllllllll}381450 & 3740850 & 11.00698 & 10.57816 & 14.83704 & 14.26046 & 14.83704 & 14.26046 & 14.57596 & 14.01026 & 14.57596 & 14.01026 & 14.73039 & 14.1583 & 11.00698 & 10.57816 & 14.83704 & 14.26046 & 14.83704 & 14.26046\end{array}$ $\begin{array}{llllllllllllllllllllllll}381950 & 3740850 & 10.67556 & 10.16121 & 14.39436 & 13.70381 & 14.39436 & 13.70381 & 14.13993 & 13.46128 & 14.13993 & 13.46128 & 14.28805 & 13.60109 & 10.67556 & 10.16121 & 14.39436 & 13.70381 & 14.39436 & 13.70381\end{array}$ $\begin{array}{llllllllllllllllllllll}382450 & 3740850 & 10.42925 & 9.944524 & 14.06657 & 13.41526 & 14.06657 & 13.41526 & 13.81494 & 13.1752 & 13.81494 & 13.1752 & 13.95756 & 13.31026 & 10.42925 & 9.944524 & 14.06657 & 13.41526 & 14.06657 & 13.41526\end{array}$ $\begin{array}{lllllllllllllllllllllll}382950 & 3740850 & 10.06869 & 9.593855 & 13.58679 & 12.94783 & 13.58679 & 12.94783 & 13.3403 & 12.71439 & 13.3403 & 12.71439 & 13.47503 & 12.84236 & 10.06869 & 9.593855 & 13.58679 & 12.94783 & 13.58679 & 12.94783\end{array}$

$\begin{array}{llllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$ 2033_ALT4_ 2033_ALT4_ 2033_ALTS_ 2033_ALT5_ 2033_PP_CA 2033_PP_N 2038_ALT1_ 2038_ALT1_ 2038_NP_C 2038_NP_N 2038_ALT3_ 2038_ALT3_ 2038_ALT4_ 2038_ALT4_ 2038_ALTS_ 2038_ALT5_ 2038_PP_CA 2038_PP_N

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383450 \& 3740850 \& 9.60402 \& 9.182789 \& 12.96716 \& 12.40017 \& 12.96716 \& 12.40017 \& 12.72012 \& 12.17287 \& 12.71868 \& 12.17287 \& 12.85541 \& 12.29213 \& 9.60402 \& 9.182789 \& 12.96716 <br>
383950 \& 3740850 \& 9.106799 \& 8.76943 \& 12.30307 \& 11.84944 \& 12.30307 \& 11.84944 \& 12.07408 \& 11.62987 \& 12.07408 \& 11.62987 \& 12.18974 \& 11.74061 \& 9.106799 \& 8.76943 \& 12.30307 <br>
11.84944 \& 12.96716 \& 12.40017 <br>
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 $\begin{array}{llllllllllllllllll}384450 & 3740850 & 8.529853 & 8.160827 & 11.53405 & 11.03891 & 11.53405 & 11.03891 & 11.31591 & 10.83038 & 11.31591 & 10.83038 & 11.41985 & 10.92844 & 8.529853 & 8.160827 & 11.53405 & 11.03891\end{array} 11.53405 \quad 11.03891$ 

384950 \& 3740850 \& 8.249722 \& 7.892022 \& 11.15937 \& 10.67994 \& 11.15937 \& 10.67994 \& 10.94722 \& 10.47623 \& 10.94722 \& 10.47623 \& 11.04607 \& 10.56902 \& 8.249722 \& 7.892022 \& 11.15937 \& 10.67994 \& 11.15937 <br>
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 10.67994 $\begin{array}{llllllllllllllllllll}385450 & 3740850 & 8.031741 & 7.75564 & 10.86999 & 10.49902 & 10.86999 & 10.49902 & 10.65853 & 10.29538 & 10.65853 & 10.29538 & 10.75196 & 10.38469 & 8.031741 & 7.75564 & 10.86999 & 10.49902 & 10.86999 & 10.49902\end{array}$ $\begin{array}{lllllllllllllllllllllllll}385950 & 3740850 & 7.621579 & 7.358371 & 10.32157 & 9.968529 & 10.32157 & 9.968529 & 10.11857 & 9.771784 & 10.11857 & 9.771784 & 10.2044 & 9.85328 & 7.621579 & 7.358371 & 10.32157 & 9.968529 & 10.32157 & 9.968529\end{array}$ $\begin{array}{lllllllllllllllllllllll}386450 & 3740850 & 7.222836 & 6.833316 & 9.788139 & 9.266294 & 9.788139 & 9.266294 & 9.592589 & 9.080118 & 9.592589 & 9.080118 & 9.671014 & 9.151914 & 7.222836 & 6.833316 & 9.788139 & 9.266294 & 9.788139 & 9.266294\end{array}$ $\begin{array}{llllllllllllllllll}386950 & 3740850 & 6.965464 & 6.679428 & 9.445649 & 9.06139 & 9.445649 & 9.06139 & 9.25385 & 8.877088 & 9.25385 & 8.877088 & 9.326644 & 8.945513 & 6.965464 & 6.679428 & 9.445649 & 9.06139\end{array} 9.445649 \quad 9.06139$ $\begin{array}{lllllllllllllllllllll}387450 & 3740850 & 6.843631 & 6.497739 & 9.283573 & 8.818065 & 9.283573 & 8.818065 & 9.092478 & 8.637668 & 9.092478 & 8.637668 & 9.162431 & 8.702923 & 6.843631 & 6.497739 & 9.283573 & 8.818065 & 9.283573 & 8.818065\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}387950 & 3740850 & 6.637063 & 6.252997 & 9.007727 & 8.491321 & 9.007727 & 8.491321 & 8.820041 & 8.315413 & 8.820041 & 8.315413 & 8.88592 & 8.37585 & 6.637063 & 6.252997 & 9.007727 & 8.491321 & 9.007727 & 8.491321\end{array}$ $\begin{array}{lllllllllllllllllll}388450 & 3740850 & 6.249254 & 5.947288 & 8.486957 & 8.08212 & 8.486957 & 8.08212 & 8.308671 & 7.913325 & 8.308671 & 7.913325 & 8.368396 & 7.96838 & 6.249254 & 5.947288 & 8.486957 & 8.08212 & 8.486957 \\ 8.08212\end{array}$ $\begin{array}{llllllllllllllllllllll}388950 & 3740850 & 6.109107 & 5.897537 & 8.30209 & 8.017462 & 8.30209 & 8.017462 & 8.124204 & 7.848166 & 8.124204 & 7.848166 & 8.180005 & 7.901381 & 6.109107 & 5.897537 & 8.30209 & 8.017462 & 8.30209 & 8.017462\end{array}$ $\begin{array}{lllllllllllllllllllllll}389450 & 3740850 & 5.915522 & 5.75158 & 8.043767 & 7.822903 & 8.043767 & 7.822903 & 7.870396 & 7.655228 & 7.870396 & 7.655228 & 7.922524 & 7.705299 & 5.915522 & 5.75158 & 8.043767 & 7.822903 & 8.043767 & 7.822903\end{array}$ $\begin{array}{llllllllllllllllll}380450 & 3741350 & 10.57388 & 10.25062 & 14.25906 & 13.82379 & 14.25906 & 13.82379 & 14.01183 & 13.58401 & 14.01183 & 13.58401 & 14.15863 & 13.72608 & 10.57388 & 10.25062 & 14.25906 & 13.82379\end{array} 14.25906 \quad 13.82379$ $\begin{array}{llllllllllllllllllll}380950 & 3741350 & 10.04468 & 9.811957 & 13.54691 & 13.23346 & 13.54691 & 13.23346 & 13.31208 & 13.00405 & 13.31208 & 13.00405 & 13.45107 & 13.13955 & 10.04468 & 9.811957 & 13.54691 & 13.23346 & 13.54691 & 13.23346\end{array}$ $\begin{array}{lllllllllllllllllllllll}381450 & 3741350 & 10.3843 & 10.0508 & 14.00421 & 13.55528 & 14.00421 & 13.55528 & 13.75849 & 13.31747 & 13.75849 & 13.31747 & 13.90189 & 13.45604 & 10.3843 & 10.0508 & 14.00421 & 13.55528 & 14.00421 & 13.55528\end{array}$ $\begin{array}{llllllllllllllllllllll}381950 & 3741350 & 10.09981 & 9.608897 & 13.6247 & 12.966 & 13.6247 & 12.966 & 13.38392 & 12.73645 & 13.38392 & 12.73645 & 13.52162 & 12.86608 & 10.09981 & 9.608897 & 13.6247 & 12.966 & 13.6247 & 12.966\end{array}$ $\begin{array}{lllllllllllllllllllll}382450 & 3741350 & 9.880423 & 9.45288 & 13.33222 & 12.75784 & 13.33222 & 12.75784 & 13.09398 & 12.5299 & 13.09398 & 12.5299 & 13.22698 & 12.65621 & 9.880423 & 9.45288 & 13.33222 & 12.75784 & 13.33222 & 12.75784\end{array}$ $\begin{array}{lllllllllllllllllllll}382950 & 3741350 & 9.585016 & 9.092003 & 12.93822 & 12.27597 & 12.93822 & 12.27597 & 12.70434 & 12.05568 & 12.70434 & 12.05568 & 12.83123 & 12.17511 & 9.585016 & 9.092003 & 12.93822 & 12.27597 & 12.93822 & 12.27597\end{array}$ $\begin{array}{lllllllllllllllllllll}383450 & 3741350 & 9.167705 & 8.876338 & 12.38222 & 11.98904 & 12.38222 & 11.98904 & 12.15632 & 11.77043 & 12.15632 & 11.77043 & 12.27466 & 11.8849 & 9.167705 & 8.876338 & 12.38222 & 11.98904 & 12.38222 & 11.98904\end{array}$ $\begin{array}{lllllllllllllllllllll}383950 & 3741350 & 8.752606 & 8.460139 & 11.82726 & 11.43397 & 11.82726 & 11.43397 & 11.60794 & 11.22299 & 11.60794 & 11.22299 & 11.71824 & 11.32907 & 8.752606 & 8.460139 & 11.82726 & 11.43397 & 11.82726 & 11.43397\end{array}$ $\begin{array}{lllllllllllllllllllllll}384450 & 3741350 & 8.354958 & 8.016274 & 11.297 & 10.84325 & 11.297 & 10.84325 & 11.08465 & 10.63956 & 11.08465 & 10.63956 & 11.18688 & 10.73611 & 8.354958 & 8.016274 & 11.297 & 10.84325 & 11.297 & 10.84325\end{array}$ $\begin{array}{llllllllllllllllllll}384950 & 3741350 & 7.958562 & 7.539584 & 10.76842 & 10.20798 & 10.76842 & 10.20798 & 10.56427 & 10.01367 & 10.56427 & 10.01367 & 10.65863 & 10.10055 & 7.958562 & 7.539584 & 10.76842 & 10.20798 & 10.76842 & 10.20798\end{array}$ 

385450 \& 3741350 \& 7.717838 \& 7.489979 \& 10.44714 \& 10.14104 \& 10.44714 \& 10.14104 \& 10.24507 \& 9.945304 \& 10.24507 \& 9.945304 \& 10.33428 \& 10.0311 \& 7.717838 \& 7.489979 \& 10.44714 \& 10.14104 \& 10.44714 <br>
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\end{tabular} 10.14104 $\begin{array}{llllllllllllllllllllll}385950 & 3741350 & 7.276041 & 7.076729 & 9.854924 & 9.587202 & 9.854924 & 9.587202 & 9.662547 & 9.39975 & 9.662547 & 9.39975 & 9.744239 & 9.47833 & 7.276041 & 7.076729 & 9.854924 & 9.587202 & 9.854924 & 9.587202\end{array}$ $\begin{array}{llllllllllllllllllllll}386450 & 3741350 & 7.117188 & 6.782537 & 9.644114 & 9.195683 & 9.644114 & 9.195683 & 9.452877 & 9.012761 & 9.452877 & 9.012761 & 9.5307 & 9.084971 & 7.117188 & 6.782537 & 9.644114 & 9.195683 & 9.644114 & 9.195683\end{array}$ $\begin{array}{lllllllllllllllllllllllll}386950 & 3741350 & 6.789652 & 6.521568 & 9.207909 & 8.847784 & 9.207909 & 8.847784 & 9.021956 & 8.668902 & 9.021956 & 8.668902 & 9.092834 & 8.735676 & 6.789652 & 6.521568 & 9.207909 & 8.847784 & 9.207909 & 8.847784\end{array}$ $\begin{array}{llllllllllllllllllllllllll}387450 & 3741350 & 6.665353 & 6.358303 & 9.042905 & 8.630043 & 9.042905 & 8.630043 & 8.858309 & 8.454702 & 8.858309 & 8.454702 & 8.926268 & 8.518274 & 6.665353 & 6.358303 & 9.042905 & 8.630043 & 9.042905 & 8.630043\end{array}$ $\begin{array}{lllllllllllllllllllllllll}387950 & 3741350 & 6.525305 & 6.208293 & 8.856098 & 8.429192 & 8.856098 & 8.429192 & 8.673525 & 8.255881 & 8.673525 & 8.255881 & 8.738591 & 8.316617 & 6.525305 & 6.208293 & 8.856098 & 8.429192 & 8.856098 & 8.429192\end{array}$ $\begin{array}{llllllllllllllllllllllllll}388950 & 3741350 & 6.077107 & 5.752613 & 8.256574 & 7.821 & 8.256574 & 7.821 & 8.081882 & 7.658089 & 8.081882 & 7.658089 & 8.138509 & 7.710139 & 6.077107 & 5.752613 & 8.256574 & 7.821 & 8.256574 & 7.821\end{array}$ $\begin{array}{lllllllllllllllllllll}389450 & 3741350 & 5.861639 & 5.679718 & 7.969117 & 7.723744 & 7.969117 & 7.723744 & 7.798659 & 7.560398 & 7.798659 & 7.560398 & 7.851016 & 7.610726 & 5.861639 & 5.679718 & 7.969117 & 7.723744 & 7.969117 & 7.723744\end{array}$ $\begin{array}{llllllllllllllllllllll}380450 & 3741850 & 9.842665 & 9.501055 & 13.2792 & 12.8205 & 13.2792 & 12.8205 & 13.05004 & 12.59895 & 13.05004 & 12.59895 & 13.18457 & 12.72798 & 9.842665 & 9.501055 & 13.2792 & 12.8205 & 13.2792 & 12.8205\end{array}$ $\begin{array}{lllllllllllllllllll}380950 & 3741850 & 9.906662 & 9.47271 & 13.36445 & 12.78256 & 13.36445 & 12.78256 & 13.13198 & 12.5606 & 13.13198 & 12.5606 & 13.26757 & 12.68897 & 9.906662 & 9.47271 & 13.36445 & 12.78256 & 13.36445 \\ 12.28 .78256 & \end{array}$ $\begin{array}{llllllllllllllllllll}381450 & 3741850 & 9.639732 & 9.29377 & 13.00648 & 12.5421 & 13.00648 & 12.5421 & 12.77924 & 12.32248 & 12.77924 & 12.32248 & 12.91018 & 12.44775 & 9.639732 & 9.29377 & 13.00648 & 12.5421 & 13.00648 & 12.5421\end{array}$ $\begin{array}{lllllllllllllllllllll}381950 & 3741850 & 9.576137 & 9.162243 & 12.92358 & 12.36813 & 12.92358 & 12.36813 & 12.69548 & 12.14943 & 12.69548 & 12.14943 & 12.82412 & 12.27129 & 9.576137 & 9.162243 & 12.92358 & 12.36813 & 12.92358 & 12.36813\end{array}$ $\begin{array}{llllllllllllllllllllllll}382450 & 3741850 & 9.339979 & 8.950148 & 12.6085 & 12.0851 & 12.6085 & 12.0851 & 12.38384 & 11.86936 & 12.38384 & 11.86936 & 12.50763 & 11.98685 & 9.339979 & 8.950148 & 12.6085 & 12.0851 & 12.6085 & 12.0851\end{array}$ $\begin{array}{llllllllllllllllllllll}382950 & 3741850 & 9.143628 & 8.738541 & 12.34639 & 11.8023 & 12.34639 & 11.8023 & 12.12425 & 11.59038 & 12.12425 & 11.59038 & 12.244 & 11.70383 & 9.143628 & 8.738541 & 12.34639 & 11.8023 & 12.34639 & 11.8023\end{array}$ $\begin{array}{lllllllllllllllllll}383450 & 3741850 & 8.730179 & 8.515468 & 11.7951 & 11.50488 & 11.7951 & 11.50488 & 11.58044 & 11.29528 & 11.58044 & 11.29528 & 11.6918 & 11.40391 & 8.730179 & 8.515468 & 11.7951 & 11.50488 & 11.7951\end{array} 11.50488$ $\begin{array}{lllllllllllllllllll} \\ 383950 & 3741850 & 8.390007 & 8.059075 & 11.34001 & 10.89291 & 11.34001 & 10.89291 & 11.13065 & 10.69226 & 11.13065 & 10.69226 & 11.23552 & 10.79189 & 8.395797 & 8.059075 & 11.34001 & 10.89615 & 11.34001 \\ 10.89 .89615\end{array}$ $\begin{array}{lllllllllllllllllllllll}384450 & 3741850 & 8.042216 & 7.803455 & 10.87669 & 10.55592 & 10.87669 & 10.55592 & 10.6732 & 10.35859 & 10.6732 & 10.35859 & 10.77081 & 10.45253 & 8.042216 & 7.803455 & 10.87669 & 10.55592 & 10.87669 & 10.55592\end{array}$ $\begin{array}{lllllllllllllllll}384950 & 3741850 & 7.533318 & 7.331627 & 10.19671 & 9.925474 & 10.19671 & 9.925474 & 10.004 & 9.738045 & 10.004 & 9.738045 & 10.09207 & 9.823128 & 7.533318 & 7.331627 & 10.19671\end{array} 9.925474 \quad 10.19671 \quad 9.925474$ $\begin{array}{llllllllllllllllll}385450 & 3741850 & 7.470896 & 7.1963 & 10.11451 & 9.745922 & 10.11451 & 9.745922 & 9.919964 & 9.558418 & 9.919964 & 9.558418 & 10.00592 & 9.640008 & 7.470896 & 7.1963 & 10.11451 & 9.745922\end{array} 10.11451 \quad 9.745922$ $\begin{array}{lllllllllllllllllllllllllllll}385950 & 3741850 & 7.185797 & 6.97381 & 9.732777 & 9.447899 & 9.732777 & 9.447899 & 9.543878 & 9.264271 & 9.543878 & 9.264271 & 9.624707 & 9.341839 & 7.185797 & 6.97381 & 9.732777 & 9.447899 & 9.732777 & 9.447899\end{array}$ $\begin{array}{llllllllllllllllllllll}386450 & 3741850 & 6.968694 & 6.769863 & 9.444058 & 9.176413 & 9.444058 & 9.176413 & 9.257723 & 8.994991 & 9.257723 & 8.994991 & 9.333631 & 9.068007 & 6.968694 & 6.769863 & 9.444058 & 9.176413 & 9.444058 & 9.176413\end{array}$

 $\begin{array}{llllllllllllllllllll}387450 & 3741850 & 6.43759 & 6.237615 & 8.736377 & 8.466338 & 8.736377 & 8.466338 & 8.559205 & 8.29514 & 8.559205 & 8.29514 & 8.624109 & 8.357604 & 6.43759 & 6.237615 & 8.736377 & 8.466338 & 8.736377 & 8.466338\end{array}$ $\begin{array}{lllllllllllllllllllll}387950 & 3741850 & 6.368915 & 6.083942 & 8.644699 & 8.260522 & 8.644699 & 8.260522 & 8.467683 & 8.091632 & 8.467683 & 8.091632 & 8.53106 & 8.151238 & 6.368915 & 6.083942 & 8.644699 & 8.260522 & 8.644699 & 8.260522\end{array}$ $\begin{array}{llllllllllllllllllll}388950 & 3741850 & 6.053673 & 5.698119 & 8.222626 & 7.745543 & 8.222626 & 7.745543 & 8.050917 & 7.584824 & 8.050917 & 7.584824 & 8.108469 & 7.636994 & 6.053673 & 5.698119 & 8.222626 & 7.745543 & 8.222626 & 7.745543\end{array}$ $\begin{array}{lllllllllllllllllllll}389450 & 3741850 & 5.853672 & 5.535075 & 7.95556 & 7.52799 & 7.95556 & 7.52799 & 7.786615 & 7.370571 & 7.786615 & 7.370571 & 7.840138 & 7.419553 & 5.853672 & 5.535075 & 7.95556 & 7.52799 & 7.95556 & 7.52799\end{array}$ $\begin{array}{llllllllllllllllllll}380450 & 3742350 & 9.444651 & 9.144328 & 12.74806 & 12.34425 & 12.74806 & 12.34425 & 12.52768 & 12.1309 & 12.52768 & 12.1309 & 12.65457 & 12.25322 & 9.444651 & 9.144328 & 12.74806 & 12.34425 & 12.74806 & 12.34425\end{array}$ $\begin{array}{lllllllllllllllllll}380950 & 3742350 & 9.385941 & 8.89886 & 12.66673 & 12.01423 & 12.66673 & 12.01423 & 12.44651 & 11.80597 & 12.44651 & 11.80597 & 12.57318 & 11.9244 & 9.385941 & 8.89886 & 12.66673 & 12.01423 & 12.66673 \\ 12.01423\end{array}$ $\begin{array}{llllllllllllllllllllll}381450 & 3742350 & 9.289386 & 8.948022 & 12.53858 & 12.07999 & 12.53858 & 12.07999 & 12.31926 & 11.86869 & 12.31926 & 11.86869 & 12.44364 & 11.98769 & 9.289386 & 8.948022 & 12.53858 & 12.07999 & 12.53858 & 12.0799\end{array}$ $\begin{array}{lllllllllllllllllll}381950 & 3742350 & 9.106563 & 8.753836 & 12.29487 & 11.82087 & 12.29487 & 11.82087 & 12.07798 & 11.61177 & 12.07798 & 11.61177 & 12.19847 & 11.72668 & 9.106563 & 8.753836 & 12.29487 & 11.82087 & 12.29487 \\ 11.82087\end{array}$ $\begin{array}{llllllllllllllllllllll}382450 & 3742350 & 8.865085 & 8.513157 & 11.97272 & 11.49927 & 11.97272 & 11.49927 & 11.75944 & 11.29475 & 11.75944 & 11.29475 & 11.87497 & 11.40508 & 8.865085 & 8.513157 & 11.97272 & 11.49927 & 11.97272 & 11.49927\end{array}$

 | 383450 | 3742350 | 8.383144 | 8.140457 | 11.32947 | 11.00162 | 11.32947 | 11.00162 | 11.12397 | 10.8017 | 11.12397 | 10.8017 | 11.22982 | 10.90438 | 8.383144 | 8.140457 | 11.32947 | 11.00162 | 11.32947 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | 11.00162 $\begin{array}{lllllllllllllllllll}383950 & 3742350 & 8.146338 & 7.767225 & 11.01397 & 10.50458 & 11.01397 & 10.50458 & 10.8115 & 10.31119 & 10.8115 & 10.31119 & 10.91226 & 10.40605 & 8.146338 & 7.767225 & 11.01397 & 10.50458 & 11.01397\end{array} 10.50458$ $\begin{array}{llllllllllllllllllllll}384450 & 3742350 & 7.815281 & 7.534084 & 10.57113 & 10.1935 & 10.57113 & 10.1935 & 10.37441 & 10.00339 & 10.37441 & 10.00339 & 10.46891 & 10.09343 & 7.815281 & 7.534084 & 10.57113 & 10.1935 & 10.57113 & 10.1935\end{array}$ $\begin{array}{llllllllllllllllllll}384950 & 3742350 & 7.400231 & 7.066375 & 10.01676 & 9.569566 & 10.01676 & 9.569566 & 9.828393 & 9.389345 & 9.828393 & 9.389345 & 9.914985 & 9.470248 & 7.400231 & 7.066375 & 10.01676 & 9.569566 & 10.01676 & 9.569566\end{array}$ $\begin{array}{llllllllllllllllllllll}385450 & 3742350 & 7.21674 & 6.888565 & 9.771802 & 9.332016 & 9.771802 & 9.332016 & 9.584761 & 9.153108 & 9.584761 & 9.153108 & 9.667421 & 9.230266 & 7.21674 & 6.888565 & 9.771802 & 9.332016 & 9.771802 & 9.332016\end{array}$ $\begin{array}{lllllllllllllllllllllllll}385950 & 3742350 & 6.947834 & 6.782398 & 9.412469 & 9.189557 & 9.412469 & 9.189557 & 9.230689 & 9.012176 & 9.230689 & 9.012176 & 9.308227 & 9.087441 & 6.947834 & 6.782398 & 9.412469 & 9.189557 & 9.412469 & 9.189557\end{array}$ $\begin{array}{llllllllllllllllllll}386450 & 3742350 & 6.806099 & 6.629346 & 9.225061 & 8.986977 & 9.225061 & 8.986977 & 9.043991 & 8.810075 & 9.043991 & 8.810075 & 9.117791 & 8.881327 & 6.806099 & 6.629346 & 9.225061 & 8.986977 & 9.225061 & 8.986977\end{array}$ $\begin{array}{llllllllllllllllllll}386950 & 3742350 & 6.622683 & 6.37371 & 8.97996 & 8.645194 & 8.97996 & 8.645194 & 8.801306 & 8.473236 & 8.801306 & 8.473236 & 8.871436 & 8.539698 & 6.622683 & 6.37371 & 8.97996 & 8.645194 & 8.97996 & 8.645194\end{array}$ $\begin{array}{llllllllllllllllllll}387450 & 3742350 & 6.391945 & 6.061901 & 8.672582 & 8.229772 & 8.672582 & 8.229772 & 8.498035 & 8.063869 & 8.498035 & 8.063869 & 8.563377 & 8.12396 & 6.391945 & 6.061901 & 8.672582 & 8.229772 & 8.672582 & 8.229772\end{array}$ $\begin{array}{lllllllllllllllllllllll}387950 & 3742350 & 6.188001 & 5.968142 & 8.401294 & 8.104309 & 8.401294 & 8.104309 & 8.229595 & 7.940199 & 8.229595 & 7.940199 & 8.29042 & 7.998552 & 6.188001 & 5.968142 & 8.401294 & 8.104309 & 8.401294 & 8.104309\end{array}$ $\begin{array}{lllllllllllllllllllllllll}388950 & 3742350 & 5.976304 & 5.704493 & 8.117631 & 7.751531 & 8.117631 & 7.751531 & 7.949406 & 7.591836 & 7.949406 & 7.591836 & 8.006387 & 7.645226 & 5.976304 & 5.704493 & 8.117631 & 7.751531 & 8.117631 & 7.751531\end{array}$ $\begin{array}{lllllllllllllllllll}389450 & 3742350 & 5.821698 & 5.490406 & 7.910326 & 7.466109 & 7.910326 & 7.466109 & 7.744487 & 7.311055 & 7.744487 & 7.311055 & 7.798702 & 7.36021 & 5.821698 & 5.490406 & 7.910326 & 7.466109 & 7.910326\end{array} 7.466109$ $\begin{array}{llllllllllllllllll}380200 & 3731100 & 12.169 & 11.85955 & 16.48599 & 16.06098 & 16.48599 & 16.06098 & 16.22029 & 15.80054 & 16.22029 & 15.80054 & 16.36453 & 15.94297 & 12.169 & 11.85955 & 16.48599 & 16.06098 \\ 16.48599 & 16.06098\end{array}$ $\begin{array}{llllllllllllllllllllll}380700 & 3731100 & 15.00624 & 14.74396 & 20.26639 & 19.9048 & 20.26639 & 19.9048 & 19.92635 & 19.56876 & 19.92635 & 19.56876 & 20.12544 & 19.76674 & 15.00624 & 14.74396 & 20.26639 & 19.9048 & 20.26639 & 19.9048\end{array}$ $\begin{array}{llllllllllllllllllllllll}380200 & 3731600 & 14.19387 & 13.7263 & 19.18164 & 18.54688 & 19.18164 & 18.54688 & 18.86561 & 18.23966 & 18.86561 & 18.23966 & 19.05016 & 18.41906 & 14.19387 & 13.7263 & 19.18164 & 18.54688 & 19.18164 & 18.54688\end{array}$ $\begin{array}{llllllllllllllllllllll}380700 & 3731600 & 16.8915 & 16.25433 & 22.77339 & 21.91308 & 22.77339 & 21.91308 & 22.38761 & 21.53991 & 22.38761 & 21.53991 & 22.62541 & 21.76897 & 16.8915 & 16.25433 & 22.77339 & 21.91308 & 22.77339 & 21.91308\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}381200 & 3731600 & 18.86121 & 18.21666 & 25.37955 & 24.51138 & 25.37955 & 24.51138 & 24.94083 & 24.08634 & 24.94083 & 24.08634 & 25.22337 & 24.35924 & 18.86121 & 18.21666 & 25.37955 & 24.51138 & 25.37955 & 24.51138\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}381700 & 3731600 & 21.70771 & 21.22399 & 29.16669 & 28.51385 & 29.16669 & 28.51385 & 28.65448 & 28.01388 & 28.65448 & 28.01388 & 28.99414 & 28.34715 & 21.70771 & 21.22399 & 29.16669 & 28.51385 & 29.16669 & 28.51385\end{array}$ $\begin{array}{llllllllllllllllllllll}383700 & 3731600 & 18.43256 & 18.20101 & 24.83509 & 24.51812 & 24.83509 & 24.51812 & 24.27538 & 23.96654 & 24.27538 & 23.96654 & 24.51858 & 24.20867 & 18.43256 & 18.20101 & 24.83509 & 24.51812 & 24.83509 & 24.51812\end{array}$ $\begin{array}{llllllllllllllllllllllllll}384200 & 3731600 & 17.25165 & 16.62738 & 23.26906 & 22.42666 & 23.26906 & 22.42666 & 22.71006 & 21.88892 & 22.71006 & 21.88892 & 22.92276 & 22.09436 & 17.25165 & 16.62738 & 23.26906 & 22.42666 & 23.26906 & 22.42666\end{array}$ $\begin{array}{lllllllllllllllllllll}380200 & 3732100 & 14.99918 & 14.65736 & 20.24883 & 19.78196 & 20.24883 & 19.78196 & 19.91179 & 19.45104 & 19.91179 & 19.45104 & 20.11415 & 19.65056 & 14.99918 & 14.65736 & 20.24883 & 19.78196 & 20.24883 & 19.78196\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}380700 & 3732100 & 17.80068 & 17.14852 & 23.97756 & 23.10044 & 23.97756 & 23.10044 & 23.56797 & 22.70441 & 23.56797 & 22.70441 & 23.82611 & 22.95231 & 17.80068 & 17.14852 & 23.97756 & 23.10044 & 23.97756 & 23.10044\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}381200 & 3732100 & 20.06849 & 19.45328 & 26.98395 & 26.15724 & 26.98395 & 26.15724 & 26.51412 & 25.70184 & 26.51412 & 25.70184 & 26.82153 & 25.99957 & 20.06849 & 19.45328 & 26.98395 & 26.15724 & 26.98395 & 26.15724\end{array}$ $\begin{array}{llllllllllllllllllllllll}381700 & 3732100 & 22.54349 & 22.1034 & 30.27566 & 29.68194 & 30.27566 & 29.68194 & 29.74023 & 29.15665 & 29.74023 & 29.15665 & 30.09751 & 29.50795 & 22.54349 & 22.1034 & 30.27566 & 29.68194 & 30.27566 & 29.68194\end{array}$ $\begin{array}{llllllllllllllllllllllll}382700 & 3732100 & 22.17561 & 21.8238 & 29.79943 & 29.3228 & 29.79943 & 29.3228 & 29.2294 & 28.7619 & 29.2294 & 28.7619 & 29.56743 & 29.09768 & 22.17561 & 21.8238 & 29.79943 & 29.3228 & 29.79943 & 29.3228\end{array}$ $\begin{array}{llllllllllllllllllllllllll}383700 & 3732100 & 16.33858 & 15.98027 & 22.03546 & 21.54812 & 22.03546 & 21.54812 & 21.53961 & 21.06519 & 21.53961 & 21.06519 & 21.74726 & 21.27016 & 16.33858 & 15.98027 & 22.03546 & 21.54812 & 22.03546 & 21.54812\end{array}$ $\begin{array}{lllllllllllllllllllllllll}380200 & 3732600 & 16.28134 & 15.758 & 21.95206 & 21.24748 & 21.95206 & 21.24748 & 21.57999 & 20.88763 & 21.57999 & 20.88763 & 21.80873 & 21.10869 & 16.28134 & 15.758 & 21.95206 & 21.24748 & 21.95206 & 21.24748\end{array}$ $\begin{array}{lllllllllllllllllllllll}380700 & 3732600 & 18.36547 & 17.85868 & 24.72316 & 24.04242 & 24.72316 & 24.04242 & 24.29631 & 23.62781 & 24.29631 & 23.62781 & 24.5676 & 23.891 & 18.36547 & 17.85868 & 24.72316 & 24.04242 & 24.72316 & 24.04242\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}381200 & 3732600 & 20.94178 & 20.24156 & 28.14377 & 27.20488 & 28.14377 & 27.20488 & 27.65069 & 26.72747 & 27.65069 & 26.72747 & 27.97632 & 27.04122 & 20.94178 & 20.24156 & 28.14377 & 27.20488 & 28.14377 & 27.20488\end{array}$ $\begin{array}{llllllllllllllllllllllll}381700 & 3732600 & 24.27082 & 22.62938 & 32.57481 & 30.38179 & 32.57481 & 30.38179 & 31.99945 & 29.8422 & 31.99945 & 29.8422 & 32.39148 & 30.20396 & 24.27082 & 22.79908 & 32.57481 & 30.38179 & 32.57481 & 30.38179\end{array}$ $\begin{array}{lllllllllllllllllllll}383700 & 3732600 & 14.57702 & 14.25028 & 19.67931 & 19.22278 & 19.67931 & 19.22278 & 19.23926 & 18.79359 & 19.23926 & 18.79359 & 19.41769 & 18.97045 & 14.57702 & 14.25028 & 19.67931 & 19.22278 & 19.67931 & 19.22278\end{array}$



$\begin{array}{llllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$

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384700 \& 3732600 \& 13.02483 \& 12.35158 \& 17.61004 \& 16.69937 \& 17.61004 \& 16.69937 \& 17.20105 \& 16.31023 \& 17.20105 \& 16.31023 \& 17.34836 \& 16.44987 \& 13.02483 \& 12.35158 \& 17.61004 \& 16.69937 \& 17.61004 \& 16.69937 <br>
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385200 \& 3732600 \& 12.37451 \& 11.8602 \& 16.74045 \& 16.042 \& 16.74045 \& 16.042 \& 16.35135 \& 15.66688 \& 16.35135 \& 15.66688 \& 16.48768 \& 15.79818 \& 12.37451 \& 11.8602 \& 16.74045 \& 16.042 \& 16.74045 <br>
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\end{tabular} $\begin{array}{lllllllllllllllllll}380200 & 3733100 & 16.70459 & 16.21081 & 22.51019 & 21.84441 & 22.51019 & 21.84441 & 22.12693 & 21.47242 & 22.12693 & 21.47242 & 22.36603 & 21.7041 & 16.70459 & 16.21081 & 22.51019 & 21.84441 & 22.51019\end{array} 21.84441$ $\begin{array}{lllllllllllllllllllllllll}380700 & 3733100 & 19.04049 & 18.09232 & 25.61856 & 24.34946 & 25.61856 & 24.34946 & 25.17471 & 23.92669 & 25.17471 & 23.92669 & 25.46051 & 24.19562 & 19.04049 & 18.09232 & 25.61856 & 24.34946 & 25.61856 & 24.34946\end{array}$ $\begin{array}{llllllllllllllllllllll}381200 & 3733100 & 22.43259 & 21.74871 & 30.13273 & 29.15452 & 30.13273 & 29.15452 & 29.60469 & 28.64425 & 29.60469 & 28.64425 & 29.95892 & 28.98628 & 22.43259 & 21.74871 & 30.13273 & 29.15452 & 30.13273 & 29.15452\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}381700 & 3733100 & 26.0399 & 24.58336 & 34.92746 & 32.97793 & 34.92746 & 32.97793 & 34.30822 & 32.39158 & 34.30822 & 32.39158 & 34.73695 & 32.79443 & 26.0399 & 24.58336 & 34.92746 & 32.97793 & 34.92746 & 32.97793\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}382200 & 3733100 & 22.94609 & 21.38282 & 30.804 & 28.71154 & 30.804 & 28.71154 & 30.24106 & 28.18396 & 30.24106 & 28.18396 & 30.60646 & 28.52165 & 22.94776 & 21.3856 & 30.804 & 28.71154 & 30.804 & 28.71154\end{array}$ $\begin{array}{llllllllllllllllllllll}382700 & 3733100 & 17.73334 & 16.6022 & 23.86593 & 22.34801 & 23.86593 & 22.34801 & 23.40199 & 21.90954 & 23.40199 & 21.90954 & 23.6578 & 22.14677 & 17.73334 & 16.6022 & 23.86593 & 22.34801 & 23.86593 & 22.34801\end{array}$ $\begin{array}{llllllllllllllllllll}383200 & 3733100 & 14.71169 & 14.01462 & 19.84597 & 18.9046 & 19.84597 & 18.9046 & 19.43142 & 18.50762 & 19.43142 & 18.50762 & 19.62177 & 18.68898 & 14.71169 & 14.01462 & 19.84597 & 18.9046 & 19.84597 & 18.9046\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}384700 & 3733100 & 11.93403 & 11.51507 & 16.14641 & 15.57642 & 16.14641 & 15.57642 & 15.77591 & 15.21966 & 15.77591 & 15.21966 & 15.90748 & 15.34788 & 11.93403 & 11.51507 & 16.14641 & 15.57642 & 16.14641 & 15.57642\end{array}$ $\begin{array}{llllllllllllllllll}385200 & 3733100 & 11.56486 & 11.13893 & 15.65249 & 15.07419 & 15.65249 & 15.07419 & 15.29259 & 14.72417 & 15.29259 & 14.72417 & 15.4179 & 14.845 & 11.56486 & 11.13893 & 15.65249 & 15.07419\end{array} 15.65249 \quad 15.07419$ $\begin{array}{lllllllllllllllllllllll}380200 & 3733600 & 16.96115 & 16.46817 & 22.8467 & 22.18097 & 22.8467 & 22.18097 & 22.45573 & 21.80107 & 22.45573 & 21.80107 & 22.70151 & 22.04036 & 16.96115 & 16.46817 & 22.8467 & 22.18097 & 22.8467 & 22.18097\end{array}$ $\begin{array}{llllllllllllllllllllll}380700 & 3733600 & 19.86544 & 19.28478 & 26.57209 & 25.81221 & 26.57209 & 25.81221 & 26.11159 & 25.36548 & 26.11159 & 25.36548 & 26.414 & 25.65956 & 19.86544 & 19.28478 & 26.57209 & 25.81221 & 26.57209 & 25.81221\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllll}381200 & 3733600 & 23.62056 & 23.02416 & 31.71192 & 30.90885 & 31.71192 & 30.90885 & 31.15431 & 30.36705 & 31.15431 & 30.36705 & 31.53296 & 30.73735 & 23.62056 & 23.02416 & 31.71192 & 30.90885 & 31.71192 & 30.90885\end{array}$ $\begin{array}{lllllllllllllllllllll}381700 & 3733600 & 27.59913 & 26.7409 & 36.99322 & 35.83871 & 36.99322 & 35.83871 & 36.34241 & 35.2062 & 36.34241 & 35.2062 & 36.8071 & 35.65759 & 27.59913 & 26.7409 & 36.99322 & 35.83871 & 36.99322 & 35.83871\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}382200 & 3733600 & 21.64288 & 20.99272 & 29.06208 & 28.18541 & 29.06208 & 28.18541 & 28.52923 & 27.66791 & 28.52923 & 27.66791 & 28.87086 & 28.00034 & 21.64288 & 20.99272 & 29.06208 & 28.18541 & 29.06208 & 28.18541\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}382700 & 3733600 & 16.67139 & 15.77955 & 22.44362 & 21.24532 & 22.44362 & 21.24532 & 22.00838 & 20.82943 & 22.00838 & 20.82943 & 22.24652 & 21.05323 & 16.67139 & 15.77955 & 22.44362 & 21.24532 & 22.44362 & 21.24532\end{array}$ $\begin{array}{lllllllllllllllllllllllll}383200 & 3733600 & 14.02091 & 13.42064 & 18.91684 & 18.10603 & 18.91684 & 18.10603 & 18.52655 & 17.73017 & 18.52655 & 17.73017 & 18.70778 & 17.90362 & 14.02091 & 13.42064 & 18.91684 & 18.10603 & 18.91684 & 18.10603\end{array}$ $\begin{array}{lllllllllllllllll}383700 & 3733600 & 12.76121 & 12.15468 & 17.23988 & 16.42063 & 17.23988 & 16.42063 & 16.86995 & 16.06528 & 16.86995 & 16.06528 & 17.02421 & 16.2117 & 12.76121 & 12.15468 & 17.23988 \\ 16.6 .42063 & 17.23988 & 16.42063\end{array}$ $\begin{array}{lllllllllllllllllllll}384200 & 3733600 & 11.67403 & 11.30192 & 15.79137 & 15.28434 & 15.79137 & 15.28434 & 15.44069 & 14.94428 & 15.44069 & 14.94428 & 15.57245 & 15.07311 & 11.67403 & 11.30192 & 15.79137 & 15.28434 & 15.79137 & 15.28434\end{array}$ $\begin{array}{lllllllllllllllllllll}384700 & 3733600 & 11.0318 & 10.72002 & 14.934 & 14.50881 & 14.934 & 14.50881 & 14.59568 & 14.17996 & 14.59568 & 14.17996 & 14.71493 & 14.29697 & 11.0318 & 10.72002 & 14.934 & 14.50881 & 14.934 & 14.50881\end{array}$ $\begin{array}{llllllllllllllllllll}388700 & 3733600 & 8.991735 & 8.59127 & 12.19837 & 11.65325 & 12.19837 & 11.65325 & 11.91216 & 11.37951 & 11.91216 & 11.37951 & 11.99813 & 11.46228 & 8.991735 & 8.59127 & 12.19837 & 11.65325 & 12.19837 & 11.65325\end{array}$ $\begin{array}{llllllllllllllllllllllll}389200 & 3733600 & 8.693859 & 8.361741 & 11.79893 & 11.34621 & 11.79893 & 11.34621 & 11.52292 & 11.07953 & 11.52292 & 11.07953 & 11.60446 & 11.15848 & 8.693859 & 8.361741 & 11.79893 & 11.34621 & 11.79893 & 11.34621\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}380200 & 3734100 & 17.59618 & 16.99177 & 23.68617 & 22.87062 & 23.68617 & 22.87062 & 23.28108 & 22.47951 & 23.28108 & 22.47951 & 23.54202 & 22.7322 & 17.59618 & 16.99177 & 23.68617 & 22.87062 & 23.68617 & 22.87062\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllll}380700 & 3734100 & 20.95039 & 20.0946 & 28.15129 & 27.00274 & 28.15129 & 27.00274 & 27.66114 & 26.53367 & 27.66114 & 26.53367 & 27.98892 & 26.84761 & 20.95039 & 20.0946 & 28.15129 & 27.00274 & 28.15129 & 27.00274\end{array}$ $\begin{array}{lllllllllllllllllllllllll}381200 & 3734100 & 25.96232 & 25.30996 & 34.81908 & 33.94361 & 34.81908 & 33.94361 & 34.20952 & 33.34963 & 34.20952 & 33.34963 & 34.63974 & 33.7693 & 25.96232 & 25.30996 & 34.81908 & 33.94361 & 34.81908 & 33.94361\end{array}$ $\begin{array}{llllllllllllllllllllll}383200 & 3734100 & 13.76996 & 13.17745 & 18.58192 & 17.77866 & 18.58192 & 17.77866 & 18.20041 & 17.42029 & 18.20041 & 17.42029 & 18.37733 & 17.58085 & 13.76996 & 13.17745 & 18.58192 & 17.77866 & 18.58192 & 17.77866\end{array}$ $\begin{array}{lllllllllllllllllllll}383700 & 3734100 & 12.38149 & 11.83575 & 16.72836 & 15.99473 & 16.72836 & 15.99473 & 16.37429 & 15.65478 & 16.37429 & 15.65478 & 16.52419 & 15.79651 & 12.38149 & 11.83575 & 16.72836 & 15.99473 & 16.72836 & 15.99473\end{array}$ $\begin{array}{lllllllllllllllllll}385700 & 3734100 & 10.08529 & 9.563136 & 13.66462 & 12.96083 & 13.66462 & 12.96083 & 13.35284 & 12.66172 & 13.35284 & 12.66172 & 13.45709 & 12.75867 & 10.08529 & 9.563136 & 13.66462 & 12.96083 & 13.66462\end{array} 12.96083$ $\begin{array}{llllllllllllllllll}388200 & 3734100 & 9.188594 & 8.770698 & 12.46811 & 11.90017 & 12.46811 & 11.90017 & 12.17213 & 11.61886 & 12.17213 & 11.61886 & 12.25845 & 11.70177 & 9.188594 & 8.770698 & 12.46811 & 11.90017\end{array} 12.46811 \quad 11.90017$ $\begin{array}{lllllllllllllllllllllllll}389700 & 3734100 & 8.325828 & 7.902872 & 11.30744 & 10.73249 & 11.30744 & 10.73249 & 11.04345 & 10.4833 & 11.04345 & 10.4833 & 11.11866 & 10.55511 & 8.325828 & 7.902872 & 11.30744 & 10.73249 & 11.30744 & 10.73249\end{array}$ $\begin{array}{llllllllllllllllllllllllll}380200 & 3734600 & 18.26128 & 17.76491 & 24.5662 & 23.89492 & 24.5662 & 23.89492 & 24.14373 & 23.48463 & 24.14373 & 23.48463 & 24.41982 & 23.75459 & 18.26128 & 17.76491 & 24.5662 & 23.89492 & 24.5662 & 23.89492\end{array}$ $\begin{array}{lllllllllllllllllllll}380700 & 3734600 & 22.09131 & 21.66653 & 29.66471 & 29.09009 & 29.66471 & 29.09009 & 29.1501 & 28.58542 & 29.1501 & 28.58542 & 29.50333 & 28.93332 & 22.09131 & 21.66653 & 29.66471 & 29.09009 & 29.66471 & 29.09009\end{array}$ $\begin{array}{lllllllllllllllllllllll}381200 & 3734600 & 27.66249 & 26.98413 & 37.07996 & 36.16442 & 37.07996 & 36.16442 & 36.43544 & 35.53667 & 36.43544 & 35.53667 & 36.90178 & 35.99202 & 27.66249 & 26.98413 & 37.07996 & 36.16442 & 37.07996 & 36.16442\end{array}$ $\begin{array}{lllllllllllllllllllllll}381700 & 3734600 & 29.03769 & 28.35757 & 38.88598 & 37.98663 & 38.88598 & 37.98663 & 38.21868 & 37.3236 & 38.21868 & 37.3236 & 38.71628 & 37.8102 & 29.03769 & 28.35757 & 38.89933 & 37.98714 & 38.89933 & 37.98714\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382700 & 3734600 & 15.26586 & 14.54669 & 20.56251 & 19.59931 & 20.56251 & 19.59931 & 20.16637 & 19.22004 & 20.16637 & 19.22004 & 20.38076 & 19.42206 & 15.26586 & 14.54669 & 20.56251 & 19.59931 & 20.56251 & 19.59931\end{array}$ $\begin{array}{llllllllllllllllll}383200 & 3734600 & 12.8891 & 12.52112 & 17.3939 & 16.89652 & 17.3939 & 16.89652 & 17.04354 & 16.5575 & 17.04354 & 16.5575 & 17.21005 & 16.71971 & 12.8891 & 12.52112 & 17.3939 & 16.89652\end{array} 17.3939 \quad 16.89652$ $\begin{array}{llllllllllllllllllllllllll}383700 & 3734600 & 11.94406 & 11.47952 & 16.14231 & 15.51644 & 16.14231 & 15.51644 & 15.80463 & 15.19379 & 15.80463 & 15.19379 & 15.94808 & 15.33126 & 11.94406 & 11.47952 & 16.14231 & 15.51644 & 16.14231 & 15.51644\end{array}$ $\begin{array}{llllllllllllllllllll}384700 & 3734600 & 10.25986 & 10.02757 & 13.89069 & 13.57321 & 13.89069 & 13.57321 & 13.58847 & 13.27675 & 13.58847 & 13.27675 & 13.70075 & 13.38741 & 10.25986 & 10.02757 & 13.89069 & 13.57321 & 13.89069 & 13.57321\end{array}$

 $\begin{array}{lllllllllllllllllll}388700 & 3734600 & 8.521393 & 7.996442 & 11.56967 & 10.85816 & 11.56967 & 10.85816 & 11.2952 & 10.60638 & 11.2952 & 10.60638 & 11.37272 & 10.67961 & 8.521393 & 7.996442 & 11.56967 & 10.85816 & 11.56967\end{array} 10.85816$ $\begin{array}{lllllllllllllllllll}389200 & 3734600 & 8.120797 & 7.795934 & 11.03039 & 10.58869 & 11.03039 & 10.58869 & 10.77322 & 10.34145 & 10.77322 & 10.34145 & 10.84612 & 10.41154 & 8.120797 & 7.795934 & 11.03039 & 10.58869 & 11.03039\end{array} 10.58869$ $\begin{array}{lllllllllllllllllllllll}389700 & 3734600 & 7.913076 & 7.679162 & 10.75275 & 10.43138 & 10.75275 & 10.43138 & 10.50206 & 10.18824 & 10.50206 & 10.18824 & 10.57143 & 10.25686 & 7.913076 & 7.679162 & 10.75275 & 10.43138 & 10.75275 & 10.43138\end{array}$ $\begin{array}{llllllllllllllllllllll}380200 & 3735100 & 19.40487 & 18.27191 & 26.08348 & 24.56489 & 26.08348 & 24.56489 & 25.63446 & 24.14141 & 25.63446 & 24.14141 & 25.93552 & 24.42322 & 19.40487 & 18.27191 & 26.08348 & 24.56489 & 26.08348 & 24.5648\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}380700 & 3735100 & 22.87807 & 21.99905 & 30.70317 & 29.52452 & 30.70317 & 29.52452 & 30.17121 & 29.0138 & 30.17121 & 29.0138 & 30.54374 & 29.37167 & 22.87807 & 21.99905 & 30.70317 & 29.52452 & 30.70317 & 29.52452\end{array}$ $\begin{array}{llllllllllllllllll}381200 & 3735100 & 26.56631 & 25.75426 & 35.6104 & 34.523 & 35.6104 & 34.523 & 34.99079 & 33.92228 & 34.99079 & 33.92228 & 35.4386 & 34.356 & 26.56631 & 25.75426 & 35.6104 & 34.523 \\ 35.6104 & 34.523\end{array}$ $\begin{array}{llllllllllllllllllllllll}381700 & 3735100 & 27.69002 & 26.72665 & 37.0975 & 35.80824 & 37.0975 & 35.80824 & 36.45766 & 35.18285 & 36.45766 & 35.18285 & 36.93088 & 35.63916 & 27.69564 & 26.72678 & 37.10425 & 35.80843 & 37.10313 & 35.80843\end{array}$ $\begin{array}{lllllllllllllllllllllll}383200 & 3735100 & 12.91342 & 12.3267 & 17.42473 & 16.61518 & 17.42473 & 16.61518 & 17.0804 & 16.30645 & 17.0804 & 16.30645 & 17.24791 & 16.46503 & 12.91342 & 12.3267 & 17.42679 & 16.63819 & 17.42679 & 16.63819\end{array}$ $\begin{array}{lllllllllllllllllllll}383700 & 3735100 & 11.79559 & 11.26372 & 15.93586 & 15.21896 & 15.93586 & 15.21896 & 15.61026 & 14.90707 & 15.61026 & 14.90707 & 15.75532 & 15.0462 & 11.79559 & 11.26372 & 15.93586 & 15.21896 & 15.93586 & 15.21896\end{array}$ $\begin{array}{llllllllllllllllllllll}384700 & 3735100 & 9.952143 & 9.674366 & 13.4744 & 13.09603 & 13.4744 & 13.09603 & 13.18654 & 12.81426 & 13.18654 & 12.81426 & 13.29619 & 12.92136 & 9.952143 & 9.674366 & 13.4744 & 13.09603 & 13.4744 & 13.09603\end{array}$ $\begin{array}{lllllllllllllllllll}387700 & 3735100 & 8.464234 & 8.093981 & 11.49423 & 10.99188 & 11.49423 & 10.99188 & 11.22549 & 10.73483 & 11.22549 & 10.73483 & 11.30233 & 10.80813 & 8.464234 & 8.093981 & 11.49423 & 10.99188 & 11.49423\end{array} 10.99188$ $\begin{array}{lllllllllllllll}388700 & 3735100 & 8.106938 & 7.8427 & 11.01706 & 10.65592 & 11.01706 & 10.65592 & 10.75853 & 10.40645 & 10.75853 & 10.40645 & 10.83045 & 10.47742 & 8.106938 \\ 7 & 7.8427\end{array}$ $\begin{array}{lllllllllllllllllll}389200 & 3735100 & 7.811006 & 7.492935 & 10.61326 & 10.1798 & 10.61326 & 10.1798 & 10.36549 & 9.945198 & 10.36549 & 9.945198 & 10.43419 & 10.01207 & 7.811006 & 7.492935 & 10.61326 & 10.1798 & 10.61326\end{array} 10.1798$ $\begin{array}{lllllllllllllllllllll}389700 & 3735100 & 7.559995 & 7.271527 & 10.27602 & 9.882056 & 10.27602 & 9.882056 & 10.03748 & 9.652723 & 10.03748 & 9.652723 & 10.10279 & 9.71624 & 7.559995 & 7.271527 & 10.27602 & 9.882056 & 10.27602 & 9.882056\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}380200 & 3735600 & 19.17682 & 18.67039 & 25.76352 & 25.08257 & 25.76352 & 25.08257 & 25.3209 & 24.65095 & 25.3209 & 24.65095 & 25.62357 & 24.9458 & 19.17682 & 18.67039 & 25.76352 & 25.08257 & 25.76352 & 25.08257\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}380700 & 3735600 & 21.38238 & 20.95226 & 28.69358 & 28.11459 & 28.69358 & 28.11459 & 28.19774 & 27.62861 & 28.19774 & 27.62861 & 28.54695 & 27.97136 & 21.38238 & 20.95226 & 28.69358 & 28.11459 & 28.69358 & 28.11459\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}381200 & 3735600 & 24.00495 & 23.52751 & 32.18622 & 30.84783 & 32.18622 & 30.84783 & 31.62816 & 30.30424 & 31.62816 & 30.29851 & 32.02972 & 30.69544 & 24.00495 & 23.52751 & 32.18622 & 30.84783 & 32.18622 & 30.84783\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllllll}381700 & 3735600 & 25.78566 & 24.8484 & 34.55692 & 33.30005 & 34.55692 & 33.30005 & 33.95362 & 32.71752 & 33.95362 & 32.71752 & 34.39046 & 33.13869 & 25.78566 & 24.8484 & 34.55692 & 33.30005 & 34.55692 & 33.30005\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}382700 & 3735600 & 19.15267 & 17.38225 & 25.72308 & 23.35751 & 25.72308 & 23.35751 & 25.25349 & 22.86383 & 25.25349 & 22.86038 & 25.55419 & 23.19473 & 19.15267 & 17.38225 & 25.72308 & 23.35751 & 25.72308 & 23.35751\end{array}$ $\begin{array}{llllllllllllllllllll}383200 & 3735600 & 13.89371 & 13.03601 & 18.71992 & 17.56999 & 18.71992 & 17.56999 & 18.36076 & 17.23061 & 18.34856 & 17.23061 & 18.55403 & 17.40946 & 13.89371 & 13.03601 & 18.71992 & 17.56999 & 18.71992 & 17.56999\end{array}$ $\begin{array}{llllllllllllllllllllll}383700 & 3735600 & 12.02454 & 11.1599 & 16.23095 & 15.07177 & 16.23095 & 15.07177 & 15.9075 & 14.76952 & 15.9075 & 14.76952 & 16.06202 & 14.90962 & 12.02454 & 11.1599 & 16.23095 & 15.07177 & 16.23095 & 15.07177\end{array}$ $\begin{array}{llllllllllllllllllllllll}384200 & 3735600 & 10.70343 & 10.40433 & 14.47237 & 14.0494 & 14.47237 & 14.0494 & 14.19496 & 13.83824 & 14.19496 & 13.83824 & 14.32232 & 13.96333 & 10.71797 & 10.45136 & 14.49174 & 14.12844 & 14.47237 & 14.12844\end{array}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 384700 | 3735600 | 10.06564 | 9.735839 | 13.62359 | 13.17603 | 13.62359 | 13.17603 | 13.338 | 12.89779 | 13.338 | 12.89779 | 13.45144 | 13.00761 | 10.06564 | 9.735839 | 13.62359 | 13.17603 | $\begin{array}{lllllllllllllllllllll}385200 & 3735600 & 9.557356 & 9.165143 & 12.94594 & 12.41431 & 12.94594 & 12.41431 & 12.6667 & 12.14661 & 12.6667 & 12.14661 & 12.76932 & 12.24517 & 9.557356 & 9.165143 & 12.94594 & 12.41431 & 12.94594 & 12.41431\end{array}$ $\begin{array}{lllllllllllllllllllll}385700 & 3735600 & 9.043032 & 8.744985 & 12.25875 & 11.8547 & 12.25875 & 11.8547 & 11.9891 & 11.59329 & 11.9891 & 11.59329 & 12.08185 & 11.6829 & 9.043032 & 8.744985 & 12.25875 & 11.8547 & 12.25875 & 11.8547\end{array}$ $\begin{array}{llllllllllllllllllll}386700 & 3735600 & 8.637876 & 8.270006 & 11.72338 & 11.22387 & 11.72338 & 11.22387 & 11.45658 & 10.96916 & 11.45658 & 10.96916 & 11.53861 & 11.0479 & 8.637876 & 8.270006 & 11.72338 & 11.22387 & 11.72338 & 11.22387\end{array}$ $\begin{array}{llllllllllllllllllll}388200 & 3735600 & 7.835817 & 7.528432 & 10.64669 & 10.22702 & 10.64669 & 10.22702 & 10.39953 & 9.989458 & 10.39953 & 9.989458 & 10.46879 & 10.05672 & 7.835817 & 7.528432 & 10.64669 & 10.22702 & 10.64669 & 10.22702\end{array}$ $\begin{array}{lllllllllllllllllll}388700 & 3735600 & 7.801962 & 7.551145 & 10.60559 & 10.25916 & 10.60559 & 10.25916 & 10.35803 & 10.02 & 10.35803 & 10.02 & 10.42496 & 10.08686 & 7.801962 & 7.551145 & 10.60559 & 10.25916 & 10.60559 \\ 10.25916\end{array}$ $\begin{array}{lllllllllllllllllllllll}389200 & 3735600 & 7.651638 & 7.261272 & 10.42063 & 9.872533 & 10.42063 & 9.872533 & 10.17651 & 9.64567 & 10.17651 & 9.64567 & 10.24279 & 9.709624 & 7.651638 & 7.261272 & 10.42063 & 9.872533 & 10.42063 & 9.872533\end{array}$ $\begin{array}{llllllllllllllllllllll}380200 & 3736100 & 18.53146 & 17.78112 & 24.89676 & 23.88868 & 24.89676 & 23.88868 & 24.46996 & 23.47733 & 24.46996 & 23.47733 & 24.76246 & 23.75778 & 18.53146 & 17.78112 & 24.89676 & 23.88868 & 24.89676 & 23.88868\end{array}$ $\begin{array}{lllllllllllllllllllllll}380700 & 3736100 & 20.74971 & 20.37799 & 27.85067 & 27.34669 & 27.85067 & 27.34669 & 27.36885 & 26.87404 & 27.36885 & 26.87404 & 27.70529 & 27.20649 & 20.74971 & 20.37799 & 27.85067 & 27.34669 & 27.85067 & 27.34669\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}381200 & 3736100 & 22.08624 & 21.29958 & 29.62817 & 28.57274 & 29.62817 & 28.57274 & 29.11249 & 28.06315 & 29.11249 & 27.95725 & 29.47628 & 28.42568 & 22.08624 & 21.29958 & 29.62817 & 28.57274 & 29.62817 & 28.57274\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}381700 & 3736100 & 23.48785 & 22.58517 & 31.49278 & 30.28146 & 31.49278 & 30.28146 & 30.9416 & 29.75011 & 30.9416 & 29.75011 & 31.33366 & 30.12725 & 23.48785 & 22.58517 & 31.49278 & 30.28146 & 31.49278 & 30.28146\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllll}382200 & 3736100 & 22.63002 & 21.8537 & 30.34898 & 29.30651 & 30.34898 & 29.30651 & 29.81126 & 28.78716 & 29.81126 & 28.78716 & 30.18565 & 29.14913 & 22.63002 & 21.8537 & 30.34898 & 29.30651 & 30.34898 & 29.30651\end{array}$ $\begin{array}{llllllllllllllllllllll}382700 & 3736100 & 18.82071 & 17.33436 & 25.27569 & 23.28866 & 25.27569 & 23.28866 & 24.81729 & 22.8638 & 24.81729 & 22.8638 & 25.11391 & 23.13328 & 18.82071 & 17.33436 & 25.27569 & 23.28866 & 25.27569 & 23.28866\end{array}$ $\begin{array}{llllllllllllllllllllll}383700 & 3736100 & 12.34271 & 11.66987 & 16.64921 & 15.74548 & 16.64921 & 15.74548 & 16.32393 & 15.43815 & 16.32393 & 15.43815 & 16.4876 & 15.59157 & 12.34271 & 11.66987 & 16.64921 & 15.74548 & 16.64921 & 15.74548\end{array}$ $\begin{array}{lllllllllllllllllllllll}384200 & 3736100 & 10.85483 & 10.12183 & 14.66748 & 13.68396 & 14.66748 & 13.68396 & 14.37292 & 13.40647 & 14.37292 & 13.40647 & 14.50629 & 13.52783 & 10.85483 & 10.12183 & 14.66748 & 13.68396 & 14.66748 & 13.68396\end{array}$ $\begin{array}{llllllllllllllllllll}384700 & 3736100 & 9.958838 & 9.599146 & 13.47397 & 12.98732 & 13.47397 & 12.98732 & 13.19692 & 12.80178 & 13.19692 & 12.80178 & 13.31189 & 12.91355 & 9.958838 & 9.663006 & 13.47397 & 13.07236 & 13.47397 & 13.07236\end{array}$ $\begin{array}{lllllllllllllllllll}385200 & 3736100 & 9.407422 & 9.020548 & 12.74003 & 12.21579 & 12.74003 & 12.21579 & 12.46994 & 11.95657 & 12.46994 & 11.95657 & 12.57275 & 12.05524 & 9.407422 & 9.020548 & 12.74003 & 12.21579 & 12.74003\end{array} 12.21579$ $\begin{array}{lllllllllllllllllllll}385700 & 3736100 & 8.798797 & 8.510432 & 11.92599 & 11.53442 & 11.92599 & 11.53442 & 11.66865 & 11.28365 & 11.66865 & 11.28365 & 11.76033 & 11.37229 & 8.798797 & 8.510432 & 11.92599 & 11.53442 & 11.92599 & 11.53442\end{array}$ $\begin{array}{lllllllllllllllll}386200 & 3736100 & 8.424782 & 8.213038 & 11.42675 & 11.13875 & 11.42675 & 11.13875 & 11.1741 & 10.89214 & 11.1741 & 10.89214 & 11.25805 & 10.97423 & 8.424782 & 8.213038 & 11.42675\end{array} 11.13875 \quad 11.42675 \quad 11.13875$ $\begin{array}{llllllllllllllllll}386700 & 3736100 & 8.439412 & 8.062878 & 11.45188 & 10.94217 & 11.45188 & 10.94217 & 11.1939 & 10.69704 & 11.1939 & 10.69704 & 11.27528 & 10.77455 & 8.439412 & 8.062878 & 11.45188 & 10.94217 \\ 11.45188 & 10.94217\end{array}$ $\begin{array}{llllllllllllllllllll}387700 & 3736100 & 7.844809 & 7.597488 & 10.6567 & 10.32036 & 10.6567 & 10.32036 & 10.41138 & 10.08297 & 10.41138 & 10.08297 & 10.48185 & 10.1514 & 7.844809 & 7.597488 & 10.6567 & 10.32036 & 10.6567 & 10.32036\end{array}$ $\begin{array}{llllllllllllllllllll}388200 & 3736100 & 7.671677 & 7.403269 & 10.42652 & 10.06085 & 10.42652 & 10.06085 & 10.18462 & 9.829377 & 10.18462 & 9.829377 & 10.25139 & 9.894444 & 7.671677 & 7.403269 & 10.42652 & 10.06085 & 10.42652 & 10.06085\end{array}$ $\begin{array}{lllllllllllllllllll}388700 & 3736100 & 7.45385 & 7.105897 & 10.13234 & 9.659388 & 10.13234 & 9.659388 & 9.897475 & 9.437476 & 9.897475 & 9.437476 & 9.961698 & 9.498997 & 7.45385 & 7.105897 & 10.13234 & 9.659388 & 10.13234 \\ 9.6 .659388\end{array}$ $\begin{array}{llllllllllllllllllll}389700 & 3736100 & 6.930801 & 6.635651 & 9.424274 & 9.022966 & 9.424274 & 9.022966 & 9.208049 & 8.81897 & 9.208049 & 8.81897 & 9.26703 & 8.875915 & 6.930801 & 6.635651 & 9.424274 & 9.022966 & 9.424274 & 9.022966\end{array}$



| Reduction to Peak | $\mathrm{C}_{0.0010}$ | 0.0009 | 0.0037 | 0.0035 | 0.0037 | 0.0034 | 0.0021 | 0.0019 | 0.0021 | 0.0019 | 0.0058 | 0.0055 | 0.0014 | 0.0013 | 0.0055 | 0.0052 | 0.0055 | 0.0052 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction | 48.55\% | 48.55\% | 44.40\% | 44.40\% | 44.40\% | 44.40\% | 78.71\% | 78.71\% | 78.71\% | 78.71\% | 70.88\% | 70.88\% | 67.78\% | 67.78\% | 66.42\% | 66.42\% | 66.42\% | 66.42\% |
|  | 389450_3 | 389450_37 | 382683.8 | 382683.8 | 382683.8 | 382683. | 389450 | 389200_ | 389450 | 389200_3 | 382683.8 | 382683.8_3 | 389450 | 389450_37 | 382683.8 | 382683.8-3 | 382683. | 382683.8_3 |

$\begin{array}{llllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$ 2033_ALT4_ 2033_ALT4_ 2033_ALT5_ 2033_ALT5_ 2033_PP_CA 2033_PP_N 2038_ALT1_ 2038_ALT1_ 2038_NP_C 2038_NP_N 2038_ALT3_ 2038_ALT3_ 2038_ALT4_ 2038_ALT4_ 2038_ALT5_ 2038_ALT5_ 2038_PP_CA 2038_PP_N

 $\begin{array}{lllllllllllllllllllll}381700 & 3736600 & 21.38541 & 20.41103 & 28.68783 & 27.38259 & 28.68783 & 27.38259 & 28.18536 & 26.90187 & 28.18536 & 26.90187 & 28.53713 & 27.23678 & 21.38541 & 20.41103 & 28.68783 & 27.38259 & 28.68783 & 27.38259\end{array}$ $\begin{array}{llllllllllllllllllllllllll}382200 & 3736600 & 20.36052 & 19.63501 & 27.32293 & 26.34995 & 27.32293 & 26.34995 & 26.83801 & 25.88113 & 26.83801 & 25.88113 & 27.16819 & 26.19918 & 20.36052 & 19.63501 & 27.32293 & 26.34995 & 27.32293 & 26.34995\end{array}$ $\begin{array}{lllllllllllllllllllllll}382700 & 3736600 & 17.76213 & 16.30674 & 23.86138 & 21.91626 & 23.86138 & 21.91626 & 23.42904 & 21.51839 & 23.42904 & 21.51839 & 23.7063 & 21.76911 & 17.76213 & 16.30674 & 23.86138 & 21.91626 & 23.86138 & 21.91626\end{array}$ $\begin{array}{llllllllllllllllllll}384200 & 3736600 & 10.9605 & 10.32042 & 14.80003 & 13.94146 & 14.80003 & 13.94146 & 14.50823 & 13.66554 & 14.50823 & 13.66554 & 14.64754 & 13.79444 & 10.9605 & 10.32042 & 14.80003 & 13.94146 & 14.80003 & 13.94146\end{array}$ $\begin{array}{llllllllllllllllllll}384700 & 3736600 & 9.819356 & 9.224407 & 13.28095 & 12.48208 & 13.28095 & 12.48208 & 13.01215 & 12.22748 & 13.01215 & 12.22748 & 13.12779 & 12.33364 & 9.819356 & 9.224407 & 13.28095 & 12.48208 & 13.28095 & 12.48208\end{array}$ $\begin{array}{lllllllllllllllllllllll}385200 & 3736600 & 9.098156 & 8.762737 & 12.32028 & 11.86651 & 12.32028 & 11.86651 & 12.06301 & 11.61856 & 12.06301 & 11.61856 & 12.16341 & 11.71507 & 9.098156 & 8.762737 & 12.32028 & 11.86651 & 12.32028 & 11.86651\end{array}$ $\begin{array}{lllllllllllllllllllllll}385700 & 3736600 & 8.599321 & 8.389351 & 11.65477 & 11.36859 & 11.65477 & 11.36859 & 11.40695 & 11.12592 & 11.40695 & 11.12592 & 11.49745 & 11.21465 & 8.599321 & 8.389351 & 11.65477 & 11.36859 & 11.65477 & 11.36859\end{array}$ $\begin{array}{lllllllllllllllllllll}386200 & 3736600 & 8.223511 & 7.968186 & 11.15297 & 10.80759 & 11.15297 & 10.80759 & 10.91016 & 10.57279 & 10.91016 & 10.57279 & 10.993 & 10.6528 & 8.223511 & 7.968186 & 11.15297 & 10.80759 & 11.15297 & 10.80759\end{array}$ $\begin{array}{llllllllllllllllllll}386700 & 3736600 & 7.952424 & 7.71167 & 10.79165 & 10.46618 & 10.79165 & 10.46618 & 10.55213 & 10.23509 & 10.55213 & 10.23509 & 10.62915 & 10.30953 & 7.952424 & 7.71167 & 10.79165 & 10.46618 & 10.79165 & 10.46618\end{array}$ $\begin{array}{llllllllllllllllll}387200 & 3736600 & 7.807511 & 7.580458 & 10.60112 & 10.29291 & 10.60112 & 10.29291 & 10.36374 & 10.0632 & 10.36374 & 10.0632 & 10.43677 & 10.13421 & 7.807511 & 7.580458 & 10.60112 & 10.29291\end{array} 10.60112 \quad 10.29291$ $\begin{array}{llllllllllllllllllll}387700 & 3736600 & 7.666329 & 7.443281 & 10.41462 & 10.11149 & 10.41462 & 10.11149 & 10.17719 & 9.881381 & 10.17719 & 9.881381 & 10.24631 & 9.948587 & 7.666329 & 7.443281 & 10.41462 & 10.11149 & 10.41462 & 10.11149\end{array}$ $\begin{array}{llllllllllllllllllllll}388200 & 3736600 & 7.542338 & 7.303633 & 10.24983 & 9.92589 & 10.24983 & 9.92589 & 10.01507 & 9.698766 & 10.01507 & 9.698766 & 10.08155 & 9.762998 & 7.542338 & 7.303633 & 10.24983 & 9.92589 & 10.24983 & 9.92589\end{array}$ $\begin{array}{lllllllllllllllllllllll}388700 & 3736600 & 7.299723 & 7.063149 & 9.924493 & 9.602643 & 9.924493 & 9.602643 & 9.696459 & 9.383054 & 9.696459 & 9.383054 & 9.75906 & 9.443877 & 7.299723 & 7.063149 & 9.924493 & 9.602643 & 9.924493 & 9.602643\end{array}$ $\begin{array}{llllllllllllllllllllllllll}389200 & 3736600 & 7.064279 & 6.816975 & 9.607509 & 9.269767 & 9.607509 & 9.269767 & 9.386745 & 9.057336 & 9.386745 & 9.057336 & 9.446151 & 9.115289 & 7.064279 & 6.816975 & 9.607509 & 9.269767 & 9.607509 & 9.269767\end{array}$ $\begin{array}{llllllllllllllllllllll}389700 & 3736600 & 6.936063 & 6.567937 & 9.434606 & 8.934136 & 9.434606 & 8.934136 & 9.216216 & 8.732142 & 9.216216 & 8.732142 & 9.273755 & 8.787301 & 6.936063 & 6.567937 & 9.434606 & 8.934136 & 9.434606 & 8.934136\end{array}$ $\begin{array}{lllllllllllllllllllll}380200 & 3737100 & 17.50724 & 16.94015 & 23.52915 & 22.76363 & 23.52915 & 22.76363 & 23.12465 & 22.37235 & 23.12465 & 22.37235 & 23.39769 & 22.63781 & 17.50724 & 16.94015 & 23.52915 & 22.76363 & 23.52915 & 22.76363\end{array}$ $\begin{array}{lllllllllllllllllllll}380700 & 3737100 & 18.35537 & 17.63286 & 24.66506 & 23.68966 & 24.66506 & 23.68966 & 24.2387 & 23.10902 & 24.2387 & 23.10902 & 24.52618 & 23.55568 & 18.35537 & 17.63286 & 24.66506 & 23.68966 & 24.66506 & 23.68966\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}381200 & 3737100 & 19.60374 & 19.20502 & 26.32232 & 25.78123 & 26.32232 & 25.78123 & 25.86241 & 25.33011 & 25.86241 & 25.33011 & 26.17607 & 25.63937 & 19.60374 & 19.20502 & 26.32232 & 25.78123 & 26.32232 & 25.78123\end{array}$ $\begin{array}{llllllllllllllllllllll}381700 & 3737100 & 18.76121 & 18.14718 & 25.18478 & 24.36039 & 25.18478 & 24.36039 & 24.7442 & 23.93332 & 24.7442 & 23.93332 & 25.04647 & 24.22563 & 18.76121 & 18.14718 & 25.18478 & 24.36039 & 25.18478 & 24.36039\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}382200 & 3737100 & 18.51678 & 17.55273 & 24.86255 & 23.57149 & 24.86255 & 23.57149 & 24.42142 & 23.15162 & 24.42142 & 23.15162 & 24.71661 & 23.42992 & 18.52085 & 17.55364 & 24.86255 & 23.57149 & 24.86255 & 23.57149\end{array}$ $\begin{array}{llllllllllllllllllllllll}382700 & 3737100 & 16.35928 & 15.54193 & 21.98788 & 20.8934 & 21.98788 & 20.8934 & 21.5912 & 20.51461 & 21.5912 & 20.51461 & 21.84276 & 20.75183 & 16.35928 & 15.54193 & 21.98788 & 20.8934 & 21.98788 & 20.8934\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}383200 & 3737100 & 14.14092 & 13.23795 & 19.03381 & 17.82531 & 19.03381 & 17.82531 & 18.6816 & 17.49458 & 18.6816 & 17.49458 & 18.88748 & 17.68456 & 14.14092 & 13.23795 & 19.03381 & 17.82531 & 19.03381 & 17.82531\end{array}$ $\begin{array}{llllllllllllllllllll}383200 & 3737100 & 14.14092 & 13.23795 & 19.03381 & 17.82531 & 19.03381 & 17.82531 & 18.6816 & 17.49458 & 18.6816 & 17.49458 & 18.88748 & 17.68456 & 14.14092 & 13.23795 & 19.03381 & 17.82531 & 19.03381 & 17.82531 \\ 383700 & 3737100 & 12.60385 & 11.57347 & 16.98643 & 15.60869 & 16.98643 & 15.60869 & 16.66507 & 15.31197 & 16.66507 & 15.31197 & 16.83944 & 15.46794 & 12.60385 & 11.57347 & 16.98643 & 15.60869 & 16.98643 & 15.60869\end{array}$ $\begin{array}{lllllllllllllllllllll}384200 & 3737100 & 11.14758 & 10.6389 & 15.04365 & 14.3617 & 15.04365 & 14.3617 & 14.75179 & 14.08328 & 14.75179 & 14.08328 & 14.89761 & 14.22076 & 11.14758 & 10.6389 & 15.04365 & 14.3617 & 15.04365 & 14.3617\end{array}$ $\begin{array}{llllllllllllllllllll}384700 & 3737100 & 9.887682 & 9.426382 & 13.36551 & 12.74613 & 13.36551 & 12.74613 & 13.0996 & 12.49151 & 13.0996 & 12.49151 & 13.21967 & 12.60427 & 9.887682 & 9.426382 & 13.36551 & 12.74613 & 13.36551 & 12.74613\end{array}$ $\begin{array}{lllllllllllllllllllll}385200 & 3737100 & 9.002903 & 8.585594 & 12.18776 & 11.62637 & 12.18776 & 11.62637 & 11.93709 & 11.38634 & 11.93709 & 11.38634 & 12.03837 & 11.48149 & 9.002903 & 8.585594 & 12.18776 & 11.62637 & 12.18776 & 11.62637\end{array}$ $\begin{array}{lllllllllllllllllllll}387700 & 3737100 & 7.560529 & 7.312508 & 10.26915 & 9.932422 & 10.26915 & 9.932422 & 10.03706 & 9.708998 & 10.03706 & 9.708998 & 10.10619 & 9.775969 & 7.560529 & 7.312508 & 10.26915 & 9.932422 & 10.26915 & 9.932422\end{array}$ $\begin{array}{llllllllllllllllllllllllll}388200 & 3737100 & 7.129039 & 6.910901 & 9.688319 & 9.392047 & 9.688319 & 9.392047 & 9.468755 & 9.180473 & 9.468755 & 9.180473 & 9.531902 & 9.241846 & 7.129039 & 6.910901 & 9.688319 & 9.392047 & 9.688319 & 9.392047\end{array}$ $\begin{array}{llllllllllllllllllllllll}388700 & 3737100 & 7.11697 & 6.861978 & 9.675382 & 9.329349 & 9.675382 & 9.329349 & 9.453635 & 9.118175 & 9.453635 & 9.118175 & 9.515001 & 9.177541 & 7.11697 & 6.861978 & 9.675382 & 9.329349 & 9.675382 & 9.329349\end{array}$ $\begin{array}{lllllllllllllllllll}389200 & 3737100 & 6.99496 & 6.737396 & 9.514117 & 9.163244 & 9.514117 & 9.163244 & 9.294984 & 8.955441 & 9.294984 & 8.955441 & 9.353425 & 9.012446 & 6.99496 & 6.737396 & 9.514117 & 9.163244 & 9.514117\end{array} 9.163244$ $\begin{array}{llllllllllllllllllll}389700 & 3737100 & 6.850128 & 6.604386 & 9.320377 & 8.983824 & 9.320377 & 8.983824 & 9.106422 & 8.77793 & 9.106422 & 8.77793 & 9.162555 & 8.832894 & 6.850128 & 6.604386 & 9.320377 & 8.983824 & 9.320377 & 8.983824\end{array}$ $\begin{array}{lllllllllllllllllll}380200 & 3737600 & 16.4178 & 16.08404 & 22.07349 & 21.62036 & 22.07349 & 21.62036 & 21.69433 & 21.24791 & 21.69433 & 21.24791 & 21.94723 & 21.4972 & 16.4178 & 16.08404 & 22.07349 & 21.62036 & 22.07349 \\ 21.62036\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}380700 & 3737600 & 17.0731 & 16.38192 & 22.95227 & 22.01842 & 22.95227 & 22.01842 & 22.55545 & 21.63588 & 22.55545 & 21.63588 & 22.81892 & 21.8902 & 17.0731 & 16.38192 & 22.95227 & 22.01842 & 22.95227 & 22.01842\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllllll}381200 & 3737600 & 18.03114 & 17.26313 & 24.21681 & 23.18718 & 24.21681 & 23.18718 & 23.79435 & 22.78195 & 23.79435 & 22.78195 & 24.08067 & 23.05531 & 18.03114 & 17.26313 & 24.21681 & 23.18718 & 24.21681 & 23.18718\end{array}$ $\begin{array}{lllllllllllllllllllllllll}381700 & 3737600 & 17.64457 & 16.97981 & 23.69892 & 22.80655 & 23.69892 & 22.80655 & 23.28168 & 22.40499 & 23.28168 & 22.40499 & 23.56076 & 22.67334 & 17.64457 & 16.97981 & 23.69892 & 22.80655 & 23.69892 & 22.80655\end{array}$ $\begin{array}{lllllllllllllllllllll}382200 & 3737600 & 16.88853 & 15.81273 & 22.69053 & 21.25143 & 22.69053 & 21.25143 & 22.28794 & 20.87253 & 22.28794 & 20.87253 & 22.55198 & 21.11722 & 16.88853 & 15.81273 & 22.69053 & 21.25143 & 22.69053 & 21.25143\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}382700 & 3737600 & 15.19494 & 14.31021 & 20.43337 & 19.24962 & 20.43337 & 19.24962 & 20.06441 & 18.90106 & 20.06441 & 18.90106 & 20.29414 & 19.11503 & 15.19494 & 14.31021 & 20.43337 & 19.24962 & 20.43337 & 19.24962\end{array}$ $\begin{array}{lllllllllllllllllllllllll}383200 & 3737600 & 13.37297 & 12.56677 & 18.00614 & 16.92754 & 18.00614 & 16.92754 & 17.67398 & 16.61433 & 17.67398 & 16.61433 & 17.86664 & 16.7926 & 13.37297 & 12.56677 & 18.00614 & 16.92754 & 18.00614 & 16.92754\end{array}$ $\begin{array}{llllllllllllllllll}383700 & 3737600 & 12.17121 & 11.44408 & 16.40508 & 15.43166 & 16.40508 & 15.43166 & 16.0963 & 15.1405 & 16.0963 & 15.1405 & 16.26431 & 15.29599 & 12.17121 & 11.44408 & 16.40508 & 15.43166 \\ 16.40508 & 15.43166\end{array}$ $\begin{array}{llllllllllllllllllll}384200 & 3737600 & 10.86906 & 10.02681 & 14.66921 & 13.54275 & 14.66921 & 13.54275 & 14.38635 & 13.28056 & 14.38635 & 13.28056 & 14.52824 & 13.40749 & 10.86906 & 10.02681 & 14.66921 & 13.54275 & 14.66921 & 13.54275\end{array}$
 $\begin{array}{llllllllllllllllllll}385200 & 3737600 & 9.089382 & 8.692133 & 12.29719 & 11.76233 & 12.29719 & 11.76233 & 12.04869 & 11.52357 & 12.04869 & 11.52357 & 12.15446 & 11.62361 & 9.089382 & 8.692133 & 12.29719 & 11.76233 & 12.29719 & 11.76233\end{array}$ $\begin{array}{lllllllllllllllllll}385700 & 3737600 & 8.284546 & 8.090516 & 11.22511 & 10.96063 & 11.22511 & 10.96063 & 10.99207 & 10.73179 & 10.99207 & 10.73179 & 11.08128 & 10.8193 & 8.284546 & 8.090516 & 11.22511 & 10.96063 & 11.22511 \\ 10.96063\end{array}$ $\begin{array}{lllllllllllllllllll}386200 & 3737600 & 7.989288 & 7.714791 & 10.83173 & 10.4595 & 10.83173 & 10.4595 & 10.60182 & 10.23713 & 10.60182 & 10.23713 & 10.68458 & 10.31702 & 7.989288 & 7.714791 & 10.83173 & 10.4595 & 10.83173 \\ 10.4595\end{array}$ $\begin{array}{llllllllllllllllllllll}386700 & 3737600 & 7.671044 & 7.372461 & 10.40674 & 10.00301 & 10.40674 & 10.00301 & 10.18153 & 9.787457 & 10.18153 & 9.787457 & 10.2579 & 9.86051 & 7.671044 & 7.372461 & 10.40674 & 10.00301 & 10.40674 & 10.00301\end{array}$ $\begin{array}{llllllllllllllllllllllllll}387200 & 3737600 & 7.44054 & 7.18984 & 10.09947 & 9.759904 & 10.09947 & 9.759904 & 9.877754 & 9.547099 & 9.877754 & 9.547099 & 9.949315 & 9.616211 & 7.44054 & 7.18984 & 10.09947 & 9.759904 & 10.09947 & 9.759904\end{array}$ $\begin{array}{llllllllllllllllllll}387700 & 3737600 & 7.255779 & 7.0146 & 9.854706 & 9.526475 & 9.854706 & 9.526475 & 9.63576 & 9.316946 & 9.63576 & 9.316946 & 9.702901 & 9.382428 & 7.255779 & 7.0146 & 9.854706 & 9.526475 & 9.854706 & 9.526475\end{array}$ $\begin{array}{llllllllllllllllllll}388200 & 3737600 & 7.151048 & 6.98603 & 9.7179 & 9.492099 & 9.7179 & 9.492099 & 9.499652 & 9.279028 & 9.499652 & 9.279028 & 9.563428 & 9.341919 & 7.151048 & 6.98603 & 9.7179 & 9.492099 & 9.7179 & 9.492099\end{array}$ $\begin{array}{llllllllllllllllllllll}388700 & 3737600 & 6.923545 & 6.736088 & 9.412766 & 9.157334 & 9.412766 & 9.157334 & 9.199876 & 8.951254 & 9.199876 & 8.951254 & 9.259888 & 9.010025 & 6.923545 & 6.736088 & 9.412766 & 9.157334 & 9.412766 & 9.157334\end{array}$
 $\begin{array}{lllllllllllllllllllll}389700 & 3737600 & 6.717161 & 6.488078 & 9.1402 & 8.827056 & 9.1402 & 8.827056 & 8.931994 & 8.627249 & 8.931994 & 8.627249 & 8.987034 & 8.681134 & 6.717161 & 6.488078 & 9.1402 & 8.827056 & 9.1402 & 8.827056\end{array}$ $\begin{array}{llllllllllllllllllllll}380200 & 3738100 & 15.42725 & 14.93093 & 20.74849 & 20.07955 & 20.74849 & 20.07955 & 20.39157 & 19.65259 & 20.39157 & 19.65259 & 20.62671 & 19.96121 & 15.42725 & 14.93093 & 20.74849 & 20.07955 & 20.74849 & 20.07955\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}380700 & 3738100 & 16.13558 & 15.52091 & 21.69533 & 20.8676 & 21.69533 & 20.8676 & 21.3182 & 20.50409 & 21.3182 & 20.50409 & 21.56572 & 20.74247 & 16.13558 & 15.52091 & 21.69533 & 20.8676 & 21.69533 & 20.8676\end{array}$ $\begin{array}{llllllllllllllllllllll}381200 & 3738100 & 16.35964 & 15.58542 & 21.98539 & 20.94781 & 21.98539 & 20.94781 & 21.60164 & 20.58107 & 21.60164 & 20.58107 & 21.85647 & 20.82252 & 16.35964 & 15.58542 & 21.98539 & 20.94781 & 21.98539 & 20.94781\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}381700 & 3738100 & 16.30558 & 15.71486 & 21.91342 & 21.12012 & 21.91342 & 21.12012 & 21.52732 & 20.74656 & 21.52732 & 20.74656 & 21.78039 & 20.99007 & 16.30558 & 15.71486 & 21.91342 & 21.12012 & 21.91342 & 21.12012\end{array}$ $\begin{array}{llllllllllllllllllllllll}382200 & 3738100 & 15.6119 & 14.57772 & 20.98788 & 19.60384 & 20.98788 & 19.60384 & 20.61373 & 19.25448 & 20.61373 & 19.25448 & 20.85297 & 19.47544 & 15.6119 & 14.57772 & 20.98788 & 19.60384 & 20.98788 & 19.60384\end{array}$ $\begin{array}{llllllllllllllllllll}382700 & 3738100 & 14.0875 & 13.56748 & 18.95464 & 18.2569 & 18.95464 & 18.2569 & 18.61283 & 17.92657 & 18.61283 & 17.92657 & 18.822 & 18.12721 & 14.0875 & 13.56748 & 18.95464 & 18.2569 & 18.95464 & 18.2569\end{array}$ $\begin{array}{llllllllllllllllllll}383200 & 3738100 & 12.78099 & 12.20754 & 17.21335 & 16.44515 & 17.21335 & 16.44515 & 16.89671 & 16.14224 & 16.89671 & 16.14224 & 17.07938 & 16.31509 & 12.78099 & 12.20754 & 17.21335 & 16.44515 & 17.21335 & 16.44515\end{array}$ $\begin{array}{llllllllllllllllllll}383700 & 3738100 & 11.48698 & 11.07255 & 15.48944 & 14.93278 & 15.48944 & 14.93278 & 15.19873 & 14.65242 & 15.19873 & 14.65242 & 15.355 & 14.80224 & 11.48698 & 11.07255 & 15.48944 & 14.93278 & 15.48944 & 14.93278\end{array}$
 $\begin{array}{llllllllllllllllllllll}384700 & 3738100 & 9.701103 & 9.112712 & 13.10888 & 12.32055 & 13.10888 & 12.32055 & 12.85332 & 12.07902 & 12.85332 & 12.07902 & 12.97361 & 12.1893 & 9.701103 & 9.112712 & 13.10888 & 12.32055 & 13.10888 & 12.32055\end{array}$ $\begin{array}{llllllllllllllllllll}385200 & 3738100 & 9.083663 & 8.616653 & 12.28494 & 11.65772 & 12.28494 & 11.65772 & 12.04002 & 11.42412 & 12.04002 & 11.42412 & 12.14794 & 11.52469 & 9.083663 & 8.616653 & 12.28494 & 11.65772 & 12.28494 & 11.65772\end{array}$ $\begin{array}{llllllllllllllllllll}385700 & 3738100 & 8.606295 & 8.245249 & 11.65346 & 11.16757 & 11.65346 & 11.16757 & 11.41558 & 10.9379 & 11.41558 & 10.9379 & 11.51171 & 11.02862 & 8.606295 & 8.245249 & 11.65346 & 11.16757 & 11.65346 & 11.16757\end{array}$ $\begin{array}{llllllllllllllllllll}386200 & 3738100 & 7.823206 & 7.573322 & 10.60648 & 10.26727 & 10.60648 & 10.26727 & 10.38446 & 10.05174 & 10.38446 & 10.05174 & 10.46603 & 10.13076 & 7.823206 & 7.573322 & 10.60648 & 10.26727 & 10.60648 & 10.26727\end{array}$ $\begin{array}{llllllllllllllllllll}386700 & 3738100 & 7.58635 & 7.353084 & 10.29221 & 9.97575 & 10.29221 & 9.97575 & 10.07224 & 9.763248 & 10.07224 & 9.763248 & 10.14807 & 9.83686 & 7.58635 & 7.353084 & 10.29221 & 9.97575 & 10.29221 & 9.97575\end{array}$ $\begin{array}{lllllllllllllllllll}387200 & 3738100 & 7.450921 & 7.133041 & 10.1123 & 9.68382 & 10.1123 & 9.68382 & 9.892037 & 9.474742 & 9.892037 & 9.474742 & 9.964452 & 9.543264 & 7.450921 & 7.133041 & 10.1123 & 9.68382 & 10.1123\end{array} 9.68382$ $\begin{array}{lllllllllllllllllllll}387700 & 3738100 & 7.112439 & 6.895194 & 9.66046 & 9.366096 & 9.66046 & 9.366096 & 9.448242 & 9.162114 & 9.448242 & 9.162114 & 9.51429 & 9.226161 & 7.112439 & 6.895194 & 9.66046 & 9.366096 & 9.66046 & 9.366096\end{array}$ $\begin{array}{llllllllllllllllllllll}388200 & 3738100 & 6.969333 & 6.743603 & 9.469207 & 9.16276 & 9.469207 & 9.16276 & 9.258515 & 8.960162 & 9.258515 & 8.960162 & 9.321651 & 9.021353 & 6.969333 & 6.743603 & 9.469207 & 9.16276 & 9.469207 & 9.16276\end{array}$ $\begin{array}{lllllllllllllllllll}388700 & 3738100 & 6.858865 & 6.677353 & 9.321421 & 9.06608 & 9.321421 & 9.06608 & 9.112473 & 8.864324 & 9.112473 & 8.864324 & 9.172412 & 8.923055 & 6.858865 & 6.677353 & 9.321421 & 9.06608 & 9.321421\end{array} 9.06608$ $\begin{array}{lllllllllllllllllllllllllll}389200 & 3738100 & 6.780744 & 6.544898 & 9.221932 & 8.901612 & 9.221932 & 8.901612 & 9.013172 & 8.702833 & 9.013172 & 8.702833 & 9.070691 & 8.758643 & 6.780744 & 6.544898 & 9.221932 & 8.901612 & 9.221932 & 8.901612\end{array}$ $\begin{array}{llllllllllllllllllllll}389700 & 3738100 & 6.647474 & 6.36994 & 9.044357 & 8.667919 & 9.044357 & 8.667919 & 8.838774 & 8.47397 & 8.838774 & 8.47397 & 8.89367 & 8.526633 & 6.647474 & 6.36994 & 9.044357 & 8.667919 & 9.044357 & 8.667919\end{array}$ $\begin{array}{llllllllllllllllllllll}380200 & 3738600 & 14.2651 & 13.82416 & 19.19197 & 18.59836 & 19.19197 & 18.59836 & 18.86183 & 18.27813 & 18.86183 & 18.27813 & 19.07689 & 18.48656 & 14.2651 & 13.82416 & 19.19197 & 18.59836 & 19.19197 & 18.59836\end{array}$ $\begin{array}{llllllllllllllllllll}380700 & 3738600 & 14.62061 & 14.08854 & 19.66356 & 18.94979 & 19.66356 & 18.94979 & 19.32249 & 18.62076 & 19.32249 & 18.62076 & 19.54492 & 18.8344 & 14.62061 & 14.08854 & 19.66356 & 18.94979 & 19.66356 & 18.94979\end{array}$ $\begin{array}{lllllllllllllllllllll}381200 & 3738600 & 14.87115 & 14.29928 & 19.99709 & 19.2297 & 19.99709 & 19.2297 & 19.64775 & 18.89368 & 19.64775 & 18.89368 & 19.87487 & 19.1114 & 14.87115 & 14.29928 & 19.99709 & 19.2297 & 19.99709 & 19.2297\end{array}$ $\begin{array}{llllllllllllllllllllllllll}381700 & 3738600 & 14.9148 & 14.41129 & 20.05705 & 19.38035 & 20.05705 & 19.38035 & 19.70322 & 19.03769 & 19.70322 & 19.03769 & 19.92992 & 19.25644 & 14.9148 & 14.41129 & 20.05705 & 19.38035 & 20.05705 & 19.38035\end{array}$ $\begin{array}{lllllllllllllllllll}382200 & 3738600 & 14.48097 & 13.5487 & 19.47903 & 18.23046 & 19.47903 & 18.23046 & 19.13166 & 17.90527 & 19.13166 & 17.90527 & 19.34919 & 18.10675 & 14.48097 & 13.5487 & 19.47903 & 18.23046 & 19.47903 \\ 18.28 .23046\end{array}$ $\begin{array}{lllllllllllllllllll}382700 & 3738600 & 13.38784 & 12.76295 & 18.01404 & 17.18274 & 18.01404 & 17.18274 & 17.68923 & 16.87189 & 17.68923 & 16.87189 & 17.88515 & 17.05744 & 13.38893 & 12.76295 & 18.01535 & 17.18291 & 18.01404 \\ 17.69 .18291\end{array}$ $\begin{array}{llllllllllllllllllllll}383200 & 3738600 & 12.2505 & 11.64347 & 16.50503 & 15.69139 & 16.50503 & 15.69139 & 16.20143 & 15.40385 & 16.20143 & 15.40385 & 16.37423 & 15.56671 & 12.2505 & 11.64347 & 16.50503 & 15.69139 & 16.50503 & 15.69139\end{array}$ $\begin{array}{llllllllllllllllll}383700 & 3738600 & 11.00861 & 10.41576 & 14.84918 & 14.05534 & 14.84918 & 14.05534 & 14.57162 & 13.79209 & 14.57162 & 13.79209 & 14.71987 & 13.93011 & 11.00861 & 10.41576 & 14.84918 & 14.05534 \\ 14.84918 & 14.05534\end{array}$ $\begin{array}{llllllllllllllllllllll}384200 & 3738600 & 10.3732 & 9.879 & 14.00238 & 13.34005 & 14.00238 & 13.34005 & 13.73637 & 13.08594 & 13.73637 & 13.08594 & 13.87154 & 13.21279 & 10.3732 & 9.879 & 14.00238 & 13.34005 & 14.00238 & 13.34005\end{array}$ $\begin{array}{llllllllllllllllllll}384700 & 3738600 & 9.674739 & 8.99048 & 13.07118 & 12.15585 & 13.07118 & 12.15585 & 12.81869 & 11.9197 & 12.81869 & 11.9197 & 12.93978 & 12.02864 & 9.674739 & 8.99048 & 13.07118 & 12.15585 & 13.07118 & 12.15585\end{array}$ $\begin{array}{lllllllllllllllllll}385200 & 3738600 & 8.891232 & 8.57961 & 12.02672 & 11.60733 & 12.02672 & 11.60733 & 11.78835 & 11.37735 & 11.78835 & 11.37735 & 11.89346 & 11.47801 & 8.891232 & 8.57961 & 12.02672 & 11.60733 & 12.02672\end{array} 11.60733$ $\begin{array}{lllllllllllllllll}385700 & 3738600 & 8.476257 & 8.043102 & 11.47387 & 10.89219 & 11.47387 & 10.89219 & 11.24316 & 10.67118 & 11.24316 & 10.67118 & 11.3397 & 10.76076 & 8.476257 & 8.043102 & 11.47387 \\ 10.689219 & 11.47387 & 10.89219\end{array}$ $\begin{array}{lllllllllllllllllllll}386200 & 3738600 & 7.957845 & 7.634683 & 10.78327 & 10.34732 & 10.78327 & 10.34732 & 10.56148 & 10.13338 & 10.56148 & 10.13338 & 10.6472 & 10.21472 & 7.957845 & 7.634683 & 10.78327 & 10.34732 & 10.78327 & 10.34732\end{array}$ $\begin{array}{llllllllllllllllllllllllll}386700 & 3738600 & 7.499096 & 7.264675 & 10.17255 & 9.854246 & 10.17255 & 9.854246 & 9.958348 & 9.645999 & 9.958348 & 9.645999 & 10.03428 & 9.719576 & 7.499096 & 7.264675 & 10.17255 & 9.854246 & 10.17255 & 9.854246\end{array}$

| $\mathrm{C}_{0.0010}$ | 0.0009 | 0.0037 | 0.0035 | 0.0037 | 0.0034 | 0.0021 | 0.0019 | 0.0021 | 0.0019 | 0.0058 | 0.0055 | 0.0014 | 0.0013 | 0.0055 | 0.0052 | 0.0055 | 0.0052 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction | 48.55\% | 44.40\% | 44.40\% | 44.40\% | 44.40\% | 78.71\% | 78.71\% | 78.71\% | $78.71 \%$ $70.88 \%$ <br> $389200 \_374$ $382683.8 \_3$ |  | 70.88\% <br> 382683.8_3 <br> 734051.76 | 67.78\% | $\int_{3}^{67.78 \%}$ | 66.42\% | $\begin{aligned} & 66.42 \% \\ & 382683.8-3 \\ & 734051.76 \end{aligned}$ | 66.42\% | 66.42\% <br> 382683.8 734051.7 |
|  | 450_3 |  |  | 382683 |  | 389450_3 | 89200 | 389450_3 |  |  | 389450 |  |  | 382683.8 |  |  |

$\begin{array}{lllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$ 2033_ALT4_ 2033_ALT4_ 2033_ALTS_ 2033_ALT5_ 2033_PP_CA 2033_PP_N 2038_ALT1_ 2038_ALT1_ 2038_NP_C 2038_NP_N 2038_ALT3_ 2038_ALT3_ 2038_ALT4_ 2038_ALT4_ 2038_ALTS_ 2038_ALT5_ 2038_PP_CA 2038_PP_N
$\begin{array}{lllllll}387200 & 3738600 & 7.156184 & 6.891436 & 9.713414 & 9.35543 & 9.713414\end{array}$ $\begin{array}{llllllllllllllllllll}387700 & 3738600 & 6.963385 & 6.743819 & 9.456109 & 9.158684 & 9.456109 & 9.158684 & 9.251152 & 8.960903 & 9.251152 & 8.960903 & 9.316951 & 9.024464 & 6.963385 & 6.743819 & 9.456109 & 9.158684 & 9.456109 & 9.158684\end{array}$ $\begin{array}{lllllllllllllllllll}388200 & 3738600 & 6.873531 & 6.5765 & 9.338353 & 8.936319 & 9.338353 & 8.936319 & 9.132286 & 8.741236 & 9.132286 & 8.741236 & 9.195069 & 8.801102 & 6.873531 & 6.5765 & 9.338353 & 8.936319 & 9.338353 \\ 8.936319\end{array}$ $\begin{array}{llllllllllllllllllllllll}388700 & 3738600 & 6.60124 & 6.434308 & 8.974302 & 8.745863 & 8.974302 & 8.745863 & 8.775508 & 8.552841 & 8.775508 & 8.552841 & 8.833512 & 8.610043 & 6.60124 & 6.434308 & 8.974302 & 8.745863 & 8.974302 & 8.745863\end{array}$ $\begin{array}{llllllllllllllllllll}389200 & 3738600 & 6.647209 & 6.420413 & 9.021727 & 8.726338 & 9.021727 & 8.726338 & 8.819593 & 8.53246 & 8.819593 & 8.53246 & 8.876452 & 8.587951 & 6.647209 & 6.420413 & 9.021727 & 8.726338 & 9.021727 & 8.726338\end{array}$ $\begin{array}{lllllllllllllllllll}389700 & 3738600 & 6.515485 & 6.286705 & 8.864523 & 8.552723 & 8.864523 & 8.552723 & 8.665095 & 8.362824 & 8.665095 & 8.362824 & 8.719336 & 8.415759 & 6.515485 & 6.286705 & 8.864523 & 8.552723 & 8.864523 \\ 8.552723\end{array}$ $\begin{array}{lllllllllllllllllllll}380200 & 3739100 & 13.18482 & 12.83812 & 17.74497 & 17.27878 & 17.74497 & 17.27878 & 17.44014 & 16.98151 & 17.44014 & 16.98151 & 17.63651 & 17.17261 & 13.18482 & 12.83812 & 17.74497 & 17.27878 & 17.74497 & 17.27878\end{array}$ $\begin{array}{lllllllllllllllllllll}380700 & 3739100 & 13.92304 & 13.44462 & 18.73462 & 18.09087 & 18.73462 & 18.09087 & 18.40906 & 17.77658 & 18.40906 & 17.77658 & 18.61743 & 17.97782 & 13.92304 & 13.44462 & 18.73462 & 18.09087 & 18.73462 & 18.09087\end{array}$ $\begin{array}{llllllllllllllllllllll}381200 & 3739100 & 14.07201 & 13.30176 & 18.93139 & 17.8996 & 18.93139 & 17.8996 & 18.59962 & 17.58556 & 18.59962 & 17.58556 & 18.81096 & 17.78379 & 14.07201 & 13.30176 & 18.93139 & 17.8996 & 18.93139 & 17.8996\end{array}$ $\begin{array}{lllllllllllllllllllllllll}381700 & 3739100 & 13.66849 & 13.09967 & 18.39146 & 17.62844 & 18.39146 & 17.62844 & 18.06791 & 17.31722 & 18.06791 & 17.31722 & 18.2719 & 17.51173 & 13.66849 & 13.09967 & 18.39146 & 17.62844 & 18.39146 & 17.62844\end{array}$ $\begin{array}{llllllllllllllllllllll}382200 & 3739100 & 13.388 & 12.55839 & 18.0196 & 16.90853 & 18.0196 & 16.90853 & 17.69882 & 16.60577 & 17.69882 & 16.60577 & 17.89614 & 16.78845 & 13.388 & 12.55839 & 18.0196 & 16.90853 & 18.0196 & 16.90853\end{array}$ $\begin{array}{lllllllllllllllllll}382700 & 3739100 & 12.64128 & 12.12552 & 17.02529 & 16.33171 & 17.02529 & 16.33171 & 16.71853 & 16.03662 & 16.71853 & 16.03662 & 16.90022 & 16.21043 & 12.64128 & 12.12552 & 17.02529 & 16.33171 & 17.02529\end{array} 16.33171$ $\begin{array}{lllllllllllllllllll}383200 & 3739100 & 11.84072 & 11.20322 & 15.95702 & 15.10284 & 15.95702 & 15.10284 & 15.66406 & 14.82649 & 15.66406 & 14.82649 & 15.82965 & 14.98156 & 11.84072 & 11.20322 & 15.95702 & 15.10284 & 15.95702\end{array} 15.10284$ $\begin{array}{lllllllllllllllllll}383700 & 3739100 & 10.63675 & 10.27027 & 14.35213 & 13.85963 & 14.35213 & 13.85963 & 14.08458 & 13.60167 & 14.08458 & 13.60167 & 14.2262 & 13.73776 & 10.63675 & 10.27027 & 14.35213 & 13.85963 & 14.35213 \\ 13.855963\end{array}$ $\begin{array}{lllllllllllllllllll}384200 & 3739100 & 9.970418 & 9.626585 & 13.46396 & 13.00161 & 13.46396 & 13.00161 & 13.20902 & 12.75519 & 13.20902 & 12.75519 & 13.33713 & 12.87811 & 9.970418 & 9.626585 & 13.46396 & 13.00161 & 13.46396 \\ 13.00161\end{array}$ $\begin{array}{lllllllllllllllllllllll}384700 & 3739100 & 9.385244 & 9.042626 & 12.68357 & 12.22268 & 12.68357 & 12.22268 & 12.43957 & 11.98744 & 12.43957 & 11.98744 & 12.55591 & 12.09871 & 9.385244 & 9.042626 & 12.68357 & 12.22268 & 12.68357 & 12.22268\end{array}$ $\begin{array}{llllllllllllllllllllllll}385200 & 3739100 & 8.886379 & 8.229043 & 12.0193 & 11.13876 & 12.0193 & 11.13876 & 11.78297 & 10.91852 & 11.78297 & 10.91852 & 11.88865 & 11.01302 & 8.886379 & 8.229043 & 12.0193 & 11.13876 & 12.0193 & 11.13876\end{array}$ $\begin{array}{lllllllllllllllllllll}385700 & 3739100 & 8.184633 & 7.881518 & 11.08111 & 10.6724 & 11.08111 & 10.6724 & 10.85978 & 10.45792 & 10.85978 & 10.45792 & 10.9525 & 10.54638 & 8.184633 & 7.881518 & 11.08111 & 10.6724 & 11.08111 & 10.6724\end{array}$ $\begin{array}{llllllllllllllllll}386200 & 3739100 & 7.948827 & 7.538972 & 10.768 & 10.21676 & 10.768 & 10.21676 & 10.54922 & 10.0075 & 10.54922 & 10.0075 & 10.63641 & 10.08845 & 7.948827 & 7.538972 & 10.768 & 10.21676\end{array} 10.768 \quad 10.21676$ $\begin{array}{llllllllllllllllllll}386700 & 3739100 & 7.538567 & 7.201578 & 10.22136 & 9.765902 & 10.22136 & 9.765902 & 10.00906 & 9.562438 & 10.00906 & 9.562438 & 10.08764 & 9.636858 & 7.538567 & 7.201578 & 10.22136 & 9.765902 & 10.22136 & 9.765902\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}387200 & 3739100 & 7.098143 & 6.840647 & 9.633131 & 9.283994 & 9.633131 & 9.283994 & 9.429128 & 9.088136 & 9.429128 & 9.088136 & 9.499185 & 9.155648 & 7.098143 & 6.840647 & 9.633131 & 9.283994 & 9.633131 & 9.283994\end{array}$

 $\begin{array}{llllllllllllllllllllllll}388700 & 3739100 & 6.556816 & 6.339778 & 8.9118 & 8.617108 & 8.9118 & 8.617108 & 8.716274 & 8.428114 & 8.716274 & 8.428114 & 8.774968 & 8.484758 & 6.556816 & 6.339778 & 8.9118 & 8.617108 & 8.9118 & 8.617108\end{array}$ $\begin{array}{llllllllllllllllllll}389200 & 3739100 & 6.360499 & 6.175729 & 8.649881 & 8.398181 & 8.649881 & 8.398181 & 8.459136 & 8.212516 & 8.459136 & 8.212516 & 8.514097 & 8.265958 & 6.360499 & 6.175729 & 8.649881 & 8.398181 & 8.649881 & 8.398181\end{array}$ $\begin{array}{lllllllllllllllllllll}389700 & 3739100 & 6.357723 & 6.129273 & 8.639569 & 8.334251 & 8.639569 & 8.334251 & 8.446815 & 8.150569 & 8.446815 & 8.150569 & 8.500137 & 8.202287 & 6.357723 & 6.129273 & 8.639569 & 8.334251 & 8.639569 & 8.334251\end{array}$ $\begin{array}{llllllllllllllllllllll}380200 & 3739600 & 12.71235 & 12.36457 & 17.11567 & 16.64641 & 17.11567 & 16.64641 & 16.8212 & 16.35992 & 16.8212 & 16.35992 & 17.00806 & 16.54156 & 12.71235 & 12.36457 & 17.11567 & 16.64641 & 17.11567 & 16.64641\end{array}$ $\begin{array}{llllllllllllllllllll}380700 & 3739600 & 12.6354 & 12.33589 & 17.01078 & 16.60665 & 17.01078 & 16.60665 & 16.7167 & 16.3193 & 16.7167 & 16.3193 & 16.90271 & 16.50121 & 12.6354 & 12.33589 & 17.01078 & 16.60665 & 17.01078 & 16.60665\end{array}$ $\begin{array}{llllllllllllllllllll}381200 & 3739600 & 12.71412 & 12.12592 & 17.11538 & 16.32608 & 17.11538 & 16.32608 & 16.81672 & 16.04028 & 16.81672 & 16.04028 & 17.00399 & 16.2178 & 12.71412 & 12.12592 & 17.11538 & 16.32608 & 17.11538 & 16.32608\end{array}$ $\begin{array}{lllllllllllllllllll}381700 & 3739600 & 12.8299 & 12.23367 & 17.27264 & 16.47223 & 17.27264 & 16.47223 & 16.96753 & 16.18222 & 16.96753 & 16.18222 & 17.15548 & 16.36057 & 12.8299 & 12.23367 & 17.27264 & 16.47223 & 17.27264\end{array} 16.47223$ $\begin{array}{llllllllllllllllllllll}382200 & 3739600 & 12.36221 & 11.75482 & 16.64897 & 15.83382 & 16.64897 & 15.83382 & 16.3526 & 15.5512 & 16.3526 & 15.5512 & 16.53107 & 15.71972 & 12.36221 & 11.75482 & 16.64897 & 15.83382 & 16.64897 & 15.83382\end{array}$ $\begin{array}{llllllllllllllllllll}382700 & 3739600 & 11.89244 & 11.31603 & 16.02409 & 15.24979 & 16.02409 & 15.24979 & 15.73522 & 14.97465 & 15.73522 & 14.97465 & 15.90341 & 15.13382 & 11.89244 & 11.31603 & 16.02409 & 15.24979 & 16.02409 & 15.24979\end{array}$ $\begin{array}{llllllllllllllllllllll}383200 & 3739600 & 11.20838 & 10.50259 & 15.11229 & 14.16629 & 15.11229 & 14.16629 & 14.83517 & 13.90796 & 14.83517 & 13.90796 & 14.9892 & 14.05049 & 11.20838 & 10.50259 & 15.11229 & 14.16629 & 15.11229 & 14.16629\end{array}$ $\begin{array}{lllllllllllllllllll}383700 & 3739600 & 10.35011 & 10.0578 & 13.96805 & 13.57362 & 13.96805 & 13.57362 & 13.70847 & 13.32151 & 13.70847 & 13.32151 & 13.84545 & 13.4546 & 10.35011 & 10.0578 & 13.96805 & 13.57362 & 13.96805 \\ 13.57362\end{array}$ $\begin{array}{llllllllllllllllllllll}384200 & 3739600 & 9.627933 & 9.108721 & 13.00561 & 12.30913 & 13.00561 & 12.30913 & 12.75988 & 12.07587 & 12.75988 & 12.07587 & 12.88213 & 12.18961 & 9.627933 & 9.108721 & 13.00561 & 12.30913 & 13.00561 & 12.30913\end{array}$ $\begin{array}{llllllllllllllllllllll}384700 & 3739600 & 9.195637 & 8.776326 & 12.42871 & 11.86577 & 12.42871 & 11.86577 & 12.1909 & 11.63834 & 12.1909 & 11.63834 & 12.30458 & 11.74537 & 9.195637 & 8.776326 & 12.42871 & 11.86577 & 12.42871 & 11.86577\end{array}$ $\begin{array}{llllllllllllllllll}385200 & 3739600 & 8.786724 & 8.253277 & 11.88408 & 11.1692 & 11.88408 & 11.1692 & 11.6522 & 10.95057 & 11.6522 & 10.95057 & 11.75714 & 11.04658 & 8.786724 & 8.253277 & 11.88408 & 11.1692\end{array} 11.88408 \quad 11.1692$ $\begin{array}{lllllllllllllllllll}385700 & 3739600 & 8.032077 & 7.630405 & 10.87441 & 10.33504 & 10.87441 & 10.33504 & 10.65898 & 10.12879 & 10.65898 & 10.12879 & 10.75031 & 10.21368 & 8.032077 & 7.630405 & 10.87441 & 10.33504 & 10.87441 \\ 10.33504\end{array}$ $\begin{array}{lllllllllllllllllllllll}386200 & 3739600 & 7.736838 & 7.520133 & 10.48185 & 10.18832 & 10.48185 & 10.18832 & 10.27015 & 9.982006 & 10.27015 & 9.982006 & 10.35484 & 10.06422 & 7.736838 & 7.520133 & 10.48185 & 10.18832 & 10.48185 & 10.18832\end{array}$ $\begin{array}{llllllllllllllllllllllll}386700 & 3739600 & 7.490651 & 7.112296 & 10.15338 & 9.643999 & 10.15338 & 9.643999 & 9.945214 & 9.445107 & 9.945214 & 9.445107 & 10.02484 & 9.519235 & 7.490651 & 7.112296 & 10.15338 & 9.643999 & 10.15338 & 9.643999\end{array}$

 $\begin{array}{llllllllllllllllllllllll}387700 & 3739600 & 6.812625 & 6.555793 & 9.249173 & 8.901957 & 9.249173 & 8.901957 & 9.05209 & 8.713858 & 9.05209 & 8.713858 & 9.117823 & 8.776827 & 6.812625 & 6.555793 & 9.249173 & 8.901957 & 9.249173 & 8.901957\end{array}$ $\begin{array}{llllllllllllllllllllllll}388200 & 3739600 & 6.499871 & 6.30315 & 8.831034 & 8.564644 & 8.831034 & 8.564644 & 8.64083 & 8.382177 & 8.64083 & 8.382177 & 8.700841 & 8.440352 & 6.499871 & 6.30315 & 8.831034 & 8.564644 & 8.831034 & 8.564644\end{array}$ $\begin{array}{llllllllllllllllllllllll}388700 & 3739600 & 6.415148 & 6.145938 & 8.718242 & 8.354842 & 8.718242 & 8.354842 & 8.528077 & 8.174793 & 8.528077 & 8.174793 & 8.586056 & 8.229787 & 6.415148 & 6.145938 & 8.718242 & 8.354842 & 8.718242 & 8.354842\end{array}$ $\begin{array}{lllllllllllllllllllllll}389200 & 3739600 & 6.270054 & 6.063703 & 8.525578 & 8.245634 & 8.525578 & 8.245634 & 8.338887 & 8.0661 & 8.338887 & 8.0661 & 8.393774 & 8.119096 & 6.270054 & 6.063703 & 8.525578 & 8.245634 & 8.525578 & 8.245634\end{array}$ $\begin{array}{lllllllllllllllllll}389700 & 3739600 & 6.122534 & 5.889335 & 8.328186 & 8.012217 & 8.328186 & 8.012217 & 8.144634 & 7.83785 & 8.144634 & 7.83785 & 8.196845 & 7.887967 & 6.122534 & 5.889335 & 8.328186 & 8.012217 & 8.328186 \\ 8.012217\end{array}$ $\begin{array}{lllllllllllllllllllllll} \\ 380200 & 3740100 & 12.20323 & 11.76132 & 16.43748 & 15.84012 & 16.43748 & 15.84012 & 16.15357 & 15.56679 & 16.15357 & 15.56679 & 16.33016 & 15.73634 & 12.22266 & 11.76132 & 16.43748 & 15.84012 & 16.43748 & 15.84012\end{array}$ | 380700 | 3740100 | 11.94347 | 11.57203 | 16.08694 | 15.5869 | 16.08694 | 15.5869 | 15.80789 | 15.31723 | 15.80789 | 15.31723 | 15.9808 | 15.4847 | 11.94347 | 11.57203 | 16.08694 | 15.5869 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $16.08694 \quad 15.5869$ $\begin{array}{llllllllllllllllllll}381200 & 3740100 & 11.96378 & 11.40401 & 16.11361 & 15.36252 & 16.11361 & 15.36252 & 15.83217 & 15.0937 & 15.83217 & 15.0937 & 16.00533 & 15.25756 & 11.96378 & 11.40401 & 16.11361 & 15.36252 & 16.11361 & 15.36252\end{array}$ $\begin{array}{lllllllllllllllllllll}381700 & 3740100 & 11.99221 & 11.4786 & 16.15392 & 15.46339 & 16.15392 & 15.46339 & 15.86841 & 15.19078 & 15.86841 & 15.19078 & 16.04064 & 15.35529 & 11.99221 & 11.4786 & 16.15392 & 15.46339 & 16.15392 & 15.46339\end{array}$ $\begin{array}{lllllllllllllllllll}382200 & 3740100 & 11.56951 & 11.07348 & 15.59026 & 14.92365 & 15.59026 & 14.92365 & 15.3132 & 14.65755 & 15.3132 & 14.65755 & 15.47699 & 14.8135 & 11.56951 & 11.07348 & 15.59026 & 14.92365 & 15.59026\end{array} 14.92365$ $\begin{array}{lllllllllllllllll}382700 & 3740100 & 11.13862 & 10.68579 & 15.0161 & 14.40674 & 15.0161 & 14.40674 & 14.74562 & 14.1468 & 14.74562 & 14.1468 & 14.90038 & 14.29474 & 11.13862 & 10.68579 & 15.0161\end{array} 14.40674 \quad 15.0161 \quad 14.40674$ $\begin{array}{lllllllllllllllllllllll}383200 & 3740100 & 10.57789 & 10.15217 & 14.26905 & 13.69529 & 14.26905 & 13.69529 & 13.99839 & 13.44552 & 13.99839 & 13.44552 & 14.15209 & 13.58395 & 10.57789 & 10.15217 & 14.26905 & 13.69529 & 14.26905 & 13.69529\end{array}$


 $\begin{array}{llllllllllllllllll}384700 & 3740100 & 8.880088 & 8.586179 & 12.00646 & 11.61066 & 12.00646 & 11.61066 & 11.77732 & 11.38927 & 11.77732 & 11.38927 & 11.88563 & 11.49344 & 8.880088 & 8.586179 & 12.00646 & 11.61066 \\ 12.00646 & 11.61066\end{array}$ $\begin{array}{llllllllllllllllll}385200 & 3740100 & 8.554454 & 8.18942 & 11.57215 & 11.08169 & 11.57215 & 11.08169 & 11.34757 & 10.86639 & 11.34757 & 10.86639 & 11.44912 & 10.96231 & 8.554454 & 8.18942 & 11.57215 & 11.08169\end{array} 11.57215 \quad 11.08169$ $\begin{array}{llllllllllllllllllll}385700 & 3740100 & 7.978606 & 7.513919 & 10.79973 & 10.17739 & 10.79973 & 10.17739 & 10.588 & 9.97635 & 10.588 & 9.97635 & 10.67992 & 10.06022 & 7.978606 & 7.513919 & 10.79973 & 10.17739 & 10.79973 & 10.17739\end{array}$ $\begin{array}{lllllllllllllllllll}386200 & 3740100 & 7.565279 & 7.251288 & 10.25001 & 9.828116 & 10.25001 & 9.828116 & 10.04431 & 9.62964 & 10.04431 & 9.62964 & 10.1271 & 9.707493 & 7.565279 & 7.251288 & 10.25001 & 9.828116 & 10.25001\end{array} 9.828116$ $\begin{array}{lllllllllllllllllllll}386700 & 3740100 & 7.386015 & 7.110776 & 10.01183 & 9.640926 & 10.01183 & 9.640926 & 9.807454 & 9.443979 & 9.807454 & 9.443979 & 9.886022 & 9.518772 & 7.386015 & 7.110776 & 10.01183 & 9.640926 & 10.01183 & 9.640926\end{array}$ $\begin{array}{lllllllllllllllllllllll}387200 & 3740100 & 7.119784 & 6.736923 & 9.65589 & 9.140623 & 9.65589 & 9.140623 & 9.456333 & 8.951516 & 9.456333 & 8.951516 & 9.529843 & 9.019574 & 7.119784 & 6.736923 & 9.65589 & 9.140623 & 9.65589 & 9.140623\end{array}$ $\begin{array}{llllllllllllllllllllll}387700 & 3740100 & 6.803913 & 6.47107 & 9.23453 & 8.786362 & 9.23453 & 8.786362 & 9.040368 & 8.602736 & 9.040368 & 8.602736 & 9.10747 & 8.665421 & 6.803913 & 6.47107 & 9.23453 & 8.786362 & 9.23453 & 8.786362\end{array}$ $\begin{array}{llllllllllllllllllll}388200 & 3740100 & 6.508281 & 6.295432 & 8.839605 & 8.552704 & 8.839605 & 8.552704 & 8.651263 & 8.371679 & 8.651263 & 8.371679 & 8.712725 & 8.430517 & 6.508281 & 6.295432 & 8.839605 & 8.552704 & 8.839605 & 8.552704\end{array}$ $\begin{array}{llllllllllllllllllll}388700 & 3740100 & 6.278423 & 6.071679 & 8.532616 & 8.253443 & 8.532616 & 8.253443 & 8.347951 & 8.077348 & 8.347951 & 8.077348 & 8.40487 & 8.132123 & 6.278423 & 6.071679 & 8.532616 & 8.253443 & 8.532616 & 8.253443\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}389200 & 3740100 & 6.131933 & 5.932391 & 8.337159 & 8.067612 & 8.337159 & 8.067612 & 8.156172 & 7.893235 & 8.156172 & 7.893235 & 8.210324 & 7.945086 & 6.131933 & 5.932391 & 8.337159 & 8.067612 & 8.337159 & 8.067612\end{array}$ $\begin{array}{lllllllllllllllllllllll}389700 & 3740100 & 5.983779 & 5.790983 & 8.139447 & 7.878697 & 8.139447 & 7.878697 & 7.962276 & 7.707498 & 7.962276 & 7.707498 & 8.013667 & 7.756724 & 5.983779 & 5.790983 & 8.139447 & 7.878697 & 8.139447 & 7.878697\end{array}$ $\begin{array}{lllllllllllllllllll}380200 & 3740600 & 11.53015 & 11.01892 & 15.53809 & 14.73719 & 15.53809 & 14.73719 & 15.27014 & 14.48282 & 15.27014 & 14.48282 & 15.43438 & 14.63696 & 11.53015 & 11.01892 & 15.53809 & 14.73719 & 15.53809\end{array} 14.73719$ $\begin{array}{lllllllllllllllllll}380700 & 3740600 & 11.08539 & 10.71474 & 14.93914 & 14.44107 & 14.93914 & 14.44107 & 14.68052 & 14.19069 & 14.68052 & 14.19069 & 14.83813 & 14.3424 & 11.08539 & 10.71474 & 14.93914 & 14.44107 & 14.93914\end{array} 14.44107$ $\begin{array}{llllllllllllllllllll}381200 & 3740600 & 11.43837 & 10.73916 & 15.41286 & 14.47668 & 15.41286 & 14.47668 & 15.1437 & 14.22271 & 15.1437 & 14.22271 & 15.30669 & 14.37334 & 11.43837 & 10.73916 & 15.41286 & 14.47668 & 15.41286 & 14.47668\end{array}$ $\begin{array}{lllllllllllllllllllllllll}381700 & 3740600 & 11.05936 & 10.70567 & 14.90596 & 14.4297 & 14.90596 & 14.4297 & 14.64392 & 14.17542 & 14.64392 & 14.17542 & 14.7997 & 14.32604 & 11.05936 & 10.70567 & 14.90596 & 14.4297 & 14.90596 & 14.4297\end{array}$ $\begin{array}{lllllllllllllllllll}382200 & 3740600 & 10.87144 & 10.48151 & 14.65743 & 14.13251 & 14.65743 & 14.13251 & 14.39703 & 13.88109 & 14.39703 & 13.88109 & 14.54807 & 14.02638 & 10.87144 & 10.48151 & 14.65743 & 14.13251 & 14.65743 \\ 14.4351\end{array}$ $\begin{array}{lllllllllllllllllll}382700 & 3740600 & 10.56051 & 10.17513 & 14.24318 & 13.72426 & 14.24318 & 13.72426 & 13.98732 & 13.47673 & 13.98732 & 13.47673 & 14.1317 & 13.61545 & 10.56051 & 10.17513 & 14.24318 & 13.72426 & 14.24318\end{array} 13.72426$ $\begin{array}{llllllllllllllllllll}383200 & 3740600 & 10.04842 & 9.669564 & 13.56087 & 13.05005 & 13.56087 & 13.05005 & 13.31419 & 12.81319 & 13.31419 & 12.81319 & 13.44802 & 12.94188 & 10.04842 & 9.669564 & 13.56087 & 13.05005 & 13.56087 & 13.05005\end{array}$ $\begin{array}{llllllllllllllllllll}383700 & 3740600 & 9.556822 & 9.175414 & 12.90429 & 12.3921 & 12.90429 & 12.3921 & 12.66644 & 12.16286 & 12.66644 & 12.16286 & 12.79071 & 12.28099 & 9.556822 & 9.175414 & 12.90429 & 12.3921 & 12.90429 & 12.3921\end{array}$ $\begin{array}{lllllllllllllllllll}384200 & 3740600 & 8.991578 & 8.618644 & 12.15079 & 11.65026 & 12.15079 & 11.65026 & 11.92261 & 11.43201 & 11.92261 & 11.43201 & 12.03523 & 11.53879 & 8.991578 & 8.618644 & 12.15079 & 11.65026 & 12.15079\end{array} 11.65026$ $\begin{array}{lllllllllllllllllllll}384700 & 3740600 & 8.495718 & 8.0589 & 11.48768 & 10.90266 & 11.48768 & 10.90266 & 11.2698 & 10.69576 & 11.2698 & 10.69576 & 11.3733 & 10.79185 & 8.495718 & 8.0589 & 11.48768 & 10.90266 & 11.48768 & 10.90266\end{array}$ $\begin{array}{llllllllllllllllllll}385200 & 3740600 & 8.261332 & 7.916818 & 11.17694 & 10.71482 & 11.17694 & 10.71482 & 10.96128 & 10.50787 & 10.96128 & 10.50787 & 11.05905 & 10.60006 & 8.261332 & 7.916818 & 11.17694 & 10.71482 & 11.17694 & 10.71482\end{array}$ $\begin{array}{llllllllllllllllllllllllll}385700 & 3740600 & 7.848156 & 7.55984 & 10.62502 & 10.23802 & 10.62502 & 10.23802 & 10.41693 & 10.03737 & 10.41693 & 10.03737 & 10.5067 & 10.12259 & 7.848156 & 7.55984 & 10.62502 & 10.23802 & 10.62502 & 10.23802\end{array}$ $\begin{array}{lllllllllllllllllll}386200 & 3740600 & 7.671542 & 7.106426 & 10.39281 & 9.636794 & 10.39281 & 9.636794 & 10.18519 & 9.44241 & 10.18519 & 9.44241 & 10.26974 & 9.516896 & 7.671542 & 7.106426 & 10.39281 & 9.636794 & 10.39281 \\ 9.6 .636794\end{array}$ $\begin{array}{lllllllllllllllllllll}386700 & 3740600 & 7.187466 & 6.887182 & 9.743962 & 9.340478 & 9.743962 & 9.340478 & 9.546138 & 9.150908 & 9.546138 & 9.150908 & 9.622298 & 9.222558 & 7.187466 & 6.887182 & 9.743962 & 9.340478 & 9.743962 & 9.340478\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}387200 & 3740600 & 6.972979 & 6.662152 & 9.457021 & 9.038976 & 9.457021 & 9.038976 & 9.263733 & 8.853754 & 9.263733 & 8.853754 & 9.335964 & 8.921423 & 6.972979 & 6.662152 & 9.457021 & 9.038976 & 9.457021 & 9.038976\end{array}$ $\begin{array}{llllllllllllllllllllll}387700 & 3740600 & 6.776888 & 6.418205 & 9.195609 & 8.713043 & 9.195609 & 8.713043 & 9.004967 & 8.532135 & 9.004967 & 8.532135 & 9.073064 & 8.595075 & 6.776888 & 6.418205 & 9.195609 & 8.713043 & 9.195609 & 8.713043\end{array}$ $\begin{array}{llllllllllllllllllll}388200 & 3740600 & 6.462305 & 6.155894 & 8.775163 & 8.363169 & 8.775163 & 8.363169 & 8.591071 & 8.189007 & 8.591071 & 8.189007 & 8.653305 & 8.246976 & 6.462305 & 6.155894 & 8.775163 & 8.363169 & 8.775163 & 8.363169\end{array}$ $\begin{array}{llllllllllllllllllllll}388700 & 3740600 & 6.224185 & 5.97428 & 8.456914 & 8.12065 & 8.456914 & 8.12065 & 8.276168 & 7.950299 & 8.276168 & 7.950299 & 8.333685 & 8.004806 & 6.224185 & 5.97428 & 8.456914 & 8.12065 & 8.456914 & 8.12065\end{array}$ $\begin{array}{llllllllllllllllllllllllll}389200 & 3740600 & 6.026469 & 5.843815 & 8.193197 & 7.947059 & 8.193197 & 7.947059 & 8.016472 & 7.777114 & 8.016472 & 7.777114 & 8.070082 & 7.828533 & 6.026469 & 5.843815 & 8.193197 & 7.947059 & 8.193197 & 7.947059\end{array}$ $\begin{array}{lllllllllllllllllll}389700 & 3740600 & 5.889362 & 5.710466 & 8.01104 & 7.769141 & 8.01104 & 7.769141 & 7.83749 & 7.601771 & 7.83749 & 7.601771 & 7.888203 & 7.650547 & 5.889362 & 5.710466 & 8.01104 & 7.769141 & 8.01104 \\ 7.769141\end{array}$ $\begin{array}{llllllllllllllllllllllllll}380200 & 3741100 & 10.93198 & 10.3739 & 14.73781 & 13.98959 & 14.73781 & 13.98959 & 14.48413 & 13.74853 & 14.48413 & 13.74853 & 14.63774 & 13.89272 & 10.93198 & 10.3739 & 14.73781 & 13.98959 & 14.73781 & 13.98959\end{array}$

| Red | 0.0010 | 0.0009 | 0.0037 | 0.0035 | 0.0037 | 0.0034 | 0.0021 | 0.0019 | 0.0021 | 0.0019 | 0.0058 | 0.0055 | 0.0014 | 0.0013 | 0.0055 | 0.0052 | 0.0055 | 0.0052 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction | 48.55\% | 48.55\% | 44.40\% | 44.40\% | 44.40\% | 44.40\% | 78.71\% | 78.71\% | 78.71\% | 78.71\% | 70.88\% | 70.88\% | 67.78\% | 67.78\% | 66.42\% | .42\% | 66.42\% | 66.42\% |
|  | 389450_3 | 50 |  |  | 382683.8 |  |  |  |  |  |  |  | 389450_3 | 450_37 |  |  |  |  |

$\begin{array}{llllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$ 2033_ALT4_ 2033_ALT4_ 2033_ALTS_ 2033_ALT5_ 2033_PP_CA 2033_PP_N 2038_ALT1_ 2038_ALT1_ 2038_NP_C 2038_NP_N 2038_ALT3_ 2038_ALT3_ 2038_ALT4_ 2038_ALT4_ 2038_ALT5_ 2038_ALT5_ 2038_PP_CA 2038_PP_N

| 380700 | 3741100 | 10.8258 | 10.43959 | 14.59549 | 14.07632 | 14.59549 | 14.07632 | 14.34214 | 13.83112 | 14.34214 | 13.83112 | 14.49361 | 13.97648 | 10.8258 | 10.43959 | 14.59549 | 14.07632 | 14.59549 | 14.07632 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

 \begin{tabular}{lllllllllllllllllll}
381700 \& 3741100 \& 10.52432 \& 10.1786 \& 14.19228 \& 13.72679 \& 14.19228 \& 13.72679 \& 13.94228 \& 13.48461 \& 13.94228 \& 13.48461 \& 14.08782 \& 13.62499 \& 10.52432 \& 10.1786 \& 14.19228 \& 13.72679 \& 14.19228 <br>
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 13.72679 $\begin{array}{lllllllllllllllllll}382200 & 3741100 & 10.24084 & 9.934622 & 13.81367 & 13.40089 & 13.81367 & 13.40089 & 13.56828 & 13.16232 & 13.56828 & 13.16232 & 13.70819 & 13.29785 & 10.24084 & 9.934622 & 13.81367 & 13.40089 & 13.81367 \\ 13.40089\end{array}$ $\begin{array}{lllllllllllllllllll}382700 & 3741100 & 9.971699 & 9.637239 & 13.45536 & 13.00445 & 13.45536 & 13.00445 & 13.21342 & 12.77097 & 13.21342 & 12.77097 & 13.34741 & 12.90038 & 9.971699 & 9.637239 & 13.45536 & 13.00445 & 13.45536 \\ 13.23 .00445\end{array}$ $\begin{array}{llllllllllllllllllllllllll}383200 & 3741100 & 9.559495 & 9.276759 & 12.90606 & 12.52404 & 12.90606 & 12.52404 & 12.67133 & 12.29675 & 12.67133 & 12.29675 & 12.79681 & 12.41869 & 9.559495 & 9.276759 & 12.90606 & 12.52404 & 12.90606 & 12.52404\end{array}$ $\begin{array}{lllllllllllllllllllll}383700 & 3741100 & 9.2405 & 8.796595 & 12.4797 & 11.88303 & 12.4797 & 11.88303 & 12.25038 & 11.66381 & 12.25038 & 11.66381 & 12.3697 & 11.77568 & 9.241401 & 8.796595 & 12.4797 & 11.88303 & 12.4797 & 11.88303\end{array}$ $\begin{array}{llllllllllllllllllllll} & 883700 & 3741100 & 9.2405 & 8.796595 & 12.4797 & 11.88303 & 12.4797 & 11.88303 & 12.25038 & 11.66381 & 12.25038 & 11.66381 & 12.3697 & 11.77568 & 9.241401 & 8.796595 & 12.4797 & 11.88303 & 12.4797 & 11.88303 \\ 384200 & 3741100 & 8.668 & 8.476721 & 11.71632 & 11.45799 & 11.71632 & 11.45799 & 11.49687 & 11.24462 & 11.49687 & 11.24462 & 11.60452 & 11.35 & 8.668 & 8.476721 & 11.71632 & 11.45799 & 11.71632 & 11.4579 & 9 & \end{array}$ $\begin{array}{llllllllllllllllllll}384200 & 3741100 & 8.668 & 8.476721 & 11.71632 & 11.45799 & 11.71632 & 11.45799 & 11.49687 & 11.24462 & 11.49687 & 11.24462 & 11.60452 & 11.35 & 8.668 & 8.476721 & 11.71632 & 11.45799 & 11.71632 & 11.45799 \\ 384700 & 3741100 & 8.210202 & 7.833885 & 11.10626 & 10.60181 & 11.10626 & 10.60181 & 10.89578 & 10.40097 & 10.89578 & 10.40097 & 10.99411 & 10.49311 & 8.210202 & 7.833885 & 11.10626 & 10.60181 & 11.10626 & 10.60181\end{array}$ $\begin{array}{llllllllllllllllllllll}385200 & 3741100 & 7.901754 & 7.677193 & 10.69304 & 10.39142 & 10.69304 & 10.39142 & 10.48757 & 10.19195 & 10.48757 & 10.19195 & 10.58026 & 10.28121 & 7.901754 & 7.677193 & 10.69304 & 10.39142 & 10.69304 & 10.39142\end{array}$ $\begin{array}{llllllllllllllllllllllllll}385700 & 3741100 & 7.643938 & 7.404711 & 10.34891 & 10.02771 & 10.34891 & 10.02771 & 10.14732 & 9.832742 & 10.14732 & 9.832742 & 10.2348 & 9.916552 & 7.643938 & 7.404711 & 10.34891 & 10.02771 & 10.34891 & 10.02771\end{array}$ $\begin{array}{lllllllllllllllllll}386200 & 3741100 & 7.458686 & 7.104537 & 10.10344 & 9.629129 & 10.10344 & 9.629129 & 9.903437 & 9.437593 & 9.903437 & 9.437593 & 9.986312 & 9.514386 & 7.458686 & 7.104537 & 10.10344 & 9.629129 & 10.10344 \\ 9.6 .629129\end{array}$ $\begin{array}{llllllllllllllllllllll}386700 & 3741100 & 7.055169 & 6.704855 & 9.564421 & 9.094966 & 9.564421 & 9.094966 & 9.371905 & 8.911564 & 9.371905 & 8.911564 & 9.446986 & 8.980854 & 7.055169 & 6.704855 & 9.564421 & 9.094966 & 9.564421 & 9.094966\end{array}$ $\begin{array}{lllllllllllllllllllllllll}387200 & 3741100 & 6.802243 & 6.529574 & 9.226567 & 8.860132 & 9.226567 & 8.860132 & 9.038965 & 8.679912 & 9.038965 & 8.679912 & 9.109203 & 8.746056 & 6.802243 & 6.529574 & 9.226567 & 8.860132 & 9.226567 & 8.860132\end{array}$ $\begin{array}{lllllllllllllllllllllllll}387700 & 3741100 & 6.674569 & 6.334688 & 9.05653 & 8.599018 & 9.05653 & 8.599018 & 8.870037 & 8.422776 & 8.870037 & 8.422776 & 8.937412 & 8.485493 & 6.674569 & 6.334688 & 9.05653 & 8.599018 & 9.05653 & 8.599018\end{array}$ $\begin{array}{llllllllllllllllllllllll}388200 & 3741100 & 6.511805 & 6.141599 & 8.839886 & 8.342316 & 8.839886 & 8.342316 & 8.655341 & 8.168649 & 8.655341 & 8.168649 & 8.719115 & 8.227024 & 6.511805 & 6.141599 & 8.839886 & 8.342316 & 8.839886 & 8.342316\end{array}$ $\begin{array}{llllllllllllllllllllll}388700 & 3741100 & 6.224353 & 5.926506 & 8.455086 & 8.055198 & 8.455086 & 8.055198 & 8.276619 & 7.88668 & 8.276619 & 7.88668 & 8.33525 & 7.941013 & 6.224353 & 5.926506 & 8.455086 & 8.055198 & 8.455086 & 8.055198\end{array}$ $\begin{array}{lllllllllllllllllll}389200 & 3741100 & 5.991342 & 5.769313 & 8.143605 & 7.844698 & 8.143605 & 7.844698 & 7.968909 & 7.679433 & 7.968909 & 7.679433 & 8.023033 & 7.730983 & 5.991342 & 5.769313 & 8.143605 & 7.844698 & 8.143605 \\ 7.844698\end{array}$ $\begin{array}{llllllllllllllllllll}389700 & 3741100 & 5.805669 & 5.617062 & 7.895967 & 7.641588 & 7.895967 & 7.641588 & 7.726133 & 7.47889 & 7.726133 & 7.47889 & 7.776762 & 7.527356 & 5.805669 & 5.617062 & 7.895967 & 7.641588 & 7.895967 & 7.641588\end{array}$ $\begin{array}{lllllllllllllllllllll}380200 & 3741600 & 10.23454 & 9.964937 & 13.80529 & 13.44156 & 13.80529 & 13.44156 & 13.56693 & 13.21024 & 13.56693 & 13.21024 & 13.70775 & 13.34754 & 10.23454 & 9.964937 & 13.80529 & 13.44156 & 13.80529 & 13.44156\end{array}$ $\begin{array}{lllllllllllllllllll}380700 & 3741600 & 10.30933 & 9.846835 & 13.90447 & 13.28402 & 13.90447 & 13.28402 & 13.66306 & 13.05315 & 13.66306 & 13.05315 & 13.80538 & 13.18778 & 10.30933 & 9.846835 & 13.90447 & 13.28402 & 13.90447 \\ 13.28402\end{array}$ $\begin{array}{lllllllllllllllllll}381200 & 3741600 & 9.987748 & 9.48366 & 13.47181 & 12.79638 & 13.47181 & 12.79638 & 13.23652 & 12.5736 & 13.23652 & 12.5736 & 13.37384 & 12.70237 & 9.987748 & 9.48366 & 13.47181 & 12.79638 & 13.47181\end{array} 12.79638$ $\begin{array}{lllllllllllllllllllllllll}381700 & 3741600 & 9.864995 & 9.57358 & 13.31035 & 12.91769 & 13.31035 & 12.91769 & 13.07601 & 12.69043 & 13.07601 & 12.69043 & 13.20975 & 12.82005 & 9.864995 & 9.57358 & 13.31035 & 12.91769 & 13.31035 & 12.91769\end{array}$ $\begin{array}{lllllllllllllllllll}382200 & 3741600 & 9.739018 & 9.445311 & 13.14212 & 12.74636 & 13.14212 & 12.74636 & 12.90882 & 12.51973 & 12.90882 & 12.51973 & 13.0399 & 12.64659 & 9.739018 & 9.445311 & 13.14212 & 12.74636 & 13.14212\end{array} 12.74636$ $\begin{array}{llllllllllllllllllll}382200 & 3741600 & 9.739018 & 9.445311 & 13.14212 & 12.74636 & 13.14212 & 12.74636 & 12.90882 & 12.51973 & 12.90882 & 12.51973 & 13.0399 & 12.64659 & 9.739018 & 9.445311 & 13.14212 & 12.74636 & 13.14212 & 12.74636 \\ 382700 & 3741600 & 9.408183 & 9.110218 & 12.70122 & 12.29916 & 12.70122 & 12.29916 & 12.47265 & 12.07944 & 12.47265 & 12.07944 & 12.59675 & 12.19976 & 9.408183 & 9.110218 & 12.70122 & 12.29916 & 12.70122 & 12.29916\end{array}$ $\begin{array}{lllllllllllllllllllll}382700 & 3741600 & 9.408183 & 9.110218 & 12.70122 & 12.29916 & 12.70122 & 12.29916 & 12.47265 & 12.07944 & 12.47265 & 12.07944 & 12.59675 & 12.19976 & 9.408183 & 9.110218 & 12.70122 & 12.29916 & 12.70122 & 12.29916 \\ 383200 & 3741600 & 9.05925 & 8.867912 & 12.23564 & 11.97614 & 12.23564 & 11.97614 & 12.01335 & 11.75881 & 12.01335 & 11.75881 & 12.13047 & 11.8739 & 9.05925 & 8.867912 & 12.23564 & 11.97614 & 12.23564 & 11.97614\end{array}$ $\begin{array}{lllllllllllllllllll}383700 & 3741600 & 8.794608 & 8.353275 & 11.88265 & 11.29047 & 11.88265 & 11.29047 & 11.66478 & 11.08321 & 11.66478 & 11.08321 & 11.77653 & 11.18778 & 8.794608 & 8.353275 & 11.88265 & 11.29047 & 11.88265\end{array} 11.29047$ $\begin{array}{llllllllllllllllllll}384200 & 3741600 & 8.4228 & 8.143986 & 11.38604 & 11.01142 & 11.38604 & 11.01142 & 11.17366 & 10.80721 & 11.17366 & 10.80721 & 11.27797 & 10.90741 & 8.4228 & 8.143986 & 11.38604 & 11.01142 & 11.38604 & 11.01142\end{array}$ $\begin{array}{lllllllllllllllllllll}384700 & 3741600 & 7.934523 & 7.574439 & 10.73502 & 10.25289 & 10.73502 & 10.25289 & 10.53239 & 10.05943 & 10.53239 & 10.05943 & 10.62693 & 10.14784 & 7.934523 & 7.574439 & 10.73502 & 10.25289 & 10.73502 & 10.25289\end{array}$ $\begin{array}{llllllllllllllllllll}385200 & 3741600 & 7.725026 & 7.350809 & 10.45502 & 9.953935 & 10.45502 & 9.953935 & 10.25518 & 9.763379 & 10.25518 & 9.763379 & 10.34555 & 9.847345 & 7.725026 & 7.350809 & 10.45502 & 9.953935 & 10.45502 & 9.953935\end{array}$ $\begin{array}{lllllllllllllllllllll}385700 & 3741600 & 7.464605 & 7.200063 & 10.10693 & 9.751806 & 10.10693 & 9.751806 & 9.91104 & 9.563526 & 9.91104 & 9.563526 & 9.996318 & 9.644771 & 7.464605 & 7.200063 & 10.10693 & 9.751806 & 10.10693 & 9.751806\end{array}$ $\begin{array}{llllllllllllllllllllllll}386200 & 3741600 & 7.125386 & 6.909007 & 9.653522 & 9.362832 & 9.653522 & 9.362832 & 9.463884 & 9.178636 & 9.463884 & 9.178636 & 9.54272 & 9.254119 & 7.125386 & 6.909007 & 9.653522 & 9.362832 & 9.653522 & 9.362832\end{array}$ $\begin{array}{lllllllllllllllllllll}386700 & 3741600 & 6.945774 & 6.561667 & 9.414685 & 8.900049 & 9.414685 & 8.900049 & 9.22744 & 8.721965 & 9.22744 & 8.721965 & 9.302242 & 8.790244 & 6.945774 & 6.561667 & 9.414685 & 8.900049 & 9.414685 & 8.900049\end{array}$ $\begin{array}{llllllllllllllllllll}387200 & 3741600 & 6.611789 & 6.371295 & 8.969837 & 8.64621 & 8.969837 & 8.64621 & 8.788114 & 8.471503 & 8.788114 & 8.471503 & 8.855894 & 8.535907 & 6.611789 & 6.371295 & 8.969837 & 8.64621 & 8.969837 & 8.64621\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}387700 & 3741600 & 6.536011 & 6.206779 & 8.869334 & 8.426177 & 8.869334 & 8.426177 & 8.687462 & 8.254591 & 8.687462 & 8.254591 & 8.753265 & 8.315935 & 6.536011 & 6.206779 & 8.869334 & 8.426177 & 8.869334 & 8.426177\end{array}$ $\begin{array}{llllllllllllllllllllllllll}388200 & 3741600 & 6.396027 & 6.063885 & 8.682287 & 8.234572 & 8.682287 & 8.234572 & 8.502514 & 8.065198 & 8.502514 & 8.065198 & 8.565547 & 8.123983 & 6.396027 & 6.063885 & 8.682287 & 8.234572 & 8.682287 & 8.234572\end{array}$ $\begin{array}{lllllllllllllllllllll}388700 & 3741600 & 6.189328 & 5.834685 & 8.40536 & 7.929142 & 8.40536 & 7.929142 & 8.229912 & 7.764298 & 8.229912 & 7.764298 & 8.289341 & 7.818425 & 6.189328 & 5.834685 & 8.40536 & 7.929142 & 8.40536 & 7.929142\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}389200 & 3741600 & 5.972855 & 5.679538 & 8.116194 & 7.722369 & 8.116194 & 7.722369 & 7.94397 & 7.560253 & 7.94397 & 7.560253 & 7.999085 & 7.611185 & 5.972855 & 5.679538 & 8.116194 & 7.722369 & 8.116194 & 7.722369\end{array}$ $\begin{array}{lllllllllllllllllllllll} \\ 389700 & 3741600 & 5.748747 & 5.597759 & 7.8172 & 7.613243 & 7.8172 & 7.613243 & 7.65011 & 7.451491 & 7.65011 & 7.451491 & 7.700907 & 7.500621 & 5.748747 & 5.597759 & 7.8172 & 7.613243 & 7.8172 & 7.613243\end{array}$ $\begin{array}{lllllllllllllllllllll}380200 & 3742100 & 9.747285 & 9.523311 & 13.15329 & 12.85081 & 13.15329 & 12.85081 & 12.9265 & 12.62908 & 12.9265 & 12.62908 & 13.05874 & 12.75837 & 9.747285 & 9.523311 & 13.15329 & 12.85081 & 13.15329 & 12.85081\end{array}$ $\begin{array}{llllllllllllllll}380700 & 3742100 & 9.698036 & 9.252893 & 13.08549 & 12.4891 & 13.08549 & 12.4891 & 12.859 & 12.27267 & 12.859 & 12.27267 & 12.99094 & 12.39695 & 9.698036 & 9.252893\end{array} 13.08549 \quad 12.4891 \quad 13.08549 \quad 12.4891$ $\begin{array}{llllllllllllllllllllll}381200 & 3742100 & 9.538502 & 9.108867 & 12.87203 & 12.29604 & 12.87203 & 12.29604 & 12.64727 & 12.08169 & 12.64727 & 12.08169 & 12.77608 & 12.20333 & 9.538502 & 9.108867 & 12.87203 & 12.29604 & 12.87203 & 12.29604\end{array}$ $\begin{array}{lllllllllllllllllllllll}381700 & 3742100 & 9.296969 & 9.055512 & 12.54965 & 12.224 & 12.54965 & 12.224 & 12.32913 & 12.00918 & 12.32913 & 12.00918 & 12.45311 & 12.12985 & 9.296969 & 9.055512 & 12.54965 & 12.224 & 12.54965 & 12.224\end{array}$ $\begin{array}{llllllllllllllllllll}382200 & 3742100 & 9.269409 & 8.918075 & 12.51321 & 12.04072 & 12.51321 & 12.04072 & 12.29106 & 11.82726 & 12.29106 & 11.82726 & 12.41404 & 11.94497 & 9.269409 & 8.918075 & 12.51321 & 12.04072 & 12.51321 & 12.04072\end{array}$ 

382700 \& 3742100 \& 8.892492 \& 8.623108 \& 12.01085 \& 11.647 \& 12.01085 \& 11.647 \& 11.79488 \& 11.43953 \& 11.79488 \& 11.43953 \& 11.91004 \& 11.55151 \& 8.892492 \& 8.623108 \& 12.01085 \& 11.647 <br>
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 $12.01085 \quad 11.647$ $\begin{array}{lllllllllllllllllllllll}383200 & 3742100 & 8.685881 & 8.409323 & 11.73472 & 11.36176 & 11.73472 & 11.36176 & 11.52213 & 11.15568 & 11.52213 & 11.15568 & 11.63327 & 11.26301 & 8.685881 & 8.409323 & 11.73472 & 11.36176 & 11.73472 & 11.36176\end{array}$ $\begin{array}{lllllllllllllllllllllllll}383700 & 3742100 & 8.412436 & 8.13425 & 11.37014 & 10.99501 & 11.37014 & 10.99501 & 11.1619 & 10.79411 & 11.1619 & 10.79411 & 11.2674 & 10.89587 & 8.412436 & 8.13425 & 11.37014 & 10.99501 & 11.37014 & 10.99501\end{array}$ $\begin{array}{llllllllllllllllllllll}384200 & 3742100 & 8.076762 & 7.869921 & 10.92189 & 10.64272 & 10.92189 & 10.64272 & 10.71872 & 10.44605 & 10.71872 & 10.44605 & 10.8175 & 10.5423 & 8.076762 & 7.869921 & 10.92189 & 10.64272 & 10.92189 & 10.64272\end{array}$ 

384700 \& 3742100 \& 7.783699 \& 7.386576 \& 10.53044 \& 9.998585 \& 10.53044 \& 9.998585 \& 10.33287 \& 9.811012 \& 10.33287 \& 9.811012 \& 10.42601 \& 9.897392 \& 7.783699 \& 7.386576 \& 10.53044 \& 9.998585 <br>
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\end{tabular} $10.53044 \quad 9.998585$ $\begin{array}{llllllllllllllllll}385200 & 3742100 & 7.406246 & 7.042422 & 10.02556 & 9.538294 & 10.02556 & 9.538294 & 9.834823 & 9.356491 & 9.834823 & 9.356491 & 9.920888 & 9.436332 & 7.406246 & 7.042422 & 10.02556 & 9.538294\end{array} 10.02556 \quad 9.538294$ $\begin{array}{lllllllllllllllllll}385700 & 3742100 & 7.186638 & 6.932665 & 9.73298 & 9.391586 & 9.73298 & 9.391586 & 9.545091 & 9.211135 & 9.545091 & 9.211135 & 9.62642 & 9.288795 & 7.186638 & 6.932665 & 9.73298 & 9.391586 & 9.73298 \\ 9.9 .391586\end{array}$

 $\begin{array}{llllllllllllllllllll}386700 & 3742100 & 6.766507 & 6.566571 & 9.173221 & 8.904128 & 9.173221 & 8.904128 & 8.99187 & 8.727507 & 8.99187 & 8.727507 & 9.064349 & 8.797032 & 6.766507 & 6.566571 & 9.173221 & 8.904128 & 9.173221 & 8.904128\end{array}$ $\begin{array}{llllllllllllllllllllllll}387200 & 3742100 & 6.577897 & 6.196702 & 8.921704 & 8.410761 & 8.921704 & 8.410761 & 8.742529 & 8.241096 & 8.742529 & 8.241096 & 8.811007 & 8.30324 & 6.577897 & 6.196702 & 8.921704 & 8.410761 & 8.921704 & 8.410761\end{array}$ $\begin{array}{lllllllllllllllllllll}387700 & 3742100 & 6.324269 & 6.11121 & 8.584226 & 8.296419 & 8.584226 & 8.296419 & 8.409078 & 8.128768 & 8.409078 & 8.128768 & 8.47207 & 8.18938 & 6.324269 & 6.11121 & 8.584226 & 8.296419 & 8.584226 & 8.296419\end{array}$ $\begin{array}{llllllllllllllllllll}388200 & 3742100 & 6.254874 & 5.959436 & 8.49178 & 8.093324 & 8.49178 & 8.093324 & 8.317215 & 7.927738 & 8.317215 & 7.927738 & 8.378648 & 7.985425 & 6.254874 & 5.959436 & 8.49178 & 8.093324 & 8.49178 & 8.093324\end{array}$ $\begin{array}{llllllllllllllllllll}388700 & 3742100 & 6.061065 & 5.785686 & 8.231451 & 7.860386 & 8.231451 & 7.860386 & 8.061795 & 7.699339 & 8.061795 & 7.699339 & 8.12023 & 7.75418 & 6.061065 & 5.785686 & 8.231451 & 7.860386 & 8.231451 & 7.860386\end{array}$ $\begin{array}{llllllllllllllllllllllllll}389200 & 3742100 & 5.937882 & 5.568814 & 8.066748 & 7.571662 & 8.066748 & 7.571662 & 7.897833 & 7.415194 & 7.897833 & 7.415194 & 7.953694 & 7.465584 & 5.937882 & 5.568814 & 8.066748 & 7.571662 & 8.066748 & 7.571662\end{array}$ $\begin{array}{lllllllllllllllllllllll}389700 & 3742100 & 5.716118 & 5.421759 & 7.770349 & 7.375469 & 7.770349 & 7.375469 & 7.605989 & 7.221112 & 7.605989 & 7.221112 & 7.657696 & 7.268472 & 5.716118 & 5.421759 & 7.770349 & 7.375469 & 7.770349 & 7.375469\end{array}$ $\begin{array}{lllllllllllllllllllll}389978 & 3741459 & 5.725512 & 5.555197 & 7.788493 & 7.557908 & 7.788493 & 7.557908 & 7.620734 & 7.396315 & 7.620734 & 7.396315 & 7.670055 & 7.443956 & 5.725512 & 5.555197 & 7.788493 & 7.557908 & 7.788493 & 7.557908\end{array}$ $\begin{array}{lllllllllllllllllllll}380022 & 3739531 & 12.89943 & 12.62041 & 17.37018 & 16.99246 & 17.37018 & 16.99246 & 17.07092 & 16.69939 & 17.07092 & 16.69939 & 17.25955 & 16.88467 & 12.89943 & 12.62041 & 17.37018 & 16.99246 & 17.37018 & 16.99246\end{array}$ $\begin{array}{lllllllllllllllllllll}379814 & 3739341 & 13.04216 & 12.54509 & 17.56131 & 16.89254 & 17.56131 & 16.89254 & 17.26044 & 16.60275 & 17.26044 & 16.60275 & 17.45183 & 16.78663 & 13.04216 & 12.54509 & 17.56131 & 16.89254 & 17.56131 & 16.89254\end{array}$ $\begin{array}{llllllllllllllllll}379142 & 3733893 & 12.57946 & 12.24243 & 17.00472 & 16.54668 & 17.00472 & 16.54668 & 16.7249 & 16.27417 & 16.7249 & 16.27417 & 16.88686 & 16.43266 & 12.57946 & 12.24243 & 17.00472 & 16.54668 \\ 18.54 .00472 & 16.54668 & \end{array}$ $\begin{array}{llllllllllllllllllll}389449 & 3739338 & 6.217602 & 6.016993 & 8.456634 & 8.183805 & 8.456634 & 8.183805 & 8.270433 & 8.004447 & 8.270433 & 8.004447 & 8.323804 & 8.056211 & 6.217602 & 6.016993 & 8.456634 & 8.183805 & 8.456634 & 8.183805\end{array}$ $\begin{array}{lllllllllllllllllllll}389215 & 3739462 & 6.244367 & 6.052538 & 8.491166 & 8.230576 & 8.491166 & 8.230576 & 8.305503 & 8.050528 & 8.305503 & 8.050528 & 8.360001 & 8.103245 & 6.244367 & 6.052538 & 8.491166 & 8.230576 & 8.491166 & 8.230576\end{array}$ $\begin{array}{lllllllllllllllllllll}378929 & 3734007 & 12.10155 & 11.79276 & 16.36762 & 15.9469 & 16.36762 & 15.9469 & 16.09983 & 15.68601 & 16.09983 & 15.68601 & 16.25261 & 15.83597 & 12.10155 & 11.79276 & 16.36762 & 15.9469 & 16.36762 & 15.9469\end{array}$ $\begin{array}{lllllllllllllllllllllll}389539 & 3741329 & 5.821777 & 5.663934 & 7.916034 & 7.702995 & 7.916034 & 7.702995 & 7.746445 & 7.539181 & 7.746445 & 7.539181 & 7.798001 & 7.588946 & 5.821777 & 5.663934 & 7.916034 & 7.702995 & 7.916034 & 7.702995 & \end{array}$ $\begin{array}{llllllllllllllllllllll}390167 & 3738394 & 6.355378 & 6.172027 & 8.650905 & 8.399157 & 8.650905 & 8.399157 & 8.456176 & 8.210897 & 8.456176 & 8.210897 & 8.507512 & 8.26168 & 6.355378 & 6.172027 & 8.650905 & 8.399157 & 8.650905 & 8.399157\end{array}$ $\begin{array}{llllllllllllllllllllllll} & \\ 390353 & 3741373 & 5.719769 & 5.550874 & 7.78479 & 7.555263 & 7.78479 & 7.555263 & 7.614907 & 7.392437 & 7.614907 & 7.392437 & 7.662309 & 7.438631 & 5.719769 & 5.550874 & 7.78479 & 7.555263 & 7.78479 & 7.555263\end{array}$ $\begin{array}{llllllllllllllllllllllllll}383100 & 3738224 & 12.88991 & 12.26113 & 17.35779 & 16.51581 & 17.35779 & 16.51581 & 17.04009 & 16.21284 & 17.04009 & 16.21284 & 17.22542 & 16.38723 & 12.88991 & 12.26113 & 17.35779 & 16.51581 & 17.35779 & 16.5158\end{array}$ $\begin{array}{lllllllllllllllllll}387369 & 3742073 & 6.464062 & 6.195121 & 8.770292 & 8.408719 & 8.770292 & 8.408719 & 8.59324 & 8.239096 & 8.59324 & 8.239096 & 8.659275 & 8.301179 & 6.464062 & 6.195121 & 8.770292 & 8.408719 & 8.770292 \\ 8.408719\end{array}$ $\begin{array}{llllllllllllllllllllllllll}387922 & 3743131 & 6.095442 & 5.742699 & 8.274111 & 7.800878 & 8.274111 & 7.800878 & 8.106993 & 7.644175 & 8.106993 & 7.644175 & 8.167794 & 7.699536 & 6.095442 & 5.742699 & 8.274111 & 7.800878 & 8.274111 & 7.800878\end{array}$ $\begin{array}{llllllllllllllllllllllll}387401 & 3740832 & 6.860499 & 6.518667 & 9.30617 & 8.846303 & 9.30617 & 8.846303 & 9.114845 & 8.665007 & 9.114845 & 8.665007 & 9.185123 & 8.730467 & 6.860499 & 6.518667 & 9.30617 & 8.846303 & 9.30617 & 8.846303\end{array}$ $\begin{array}{lllllllllllllllllllll}387445 & 3739252 & 6.951653 & 6.708785 & 9.436802 & 9.107648 & 9.436802 & 9.107648 & 9.235819 & 8.914749 & 9.235819 & 8.914749 & 9.303329 & 8.979895 & 6.951653 & 6.708785 & 9.436802 & 9.107648 & 9.436802 & 9.107648\end{array}$ $\begin{array}{llllllllllllllllllllll}389789 & 3736894 & 6.690782 & 6.404419 & 9.102391 & 8.711004 & 9.102391 & 8.711004 & 8.89302 & 8.513858 & 8.89302 & 8.513858 & 8.948209 & 8.567873 & 6.690782 & 6.404419 & 9.102391 & 8.711004 & 9.102391 & 8.711004\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllllll}387455 & 3740696 & 6.890148 & 6.507091 & 9.346479 & 8.831241 & 9.346479 & 8.831241 & 9.153614 & 8.649901 & 9.153614 & 8.649901 & 9.224037 & 8.714929 & 6.890148 & 6.507091 & 9.346479 & 8.831241 & 9.346479 & 8.831241\end{array}$ $\begin{array}{llllllllllllllllllllllllll}386939 & 3743260 & 6.316278 & 6.143309 & 8.566481 & 8.33357 & 8.566481 & 8.33357 & 8.398702 & 8.169988 & 8.398702 & 8.169988 & 8.465275 & 8.234072 & 6.316278 & 6.143309 & 8.566481 & 8.33357 & 8.566481 & 8.33357\end{array}$ $\begin{array}{llllllllllllllllllllll}390450 & 3740328 & 5.805166 & 5.56084 & 7.900299 & 7.570651 & 7.900299 & 7.570651 & 7.727201 & 7.40759 & 7.727201 & 7.40759 & 7.775449 & 7.453219 & 5.805166 & 5.56084 & 7.900299 & 7.570651 & 7.900299 & 7.57065 & \end{array}$ $\begin{array}{lllllllllllllllllllllll}380445 & 3733657 & 18.51874 & 17.75433 & 24.91955 & 23.89175 & 24.91955 & 23.89175 & 24.48964 & 23.48039 & 24.48964 & 23.48039 & 24.76692 & 23.74599 & 18.51874 & 17.75433 & 24.91955 & 23.89175 & 24.91955 & 23.89175\end{array}$ $\begin{array}{llllllllllllllllllllllllll}389709 & 3742434 & 5.808585 & 5.461693 & 7.894425 & 7.429046 & 7.894425 & 7.429046 & 7.726948 & 7.273251 & 7.726948 & 7.273251 & 7.780022 & 7.321186 & 5.808585 & 5.461693 & 7.894425 & 7.429046 & 7.894425 & 7.429046\end{array}$ $\begin{array}{lllllllllllllllllllllll}389709 & 3742485 & 5.824165 & 5.469927 & 7.915453 & 7.44012 & 7.915453 & 7.44012 & 7.747458 & 7.284091 & 7.747458 & 7.284091 & 7.800708 & 7.332147 & 5.824165 & 5.469927 & 7.915453 & 7.44012 & 7.915453 & 7.44012\end{array}$ $\begin{array}{llllllllllllllllllll}389401 & 3740862 & 5.931341 & 5.770762 & 8.064875 & 7.848583 & 8.064875 & 7.848583 & 7.891115 & 7.680335 & 7.891115 & 7.680335 & 7.943539 & 7.730716 & 5.931341 & 5.770762 & 8.064875 & 7.848583 & 8.064875 & 7.848583\end{array}$ $\begin{array}{llllllllllllllllllllllll}381762 & 3737740 & 17.19776 & 16.58465 & 23.10328 & 22.28009 & 23.10328 & 22.28009 & 22.69587 & 21.88658 & 22.69587 & 21.88658 & 22.96613 & 22.14686 & 17.19776 & 16.58465 & 23.10328 & 22.28009 & 23.10328 & 22.28009\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}380296 & 3733115 & 17.12979 & 16.5304 & 23.07583 & 22.27051 & 23.07583 & 22.27051 & 22.68163 & 21.89024 & 22.68163 & 21.89024 & 22.92924 & 22.12849 & 17.12979 & 16.5304 & 23.07583 & 22.27051 & 23.07583 & 22.27051\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllll}381348 & 3733563 & 25.56499 & 24.60195 & 34.29996 & 33.00936 & 34.29996 & 33.00936 & 33.69694 & 32.42961 & 33.69694 & 32.42961 & 34.11504 & 32.83158 & 25.56499 & 24.60195 & 34.29996 & 33.00936 & 34.29996 & 33.00936\end{array}$ $\begin{array}{llllllllllllllllllllll}389119 & 3738782 & 6.603487 & 6.43485 & 8.980146 & 8.749392 & 8.980146 & 8.749392 & 8.780137 & 8.554532 & 8.780137 & 8.554532 & 8.836953 & 8.610426 & 6.603487 & 6.43485 & 8.980146 & 8.749392 & 8.980146 & 8.749392\end{array}$


| Red | 0.0010 | 0.0009 | 0.0037 | 0.0035 | 0.0037 | 0.0034 | 0.0021 | 0.0019 | 0.0021 | 0.0019 | 0.0058 | 0.0055 | 0.0014 | 0.0013 | 0.0055 | 0.0052 | 0.0055 | 0.0052 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction | 48.55\% | 48.55\% | 44.40\% | 44.40\% | 44.40\% | 44.40\% | 78.71\% | 78.71\% | 78.71\% | 78.71\% | 70.88\% | 70.88\% | 67.78\% | 67.78\% | 66.42\% | 6.42\% | 66.42\% | 66.42\% |
|  | 389450_3 | - | 382683.8 |  |  |  |  |  |  |  |  | 382683.8 | 89450 3 | 945 |  |  |  |  |

$\begin{array}{llllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$

 $\begin{array}{lllllllllllllllllllllllll} \\ 389498 & 3740798 & 5.899604 & 5.72686 & 8.022798 & 7.789785 & 8.022798 & 7.789785 & 7.84985 & 7.623249 & 7.84985 & 7.623249 & 7.901582 & 7.672994 & 5.899604 & 5.72686 & 8.022798 & 7.789785 & 8.022798 & 7.789785\end{array}$ $\begin{array}{llllllllllllllllllll}389398 & 3742733 & 5.888588 & 5.519791 & 8.000949 & 7.50514 & 8.000949 & 7.50514 & 7.833573 & 7.350437 & 7.833573 & 7.350437 & 7.888566 & 7.400393 & 5.888588 & 5.519791 & 8.000949 & 7.50514 & 8.000949 & 7.50514\end{array}$ $\begin{array}{llllllllllllllllllll}378579 & 3732386 & 9.190454 & 8.913584 & 12.49938 & 12.11828 & 12.49938 & 12.11828 & 12.30834 & 11.93183 & 12.30834 & 11.93183 & 12.40099 & 12.02316 & 9.190454 & 8.913584 & 12.49938 & 12.11828 & 12.49938 & 12.11828\end{array}$ $\begin{array}{llllllllllllllllllllllllll}387231 & 3740475 & 7.023652 & 6.658757 & 9.525541 & 9.034919 & 9.525541 & 9.034919 & 9.32995 & 8.849345 & 9.32995 & 8.849345 & 9.402645 & 8.916683 & 7.023652 & 6.658757 & 9.525541 & 9.034919 & 9.525541 & 9.034919\end{array}$ $\begin{array}{lllllllllllllllllllllllll}378821 & 3734136 & 11.78242 & 11.43562 & 15.94062 & 15.46919 & 15.94062 & 15.46919 & 15.68077 & 15.21681 & 15.68077 & 15.21681 & 15.82792 & 15.36038 & 11.78242 & 11.43562 & 15.94062 & 15.46919 & 15.94062 & 15.46919\end{array}$ $\begin{array}{llllllllllllllllllll}390456 & 3738401 & 6.279571 & 6.055204 & 8.549126 & 8.241033 & 8.549126 & 8.241033 & 8.355909 & 8.056046 & 8.355909 & 8.056046 & 8.405975 & 8.105505 & 6.279571 & 6.055204 & 8.549126 & 8.241033 & 8.549126 & 8.241033\end{array}$ $\begin{array}{llllllllllllllllll}389285 & 3742656 & 5.900044 & 5.577223 & 8.016084 & 7.581756 & 8.016084 & 7.581756 & 7.84896 & 7.425221 & 7.84896 & 7.425221 & 7.904315 & 7.476215 & 5.900044 & 5.577223 & 8.016084 & 7.581756 \\ 8.016084 & 7.581756\end{array}$

 $\begin{array}{llllllllllllllllllllll}387154 & 3741415 & 6.677777 & 6.461724 & 9.058942 & 8.767948 & 9.058942 & 8.767948 & 8.875135 & 8.590592 & 8.875135 & 8.590592 & 8.94371 & 8.656233 & 6.677777 & 6.461724 & 9.058942 & 8.767948 & 9.058942 & 8.767948\end{array}$ $\begin{array}{lllllllllllllllllllll}387349 & 3740831 & 6.858371 & 6.532397 & 9.30316 & 8.864585 & 9.30316 & 8.864585 & 9.112324 & 8.683305 & 9.112324 & 8.683305 & 9.182677 & 8.749106 & 6.858371 & 6.532397 & 9.30316 & 8.864585 & 9.30316 & 8.864585\end{array}$ $\begin{array}{llllllllllllllllllllll}390005 & 3740389 & 5.934036 & 5.674397 & 8.073179 & 7.722895 & 8.073179 & 7.722895 & 7.896384 & 7.555539 & 7.896384 & 7.555539 & 7.946643 & 7.602802 & 5.934036 & 5.674397 & 8.073179 & 7.722895 & 8.073179 & 7.722895 & \end{array}$ $\begin{array}{lllllllllllllllllll}388555 & 3741719 & 6.159685 & 5.862569 & 8.364349 & 7.964448 & 8.364349 & 7.964448 & 8.191724 & 7.800807 & 8.191724 & 7.800807 & 8.251445 & 7.856463 & 6.159685 & 5.862569 & 8.364349 & 7.964448 & 8.364349\end{array} 7.964448$ $\begin{array}{lllllllllllllllllllll}389478 & 3741347 & 5.84396 & 5.676063 & 7.945505 & 7.718933 & 7.945505 & 7.718933 & 7.775616 & 7.555346 & 7.775616 & 7.555346 & 7.827687 & 7.605523 & 5.84396 & 5.676063 & 7.945505 & 7.718933 & 7.945505 & 7.718933\end{array}$ $\begin{array}{lllllllllllllllllll}387541 & 3742481 & 6.32333 & 5.999177 & 8.580493 & 8.145567 & 8.580493 & 8.145567 & 8.407905 & 7.981393 & 8.407905 & 7.981393 & 8.472178 & 8.040505 & 6.32333 & 5.999177 & 8.580493 & 8.145567 & 8.580493 \\ 8.145567\end{array}$ $\begin{array}{lllllllllllllllllllll}378848 & 3734004 & 11.85225 & 11.57548 & 16.03552 & 15.6573 & 16.03552 & 15.6573 & 15.774 & 15.40181 & 15.774 & 15.40181 & 15.92182 & 15.5476 & 11.85225 & 11.57548 & 16.03552 & 15.6573 & 16.03552 & 15.6573\end{array}$ $\begin{array}{lllllllllllllllllllllll}390388 & 3740918 & 5.802299 & 5.51936 & 7.895937 & 7.513979 & 7.895937 & 7.513979 & 7.723153 & 7.352338 & 7.723153 & 7.352338 & 7.771604 & 7.397732 & 5.802299 & 5.51936 & 7.895937 & 7.513979 & 7.895937 & 7.513979\end{array}$ $\begin{array}{llllllllllllllllllllll}390475 & 3738176 & 6.357485 & 6.049852 & 8.655108 & 8.234915 & 8.655108 & 8.234915 & 8.457945 & 8.051234 & 8.457945 & 8.051234 & 8.508415 & 8.100417 & 6.357485 & 6.049852 & 8.655108 & 8.234915 & 8.655108 & 8.234915\end{array}$ $\begin{array}{lllllllllllllllllllll}381635 & 3738433 & 15.518 & 14.92983 & 20.86284 & 20.0729 & 20.86284 & 20.0729 & 20.49539 & 19.71775 & 20.49539 & 19.71775 & 20.73336 & 19.94617 & 15.518 & 14.92983 & 20.86284 & 20.0729 & 20.86284 & 20.0729\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}380863 & 3732991 & 19.84727 & 18.88962 & 26.69288 & 25.41165 & 26.69288 & 25.41165 & 26.22815 & 24.96922 & 26.22815 & 24.96922 & 26.52977 & 25.25387 & 19.84727 & 18.88962 & 26.69288 & 25.41165 & 26.69288 & 25.41165\end{array}$ $\begin{array}{lllllllllllllllllll}378541 & 3733938 & 10.70622 & 10.45643 & 14.5073 & 14.16412 & 14.5073 & 14.16412 & 14.27451 & 13.93658 & 14.27451 & 13.93658 & 14.40041 & 14.06122 & 10.70622 & 10.45643 & 14.5073 & 14.16412 & 14.5073\end{array} 14.16412$ $\begin{array}{llllllllllllllllllllll}379271 & 3732975 & 12.67011 & 12.14111 & 17.13724 & 16.42317 & 17.13724 & 16.42317 & 16.85756 & 16.15438 & 16.85756 & 16.15438 & 17.01733 & 16.3068 & 12.67011 & 12.14111 & 17.13724 & 16.42317 & 17.13724 & 16.42317\end{array}$ $\begin{array}{llllllllllllllllllllllll}379853 & 3731187 & 11.90446 & 11.60855 & 16.13695 & 15.72981 & 16.13695 & 15.72981 & 15.87861 & 15.47639 & 15.87861 & 15.47639 & 16.01659 & 15.6129 & 11.90446 & 11.60855 & 16.13695 & 15.72981 & 16.13695 & 15.72981\end{array}$ $\begin{array}{llllllllllllllllllll}384770 & 3739365 & 9.245046 & 8.872569 & 12.49553 & 11.99471 & 12.49553 & 11.99471 & 12.25542 & 11.76417 & 12.25542 & 11.76417 & 12.36955 & 11.87271 & 9.245046 & 8.872569 & 12.49553 & 11.99471 & 12.49553 & 11.99471\end{array}$ $\begin{array}{llllllllllllllllllll} \\ 389448 & 3738624 & 6.587843 & 6.358302 & 8.948196 & 8.648077 & 8.948196 & 8.648077 & 8.747003 & 8.454013 & 8.747003 & 8.454013 & 8.802581 & 8.508291 & 6.587843 & 6.358302 & 8.960526 & 8.648077 & 8.960526 & 8.648077\end{array}$ $\begin{array}{lllllllllllllllllll}383095 & 3739869 & 10.97718 & 10.48051 & 14.8032 & 14.13425 & 14.8032 & 14.13425 & 14.52289 & 13.87734 & 14.52289 & 13.87734 & 14.68312 & 14.02055 & 10.97718 & 10.48051 & 14.8032 & 14.13425 & 14.8032\end{array} 14.13425$ $\begin{array}{llllllllllllllllllll}379660 & 3734797 & 15.36133 & 14.77095 & 20.70014 & 19.90432 & 20.70014 & 19.90432 & 20.35178 & 19.56829 & 20.35178 & 19.56829 & 20.57232 & 19.78026 & 15.36133 & 14.77095 & 20.70014 & 19.90432 & 20.70014 & 19.90432\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}380681 & 3734795 & 22.37591 & 21.61298 & 30.04157 & 29.0167 & 30.04157 & 29.0167 & 29.52144 & 28.51335 & 29.52144 & 28.51335 & 29.88124 & 28.86098 & 22.37591 & 21.61298 & 30.04157 & 29.0167 & 30.04157 & 29.0167\end{array}$ | 386724 | 3740057 | 7.394416 | 7.085113 | 10.0231 | 9.606747 | 10.0231 | 9.606747 | 9.81843 | 9.410165 | 9.81843 | 9.410165 | 9.897108 | 9.484413 | 7.394416 | 7.085113 | 10.0231 | 9.606747 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $10.0231 \quad 9.606747$ $\begin{array}{lllllllllllllllllllllll}388765 & 3741760 & 6.147594 & 5.800664 & 8.3489 & 7.882867 & 8.3489 & 7.882867 & 8.174852 & 7.719218 & 8.174852 & 7.719218 & 8.233832 & 7.773081 & 6.147594 & 5.800664 & 8.3489 & 7.882867 & 8.3489 & 7.882867\end{array}$ $\begin{array}{lllllllllllllllllllllll}383099 & 3740817 & 9.870656 & 9.576859 & 13.32289 & 12.92531 & 13.32289 & 12.92531 & 13.08091 & 12.69173 & 13.08091 & 12.69173 & 13.21174 & 12.81922 & 9.870656 & 9.576859 & 13.32289 & 12.92531 & 13.32289 & 12.92531\end{array}$ $\begin{array}{lllllllllllllllllllllll}390224 & 3740330 & 5.871437 & 5.638786 & 7.989445 & 7.674915 & 7.989445 & 7.674915 & 7.814407 & 7.50965 & 7.814407 & 7.50965 & 7.863603 & 7.556611 & 5.871437 & 5.638786 & 7.989445 & 7.674915 & 7.989445 & 7.674915\end{array}$ $\begin{array}{llllllllllllllllllllllllll}380154 & 3733793 & 17.07141 & 16.50697 & 22.99153 & 22.22962 & 22.99153 & 22.22962 & 22.59828 & 21.84909 & 22.59828 & 21.84909 & 22.84702 & 22.09025 & 17.07141 & 16.50697 & 22.99153 & 22.22962 & 22.99153 & 22.22962\end{array}$ $\begin{array}{lllllllllllllllllllll}389538 & 3740963 & 5.864969 & 5.684802 & 7.975516 & 7.732793 & 7.975516 & 7.732793 & 7.803905 & 7.567673 & 7.803905 & 7.567673 & 7.855452 & 7.616994 & 5.864969 & 5.684802 & 7.975516 & 7.732793 & 7.975516 & 7.732793\end{array}$ $\begin{array}{lllllllllllllllllllll}388714 & 3737260 & 7.113264 & 6.838051 & 9.670145 & 9.29709 & 9.670145 & 9.29709 & 9.449114 & 9.087371 & 9.449114 & 9.087371 & 9.510609 & 9.146536 & 7.113264 & 6.838051 & 9.670145 & 9.29709 & 9.670145 & 9.29709\end{array}$ $\begin{array}{llllllllllllllllllll}378649 & 3736024 & 12.37639 & 11.94592 & 16.71488 & 16.12693 & 16.71488 & 16.12693 & 16.43961 & 15.8613 & 16.43961 & 15.8613 & 16.60457 & 16.02287 & 12.37639 & 11.94592 & 16.71488 & 16.12693 & 16.71488 & 16.12693\end{array}$ $\begin{array}{lllllllllllllllllllll}389879 & 3739303 & 6.224757 & 6.011695 & 8.469512 & 8.162301 & 8.469512 & 8.162301 & 8.281179 & 7.982714 & 8.281179 & 7.982714 & 8.333146 & 8.032862 & 6.224757 & 6.011695 & 8.469512 & 8.162301 & 8.469512 & 8.162301\end{array}$ $\begin{array}{lllllllllllllllllll}378441 & 3735152 & 10.4899 & 10.11775 & 14.20136 & 13.6956 & 14.20136 & 13.6956 & 13.97203 & 13.47365 & 13.97203 & 13.47365 & 14.09984 & 13.59761 & 10.4899 & 10.11775 & 14.20136 & 13.6956 & 14.20136\end{array} 13.6956$ $\begin{array}{lllllllllllllllllll}388749 & 3737794 & 6.870821 & 6.717024 & 9.341647 & 9.131262 & 9.341647 & 9.131262 & 9.131208 & 8.926206 & 9.131208 & 8.926206 & 9.190696 & 8.98495 & 6.870821 & 6.717024 & 9.341647 & 9.131262 & 9.341647 \\ 9.131262\end{array}$

 $\begin{array}{lllllllllllllllllllll}389624 & 3738317 & 6.611145 & 6.387899 & 8.994422 & 8.690295 & 8.994422 & 8.690295 & 8.790876 & 8.495851 & 8.790876 & 8.495851 & 8.845816 & 8.549436 & 6.611145 & 6.387899 & 8.994422 & 8.690295 & 8.994422 & 8.690295\end{array}$ $\begin{array}{llllllllllllllllllllll}382778 & 3739398 & 12.07318 & 11.50864 & 16.26691 & 15.50805 & 16.26691 & 15.50805 & 15.97271 & 15.22741 & 15.97271 & 15.22741 & 16.14355 & 15.38954 & 12.07318 & 11.50864 & 16.26691 & 15.50805 & 16.26691 & 15.50805\end{array}$ $\begin{array}{lllllllllllllllllllllll}382757 & 3737606 & 14.98169 & 14.12949 & 20.14897 & 19.0088 & 20.14897 & 19.0088 & 19.78461 & 18.66425 & 19.78461 & 18.66425 & 20.0102 & 18.87464 & 14.98169 & 14.12949 & 20.14897 & 19.0088 & 20.14897 & 19.0088\end{array}$ $\begin{array}{lllllllllllllllllll}382820 & 3738093 & 13.88218 & 13.12674 & 18.68076 & 17.66988 & 18.68076 & 17.66988 & 18.3425 & 17.34861 & 18.3425 & 17.34861 & 18.54753 & 17.5402 & 13.88218 & 13.12674 & 18.68076 & 17.66988 & 18.68076\end{array} 17.66988$ $\begin{array}{llllllllllllllllllll}389389 & 3738887 & 6.542992 & 6.294649 & 8.899118 & 8.561247 & 8.899118 & 8.561247 & 8.699813 & 8.371818 & 8.699813 & 8.371818 & 8.755476 & 8.425777 & 6.542992 & 6.295669 & 8.899118 & 8.561247 & 8.899118 & 8.561247\end{array}$ | 382180 | 3739100 | 13.35432 | 12.54136 | 17.97459 | 16.88573 | 17.97459 | 16.88573 | 17.65491 | 16.58356 | 17.65491 | 16.58356 | 17.85158 | 16.766 | 13.35432 | 12.54136 | 17.97459 | 16.88573 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $17.97459 \quad 16.88573$ $\begin{array}{lllllllllllllllllllllllll}379361 & 3740015 & 11.99903 & 11.52861 & 16.16893 & 15.53765 & 16.16893 & 15.53765 & 15.8937 & 15.27302 & 15.8937 & 15.27302 & 16.06558 & 15.43718 & 11.99903 & 11.52861 & 16.16893 & 15.53765 & 16.16893 & 15.53765\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}380824 & 3735170 & 23.85492 & 23.17524 & 32.00193 & 31.08967 & 32.00193 & 31.08967 & 31.44827 & 30.55145 & 31.44827 & 30.55145 & 31.84129 & 30.93332 & 23.85492 & 23.17524 & 32.00193 & 31.08967 & 32.00193 & 31.08967\end{array}$ $\begin{array}{llllllllllllllllllllll}383174 & 3739290 & 11.66254 & 10.9447 & 15.7191 & 14.7575 & 15.7191 & 14.7575 & 15.43067 & 14.48755 & 15.43067 & 14.48755 & 15.59312 & 14.63776 & 11.66254 & 10.9447 & 15.7191 & 14.7575 & 15.7191 & 14.7575\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}381835 & 3737984 & 16.32866 & 15.85636 & 21.94411 & 21.30878 & 21.94411 & 21.30878 & 21.55695 & 20.93118 & 21.55695 & 20.93118 & 21.81041 & 21.17738 & 16.32866 & 15.85636 & 21.94411 & 21.30878 & 21.94411 & 21.30878\end{array}$ $\begin{array}{llllllllllllllllllllll}389535 & 3741054 & 5.864364 & 5.699604 & 7.974563 & 7.752512 & 7.974563 & 7.752512 & 7.803005 & 7.586738 & 7.803005 & 7.586738 & 7.85459 & 7.636296 & 5.864364 & 5.699604 & 7.974563 & 7.752512 & 7.974563 & 7.752512\end{array}$ $\begin{array}{lllllllllllllllllllll}379332 & 3734589 & 13.33721 & 12.85122 & 18.00373 & 17.34685 & 18.00373 & 17.34685 & 17.70389 & 17.0578 & 17.70389 & 17.0578 & 17.88426 & 17.23198 & 13.33721 & 12.85122 & 18.00373 & 17.34685 & 18.00373 & 17.34685\end{array}$ $\begin{array}{llllllllllllllllllllll}389714 & 3737893 & 6.654386 & 6.383096 & 9.054727 & 8.68607 & 9.054727 & 8.68607 & 8.848764 & 8.491498 & 8.848764 & 8.491498 & 8.90334 & 8.544155 & 6.654386 & 6.383096 & 9.054727 & 8.68607 & 9.054727 & 8.68607\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}379760 & 3736916 & 16.62622 & 15.90824 & 22.36286 & 21.39554 & 22.36286 & 21.39554 & 21.9815 & 21.02864 & 21.9815 & 21.02864 & 22.23477 & 21.2712 & 16.62622 & 15.90824 & 22.36286 & 21.39554 & 22.36286 & 21.39554\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllll}389686 & 3741436 & 5.755038 & 5.602826 & 7.826424 & 7.6209 & 7.826424 & 7.6209 & 7.658753 & 7.458761 & 7.658753 & 7.458761 & 7.709286 & 7.507615 & 5.755038 & 5.602826 & 7.826424 & 7.6209 & 7.826424 & 7.6209\end{array}$ $\begin{array}{llllllllllllllllllllll}387943 & 3742041 & 6.317313 & 6.007085 & 8.57495 & 8.15723 & 8.57495 & 8.15723 & 8.399637 & 7.991413 & 8.399637 & 7.991413 & 8.462427 & 8.050022 & 6.317313 & 6.007085 & 8.57495 & 8.15723 & 8.57495 & 8.15723\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}387255 & 3739936 & 7.091586 & 6.651013 & 9.619339 & 9.026506 & 9.619339 & 9.026506 & 9.419225 & 8.839214 & 9.419225 & 8.839214 & 9.491608 & 8.90541 & 7.091586 & 6.651013 & 9.619339 & 9.026506 & 9.619339 & 9.026506\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}389235 & 3740749 & 5.999268 & 5.807106 & 8.156151 & 7.897423 & 8.156151 & 7.897423 & 7.980437 & 7.729009 & 7.980437 & 7.729009 & 8.033871 & 7.780069 & 5.999268 & 5.807106 & 8.156151 & 7.897423 & 8.156151 & 7.897423\end{array}$ $\begin{array}{lllllllllllllllllll}379517 & 3732375 & 12.5427 & 12.26393 & 16.97218 & 16.59133 & 16.97218 & 16.59133 & 16.69654 & 16.32047 & 16.69654 & 16.32047 & 16.85225 & 16.47383 & 12.5427 & 12.26393 & 16.97218 & 16.59133 & 16.97218 \\ 16.59133\end{array}$ $\begin{array}{llllllllllllllllllllll}380014 & 3733758 & 16.20021 & 15.76963 & 21.83188 & 21.24866 & 21.83188 & 21.24866 & 21.46008 & 20.88624 & 21.46008 & 20.88624 & 21.69147 & 21.11245 & 16.20021 & 15.76963 & 21.83188 & 21.24866 & 21.83188 & 21.24866\end{array}$ $\begin{array}{llllllllllllllllllll}379495 & 3737075 & 15.42649 & 14.64563 & 20.76779 & 19.71402 & 20.76779 & 19.71402 & 20.41517 & 19.37761 & 20.41517 & 19.37761 & 20.64359 & 19.59508 & 15.42649 & 14.64563 & 20.76779 & 19.71402 & 20.76779 & 19.71402\end{array}$ $\begin{array}{llllllllllllllllllllllllllll} \\ 380299 & 3740161 & 12.09325 & 11.58856 & 16.29067 & 15.61343 & 16.29067 & 15.61343 & 16.00929 & 15.34363 & 16.00929 & 15.34363 & 16.1837 & 15.50981 & 12.09325 & 11.58856 & 16.29067 & 15.61343 & 16.29067 & 15.61343\end{array}$ $\begin{array}{lllllllllllllllllll}380257 & 3740403 & 11.80181 & 11.24926 & 15.90114 & 15.08384 & 15.90114 & 15.08384 & 15.62665 & 14.82289 & 15.62665 & 14.82289 & 15.7958 & 14.98171 & 11.80181 & 11.2933 & 15.90114 & 15.08384 & 15.90114\end{array} 15.08384$ $\begin{array}{llllllllllllllllllll}389875 & 3741853 & 5.804839 & 5.624464 & 7.893622 & 7.649972 & 7.893622 & 7.649972 & 7.72436 & 7.486616 & 7.72436 & 7.486616 & 7.775514 & 7.535692 & 5.804839 & 5.624464 & 7.893622 & 7.649972 & 7.893622 & 7.649972\end{array}$ $\begin{array}{llllllllllllllllllll}381988 & 3739995 & 11.9051 & 11.30095 & 16.03784 & 15.22728 & 16.03784 & 15.22728 & 15.75376 & 14.95641 & 15.75376 & 14.95641 & 15.92416 & 15.11675 & 11.9051 & 11.30095 & 16.03784 & 15.22728 & 16.03784 & 15.22728\end{array}$ $\begin{array}{lllllllllllllllllllll}379279 & 3735517 & 14.25765 & 13.65559 & 19.22447 & 18.41029 & 19.22447 & 18.41029 & 18.90206 & 18.10084 & 18.90206 & 18.10084 & 19.10267 & 18.29379 & 14.25765 & 13.65559 & 19.22447 & 18.41029 & 19.22447 & 18.41029\end{array}$ $\begin{array}{llllllllllllllllllll}383239 & 3739989 & 10.62868 & 10.1633 & 14.33623 & 13.71033 & 14.33623 & 13.71033 & 14.07438 & 13.46066 & 14.07438 & 13.46066 & 14.21857 & 13.5979 & 10.63657 & 10.1633 & 14.33623 & 13.71084 & 14.33623 & 13.71084\end{array}$ $\begin{array}{lllllllllllllllllllll}390353 & 3739073 & 6.144775 & 5.930341 & 8.363883 & 8.071856 & 8.363883 & 8.071856 & 8.17751 & 7.893977 & 8.17751 & 7.893977 & 8.227581 & 7.942666 & 6.144775 & 5.930341 & 8.363883 & 8.071856 & 8.363883 & 8.071856\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}381187 & 3734118 & 25.86545 & 25.23592 & 34.69025 & 33.84511 & 34.69025 & 33.84511 & 34.08305 & 33.25299 & 34.08305 & 33.25299 & 34.51126 & 33.67116 & 25.86545 & 25.23592 & 34.69025 & 33.84511 & 34.69025 & 33.84511\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}380461 & 3731193 & 14.51153 & 14.26661 & 19.61054 & 19.27227 & 19.61054 & 19.27227 & 19.28511 & 18.95016 & 19.28511 & 18.95016 & 19.47353 & 19.1378 & 14.51153 & 14.26661 & 19.61054 & 19.27227 & 19.61054 & 19.27227\end{array}$ $\begin{array}{llllllllllllllllllllllll}380049 & 3733031 & 15.87478 & 15.51626 & 21.40652 & 20.92171 & 21.40652 & 20.92171 & 21.04374 & 20.56792 & 21.04374 & 20.56792 & 21.26582 & 20.78558 & 15.87478 & 15.51626 & 21.40652 & 20.92171 & 21.40652 & 20.92171\end{array}$ $\begin{array}{llllllllllllllllllll}389106 & 3738800 & 6.585189 & 6.419403 & 8.955272 & 8.728298 & 8.955272 & 8.728298 & 8.755961 & 8.53437 & 8.755961 & 8.53437 & 8.812636 & 8.590239 & 6.585189 & 6.419403 & 8.955272 & 8.728298 & 8.955272 & 8.728298\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}387111 & 3740236 & 7.122214 & 6.752608 & 9.65837 & 9.161437 & 9.65837 & 9.161437 & 9.460349 & 8.972719 & 9.460349 & 8.972719 & 9.534438 & 9.041213 & 7.122214 & 6.752608 & 9.65837 & 9.161437 & 9.65837 & 9.161437\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}389796 & 3738044 & 6.595573 & 6.331036 & 8.975088 & 8.615527 & 8.975088 & 8.615527 & 8.771461 & 8.423026 & 8.771461 & 8.423026 & 8.825499 & 8.475227 & 6.595573 & 6.331036 & 8.975088 & 8.615527 & 8.975088 & 8.615527\end{array}$ $\begin{array}{llllllllllllllllllll}379594 & 3738367 & 14.20149 & 13.76041 & 19.123 & 18.52244 & 19.123 & 18.52244 & 18.79783 & 18.20645 & 18.79783 & 18.20645 & 19.00646 & 18.4107 & 14.20149 & 13.76041 & 19.123 & 18.52244 & 19.123 & 18.52244\end{array}$ $\begin{array}{lllllllllllllllllll}390160 & 3739058 & 6.253955 & 6.023025 & 8.510654 & 8.196876 & 8.510654 & 8.196876 & 8.320106 & 8.015772 & 8.320106 & 8.015772 & 8.371589 & 8.06557 & 6.253955 & 6.023025 & 8.510654 & 8.196876 & 8.510654 \\ 8.196876\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}382425 & 3738317 & 14.52054 & 13.83929 & 19.53221 & 18.61895 & 19.53221 & 18.61895 & 19.18274 & 18.28453 & 19.18274 & 18.28453 & 19.40069 & 18.49088 & 14.52054 & 13.83929 & 19.53221 & 18.61895 & 19.53221 & 18.61895\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllll} & 379699 & 3732970 & 14.10276 & 13.85252 & 19.04663 & 18.70477 & 19.04663 & 18.70477 & 18.72916 & 18.39316 & 18.72916 & 18.39316 & 18.91643 & 18.57858 & 14.10276 & 13.85252 & 19.04663 & 18.70477 & 19.04663 & 18.70477\end{array}$ $\begin{array}{llllllllllllllllllll}379666 & 3731426 & 11.81513 & 11.58177 & 16.01622 & 15.69151 & 16.01622 & 15.69151 & 15.76055 & 15.43858 & 15.76055 & 15.43858 & 15.89737 & 15.57532 & 11.81513 & 11.58177 & 16.01622 & 15.69151 & 16.01622 & 15.69151\end{array}$ $\begin{array}{lllllllllllllllllllllll}379935 & 3736833 & 17.24622 & 16.5161 & 23.18715 & 22.20457 & 23.18715 & 22.20457 & 22.78966 & 21.82244 & 22.78966 & 21.82244 & 23.0556 & 22.07725 & 17.24622 & 16.5161 & 23.18715 & 22.20457 & 23.18715 & 22.20457\end{array}$ $\begin{array}{lllllllllllllllllllllllll}387156 & 3740295 & 7.091333 & 6.724543 & 9.616796 & 9.123652 & 9.616796 & 9.123652 & 9.41937 & 8.935611 & 9.41937 & 8.935611 & 9.492979 & 9.003714 & 7.091333 & 6.724543 & 9.616796 & 9.123652 & 9.616796 & 9.123652\end{array}$ $\begin{array}{llllllllllllllllllllllll}390248 & 3737371 & 6.652373 & 6.27662 & 9.054153 & 8.543331 & 9.054153 & 8.543331 & 8.845651 & 8.352064 & 8.845651 & 8.352064 & 8.898991 & 8.403073 & 6.652373 & 6.27662 & 9.054153 & 8.543331 & 9.054153 & 8.543331\end{array}$ $\begin{array}{llllllllllllllllllll}390538 & 3737763 & 6.433235 & 6.0898 & 8.7584 & 8.291199 & 8.7584 & 8.291199 & 8.558366 & 8.10686 & 8.558366 & 8.10686 & 8.609309 & 8.155741 & 6.433235 & 6.0898 & 8.7584 & 8.291199 & 8.7584 & 8.291199\end{array}$ $\begin{array}{llllllllllllllllll}387420 & 3740551 & 6.936129 & 6.534867 & 9.408675 & 8.869042 & 9.408675 & 8.869042 & 9.214182 & 8.686475 & 9.214182 & 8.686475 & 9.285098 & 8.751676 & 6.936129 & 6.534867 & 9.408675 & 8.869042 \\ 9.408675 & 8.869042\end{array}$ $\begin{array}{lllllllllllllllllll}379821 & 3736524 & 17.07739 & 16.21495 & 22.96915 & 21.80849 & 22.96915 & 21.80849 & 22.5765 & 21.43468 & 22.5765 & 21.43468 & 22.83664 & 21.68177 & 17.07739 & 16.21495 & 22.96915 & 21.80849 & 22.96915 \\ 21.80849\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}389624 & 3738615 & 6.523513 & 6.321371 & 8.874967 & 8.599087 & 8.874967 & 8.599087 & 8.675701 & 8.407982 & 8.675701 & 8.407982 & 8.730248 & 8.461475 & 6.523513 & 6.321371 & 8.874967 & 8.599087 & 8.874967 & 8.599087\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}378750 & 3733896 & 11.3741 & 11.11056 & 15.39856 & 15.03783 & 15.39856 & 15.03783 & 15.14926 & 14.79412 & 15.14926 & 14.79412 & 15.28769 & 14.93088 & 11.3741 & 11.11056 & 15.39856 & 15.03783 & 15.39856 & 15.03783\end{array}$

| Red | 0.0010 | 0.0009 | 0.0037 | 0.0035 | 0.0037 | 0.0034 | 0.0021 | 0.0019 | 0.0021 | 0.0019 | 0.0058 | 0.0055 | 0.0014 | 0.0013 | 0.0055 | 0.0052 | 0.0055 | 0.0052 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction | 48.55\% | 48.55\% | 44.40\% | 44.40\% | 44.40\% | 44.40\% | 78.71\% | 78.71\% | 78.71\% | 78.71\% | 70.88\% | 70.88\% | 67.78\% | 67.78\% | 66.42\% | .42\% | 66.42\% | 66.42\% |
|  | 389450_3 | 50 |  |  | 382683.8 |  |  |  |  |  |  |  | 389450_3 | 450_37 |  |  |  |  |

$\begin{array}{llllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$ 2033_ALT4_ 2033_ALT4_ 2033_ALTS_ 2033_ALT5_ 2033_PP_CA 2033_PP_N 2038_ALT1_ 2038_ALT1_ 2038_NP_C 2038_NP_N 2038_ALT3_ 2038_ALT3_ 2038_ALT4_ 2038_ALT4_ 2038_ALT5_ 2038_ALT5_ 2038_PP_CA 2038_PP_N $\begin{array}{llllllllllllllllllllllll}380498 & 3740249 & 12.01985 & 11.62965 & 16.19172 & 15.66655 & 16.19172 & 15.66655 & 15.91175 & 15.39501 & 15.91175 & 15.39501 & 16.0851 & 15.56247 & 12.01985 & 11.62965 & 16.19172 & 15.66655 & 16.19172 & 15.66655\end{array}$ $\begin{array}{llllllllllllllllllll}378867 & 3731455 & 10.30824 & 10.11939 & 14.01422 & 13.74976 & 14.01422 & 13.74976 & 13.79769 & 13.53578 & 13.79769 & 13.53578 & 13.90323 & 13.64198 & 10.30824 & 10.11939 & 14.01422 & 13.74976 & 14.01422 & 13.74976\end{array}$ $\begin{array}{lllllllllllllllllll}378709 & 3734317 & 11.40114 & 11.1044 & 15.42998 & 15.02503 & 15.42998 & 15.02503 & 15.17961 & 14.78037 & 15.17961 & 14.78037 & 15.32022 & 14.91852 & 11.40114 & 11.1044 & 15.42998 & 15.02503 & 15.42998\end{array} 15.02503$ $\begin{array}{lllllllllllllllllllll}379694 & 3736911 & 16.26545 & 15.62543 & 21.8833 & 21.01942 & 21.8833 & 21.01942 & 21.51057 & 20.65949 & 21.51057 & 20.65949 & 21.75637 & 20.89632 & 16.26545 & 15.62543 & 21.8833 & 21.01942 & 21.8833 & 21.01942\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}387129 & 3741587 & 6.661637 & 6.403564 & 9.036324 & 8.689419 & 9.036324 & 8.689419 & 8.853629 & 8.513691 & 8.853629 & 8.513691 & 8.922403 & 8.578616 & 6.661637 & 6.403564 & 9.036324 & 8.689419 & 9.036324 & 8.689419\end{array}$ $\begin{array}{lllllllllllllllllll}382074 & 3740337 & 11.37605 & 10.85028 & 15.3316 & 14.62554 & 15.3316 & 14.62554 & 15.05948 & 14.36532 & 15.05948 & 14.36532 & 15.21989 & 14.51733 & 11.37605 & 10.85028 & 15.3316 & 14.62554 & 15.3316\end{array} 14.62554$




 $\begin{array}{lllllllllllllllllllll} & 12.2725251 & 12.9732 & 12.53273 & 12.9732 & 12.53273 & 12.72565 & 12.29437 & 12.72565 & 12.29437 & 12.84673 & 12.41109 & 9.602986 & 9.276251 & 12.9732 & 12.53273 & 12.9732 & 12.53273\end{array}$


 $\begin{array}{llllllllllllllllllllllll}389921 & 3738609 & 6.44726 & 6.205141 & 8.773094 & 8.443516 & 8.773094 & 8.443516 & 8.575023 & 8.2557 & 8.575023 & 8.2557 & 8.62807 & 8.307241 & 6.44726 & 6.205141 & 8.773094 & 8.443516 & 8.773094 & 8.4643\end{array}$

 $\begin{array}{lllllllllllllllllllllllll}389599 & 3738178 & 6.655092 & 6.428991 & 9.05393 & 8.746329 & 9.05393 & 8.746329 & 8.848544 & 8.550201 & 8.848544 & 8.550201 & 8.903867 & 8.604013 & 6.655092 & 6.428991 & 9.05393 & 8.746329 & 9.05393 & 8.746329\end{array}$ $\begin{array}{lllllllllllllllllllllll}387995 & 3740853 & 6.614214 & 6.224446 & 8.977194 & 8.453328 & 8.977194 & 8.453328 & 8.789891 & 8.27797 & 8.789891 & 8.27797 & 8.855316 & 8.337796 & 6.614214 & 6.224446 & 8.977194 & 8.453328 & 8.977194 & 8.453328\end{array}$ $\begin{array}{lllllllllllllllllllll}378996 & 3739241 & 12.41232 & 11.99561 & 16.73042 & 16.166 & 16.73042 & 16.166 & 16.44748 & 15.89256 & 16.44748 & 15.89256 & 16.62387 & 16.06406 & 12.41232 & 11.99561 & 16.73042 & 16.166 & 16.73042 & 16.166\end{array}$ $\begin{array}{lllllllllllllllllllllllll}389600 & 3738360 & 6.602934 & 6.375472 & 8.9831 & 8.673181 & 8.9831 & 8.673181 & 8.780241 & 8.479738 & 8.780241 & 8.479738 & 8.835236 & 8.533388 & 6.602934 & 6.375472 & 8.9831 & 8.673181 & 8.9831 & 8.673181\end{array}$ $\begin{array}{lllllllllllllllll}390315 & 3739619 & 5.999811 & 5.805602 & 8.16558 & 7.902412 & 8.16558 & 7.902412 & 7.984416 & 7.711667 & 7.984416 & 7.711667 & 8.033792 & 7.75911 & 5.999811 & 5.805602 & 8.16558\end{array} \quad 7.902412 \quad 8.16558 \quad 7.902412$ $\begin{array}{llllllllllllllllllllllll}388103 & 3741683 & 6.380706 & 6.075305 & 8.661417 & 8.249593 & 8.661417 & 8.249593 & 8.482804 & 8.080394 & 8.482804 & 8.080394 & 8.545825 & 8.139542 & 6.380706 & 6.075305 & 8.661417 & 8.249593 & 8.661417 & 8.249593\end{array}$ $\begin{array}{lllllllllllllllllllll}390224 & 3738014 & 6.454834 & 6.23539 & 8.786588 & 8.485293 & 8.786588 & 8.485293 & 8.586957 & 8.293472 & 8.586957 & 8.293472 & 8.638688 & 8.344547 & 6.454834 & 6.23539 & 8.786588 & 8.485293 & 8.786588 & 8.485293 & \end{array}$ $\begin{array}{llllllllllllllllllllll}387926 & 3742882 & 6.100836 & 5.844268 & 8.282452 & 7.937125 & 8.282452 & 7.937125 & 8.114392 & 7.777402 & 8.114392 & 7.777402 & 8.174742 & 7.83433 & 6.100836 & 5.844268 & 8.282452 & 7.937125 & 8.282452 & 7.937125\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}388691 & 3740431 & 6.231765 & 5.990065 & 8.468071 & 8.142756 & 8.468071 & 8.142756 & 8.28648 & 7.971077 & 8.28648 & 7.971077 & 8.343647 & 8.025346 & 6.231765 & 5.990065 & 8.468071 & 8.142756 & 8.468071 & 8.142756\end{array}$ $\begin{array}{llllllllllllllllllllll}378469 & 3734936 & 10.44781 & 10.11098 & 14.14735 & 13.68288 & 14.14735 & 13.68288 & 13.91922 & 13.46179 & 13.91922 & 13.46179 & 14.04556 & 13.5848 & 10.44781 & 10.11098 & 14.14735 & 13.68288 & 14.14735 & 13.68288\end{array}$ $\begin{array}{lllllllllllllllllllllll}387340 & 3741495 & 6.597504 & 6.383576 & 8.951591 & 8.663267 & 8.951591 & 8.663267 & 8.769865 & 8.487517 & 8.769865 & 8.487517 & 8.837017 & 8.55179 & 6.597504 & 6.383576 & 8.951591 & 8.663267 & 8.951591 & 8.663267\end{array}$ $\begin{array}{llllllllllllllllllll}386718 & 3739983 & 7.40142 & 7.085014 & 10.03227 & 9.606369 & 10.03227 & 9.606369 & 9.827458 & 9.409683 & 9.827458 & 9.409683 & 9.906336 & 9.484003 & 7.40142 & 7.085014 & 10.03227 & 9.606369 & 10.03227 & 9.606369\end{array}$ $\begin{array}{lllllllllllllllllllllll}380186 & 3733726 & 17.0681 & 16.50796 & 22.98784 & 22.23181 & 22.98784 & 22.23181 & 22.59433 & 21.85117 & 22.59433 & 21.85117 & 22.84277 & 22.09203 & 17.0681 & 16.50796 & 22.98784 & 22.23181 & 22.98784 & 22.23181\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}381264 & 3732980 & 22.47556 & 21.83889 & 30.18977 & 29.28404 & 30.18977 & 29.28404 & 29.65913 & 28.77072 & 29.65913 & 28.77072 & 30.01392 & 29.1145 & 22.47556 & 21.83889 & 30.18977 & 29.28404 & 30.18977 & 29.28404\end{array}$ $\begin{array}{lllllllllllllllllllll}388011 & 3741615 & 6.412348 & 6.119176 & 8.704011 & 8.308524 & 8.704011 & 8.308524 & 8.524977 & 8.138061 & 8.524977 & 8.138061 & 8.588515 & 8.197843 & 6.412348 & 6.119176 & 8.704011 & 8.308524 & 8.704011 & 8.308524\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}388112 & 3742445 & 6.136243 & 5.92301 & 8.331743 & 8.043543 & 8.331743 & 8.043543 & 8.161577 & 7.879959 & 8.161577 & 7.879959 & 8.221647 & 7.937568 & 6.136243 & 5.92301 & 8.331743 & 8.043543 & 8.331743 & 8.043543\end{array}$ $\begin{array}{llllllllllllllllllllll}387172 & 3741938 & 6.607858 & 6.276349 & 8.962562 & 8.517688 & 8.962562 & 8.517688 & 8.782241 & 8.34578 & 8.782241 & 8.34578 & 8.850893 & 8.409139 & 6.607858 & 6.276349 & 8.962562 & 8.517688 & 8.962562 & 8.517688\end{array}$ $\begin{array}{lllllllllllllllllllllll}390062 & 3738250 & 6.431336 & 6.231408 & 8.753587 & 8.479823 & 8.753587 & 8.479823 & 8.556051 & 8.28921 & 8.556051 & 8.28921 & 8.608185 & 8.340443 & 6.431336 & 6.231408 & 8.753587 & 8.479823 & 8.753587 & 8.479823\end{array}$ $\begin{array}{lllllllllllllllllllll}389026 & 3737038 & 7.046972 & 6.831548 & 9.583501 & 9.28933 & 9.583501 & 9.28933 & 9.363114 & 9.077666 & 9.363114 & 9.077666 & 9.422544 & 9.136033 & 7.046972 & 6.831548 & 9.583501 & 9.28933 & 9.583501 & 9.28933\end{array}$ $\begin{array}{lllllllllllllllllllll}389481 & 3741039 & 5.878045 & 5.716883 & 7.992783 & 7.775673 & 7.992783 & 7.775673 & 7.820874 & 7.609282 & 7.820874 & 7.609282 & 7.87272 & 7.65911 & 5.878045 & 5.716883 & 7.992783 & 7.775673 & 7.992783 & 7.775673\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}380158 & 3734275 & 17.58069 & 16.93846 & 23.66321 & 22.79817 & 23.66321 & 22.79817 & 23.25954 & 22.40812 & 23.25954 & 22.40812 & 23.52123 & 22.66024 & 17.58069 & 16.93846 & 23.66321 & 22.79817 & 23.66321 & 22.79817\end{array}$ $\begin{array}{lllllllllllllllllll}387982 & 3740075 & 6.608901 & 6.362822 & 8.973794 & 8.641915 & 8.973794 & 8.641915 & 8.783903 & 8.460845 & 8.783903 & 8.460845 & 8.847439 & 8.521466 & 6.608901 & 6.362822 & 8.973794 & 8.641915 & 8.973794 \\ 8.641915\end{array}$ $\begin{array}{lllllllllllllllllll}378816 & 3733895 & 11.61895 & 11.30992 & 15.72507 & 15.30376 & 15.72507 & 15.30376 & 15.46976 & 15.05507 & 15.46976 & 15.05507 & 15.61293 & 15.19555 & 11.61895 & 11.30992 & 15.72507 & 15.30376 & 15.72507\end{array} 15.30376$ $\begin{array}{llllllllllllllllllllllllllll}379745 & 3733311 & 14.85461 & 14.46863 & 20.04492 & 19.52258 & 20.04492 & 19.52258 & 19.70832 & 19.19507 & 19.70832 & 19.19507 & 19.91143 & 19.39353 & 14.85461 & 14.46863 & 20.04492 & 19.52258 & 20.04492 & 19.52258\end{array}$ $\begin{array}{llllllllllllllllllllllll}380440 & 3733911 & 18.66729 & 18.04545 & 25.11385 & 24.27454 & 25.11385 & 24.27454 & 24.68197 & 23.85778 & 24.68197 & 23.85778 & 24.96366 & 24.13072 & 18.66729 & 18.04545 & 25.11385 & 24.27544 & 25.11385 & 24.27544\end{array}$

 $\begin{array}{llllllllllllllllllll}388870 & 3737870 & 6.877723 & 6.683322 & 9.351461 & 9.086619 & 9.351461 & 9.086619 & 9.140042 & 8.883016 & 9.140042 & 8.883016 & 9.199312 & 8.941094 & 6.877723 & 6.683322 & 9.351461 & 9.086619 & 9.351461 & 9.086619\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}389981 & 3738882 & 6.361434 & 6.130203 & 8.656062 & 8.341465 & 8.656062 & 8.341465 & 8.461601 & 8.156751 & 8.461601 & 8.156751 & 8.514179 & 8.207838 & 6.361434 & 6.130203 & 8.656062 & 8.341465 & 8.656062 & 8.341465\end{array}$ $\begin{array}{lllllllllllllllllllll}388635 & 3741379 & 6.245512 & 5.890084 & 8.481858 & 8.004736 & 8.481858 & 8.004736 & 8.304194 & 7.837876 & 8.304194 & 7.837876 & 8.363981 & 7.892332 & 6.245512 & 5.890084 & 8.481858 & 8.004736 & 8.481858 & 8.004736\end{array}$ $\begin{array}{llllllllllllllllllllllll}388088 & 3740588 & 6.536489 & 6.219289 & 8.874437 & 8.447875 & 8.874437 & 8.447875 & 8.688071 & 8.271424 & 8.688071 & 8.271424 & 8.751529 & 8.33044 & 6.536489 & 6.219289 & 8.874437 & 8.447875 & 8.874437 & 8.447875\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllllllll}387556 & 3739981 & 6.875459 & 6.562045 & 9.330571 & 8.908196 & 9.330571 & 8.908196 & 9.135317 & 8.721866 & 9.135317 & 8.721866 & 9.203663 & 8.78604 & 6.875459 & 6.562045 & 9.330571 & 8.908196 & 9.330571 & 8.908196\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}387009 & 3743355 & 6.280788 & 6.103319 & 8.518875 & 8.279923 & 8.518875 & 8.279923 & 8.351654 & 8.117198 & 8.351654 & 8.117198 & 8.417607 & 8.180611 & 6.280788 & 6.103319 & 8.518875 & 8.279923 & 8.518875 & 8.279923\end{array}$ $\begin{array}{llllllllllllllllllll}387670 & 3740411 & 6.802333 & 6.423884 & 9.230579 & 8.721671 & 9.230579 & 8.721671 & 9.038603 & 8.540042 & 9.038603 & 8.540042 & 9.10671 & 8.6026 & 6.802333 & 6.423884 & 9.230579 & 8.721671 & 9.230579 & 8.721671\end{array}$ $\begin{array}{lllllllllllllllllll}390403 & 3740229 & 5.839768 & 5.604531 & 7.947128 & 7.629594 & 7.947128 & 7.629594 & 7.772783 & 7.465085 & 7.772783 & 7.465085 & 7.821407 & 7.511229 & 5.839768 & 5.604531 & 7.947128 & 7.629594 & 7.947128 \\ 7.629594\end{array}$ $\begin{array}{lllllllllllllllllll}382216 & 3739181 & 13.23755 & 12.43151 & 17.81869 & 16.73888 & 17.81869 & 16.73888 & 17.50128 & 16.4392 & 17.50128 & 16.4392 & 17.69567 & 16.61959 & 13.23755 & 12.43151 & 17.81869 & 16.73888 & 17.81869\end{array} 16.73888$ $\begin{array}{llllllllllllllllllll}378878 & 3732123 & 10.01985 & 9.74991 & 13.61174 & 13.24036 & 13.61174 & 13.24036 & 13.4009 & 13.03379 & 13.4009 & 13.03379 & 13.50722 & 13.13874 & 10.01985 & 9.74991 & 13.61174 & 13.24036 & 13.61174 & 13.24036\end{array}$ $\begin{array}{llllllllllllllllllll}389425 & 3742800 & 5.87594 & 5.507796 & 7.984018 & 7.488926 & 7.984018 & 7.488926 & 7.816978 & 7.334624 & 7.816978 & 7.334624 & 7.871755 & 7.384435 & 5.87594 & 5.507796 & 7.984018 & 7.488926 & 7.984018 & 7.488926\end{array}$ $\begin{array}{llllllllllllllllllllll}379320 & 3739551 & 12.32712 & 12.10098 & 16.61166 & 16.30348 & 16.61166 & 16.30348 & 16.32841 & 16.02616 & 16.32841 & 16.02616 & 16.50464 & 16.20048 & 12.32712 & 12.10098 & 16.61166 & 16.30348 & 16.61166 & 16.30348\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}380519 & 3733982 & 19.36154 & 18.67074 & 26.03739 & 25.08837 & 26.03739 & 25.08837 & 25.58789 & 24.65541 & 25.58789 & 24.65541 & 25.88366 & 24.94076 & 19.36154 & 18.67074 & 26.03739 & 25.08837 & 26.03739 & 25.08837\end{array}$ $\begin{array}{lllllllllllllllllll}378626 & 3738189 & 11.68876 & 10.9893 & 15.7766 & 14.82887 & 15.7766 & 14.82887 & 15.51546 & 14.58213 & 15.51546 & 14.58213 & 15.6745 & 14.73284 & 11.68876 & 10.9893 & 15.7766 & 14.82887 & 15.7766 \\ 14.848 & 14.82887\end{array}$ $\begin{array}{lllllllllllllllllllllllll}381827 & 3738004 & 16.27044 & 15.78368 & 21.86637 & 21.21178 & 21.86637 & 21.21178 & 21.48055 & 20.83592 & 21.48055 & 20.83592 & 21.73301 & 21.08069 & 16.27044 & 15.78368 & 21.86637 & 21.21178 & 21.86637 & 21.21178\end{array}$ $\begin{array}{llllllllllllllllllllll}388688 & 3740334 & 6.252601 & 6.02829 & 8.496773 & 8.194744 & 8.496773 & 8.194744 & 8.314031 & 8.021114 & 8.314031 & 8.021114 & 8.371179 & 8.075585 & 6.252601 & 6.02829 & 8.496773 & 8.194744 & 8.496773 & 8.194744\end{array}$
 $\begin{array}{lllllllllllllllllll} \\ 388832 & 3740311 & 6.216219 & 5.962871 & 8.448392 & 8.107081 & 8.448392 & 8.107081 & 8.265601 & 7.935187 & 8.265601 & 7.935187 & 8.321822 & 7.988582 & 6.216219 & 5.962871 & 8.448392 & 8.107081 & 8.448392\end{array} 8.107081$ $\begin{array}{llllllllllllllllllllllll}381603 & 3740192 & 11.95326 & 11.45499 & 16.10158 & 15.43165 & 16.10158 & 15.43165 & 15.81744 & 15.16005 & 15.81744 & 15.16005 & 15.98916 & 15.32426 & 11.95326 & 11.45499 & 16.10158 & 15.43165 & 16.10158 & 15.43165\end{array}$ 38872
 $\begin{array}{lllllllllllllllllllll} \\ 380203 & 3736551 & 18.04809 & 17.57703 & 24.25185 & 23.61513 & 24.25185 & 23.61513 & 23.83443 & 23.20787 & 23.83443 & 23.20787 & 24.11738 & 23.48469 & 18.04809 & 17.57703 & 24.25185 & 23.61513 & 24.25185 & 23.61513\end{array}$ $\begin{array}{llllllllllllllllllll}390195 & 3739970 & 5.974364 & 5.728536 & 8.129351 & 7.797183 & 8.129351 & 7.797183 & 7.950328 & 7.628208 & 7.950328 & 7.628208 & 8.000294 & 7.675686 & 5.974364 & 5.728536 & 8.129351 & 7.797183 & 8.129351 & 7.797183\end{array}$ $\begin{array}{llllllllllllllllllllll}388192 & 3740542 & 6.470344 & 6.185099 & 8.78621 & 8.402542 & 8.78621 & 8.402542 & 8.601744 & 8.227289 & 8.601744 & 8.227289 & 8.663984 & 8.285612 & 6.470344 & 6.185099 & 8.78621 & 8.402542 & 8.78621 & 8.402542\end{array}$ $\begin{array}{llllllllllllllllllll}383107 & 3737969 & 13.21404 & 12.59348 & 17.79107 & 16.96003 & 17.79107 & 16.96003 & 17.46481 & 16.64854 & 17.46481 & 16.64854 & 17.65579 & 16.82898 & 13.21404 & 12.59348 & 17.79107 & 16.96003 & 17.79107 & 16.96003\end{array}$ $\begin{array}{lllllllllllllllllll}389940 & 3740373 & 5.95602 & 5.698572 & 8.102802 & 7.75558 & 8.102802 & 7.75558 & 7.925537 & 7.587639 & 7.925537 & 7.587639 & 7.976138 & 7.635202 & 5.95602 & 5.698572 & 8.102802 & 7.75558 & 8.102802\end{array} 7.75558$ $\begin{array}{llllllllllllllllllllllllllll}390373 & 3740260 & 5.843554 & 5.596359 & 7.952106 & 7.618466 & 7.952106 & 7.618466 & 7.777707 & 7.454297 & 7.777707 & 7.454297 & 7.826422 & 7.500406 & 5.843554 & 5.596359 & 7.952106 & 7.618466 & 7.952106 & 7.618466\end{array}$ $\begin{array}{llllllllllllllllllllllllllll} & \\ 390533 & 3740347 & 5.77791 & 5.550777 & 7.863737 & 7.55726 & 7.863737 & 7.55726 & 7.691611 & 7.39449 & 7.691611 & 7.39449 & 7.73947 & 7.439914 & 5.77791 & 5.550777 & 7.863737 & 7.55726 & 7.863737 & 7.55726\end{array}$ $\begin{array}{llllllllllllllllllllllll}389282 & 3739139 & 6.315778 & 6.121327 & 8.589609 & 8.324802 & 8.589609 & 8.324802 & 8.400201 & 8.141171 & 8.400201 & 8.141171 & 8.454578 & 8.194001 & 6.315778 & 6.121327 & 8.589609 & 8.324802 & 8.589609 & 8.324802\end{array}$ $\begin{array}{lllllllllllllllllll}378807 & 3734759 & 11.48677 & 11.15463 & 15.53598 & 15.08414 & 15.53598 & 15.08414 & 15.28227 & 14.83731 & 15.28227 & 14.83731 & 15.42739 & 14.97909 & 11.48677 & 11.15463 & 15.53598 & 15.08414 & 15.53598 \\ 15.08414\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}388084 & 3742865 & 6.020683 & 5.810292 & 8.175763 & 7.891651 & 8.175763 & 7.891651 & 8.009252 & 7.732452 & 8.009252 & 7.732452 & 8.067927 & 7.788727 & 6.020683 & 5.810292 & 8.175763 & 7.891651 & 8.175763 & 7.891651\end{array}$ $\begin{array}{lllllllllllllllllllllllll}388917 & 3737693 & 6.921707 & 6.667749 & 9.411394 & 9.066791 & 9.411394 & 9.066791 & 9.197494 & 8.863701 & 9.197494 & 8.863701 & 9.256913 & 8.921156 & 6.921707 & 6.667749 & 9.411394 & 9.066791 & 9.411394 & 9.066791\end{array}$ $\begin{array}{llllllllllllllllllll}379706 & 3740182 & 11.79261 & 11.59472 & 15.89213 & 15.624 & 15.89213 & 15.624 & 15.61921 & 15.35596 & 15.61921 & 15.35596 & 15.78716 & 15.52171 & 11.79261 & 11.59472 & 15.89213 & 15.624 & 15.89213 & 15.624\end{array}$ $\begin{array}{llllllllllllllllllll}388856 & 3738266 & 6.841655 & 6.681718 & 9.302094 & 9.07662 & 9.302094 & 9.07662 & 9.093681 & 8.873838 & 9.093681 & 8.873838 & 9.153062 & 8.932375 & 6.841655 & 6.681718 & 9.302094 & 9.07662 & 9.302094 & 9.07662\end{array}$ $\begin{array}{lllllllllllllllllllllll}380807 & 3733760 & 20.76822 & 20.2966 & 27.91193 & 27.27498 & 27.91193 & 27.27498 & 27.42606 & 26.80154 & 27.42606 & 26.80154 & 27.749 & 27.11846 & 20.76822 & 20.2966 & 27.91193 & 27.27498 & 27.91193 & 27.27498\end{array}$ $\begin{array}{llllllllllllllllllll}379507 & 3732828 & 13.27921 & 12.60437 & 17.94994 & 17.04167 & 17.94994 & 17.04167 & 17.65507 & 16.76079 & 17.65507 & 16.76079 & 17.82637 & 16.92172 & 13.27921 & 12.60437 & 17.94994 & 17.04167 & 17.94994 & 17.04167\end{array}$ $\begin{array}{lllllllllllllllllllllll}390021 & 3738204 & 6.464144 & 6.252147 & 8.797962 & 8.508114 & 8.797962 & 8.508114 & 8.599215 & 8.316887 & 8.599215 & 8.316887 & 8.651676 & 8.368258 & 6.464144 & 6.252147 & 8.797962 & 8.508114 & 8.797962 & 8.508114\end{array}$


|  | 0.0010 | 0.0009 | 0.0037 | 0.0035 | 0.0037 | 0.0034 | 0.0021 | 0.0019 | 0.0021 | 0.0019 | 0.0058 | 0.0055 | 0.0014 | 0.0013 | 0.0055 | 0.0052 | 0.0055 | 0.0052 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction | 48.55\% | 48.55\% | 44.40\% | 44.40\% | 44.40\% | 44.40\% | 78.71\% | 78.71\% | 78.71\% | 78.71\% | 70.88\% | 70.88\% | 67.78\% | 67.78\% | 66.42\% | 66.42\% | 6.42\% | .42\% |
|  | 389450_3 | 9450_373 | 38 | 38 | 382683.8 | 382683.8 | 450 | 200 | 945 | 389200_37 | 382 | _3 | 389450_3 | 389450_373 | 3826 | 83 | 382683.8 |  |

$\begin{array}{llllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$ 2033_ALT4_ 2033_ALT4_ 2033_ALTS_ 2033_ALT5_ 2033_PP_CA 2033_PP_N 2038_ALT1_ 2038_ALT1_ 2038_NP_C 2038_NP_N 2038_ALT3_ 2038_ALT3_ 2038_ALT4_ 2038_ALT4_ 2038_ALT5_ 2038_ALT5_ 2038_PP_CA 2038_PP_N
 $\begin{array}{llllllllllllllllllllll}379841 & 3740022 & 12.09501 & 11.81239 & 16.29397 & 15.91305 & 16.29397 & 15.91305 & 16.0142 & 15.63964 & 16.0142 & 15.63964 & 16.18865 & 15.80998 & 12.09501 & 11.81239 & 16.29397 & 15.91305 & 16.29397 & 15.91305\end{array}$ $\begin{array}{llllllllllllllllllll}389258 & 3739250 & 6.285745 & 6.125516 & 8.548204 & 8.329536 & 8.548204 & 8.329536 & 8.360467 & 8.146084 & 8.360467 & 8.146084 & 8.414914 & 8.199348 & 6.285745 & 6.125516 & 8.548204 & 8.329536 & 8.548204 & 8.329536\end{array}$ $\begin{array}{llllllllllllllllllll}388234 & 3742867 & 5.967947 & 5.792995 & 8.10546 & 7.868536 & 8.10546 & 7.868536 & 7.940146 & 7.70892 & 7.940146 & 7.70892 & 7.997781 & 7.764749 & 5.967947 & 5.792995 & 8.10546 & 7.868536 & 8.10546 & 7.868536\end{array}$ $\begin{array}{llllllllllllllllllllllllll}382152 & 3737824 & 16.29729 & 15.32749 & 21.90173 & 20.60349 & 21.90173 & 20.60349 & 21.51301 & 20.23663 & 21.51301 & 20.23663 & 21.76565 & 20.47224 & 16.29729 & 15.32749 & 21.90173 & 20.60349 & 21.90173 & 20.60349\end{array}$ $\begin{array}{llllllllllllllllllll}378944 & 3734805 & 11.98996 & 11.50973 & 16.20616 & 15.55681 & 16.20616 & 15.55681 & 15.93949 & 15.30095 & 15.93949 & 15.30095 & 16.09448 & 15.44984 & 11.98996 & 11.50973 & 16.20616 & 15.55681 & 16.20616 & 15.55681\end{array}$ $\begin{array}{llllllllllllllllllllllll}389533 & 3741212 & 5.82398 & 5.680376 & 7.919575 & 7.725777 & 7.919575 & 7.725777 & 7.749552 & 7.560848 & 7.749552 & 7.560848 & 7.800878 & 7.610511 & 5.82398 & 5.680376 & 7.919575 & 7.725777 & 7.919575 & 7.725777\end{array}$ $\begin{array}{llllllllllllllllllllllllll}388859 & 3742514 & 5.944891 & 5.677324 & 8.075197 & 7.714321 & 8.075197 & 7.714321 & 7.908912 & 7.556207 & 7.908912 & 7.556207 & 7.965692 & 7.609593 & 5.944891 & 5.677324 & 8.075197 & 7.714321 & 8.075197 & 7.714321\end{array}$ $\begin{array}{lllllllllllllllllllll}389020 & 3739872 & 6.255975 & 6.055762 & 8.504452 & 8.2338 & 8.504452 & 8.2338 & 8.319376 & 8.054926 & 8.319376 & 8.054926 & 8.375047 & 8.108311 & 6.255975 & 6.055762 & 8.504452 & 8.2338 & 8.504452 & 8.2338\end{array}$ $\begin{array}{lllllllllllllllllllllllll} & 389472 & 3740264 & 6.023568 & 5.80347 & 8.191514 & 7.89466 & 8.191514 & 7.89466 & 8.013718 & 7.724089 & 8.013718 & 7.724089 & 8.066289 & 7.773959 & 6.023568 & 5.80347 & 8.191514 & 7.89466 & 8.191514 & 7.89466\end{array}$ $\begin{array}{lllllllllllllllllllll}379181 & 3735610 & 13.93263 & 13.33606 & 18.79072 & 17.98351 & 18.79072 & 17.98351 & 18.47645 & 17.68206 & 18.47645 & 17.68206 & 18.67087 & 17.86916 & 13.93263 & 13.33606 & 18.79072 & 17.98351 & 18.79072 & 17.9835\end{array}$ $\begin{array}{lllllllllllllllllllll}387188 & 3740575 & 6.987515 & 6.680301 & 9.476561 & 9.063318 & 9.476561 & 9.063318 & 9.282863 & 8.877655 & 9.282863 & 8.877655 & 9.355323 & 8.945606 & 6.987515 & 6.680301 & 9.476561 & 9.063318 & 9.476561 & 9.063318\end{array}$ $\begin{array}{llllllllllllllllllllll}389579 & 3738221 & 6.645957 & 6.429851 & 9.041511 & 8.74712 & 9.041511 & 8.74712 & 8.836676 & 8.551269 & 8.836676 & 8.551269 & 8.891958 & 8.60527 & 6.645957 & 6.429851 & 9.041511 & 8.74712 & 9.041511 & 8.74712\end{array}$ $\begin{array}{lllllllllllllllllllll}379407 & 3739022 & 13.10057 & 12.81433 & 17.64778 & 17.25702 & 17.64778 & 17.25702 & 17.34775 & 16.96246 & 17.34775 & 16.96246 & 17.53746 & 17.14976 & 13.10057 & 12.81433 & 17.64778 & 17.25702 & 17.64778 & 17.2570\end{array}$ $\begin{array}{llllllllllllllllllll}390399 & 3739915 & 5.902326 & 5.683121 & 8.032766 & 7.736888 & 8.032766 & 7.736888 & 7.855601 & 7.568538 & 7.855601 & 7.568538 & 7.904399 & 7.614971 & 5.902326 & 5.683121 & 8.032766 & 7.736888 & 8.032766 & 7.736888\end{array}$ $\begin{array}{llllllllllllllllllllll}381871 & 3738620 & 14.42834 & 13.82901 & 19.40678 & 18.60266 & 19.40678 & 18.60266 & 19.06402 & 18.273 & 19.06402 & 18.273 & 19.28183 & 18.48078 & 14.42834 & 13.82901 & 19.40678 & 18.60266 & 19.40678 & 18.60266\end{array}$ $\begin{array}{llllllllllllllllllllllllll}380385 & 3733112 & 17.44378 & 16.86738 & 23.49375 & 22.71905 & 23.49375 & 22.71905 & 23.09059 & 22.32979 & 23.09059 & 22.32979 & 23.34446 & 22.57468 & 17.44378 & 16.86738 & 23.49375 & 22.71905 & 23.49375 & 22.71905\end{array}$ $\begin{array}{lllllllllllllllllll}389036 & 3741241 & 6.045403 & 5.811763 & 8.214701 & 7.900612 & 8.214701 & 7.900612 & 8.039985 & 7.734883 & 8.039985 & 7.734883 & 8.095721 & 7.787599 & 6.045403 & 5.811763 & 8.214701 & 7.900612 & 8.214701 \\ 7.900612\end{array}$ $\begin{array}{lllllllllllllllllllll}379775 & 3731051 & 11.53173 & 11.24672 & 15.64326 & 15.25131 & 15.64326 & 15.25131 & 15.39431 & 15.00729 & 15.39431 & 15.00729 & 15.52386 & 15.1353 & 11.53173 & 11.24672 & 15.64326 & 15.25131 & 15.64326 & 15.25131\end{array}$ $\begin{array}{lllllllllllllllllllllllll}379822 & 3735045 & 16.34607 & 15.94584 & 22.01063 & 21.46622 & 22.01063 & 21.46622 & 21.63591 & 21.10104 & 21.63591 & 21.10104 & 21.8759 & 21.33728 & 16.34607 & 15.94584 & 22.01063 & 21.46622 & 22.01063 & 21.46622\end{array}$ $\begin{array}{llllllllllllllllllll}383537 & 3739930 & 10.31544 & 9.914851 & 13.91925 & 13.38078 & 13.91925 & 13.38078 & 13.66253 & 13.13408 & 13.66253 & 13.13408 & 13.80008 & 13.26554 & 10.31544 & 9.914851 & 13.91925 & 13.38078 & 13.91925 & 13.38078\end{array}$ $\begin{array}{llllllllllllllllllll}387465 & 3742345 & 6.38071 & 6.066413 & 8.657635 & 8.235749 & 8.657635 & 8.235749 & 8.48336 & 8.069908 & 8.48336 & 8.069908 & 8.548467 & 8.130115 & 6.38071 & 6.066413 & 8.657635 & 8.235749 & 8.657635 & 8.235749\end{array}$
 $\begin{array}{lllllllllllllllllllll}390098 & 3740230 & 5.956377 & 5.700791 & 8.10405 & 7.758633 & 8.10405 & 7.758633 & 7.925973 & 7.591075 & 7.925973 & 7.591075 & 7.976174 & 7.638709 & 5.956377 & 5.700791 & 8.10405 & 7.758633 & 8.10405 & 7.758633\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}382957 & 3740576 & 10.36016 & 9.899271 & 13.97722 & 13.35683 & 13.97722 & 13.35683 & 13.72329 & 13.11536 & 13.72329 & 13.11536 & 13.86293 & 13.24846 & 10.36016 & 9.899271 & 13.97722 & 13.35683 & 13.97722 & 13.35683\end{array}$ $\begin{array}{lllllllllllllllllllll}390623 & 3740004 & 5.809661 & 5.616854 & 7.907857 & 7.647717 & 7.907857 & 7.647717 & 7.733585 & 7.48111 & 7.733585 & 7.48111 & 7.781188 & 7.526585 & 5.809661 & 5.616854 & 7.907857 & 7.647717 & 7.907857 & 7.647717\end{array}$ $\begin{array}{lllllllllllllllllllllll}380096 & 3734974 & 18.08606 & 17.52751 & 24.32915 & 23.57518 & 24.32915 & 23.57518 & 23.9116 & 23.17069 & 23.9116 & 23.17069 & 24.18569 & 23.43722 & 18.08606 & 17.52751 & 24.32915 & 23.57518 & 24.32915 & 23.57518\end{array}$ $\begin{array}{lllllllllllllllllllll}389847 & 3741751 & 5.808903 & 5.63051 & 7.899403 & 7.658529 & 7.899403 & 7.658529 & 7.729919 & 7.494938 & 7.729919 & 7.494938 & 7.78101 & 7.543935 & 5.808903 & 5.63051 & 7.899403 & 7.658529 & 7.899403 & 7.658529\end{array}$ $\begin{array}{lllllllllllllllllllllll}380473 & 3734491 & 19.86698 & 19.24517 & 26.70516 & 25.86681 & 26.70516 & 25.86681 & 26.24335 & 25.4198 & 26.24335 & 25.4198 & 26.55107 & 25.71886 & 19.86698 & 19.24517 & 26.70516 & 25.86681 & 26.70516 & 25.8668\end{array}$ $\begin{array}{llllllllllllllllllllllllll}389894 & 3738960 & 6.363134 & 6.123969 & 8.657708 & 8.332789 & 8.657708 & 8.332789 & 8.447267 & 8.139805 & 8.447267 & 8.139805 & 8.51692 & 8.199948 & 6.363134 & 6.123969 & 8.657708 & 8.332789 & 8.657708 & 8.332789\end{array}$ $\begin{array}{llllllllllllllllllllll}383041 & 3739433 & 11.64898 & 11.13405 & 15.69074 & 15.00859 & 15.69074 & 15.00859 & 15.40436 & 14.73523 & 15.40436 & 14.73523 & 15.56671 & 14.88973 & 11.64989 & 11.13405 & 15.69314 & 15.00884 & 15.69191 & 15.00884\end{array}$ $\begin{array}{lllllllllllllllllllllllll}379899 & 3739740 & 12.47173 & 12.12431 & 16.79843 & 16.33045 & 16.79843 & 16.33045 & 16.50936 & 16.04941 & 16.50936 & 16.04941 & 16.69033 & 16.22521 & 12.47173 & 12.12431 & 16.79843 & 16.33045 & 16.79843 & 16.33045\end{array}$ $\begin{array}{llllllllllllllllllll}389193 & 3738664 & 6.625201 & 6.410442 & 9.009735 & 8.709358 & 9.009735 & 8.709358 & 8.808224 & 8.515732 & 8.808224 & 8.515732 & 8.865064 & 8.571076 & 6.625201 & 6.410442 & 9.009735 & 8.709358 & 9.009735 & 8.709358\end{array}$ $\begin{array}{lllllllllllllllllll}384704 & 3739154 & 9.376913 & 9.029419 & 12.67216 & 12.20467 & 12.67216 & 12.20467 & 12.42857 & 11.96993 & 12.42857 & 11.96993 & 12.54488 & 12.08114 & 9.376913 & 9.029419 & 12.67216 & 12.20467 & 12.67216\end{array} 12.20467$ $\begin{array}{llllllllllllllllllllllllllll}381437 & 3734112 & 29.01696 & 27.91753 & 38.88064 & 37.39415 & 38.88064 & 37.39415 & 38.20215 & 36.74169 & 38.20215 & 36.74169 & 38.69642 & 37.2172 & 29.01696 & 27.91753 & 38.88064 & 37.39415 & 38.88064 & 37.39415\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}390296 & 3737362 & 6.6214 & 6.262321 & 9.012497 & 8.52425 & 9.012497 & 8.52425 & 8.805242 & 8.333485 & 8.805242 & 8.333485 & 8.858206 & 8.384228 & 6.6214 & 6.262321 & 9.012497 & 8.52425 & 9.012497 & 8.52425\end{array}$ $\begin{array}{llllllllllllllllllllllll}389492 & 3740248 & 6.022305 & 5.812121 & 8.189932 & 7.906308 & 8.189932 & 7.906308 & 8.01215 & 7.735241 & 8.01215 & 7.735241 & 8.064655 & 7.785182 & 6.022305 & 5.812121 & 8.189932 & 7.906308 & 8.189932 & 7.906308\end{array}$ $\begin{array}{llllllllllllllllllll}389517 & 3739600 & 6.135014 & 5.943288 & 8.34441 & 8.084228 & 8.34441 & 8.084228 & 8.161755 & 7.907478 & 8.161755 & 7.907478 & 8.214554 & 7.958438 & 6.135014 & 5.943288 & 8.34441 & 8.084228 & 8.34441 & 8.084228\end{array}$ $\begin{array}{llllllllllllllllllll}389536 & 3740757 & 5.880199 & 5.719719 & 7.99698 & 7.780062 & 7.99698 & 7.780062 & 7.824595 & 7.613787 & 7.824595 & 7.613787 & 7.875955 & 7.663475 & 5.880199 & 5.719719 & 7.99698 & 7.780062 & 7.99698 & 7.780062\end{array}$ $\begin{array}{lllllllllllllllllllllll}390248 & 3737686 & 6.570683 & 6.214327 & 8.943526 & 8.458102 & 8.943526 & 8.458102 & 8.738217 & 8.268547 & 8.738217 & 8.268547 & 8.790827 & 8.319182 & 6.570683 & 6.214327 & 8.943526 & 8.458102 & 8.943526 & 8.458102\end{array}$ $\begin{array}{lllllllllllllllllll}389459 & 3737689 & 6.802545 & 6.516982 & 9.25383 & 8.866384 & 9.25383 & 8.866384 & 9.042448 & 8.666665 & 9.042448 & 8.666665 & 9.09902 & 8.720946 & 6.802545 & 6.516982 & 9.25383 & 8.866384 & 9.25383 \\ 8.866384\end{array}$ $\begin{array}{lllllllllllllllllllll}382217 & 3738795 & 13.94308 & 13.05435 & 18.76008 & 17.57054 & 18.76008 & 17.57054 & 18.42631 & 17.25641 & 18.42631 & 17.25641 & 18.63424 & 17.44852 & 13.94308 & 13.05435 & 18.76008 & 17.57054 & 18.76008 & 17.57054\end{array}$ $\begin{array}{lllllllllllllllllllllllll}380194 & 3736308 & 18.38949 & 17.65859 & 24.70542 & 23.72361 & 24.70542 & 23.72361 & 24.28148 & 23.31522 & 24.28148 & 23.31522 & 24.57187 & 23.59378 & 18.38949 & 17.65859 & 24.70542 & 23.72361 & 24.70542 & 23.72361\end{array}$ $\begin{array}{llllllllllllllllllllll}388854 & 3740055 & 6.224711 & 6.015869 & 8.461298 & 8.179245 & 8.461298 & 8.179245 & 8.277326 & 8.004285 & 8.277326 & 8.004285 & 8.332983 & 8.057872 & 6.224711 & 6.015869 & 8.461298 & 8.179245 & 8.461298 & 8.179245\end{array}$ $\begin{array}{lllllllllllllllllllll}386767 & 3739844 & 7.400704 & 7.019304 & 10.03209 & 9.519224 & 10.03209 & 9.519224 & 9.826735 & 9.323267 & 9.826735 & 9.323267 & 9.905219 & 9.395998 & 7.400704 & 7.019304 & 10.03209 & 9.519224 & 10.03209 & 9.519224\end{array}$ $\begin{array}{llllllllllllllllllllllll}388039 & 3738643 & 6.841914 & 6.53158 & 9.293852 & 8.874504 & 9.293852 & 8.874504 & 9.090794 & 8.682865 & 9.090794 & 8.682865 & 9.154195 & 8.742925 & 6.841914 & 6.53158 & 9.293852 & 8.874504 & 9.293852 & 8.874504\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllll}380825 & 3733609 & 20.63874 & 19.98432 & 27.74023 & 26.79809 & 27.74023 & 26.79809 & 27.25847 & 26.33246 & 27.25847 & 26.33246 & 27.57871 & 26.64147 & 20.63874 & 19.98432 & 27.74023 & 26.79809 & 27.74023 & 26.79809\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}381497 & 3733030 & 24.27099 & 22.95892 & 32.57626 & 30.82058 & 32.57626 & 30.82058 & 32 & 30.27555 & 32 & 30.27555 & 32.39188 & 30.64435 & 24.27099 & 22.95892 & 32.57626 & 30.82058 & 32.57626 & 30.82058\end{array}$ $\begin{array}{lllllllllllllllllllllll}387362 & 3740183 & 7.022386 & 6.596375 & 9.525623 & 8.952669 & 9.525623 & 8.952669 & 9.327838 & 8.767413 & 9.327838 & 8.767413 & 9.399511 & 8.833024 & 7.022386 & 6.596375 & 9.525623 & 8.952669 & 9.525623 & 8.952669\end{array}$ $\begin{array}{lllllllllllllllllllllll}388668 & 3737492 & 6.993432 & 6.791069 & 9.507551 & 9.232191 & 9.507551 & 9.232191 & 9.291862 & 9.024015 & 9.291862 & 9.024015 & 9.352471 & 9.083156 & 6.993432 & 6.791069 & 9.507551 & 9.232191 & 9.507551 & 9.232191\end{array}$ $\begin{array}{llllllllllllllllllllllll}380507 & 3736370 & 19.90287 & 19.3593 & 26.73317 & 25.99626 & 26.73317 & 25.99626 & 26.27145 & 25.54622 & 26.27145 & 25.54622 & 26.58725 & 25.85574 & 19.90287 & 19.3593 & 26.73317 & 25.99626 & 26.73317 & 25.9962\end{array}$ $\begin{array}{llllllllllllllllllllllll}380478 & 3736076 & 20.31229 & 19.87187 & 27.27835 & 26.68039 & 27.27835 & 26.68039 & 26.80689 & 26.2183 & 26.80689 & 26.2183 & 27.13093 & 26.53755 & 20.31229 & 19.87187 & 27.27835 & 26.68039 & 27.27835 & 26.68039\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllllll}387306 & 3739448 & 7.051789 & 6.780773 & 9.569292 & 9.202317 & 9.569292 & 9.202317 & 9.367821 & 9.009085 & 9.367821 & 9.009085 & 9.437953 & 9.076311 & 7.051789 & 6.780773 & 9.569292 & 9.202317 & 9.569292 & 9.202317\end{array}$ $\begin{array}{lllllllllllllllllllllllll}386955 & 3740430 & 7.123302 & 6.849466 & 9.658796 & 9.2901 & 9.658796 & 9.2901 & 9.461482 & 9.100465 & 9.461482 & 9.100465 & 9.536071 & 9.171258 & 7.123302 & 6.849466 & 9.658796 & 9.2901 & 9.658796 & 9.2901\end{array}$ $\begin{array}{lllllllllllllllllllllll}386883 & 3740498 & 7.127237 & 6.844282 & 9.663738 & 9.283304 & 9.663738 & 9.283304 & 9.466858 & 9.093785 & 9.466858 & 9.093785 & 9.541725 & 9.164428 & 7.127237 & 6.844282 & 9.663738 & 9.283304 & 9.663738 & 9.283304\end{array}$ $\begin{array}{llllllllllllllllllllllll}387067 & 3741097 & 6.820925 & 6.589235 & 9.251603 & 8.939798 & 9.251603 & 8.939798 & 9.063608 & 8.758381 & 9.063608 & 8.758381 & 9.134158 & 8.825676 & 6.820925 & 6.589235 & 9.251603 & 8.939798 & 9.251603 & 8.939798\end{array}$ $\begin{array}{llllllllllllllllllllllllll}381098 & 3735252 & 25.70518 & 24.86986 & 34.46741 & 33.3467 & 34.46741 & 33.3467 & 33.868 & 32.76617 & 33.868 & 32.76617 & 34.2971 & 33.18153 & 25.70518 & 24.86986 & 34.46741 & 33.3467 & 34.46741 & 33.3467\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllllll}381167 & 3735184 & 25.40792 & 24.8048 & 34.06001 & 33.25103 & 34.06001 & 33.25103 & 33.46844 & 32.67382 & 33.46844 & 32.67382 & 33.89601 & 33.09145 & 25.40792 & 24.8048 & 34.06001 & 33.25103 & 34.06001 & 33.25103\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}387129 & 3740300 & 7.098578 & 6.738653 & 9.626377 & 9.142469 & 9.626377 & 9.142469 & 9.429143 & 8.954304 & 9.429143 & 8.954304 & 9.502976 & 9.022719 & 7.098578 & 6.738653 & 9.626377 & 9.142469 & 9.626377 & 9.142469\end{array}$ $\begin{array}{llllllllllllllllllllll}381405 & 3733242 & 24.06263 & 23.2617 & 32.29963 & 31.22589 & 32.29963 & 31.22589 & 31.72772 & 30.6748 & 31.72772 & 30.6748 & 32.11505 & 31.049 & 24.06263 & 23.2617 & 32.29963 & 31.22589 & 32.29963 & 31.22589\end{array}$ $\begin{array}{lllllllllllllllllllllllll}381411 & 3733508 & 25.90507 & 24.69213 & 34.74909 & 33.12629 & 34.74909 & 33.12629 & 34.13732 & 32.54269 & 34.13732 & 32.54269 & 34.56355 & 32.9473 & 25.90507 & 24.69213 & 34.74909 & 33.12629 & 34.74909 & 33.12629\end{array}$ $\begin{array}{lllllllllllllllllllllllll}381414 & 3733803 & 26.98968 & 26.02505 & 36.18741 & 34.89446 & 36.18741 & 34.89446 & 35.55205 & 34.28075 & 35.55205 & 34.28075 & 36.00258 & 34.71487 & 26.98968 & 26.02505 & 36.18741 & 34.89446 & 36.18741 & 34.89446\end{array}$ $\begin{array}{llllllllllllllllllllllll} & 387721 & 3742199 & 6.280084 & 6.064819 & 8.524773 & 8.234056 & 8.524773 & 8.234056 & 8.350949 & 8.067759 & 8.350949 & 8.067759 & 8.413315 & 8.127693 & 6.280084 & 6.064819 & 8.524773 & 8.234056 & 8.524773 & 8.234056\end{array}$ $\begin{array}{llllllllllllllllllll}383262 & 3736996 & 14.11084 & 13.46233 & 18.99445 & 18.12482 & 18.99445 & 18.12482 & 18.64192 & 17.78802 & 18.64192 & 17.78802 & 18.84671 & 17.98226 & 14.11084 & 13.46233 & 18.99445 & 18.12482 & 18.99445 & 18.12482\end{array}$ $\begin{array}{llllllllllllllllllllllll}382659 & 3737519 & 15.49322 & 14.74999 & 20.83131 & 19.83603 & 20.83131 & 19.83603 & 20.45563 & 19.47733 & 20.45563 & 19.47733 & 20.69108 & 19.69994 & 15.49322 & 14.74999 & 20.83131 & 19.83603 & 20.83131 & 19.83603\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}382237 & 3737492 & 17.08409 & 16.25311 & 22.94684 & 21.8384 & 22.94684 & 21.8384 & 22.54412 & 21.44935 & 22.54412 & 21.44935 & 22.81167 & 21.70255 & 17.08409 & 16.25311 & 22.95173 & 21.8384 & 22.95173 & 21.8384\end{array}$ $\begin{array}{lllllllllllllllllllll}381821 & 3737471 & 17.74765 & 17.00098 & 23.83585 & 22.83463 & 23.83585 & 22.83463 & 23.41545 & 22.43118 & 23.41545 & 22.43118 & 23.69657 & 22.69978 & 17.74765 & 17.00098 & 23.83585 & 22.83463 & 23.83585 & 22.83463\end{array}$ $\begin{array}{llllllllllllllllllllll}382575 & 3735031 & 15.98624 & 14.89981 & 21.53848 & 20.06276 & 21.53848 & 20.06276 & 21.21868 & 19.72204 & 21.21868 & 19.68684 & 21.45268 & 19.89964 & 16.00324 & 14.90178 & 21.62568 & 20.06627 & 21.62568 & 20.06522\end{array}$ $\begin{array}{lllllllllllllllllllllll}382628.5 & 3735071 & 15.88493 & 14.67235 & 21.46241 & 19.76022 & 21.46241 & 19.76022 & 21.05644 & 19.76129 & 21.05644 & 19.38479 & 21.28737 & 19.59271 & 15.94563 & 14.67257 & 21.46241 & 19.76054 & 21.46241 & 19.7605\end{array}$ $\begin{array}{llllllllllllllllllllllllll}382704.9 & 3735128 & 15.46679 & 14.48857 & 21.0381 & 19.51465 & 21.0381 & 19.51465 & 20.6386 & 19.14184 & 20.6386 & 19.14184 & 20.86327 & 19.34613 & 15.62749 & 14.48857 & 21.0381 & 19.51465 & 21.0381 & 19.51465\end{array}$ $\begin{array}{llllllllllllllllllllll}382767.5 & 3735065 & 14.56937 & 13.6955 & 19.62984 & 18.62503 & 19.62984 & 18.59563 & 19.25265 & 18.34556 & 19.25265 & 18.34556 & 19.45532 & 18.53681 & 14.56937 & 13.86665 & 19.62984 & 18.7068 & 19.62984 & 18.7068\end{array}$ $\begin{array}{llllllllllllllllllllll}382828.6 & 3735107 & 14.45373 & 13.50802 & 19.4752 & 18.35968 & 19.4752 & 18.35938 & 19.10058 & 18.01037 & 19.10058 & 18.01037 & 19.30112 & 18.1967 & 14.45373 & 13.62578 & 19.4752 & 18.36619 & 19.4752 & 18.36619\end{array}$ $\begin{array}{lllllllllllllllllllllll}382858.8 & 3735097 & 14.21637 & 13.37812 & 19.15957 & 18.09037 & 19.15957 & 18.09018 & 18.78965 & 17.79471 & 18.78965 & 17.79471 & 18.98529 & 17.97763 & 14.21637 & 13.42322 & 19.15957 & 18.1032 & 19.15957 & 18.0967\end{array}$ $\begin{array}{lllllllllllllllllllll}382915.1 & 3735162 & 14.20304 & 13.241 & 19.14071 & 17.85234 & 19.14071 & 17.85234 & 18.77149 & 17.50564 & 18.77149 & 17.50564 & 18.96717 & 17.68454 & 14.20304 & 13.241 & 19.14071 & 17.85271 & 19.14071 & 17.85271\end{array}$ $\begin{array}{lllllllllllllllllll}383713 & 3735584 & 11.95418 & 11.20357 & 16.13749 & 15.13005 & 16.13749 & 15.13005 & 15.81529 & 14.82668 & 15.81529 & 14.82668 & 15.96809 & 14.96759 & 11.95418 & 11.20357 & 16.13749 & 15.13005 & 16.13749\end{array} 15.13005$ $\begin{array}{lllllllllllllllllllllll}383722.9 & 3735566 & 11.88497 & 11.20078 & 16.04562 & 15.1047 & 16.04562 & 15.1047 & 15.72454 & 14.82301 & 15.72454 & 14.82301 & 15.87581 & 14.96378 & 11.88497 & 11.20078 & 16.04562 & 15.12651 & 16.04562 & 15.12651\end{array}$ $\begin{array}{llllllllllllllllllll}383697.5 & 3735551 & 11.94171 & 11.25116 & 16.1212 & 15.19379 & 16.1212 & 15.19379 & 15.79926 & 14.88905 & 15.79926 & 14.88905 & 15.95173 & 15.03079 & 11.94171 & 11.25116 & 16.1212 & 15.19379 & 16.1212 & 15.19379\end{array}$ $\begin{array}{lllllllllllllllllllllll}383513.6 & 3735351 & 12.07923 & 11.55504 & 16.30656 & 15.70118 & 16.30656 & 15.70118 & 15.98162 & 15.39078 & 15.98162 & 15.39078 & 16.13615 & 15.53782 & 12.07923 & 11.63191 & 16.30656 & 15.70227 & 16.30656 & 15.70227\end{array}$ $\begin{array}{lllllllllllllllllll}382977.5 & 3735085 & 13.49752 & 12.84614 & 18.20398 & 17.32713 & 18.20398 & 17.32713 & 17.84925 & 17.19655 & 17.84925 & 17.19655 & 18.02808 & 17.34475 & 13.49837 & 12.84759 & 18.20398 & 17.51533 & 18.20398 \\ 17.47 .44483\end{array}$ $\begin{array}{lllllllllllllllllllll}383145.9 & 3734712 & 12.95531 & 12.53582 & 17.48112 & 16.91276 & 17.48112 & 16.91276 & 17.13158 & 16.58736 & 17.13158 & 16.58736 & 17.30011 & 16.7387 & 12.95531 & 12.53582 & 17.48112 & 16.91276 & 17.48112 & 16.91276\end{array}$ $\begin{array}{lllllllllllllllllll}383112.8 & 3734692 & 13.08081 & 12.7162 & 17.64871 & 17.15515 & 17.64871 & 17.15515 & 17.29726 & 16.82945 & 17.29726 & 16.82945 & 17.46825 & 16.98059 & 13.08081 & 12.7162 & 17.64871 & 17.15515 & 17.64871 \\ 17.7 & 17.15515\end{array}$ $\begin{array}{lllllllllllllllllll}383065.6 & 3734773 & 13.2293 & 12.77946 & 17.84866 & 17.24207 & 17.84866 & 17.24207 & 17.49424 & 16.89864 & 17.49424 & 16.89864 & 17.66753 & 17.06575 & 13.2293 & 12.77946 & 17.84866 & 17.24207 & 17.84866\end{array} 17.24207$ $\begin{array}{llllllllllllllllllll}382925.9 & 3734712 & 14.05718 & 13.36328 & 18.95295 & 18.00919 & 18.95295 & 18.00919 & 18.58011 & 17.66703 & 18.58011 & 17.66703 & 18.76952 & 17.83094 & 14.05718 & 13.36328 & 18.95295 & 18.00919 & 18.95295 & 18.00919\end{array}$ $\begin{array}{llllllllllllllllllllllll}382903.6 & 3734755 & 14.10164 & 13.36323 & 19.01155 & 18.02094 & 19.01155 & 18.02094 & 18.63863 & 17.69032 & 18.63863 & 17.69032 & 18.82925 & 17.84398 & 14.10164 & 13.37027 & 19.01155 & 18.02094 & 19.01155 & 18.02094\end{array}$ $\begin{array}{lllllllllllllllllllll}382664.8 & 3734643 & 15.3376 & 14.64339 & 20.65734 & 19.72718 & 20.65734 & 19.72718 & 20.26059 & 19.34711 & 20.26059 & 19.34711 & 20.47687 & 19.55163 & 15.3376 & 14.64339 & 20.65734 & 19.72718 & 20.65734 & 19.72718\end{array}$ $\begin{array}{llllllllllllllllllll}382810.4 & 3734273 & 15.06564 & 14.22538 & 20.29618 & 19.15821 & 20.29618 & 19.15821 & 19.90073 & 18.79113 & 19.90073 & 18.79564 & 20.1103 & 18.97756 & 15.06564 & 14.22538 & 20.29618 & 19.15821 & 20.29618 & 19.15821\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllllll}382837.4 & 3734182 & 15.07858 & 14.25614 & 20.31541 & 19.14818 & 20.31541 & 19.14818 & 19.91767 & 18.79046 & 19.91767 & 18.83551 & 20.12648 & 18.98141 & 15.07858 & 14.25614 & 20.31541 & 19.16496 & 20.31541 & 19.16496\end{array}$


$\begin{array}{lllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$ 2033_ALT4_ 2033_ALT4_ 2033_ALTS_ 2033_ALT5_ 2033_PP_CA 2033_PP_N 2038_ALT1_ 2038_ALT1_ 2038_NP_C 2038_NP_N 2038_ALT3_ 2038_ALT3_ 2038_ALT4_ 2038_ALT4_ 2038_ALTS_ 2038_ALT5_ 2038_PP_CA 2038_PP_N | 382763.3 | 3734087 | 15.65034 | 14.66631 | 21.07461 | 19.63067 | 21.07461 | 19.61472 | 20.66753 | 19.37239 | 20.66753 | 19.37334 | 20.88353 | 19.50479 | 15.65034 | 14.66631 | 21.07461 | 19.66641 | 21.07461 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | 19.666410 $\begin{array}{llllllllllllllllllllll}382173.4 & 3733819 & 21.48012 & 20.56316 & 28.84326 & 27.7388 & 28.84326 & 27.7388 & 28.31615 & 27.23128 & 28.31615 & 27.10543 & 28.65549 & 27.55766 & 21.48012 & 20.56316 & 28.84326 & 27.7388 & 28.84326 & 27.7388\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}382203.6 & 3733740 & 21.34801 & 20.43118 & 28.66869 & 27.44517 & 28.66869 & 27.44517 & 28.1431 & 26.94105 & 28.1431 & 26.93288 & 28.47901 & 27.26238 & 21.34801 & 20.43118 & 28.66869 & 27.44517 & 28.66869 & 27.44517\end{array}$ $\begin{array}{lllllllllllllllllllllll}382087.1 & 3733719 & 23.09493 & 22.20799 & 30.99475 & 29.80361 & 30.99475 & 29.80361 & 30.43289 & 29.26212 & 30.43289 & 29.26212 & 30.80468 & 29.61973 & 23.09493 & 22.20799 & 30.99475 & 29.80361 & 30.99475 & 29.80361\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}382088.9 & 3733645 & 23.42418 & 22.2845 & 31.43441 & 29.90637 & 31.43441 & 29.90637 & 30.86456 & 29.36232 & 30.86456 & 29.36232 & 31.24251 & 29.72107 & 23.42418 & 22.2845 & 31.43441 & 29.90637 & 31.43441 & 29.90637\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382015.6 & 3733643 & 24.81242 & 23.72445 & 33.28273 & 31.82369 & 33.28273 & 31.82369 & 32.68437 & 31.24972 & 32.68437 & 31.24972 & 33.09095 & 31.63798 & 24.81242 & 23.72445 & 33.28273 & 31.82369 & 33.28273 & 31.82369\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}382015.2 & 3733608 & 24.95851 & 23.80367 & 33.47765 & 31.92956 & 33.47765 & 31.92956 & 32.87621 & 31.35374 & 32.87621 & 31.35374 & 33.28559 & 31.74348 & 24.95851 & 23.80367 & 33.47765 & 31.92956 & 33.47765 & 31.92956\end{array}$ $\begin{array}{lllllllllllllllllllllll}382530.1 & 3735089 & 17.34128 & 15.49277 & 23.31858 & 20.998 & 23.31858 & 20.91491 & 22.88559 & 20.63487 & 22.88559 & 20.63487 & 23.14632 & 20.86311 & 17.34128 & 15.57906 & 23.31858 & 21.0292 & 23.31858 & 21.0292\end{array}$ $\begin{array}{llllllllllllllllllllllllll}382552.6 & 3735060 & 16.52771 & 15.02519 & 22.4716 & 20.23145 & 22.4716 & 20.2294 & 22.05152 & 20.19398 & 22.05152 & 19.96048 & 22.2986 & 20.31411 & 16.70421 & 15.02801 & 22.4716 & 20.25528 & 22.4716 & 20.23358\end{array}$ $\begin{array}{llllllllllllllllllll}382601.8 & 3735051 & 15.94412 & 14.78918 & 21.5587 & 19.91663 & 21.5587 & 19.91576 & 21.15188 & 19.65964 & 21.15188 & 19.53954 & 21.38451 & 19.74998 & 16.01822 & 14.79037 & 21.5587 & 19.91732 & 21.5587 & 19.91732\end{array}$ $\begin{array}{llllllllllllllllllll}382666.7 & 3735100 & 15.70923 & 14.62331 & 21.27745 & 19.69477 & 21.27745 & 19.69477 & 20.87395 & 19.43541 & 20.87395 & 19.31931 & 21.10197 & 19.5262 & 15.80673 & 14.62331 & 21.27745 & 19.69477 & 21.27745 & 19.69477\end{array}$ $\begin{array}{lllllllllllllllllllll}382736.2 & 3735096 & 14.98469 & 14.11154 & 20.18283 & 19.01349 & 20.18283 & 19.01349 & 19.79676 & 18.64797 & 19.79676 & 18.64797 & 20.00805 & 18.84415 & 14.98469 & 14.11154 & 20.18283 & 19.01349 & 20.18283 & 19.01349\end{array}$ $\begin{array}{lllllllllllllllllll}382798 & 3735086 & 14.52701 & 13.60118 & 19.57324 & 18.49865 & 19.57324 & 18.49865 & 19.19685 & 18.14288 & 19.19685 & 18.14288 & 19.39879 & 18.33109 & 14.52701 & 13.72638 & 19.57324 & 18.50062 & 19.57324\end{array} 18.50062$ $\begin{array}{lllllllllllllllllllll}382887 & 3735129 & 14.23294 & 13.35807 & 19.18126 & 18.03537 & 19.18126 & 18.03537 & 18.81091 & 17.68516 & 18.81091 & 17.68516 & 19.00691 & 17.86656 & 14.23294 & 13.37773 & 19.18126 & 18.03557 & 19.18126 & 18.03557\end{array}$ $\begin{array}{lllllllllllllllllllll}382957.1 & 3735184 & 14.0303 & 13.04006 & 18.91047 & 17.59184 & 18.91047 & 17.58304 & 18.54518 & 17.25109 & 18.54518 & 17.25109 & 18.73754 & 17.42637 & 14.0303 & 13.04661 & 18.91047 & 17.59333 & 18.91047 & 17.59333\end{array}$ $\begin{array}{lllllllllllllllllllllll}382999.1 & 3735206 & 13.89475 & 12.86163 & 18.7301 & 17.35783 & 18.7301 & 17.34503 & 18.36649 & 17.02661 & 18.36649 & 17.02661 & 18.55583 & 17.19855 & 13.89475 & 12.87569 & 18.7301 & 17.36539 & 18.7301 & 17.36539\end{array}$

 $\begin{array}{llllllllllllllllllll}383083.1 & 3735251 & 13.73579 & 12.57019 & 18.5176 & 16.95675 & 18.5176 & 16.95675 & 18.15652 & 16.62531 & 18.15652 & 16.62531 & 18.34278 & 16.79148 & 13.73579 & 12.57019 & 18.5176 & 16.95711 & 18.5176 & 16.95711\end{array}$ $\begin{array}{lllllllllllllllllll}383125.1 & 3735273 & 13.63802 & 12.41849 & 18.38639 & 16.75288 & 18.38639 & 16.75288 & 18.0279 & 16.42539 & 18.0279 & 16.42539 & 18.21257 & 16.58879 & 13.63802 & 12.41849 & 18.38639 & 16.75427 & 18.38639\end{array} 16.75427$ $\begin{array}{llllllllllllllllllll}383167 & 3735295 & 13.50879 & 12.28856 & 18.21305 & 16.57697 & 18.21305 & 16.57807 & 17.85833 & 16.25339 & 17.85833 & 16.25339 & 18.04107 & 16.4143 & 13.50879 & 12.28856 & 18.21305 & 16.58041 & 18.21305 & 16.58041\end{array}$ $\begin{array}{llllllllllllllllllll}383209 & 3735317 & 13.37564 & 12.14308 & 18.0345 & 16.3849 & 18.0345 & 16.3849 & 17.68318 & 16.0897 & 17.68318 & 16.0615 & 17.86373 & 16.24853 & 13.37564 & 12.16462 & 18.0345 & 16.4141 & 18.0345 & 16.4141\end{array}$


 $\begin{array}{lllllllllllllllllll}383377 & 3735406 & 12.86077 & 11.70846 & 17.34639 & 15.84747 & 17.34639 & 15.84747 & 17.00672 & 15.53331 & 17.00672 & 15.53331 & 17.17781 & 15.68474 & 12.86077 & 11.7412 & 17.34639 & 15.8475 & 17.34639\end{array} 15.8475$ $\begin{array}{lllllllllllllllllll}383419 & 3735428 & 12.7308 & 11.648 & 17.17288 & 15.73988 & 17.17288 & 15.73988 & 16.83632 & 15.42731 & 16.83632 & 15.42731 & 17.0049 & 15.57712 & 12.7308 & 11.66055 & 17.17288 & 15.73994 & 17.17288 \\ 15.73994\end{array}$ $\begin{array}{lllllllllllllllllllll}383461 & 3735451 & 12.6193 & 11.59664 & 17.02422 & 15.65438 & 17.02422 & 15.65438 & 16.68957 & 15.34345 & 16.68957 & 15.34345 & 16.85593 & 15.49216 & 12.6193 & 11.59664 & 17.02422 & 15.65451 & 17.02422 & 15.65451\end{array}$ $\begin{array}{llllllllllllllllllll}383503 & 3735473 & 12.51608 & 11.5342 & 16.88671 & 15.57096 & 16.88671 & 15.57075 & 16.55352 & 15.26147 & 16.55352 & 15.26147 & 16.71773 & 15.4089 & 12.51608 & 11.5342 & 16.88671 & 15.57108 & 16.88671 & 15.57108\end{array}$ $\begin{array}{lllllllllllllllllll}383545 & 3735495 & 12.40369 & 11.46103 & 16.73683 & 15.47263 & 16.73683 & 15.47263 & 16.40579 & 15.16559 & 16.40579 & 15.16559 & 16.56765 & 15.31169 & 12.40369 & 11.46103 & 16.73683 & 15.47343 & 16.73683 \\ 15.47343\end{array}$ $\begin{array}{llllllllllllllllllllll}383587 & 3735517 & 12.28216 & 11.40956 & 16.57476 & 15.39393 & 16.57476 & 15.39726 & 16.24638 & 15.09748 & 16.24638 & 15.09748 & 16.40588 & 15.24249 & 12.28216 & 11.40956 & 16.57476 & 15.40482 & 16.57476 & 15.40482\end{array}$ $\begin{array}{llllllllllllllllllll}383629 & 3735539 & 12.15155 & 11.35276 & 16.40045 & 15.32918 & 16.40045 & 15.32918 & 16.07525 & 15.0225 & 16.07525 & 15.0225 & 16.23239 & 15.16631 & 12.15155 & 11.35276 & 16.40045 & 15.32918 & 16.40045 & 15.32918\end{array}$ $\begin{array}{llllllllllllllllllll}383671 & 3735562 & 12.05333 & 11.28401 & 16.26963 & 15.2375 & 16.26963 & 15.2375 & 15.94581 & 14.93212 & 15.94581 & 14.93212 & 16.1008 & 15.07457 & 12.05333 & 11.28401 & 16.26963 & 15.2375 & 16.26963 & 15.2375\end{array}$ $\begin{array}{lllllllllllllllllllll}383666.9 & 3735518 & 11.96843 & 11.25391 & 16.15708 & 15.18065 & 16.15708 & 15.18065 & 15.83492 & 14.8927 & 15.83492 & 14.8927 & 15.98792 & 15.03425 & 11.96843 & 11.25391 & 16.15708 & 15.19783 & 16.15708 & 15.19783\end{array}$ $\begin{array}{lllllllllllllllllllll}383636.2 & 3735484 & 11.9932 & 11.23416 & 16.19036 & 15.17034 & 16.19036 & 15.17034 & 15.86796 & 14.87953 & 15.86796 & 14.87953 & 16.02132 & 15.02079 & 11.9932 & 11.24366 & 16.19036 & 15.18445 & 16.19036 & 15.18445\end{array}$ $\begin{array}{lllllllllllllllllll}383605.5 & 3735451 & 12.03385 & 11.24585 & 16.24501 & 15.38253 & 16.24501 & 15.38253 & 15.92115 & 15.08734 & 15.92115 & 15.08734 & 16.07511 & 15.23184 & 12.03385 & 11.40202 & 16.24501 & 15.39549 & 16.24501\end{array} 15.39549$ $\begin{array}{llllllllllllllllllll}383574.9 & 3735417 & 12.06172 & 11.29187 & 16.28259 & 15.3568 & 16.28259 & 15.3279 & 15.95779 & 15.27239 & 15.95779 & 15.27239 & 16.11219 & 15.41975 & 12.06172 & 11.54289 & 16.28259 & 15.57523 & 16.28259 & 15.57523\end{array}$ $\begin{array}{lllllllllllllllllllll}383544.2 & 3735384 & 12.07678 & 11.35811 & 16.30296 & 15.36493 & 16.30296 & 15.33563 & 15.97794 & 15.35072 & 15.97794 & 15.35072 & 16.13238 & 15.49434 & 12.07678 & 11.59923 & 16.30296 & 15.65809 & 16.30296 & 15.65809\end{array}$ $\begin{array}{llllllllllllllllllll}383468.9 & 3735329 & 12.17005 & 11.53947 & 16.42755 & 15.74473 & 16.42755 & 15.71873 & 16.10144 & 15.46842 & 16.10144 & 15.46842 & 16.25798 & 15.61766 & 12.17005 & 11.69184 & 16.42755 & 15.7826 & 16.42755 & 15.7826\end{array}$ $\begin{array}{llllllllllllllllllll} \\ 383424.2 & 3735306 & 12.28502 & 11.56675 & 16.58094 & 15.80482 & 16.58094 & 15.77342 & 16.25236 & 15.52649 & 16.25236 & 15.52649 & 16.41107 & 15.67396 & 12.28502 & 11.73397 & 16.58094 & 15.83884 & 16.58094 & 15.83884\end{array}$ $\begin{array}{llllllllllllllllllllll}383379.6 & 3735284 & 12.40445 & 11.70103 & 16.74034 & 15.79713 & 16.74034 & 15.79543 & 16.40908 & 15.58679 & 16.40908 & 15.58679 & 16.56996 & 15.73495 & 12.40445 & 11.77972 & 16.74034 & 15.90048 & 16.74034 & 15.90048\end{array}$ $\begin{array}{lllllllllllllllllllllll}383334.9 & 3735262 & 12.53227 & 11.82885 & 16.91128 & 15.96581 & 16.91128 & 15.96581 & 16.5769 & 15.66034 & 16.5769 & 15.66034 & 16.74017 & 15.81258 & 12.53227 & 11.83746 & 16.91128 & 15.978 & 16.91128 & 15.978\end{array}$ $\begin{array}{llllllllllllllllllllll}383290.2 & 3735240 & 12.66168 & 11.8935 & 17.08462 & 16.052 & 17.08462 & 16.052 & 16.74705 & 15.74344 & 16.74705 & 15.74344 & 16.91251 & 15.89285 & 12.66168 & 11.89775 & 17.08462 & 16.05911 & 17.08462 & 16.05911\end{array}$ $\begin{array}{llllllllllllllllllll}383245.6 & 3735218 & 12.77601 & 12.06617 & 17.23788 & 16.28187 & 17.23788 & 16.28187 & 16.89781 & 15.96945 & 16.89781 & 15.96945 & 17.06521 & 16.11641 & 12.77601 & 12.06617 & 17.23788 & 16.28428 & 17.23788 & 16.28428\end{array}$ $\begin{array}{lllllllllllllllllll}383200.9 & 3735196 & 12.89535 & 12.26795 & 17.39845 & 16.55248 & 17.39845 & 16.55248 & 17.05533 & 16.24184 & 17.05533 & 16.24184 & 17.22444 & 16.39126 & 12.89535 & 12.27149 & 17.39845 & 16.55413 & 17.39845 \\ 16.55413\end{array}$ $\begin{array}{lllllllllllllllllllllllll}383156.2 & 3735174 & 13.04291 & 12.40262 & 17.59685 & 16.73439 & 17.59685 & 16.73439 & 17.24954 & 16.42551 & 17.24954 & 16.42551 & 17.42049 & 16.58699 & 13.04291 & 12.41783 & 17.59735 & 16.75736 & 17.59735 & 16.75623\end{array}$ $\begin{array}{llllllllllllllllllllllllll} \\ 383111.5 & 3735152 & 13.26079 & 12.50086 & 17.88882 & 16.86562 & 17.88882 & 16.86562 & 17.53764 & 16.5554 & 17.53764 & 16.5554 & 17.71244 & 16.71859 & 13.26207 & 12.51562 & 17.88882 & 16.88858 & 17.88882 & 16.88708\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}383066.9 & 3735130 & 13.40226 & 12.67719 & 18.07791 & 17.03018 & 18.07791 & 17.03018 & 17.72455 & 16.78765 & 17.72455 & 16.78765 & 17.89944 & 16.8811 & 13.40398 & 12.69195 & 18.07791 & 17.03286 & 18.07791 & 17.03018\end{array}$ $\begin{array}{llllllllllllllllllll}383022.2 & 3735107 & 13.46258 & 12.81696 & 18.15794 & 17.2884 & 18.15794 & 17.2884 & 17.80402 & 16.99066 & 17.80402 & 16.99066 & 17.98086 & 17.12676 & 13.46403 & 12.83243 & 18.15794 & 17.2884 & 18.15794 & 17.2884\end{array}$ $\begin{array}{llllllllllllllllllll}382996.2 & 3735044 & 13.42054 & 12.62298 & 18.10253 & 17.03142 & 18.10253 & 17.03142 & 17.74728 & 16.93876 & 17.74728 & 16.93876 & 17.92523 & 17.1079 & 13.42054 & 12.6691 & 18.10253 & 17.24982 & 18.10253 & 17.18952\end{array}$ $\begin{array}{lllllllllllllllllllllll}383014.9 & 3735002 & 13.28703 & 12.63071 & 17.92574 & 17.04297 & 17.92574 & 17.04297 & 17.57246 & 16.93955 & 17.57552 & 16.9408 & 17.74717 & 17.10803 & 13.28703 & 12.74967 & 17.92574 & 17.12807 & 17.92574 & 17.04997\end{array}$ $\begin{array}{llllllllllllllllllll}383033.7 & 3734961 & 13.25734 & 12.63736 & 17.88688 & 17.05278 & 17.88688 & 17.05278 & 17.53347 & 16.8123 & 17.53347 & 16.8123 & 17.70724 & 16.87923 & 13.25734 & 12.63736 & 17.88688 & 17.05278 & 17.88688 & 17.05278\end{array}$ $\begin{array}{llllllllllllllllllll}383052.4 & 3734919 & 13.20279 & 12.63407 & 17.81442 & 17.04875 & 17.81442 & 17.04875 & 17.46173 & 16.73024 & 17.46173 & 16.73024 & 17.63422 & 16.8747 & 13.20279 & 12.64927 & 17.81442 & 17.04875 & 17.81442 & 17.04875\end{array}$ $\begin{array}{lllllllllllllllllll}383071.1 & 3734878 & 13.14215 & 12.61424 & 17.73333 & 17.02202 & 17.73333 & 17.02202 & 17.38147 & 16.68406 & 17.38147 & 16.68406 & 17.55285 & 16.84808 & 13.14215 & 12.61424 & 17.73333 & 17.02202 & 17.73333\end{array} 17.02202$ $\begin{array}{llllllllllllllllllllll}383089.8 & 3734836 & 13.10538 & 12.58461 & 17.68349 & 16.98159 & 17.68349 & 16.97246 & 17.33203 & 16.64408 & 17.33203 & 16.64408 & 17.50288 & 16.80782 & 13.10538 & 12.58461 & 17.68349 & 16.98159 & 17.68349 & 16.98159\end{array}$ $\begin{array}{llllllllllllllllllll}383108.5 & 3734795 & 13.05489 & 12.54148 & 17.61507 & 16.91573 & 17.61507 & 16.91573 & 17.26429 & 16.60184 & 17.26429 & 16.60184 & 17.43452 & 16.7655 & 13.05489 & 12.55386 & 17.61507 & 16.93904 & 17.61507 & 16.93904\end{array}$ $\begin{array}{lllllllllllllllllll}383127.2 & 3734754 & 13.00278 & 12.54121 & 17.54474 & 16.92123 & 17.54474 & 16.92123 & 17.19475 & 16.58464 & 17.19475 & 16.58619 & 17.36415 & 16.74766 & 13.00278 & 12.54121 & 17.54474 & 16.92123 & 17.54474 \\ 17.92923\end{array}$ $\begin{array}{llllllllllllllllllllll}383089.2 & 3734733 & 13.14604 & 12.74707 & 17.73644 & 17.1974 & 17.73644 & 17.1974 & 17.3842 & 16.87279 & 17.3842 & 16.85685 & 17.55629 & 17.02215 & 13.14604 & 12.74707 & 17.73644 & 17.1974 & 17.73644 & 17.1974\end{array}$ $\begin{array}{llllllllllllllllllll}383030.6 & 3734758 & 13.45388 & 12.92322 & 18.14915 & 17.43483 & 18.14915 & 17.43483 & 17.78909 & 17.10608 & 17.78909 & 17.08835 & 17.96631 & 17.25793 & 13.45388 & 12.92322 & 18.14915 & 17.43483 & 18.14915 & 17.43483\end{array}$ $\begin{array}{llllllllllllllllllllll}382995.7 & 3734743 & 13.67549 & 13.18764 & 18.44491 & 17.78796 & 18.44491 & 17.78796 & 18.08004 & 17.45114 & 18.08004 & 17.45252 & 18.26147 & 17.60938 & 13.67549 & 13.18764 & 18.44491 & 17.78796 & 18.44491 & 17.78796\end{array}$ $\left.\begin{array}{llllllllllllllllllllllll} & 18\end{array}\right)$ $\begin{array}{llllllllllllllllllllllll}382863.8 & 3734736 & 14.30637 & 13.60055 & 19.28374 & 18.32054 & 19.28374 & 18.32054 & 18.90681 & 17.99063 & 18.90681 & 17.99063 & 19.10185 & 18.14817 & 14.30637 & 13.60055 & 19.28374 & 18.32054 & 19.28374 & 18.32054\end{array}$
 $\begin{array}{llllllllllllllllllll}382784.2 & 3734699 & 14.74613 & 13.98814 & 19.86979 & 18.85332 & 19.86979 & 18.85332 & 19.48367 & 18.49686 & 19.48367 & 18.49686 & 19.6876 & 18.68799 & 14.74613 & 13.99546 & 19.86979 & 18.86419 & 19.86979 & 18.86419\end{array}$ $\begin{array}{lllllllllllllllllllllll}382744.4 & 3734681 & 14.94909 & 14.10556 & 20.14013 & 19.01031 & 20.14013 & 19.00203 & 19.75053 & 18.64159 & 19.75053 & 18.64159 & 19.95864 & 18.83489 & 14.94909 & 14.10556 & 20.14013 & 19.01115 & 20.14013 & 19.01115\end{array}$ $\begin{array}{llllllllllllllllllll}382704.6 & 3734662 & 15.12684 & 14.43866 & 20.37664 & 19.45491 & 20.37664 & 19.45491 & 19.98466 & 19.07821 & 19.98466 & 19.07821 & 20.19672 & 19.27817 & 15.12684 & 14.43866 & 20.37664 & 19.45491 & 20.37664 & 19.45491\end{array}$ $\begin{array}{lllllllllllllllllllll}382683 & 3734597 & 15.35393 & 14.65157 & 20.67994 & 19.73898 & 20.67994 & 19.73898 & 20.28184 & 19.35798 & 20.28184 & 19.35798 & 20.49801 & 19.56223 & 15.35393 & 14.65157 & 20.67994 & 19.73898 & 20.67994 & 19.73898\end{array}$ $\begin{array}{llllllllllllllllllll}382701.2 & 3734551 & 15.31584 & 14.58488 & 20.6289 & 19.64987 & 20.6289 & 19.64987 & 20.23123 & 19.26978 & 20.23123 & 19.26978 & 20.44669 & 19.47267 & 15.31584 & 14.58488 & 20.6289 & 19.64987 & 20.6289 & 19.64987\end{array}$ $\begin{array}{llllllllllllllllllllllllll}382719.4 & 3734504 & 15.27121 & 14.49199 & 20.56905 & 19.52575 & 20.56905 & 19.52575 & 20.17204 & 19.14706 & 20.17204 & 19.14706 & 20.38666 & 19.34809 & 15.27121 & 14.49199 & 20.56905 & 19.52575 & 20.56905 & 19.52575\end{array}$ $\begin{array}{lllllllllllllllllllll}382737.6 & 3734458 & 15.22832 & 14.39895 & 20.51168 & 19.391 & 20.51168 & 19.391 & 20.11521 & 19.02455 & 20.11521 & 19.02455 & 20.32892 & 19.21522 & 15.22832 & 14.39895 & 20.51168 & 19.39303 & 20.51168 & 19.39303\end{array}$ $\begin{array}{llllllllllllllllllllll}382755.8 & 3734412 & 15.20002 & 14.34313 & 20.47427 & 19.32098 & 20.47427 & 19.28268 & 20.07767 & 18.95344 & 20.07767 & 18.95344 & 20.29056 & 19.14232 & 15.20002 & 14.34477 & 20.47427 & 19.32098 & 20.47427 & 19.32098\end{array}$ $\begin{array}{lllllllllllllllllllllll}382774 & 3734365 & 15.1503 & 14.34876 & 20.40816 & 19.33234 & 20.40816 & 19.28634 & 20.01218 & 18.95514 & 20.01218 & 18.95803 & 20.22401 & 19.153 & 15.1503 & 14.34876 & 20.40816 & 19.33234 & 20.40816 & 19.33234\end{array}$ $\begin{array}{llllllllllllllllllllllll}382792.2 & 3734319 & 15.10663 & 14.31668 & 20.35042 & 19.27428 & 20.35042 & 19.27428 & 19.9547 & 18.91323 & 19.9547 & 18.91564 & 20.16538 & 19.11027 & 15.10663 & 14.31668 & 20.35042 & 19.29039 & 20.35042 & 19.28068\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382823.9 & 3734227 & 15.07524 & 14.24266 & 20.31002 & 19.11751 & 20.31002 & 19.11751 & 19.91324 & 18.74153 & 19.91324 & 18.81813 & 20.12256 & 18.93525 & 15.07524 & 14.24266 & 20.31002 & 19.11751 & 20.31002 & 19.11751\end{array}$ $\begin{array}{lllllllllllllllllllll}382812.7 & 3734150 & 15.25854 & 14.34166 & 20.55343 & 19.24834 & 20.55343 & 19.23299 & 20.1538 & 18.94746 & 20.1538 & 18.94746 & 20.36406 & 19.10786 & 15.25854 & 14.34166 & 20.55343 & 19.29104 & 20.55343 & 19.27985\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382788 & 3734119 & 15.45919 & 14.52535 & 20.82027 & 19.4355 & 20.82027 & 19.41995 & 20.41671 & 19.16209 & 20.41671 & 19.18853 & 20.62985 & 19.30488 & 15.45919 & 14.52535 & 20.82027 & 19.47422 & 20.82027 & 19.47422\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382723.6 & 3734069 & 15.9173 & 15.0243 & 21.39919 & 20.07449 & 21.39649 & 20.06898 & 21.01559 & 19.81608 & 21.01791 & 19.8423 & 21.23809 & 19.95829 & 15.9173 & 15.0243 & 21.42996 & 20.11093 & 21.42996 & 20.09522\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382683.8 & 3734052 & 16.18326 & 15.36729 & 21.78395 & 20.56648 & 21.78395 & 20.55044 & 21.36689 & 20.28996 & 21.36689 & 20.29262 & 21.59133 & 20.42899 & 16.18326 & 15.36729 & 21.78395 & 20.60825 & 21.78395 & 20.60825\end{array}$ $\begin{array}{llllllllllllllllllllll}382644.1 & 3734034 & 16.53895 & 15.73784 & 22.25717 & 21.13331 & 22.25717 & 21.11694 & 21.8337 & 20.77438 & 21.8337 & 20.77852 & 22.0689 & 20.97637 & 16.53895 & 15.73784 & 22.26141 & 21.16213 & 22.26141 & 21.16213\end{array}$ $\begin{array}{llllllllllllllllllllllll}382604.3 & 3734016 & 16.88558 & 16.08618 & 22.72494 & 21.64571 & 22.72494 & 21.64571 & 22.28887 & 21.22843 & 22.28887 & 21.23573 & 22.53332 & 21.45983 & 16.88558 & 16.08618 & 22.72494 & 21.64571 & 22.72494 & 21.64571\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382564.6 & 3733999 & 17.24289 & 16.37071 & 23.20088 & 22.03216 & 23.20088 & 22.03216 & 22.75797 & 21.60883 & 22.75797 & 21.60883 & 23.00987 & 21.84581 & 17.24289 & 16.37071 & 23.20088 & 22.03216 & 23.20088 & 22.03216\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllll}382524.8 & 3733981 & 17.57095 & 16.72801 & 23.63741 & 22.50752 & 23.63741 & 22.50752 & 23.18874 & 22.07734 & 23.18874 & 22.07734 & 23.44773 & 22.32186 & 17.57095 & 16.72801 & 23.63741 & 22.50752 & 23.63741 & 22.50752\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382440.6 & 3733943 & 18.29436 & 17.36991 & 24.6005 & 23.3707 & 24.6005 & 23.3707 & 24.13765 & 22.92844 & 24.13765 & 22.92844 & 24.41163 & 23.18693 & 18.29436 & 17.36991 & 24.6005 & 23.3707 & 24.6005 & 23.3707\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllll}382396 & 3733922 & 18.72061 & 17.97182 & 25.16829 & 24.16272 & 25.16829 & 24.16272 & 24.69693 & 23.70821 & 24.69693 & 23.70821 & 24.97963 & 23.97877 & 18.72061 & 17.97182 & 25.16829 & 24.16272 & 25.16829 & 24.16272\end{array}$ $\begin{array}{lllllllllllllllllllll}382351.5 & 3733901 & 19.17211 & 18.65338 & 25.76922 & 25.06973 & 25.76922 & 25.06973 & 25.2892 & 24.60141 & 25.2892 & 24.60141 & 25.58136 & 24.88628 & 19.17211 & 18.65338 & 25.76922 & 25.06973 & 25.76922 & 25.06973\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382307 & 3733881 & 19.70673 & 19.32561 & 26.48132 & 25.96509 & 26.48132 & 25.96509 & 25.99047 & 25.48243 & 25.99047 & 25.48243 & 26.29361 & 25.78093 & 19.70673 & 19.32561 & 26.48132 & 25.96509 & 26.48132 & 25.96509\end{array}$


$\begin{array}{lllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$


 $\begin{array}{lllllllllllllllllllllllllllllll}382188.5 & 3733780 & 21.42069 & 20.5419 & 28.76483 & 27.59619 & 28.76483 & 27.59619 & 28.23838 & 27.09034 & 28.23838 & 27.07977 & 28.57615 & 27.41425 & 21.42069 & 20.5419 & 28.76483 & 27.59619 & 28.76483 & 27.59619\end{array}$ $\begin{array}{llllllllllllllllllllllll}382165.1 & 3733729 & 21.80766 & 21.1287 & 29.28015 & 28.3657 & 29.28015 & 28.3657 & 28.7451 & 27.84689 & 28.7451 & 27.84689 & 29.09068 & 28.18268 & 21.80766 & 21.1287 & 29.28015 & 28.3657 & 29.28015 & 28.3657\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}382125.9 & 3733726 & 22.33775 & 21.60871 & 29.98647 & 29.00554 & 29.98647 & 29.00554 & 29.44047 & 28.47646 & 29.44047 & 28.47646 & 29.79681 & 28.82179 & 22.33775 & 21.60871 & 29.98647 & 29.00554 & 29.98647 & 29.00554\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382088 & 3733682 & 23.25857 & 22.25085 & 31.21321 & 29.86107 & 31.21321 & 29.86107 & 30.64739 & 29.31808 & 30.64739 & 29.31808 & 31.02222 & 29.67638 & 23.25857 & 22.25085 & 31.21321 & 29.86107 & 31.21321 & 29.86107\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}382052.3 & 3733644 & 24.09343 & 23.0039 & 32.32551 & 30.86414 & 32.32551 & 30.86414 & 31.74178 & 30.30522 & 31.74178 & 30.30522 & 32.13359 & 30.67873 & 24.09343 & 23.0039 & 32.32551 & 30.86414 & 32.32551 & 30.86414\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllll}381977.3 & 3733607 & 25.59534 & 24.54197 & 34.32584 & 32.91265 & 34.32584 & 32.91265 & 33.71168 & 32.32193 & 33.71168 & 32.32193 & 34.13417 & 32.72686 & 25.59534 & 24.54197 & 34.32584 & 32.91265 & 34.32584 & 32.91265\end{array}$ $\begin{array}{llllllllllllllllllllllll}382569.5 & 3735119 & 17.3526 & 15.62094 & 23.33386 & 21.02117 & 23.33386 & 21.02117 & 22.89927 & 20.84496 & 22.89927 & 20.62676 & 23.15999 & 20.85511 & 17.3526 & 15.62094 & 23.33386 & 21.02117 & 23.33386 & 21.02117\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382609 & 3735150 & 17.29095 & 15.40302 & 23.25172 & 20.73067 & 23.25172 & 20.73067 & 22.81769 & 20.90102 & 22.81769 & 20.34052 & 23.07698 & 20.5644 & 17.29095 & 15.40302 & 23.25172 & 20.73067 & 23.25172 & 20.73067\end{array}$ $\begin{array}{llllllllllllllllllllllllll}382648.5 & 3735181 & 17.14088 & 15.43789 & 23.05092 & 20.7762 & 23.05092 & 20.7762 & 22.62005 & 20.5383 & 22.62005 & 20.38474 & 22.87661 & 20.60961 & 17.14088 & 15.43789 & 23.05092 & 20.7762 & 23.05092 & 20.7762\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382515.2 & 3735111 & 17.77219 & 15.96758 & 23.89104 & 21.48201 & 23.89104 & 21.48201 & 23.44943 & 21.49722 & 23.44943 & 21.08082 & 23.71948 & 21.31654 & 17.77219 & 15.96758 & 23.89104 & 21.48201 & 23.89104 & 21.48201\end{array}$ $\begin{array}{lllllllllllllllllll}382740.6 & 3735163 & 15.51619 & 14.32617 & 20.88852 & 19.29726 & 20.88852 & 19.29726 & 20.49242 & 18.92796 & 20.49242 & 18.92796 & 20.7154 & 19.12943 & 15.51619 & 14.32617 & 20.88852 & 19.29726 & 20.88852 \\ 19.9 .29726\end{array}$ $\begin{array}{lllllllllllllllllllllll}382744.4 & 3735213 & 16.01636 & 14.38577 & 21.55222 & 19.37413 & 21.55222 & 19.37413 & 21.14665 & 19.09564 & 21.14665 & 19.00444 & 21.38087 & 19.20809 & 16.01636 & 14.38577 & 21.55222 & 19.37413 & 21.55222 & 19.37413\end{array}$ $\begin{array}{llllllllllllllllllllllll}382678.6 & 3735218 & 17.15076 & 15.19459 & 23.0625 & 20.56809 & 23.0625 & 20.56809 & 22.63216 & 20.18958 & 22.63216 & 20.12378 & 22.88952 & 20.40239 & 17.15076 & 15.28279 & 23.0625 & 20.56809 & 23.0625 & 20.56809\end{array}$ $\begin{array}{lllllllllllllllllll}382807.6 & 3735167 & 14.82115 & 13.93645 & 19.96275 & 18.77806 & 19.96275 & 18.77806 & 19.5815 & 18.65497 & 19.5815 & 18.64047 & 19.79042 & 18.85213 & 14.82115 & 14.11855 & 19.96275 & 19.02056 & 19.96275 \\ 19.02056\end{array}$ $\left.\begin{array}{llllllllllllllllllllllll} & 19\end{array}\right)$ $\begin{array}{lllllllllllllllllllll}382843.3 & 3735202 & 14.69654 & 14.00915 & 19.79585 & 18.87349 & 19.79585 & 18.87349 & 19.41766 & 18.51121 & 19.41766 & 18.51121 & 19.62451 & 18.70687 & 14.69654 & 14.00915 & 19.79585 & 18.87349 & 19.79585 & 18.87349\end{array}$ $\begin{array}{llllllllllllllllllll} \\ 382875.1 & 3735144 & 14.37472 & 13.42667 & 19.36969 & 18.10015 & 19.36969 & 18.10015 & 18.99672 & 17.74972 & 18.99672 & 17.74972 & 19.19584 & 17.93236 & 14.37472 & 13.42711 & 19.36969 & 18.10081 & 19.36969 & 18.10081\end{array}$ $\begin{array}{lllllllllllllllllllll}382891.3 & 3735191 & 14.43445 & 13.42816 & 19.44775 & 18.09891 & 19.44775 & 18.09891 & 19.07437 & 17.88395 & 19.07437 & 17.88395 & 19.2754 & 18.06946 & 14.43445 & 13.53024 & 19.44775 & 18.2365 & 19.44775 & 18.2365\end{array}$ $\begin{array}{lllllllllllllllllll}382854.2 & 3735251 & 14.86443 & 14.02458 & 20.01803 & 18.89228 & 20.01803 & 18.89228 & 19.63708 & 18.53056 & 19.63708 & 18.53056 & 19.84804 & 18.7273 & 14.86443 & 14.02458 & 20.01803 & 18.89228 & 20.01803 \\ 18.898228\end{array}$ $\begin{array}{llllllllllllllllllll}382907.6 & 3735238 & 14.36432 & 13.49087 & 19.35241 & 18.1818 & 19.35241 & 18.1818 & 18.98192 & 17.83147 & 18.98192 & 17.83147 & 19.18242 & 18.01718 & 14.36432 & 13.49087 & 19.35241 & 18.1818 & 19.35241 & 18.1818\end{array}$ $\begin{array}{lllllllllllllllllllll}382975.7 & 3735250 & 14.11791 & 12.97552 & 19.02555 & 17.49538 & 19.02555 & 17.49538 & 18.6584 & 17.15683 & 18.6584 & 17.15683 & 18.85316 & 17.33167 & 14.11791 & 12.97552 & 19.02555 & 17.49631 & 19.02555 & 17.49631\end{array}$ $\begin{array}{lllllllllllllllllllllll}383017.7 & 3735273 & 14.0286 & 12.74561 & 18.9061 & 17.18869 & 18.9061 & 17.18869 & 18.5402 & 16.85468 & 18.5402 & 16.85468 & 18.73317 & 17.02518 & 14.0286 & 12.74561 & 18.9061 & 17.35022 & 18.9061 & 17.29332\end{array}$ $\begin{array}{llllllllllllllllllllll} \\ 383059.7 & 3735295 & 13.96805 & 12.66558 & 18.82555 & 17.08238 & 18.82555 & 17.08238 & 18.46045 & 16.74975 & 18.46045 & 16.74975 & 18.65206 & 16.92335 & 13.96805 & 12.66558 & 18.82555 & 17.08975 & 18.82555 & 17.08975\end{array}$ $\begin{array}{llllllllllllllllllllll} & \\ 383101.7 & 3735317 & 13.87333 & 12.57847 & 18.69888 & 16.96548 & 18.69888 & 16.96548 & 18.33592 & 16.71943 & 18.33592 & 16.63443 & 18.52597 & 16.91114 & 13.87333 & 12.57847 & 18.69888 & 17.07569 & 18.69888 & 17.07569\end{array}$ $\begin{array}{lllllllllllllllllll}383143.7 & 3735339 & 13.74858 & 12.47738 & 18.53188 & 16.89521 & 18.53188 & 16.89521 & 18.17237 & 16.66027 & 18.17237 & 16.56397 & 18.36022 & 16.82803 & 13.74858 & 12.54109 & 18.53188 & 16.99321 & 18.53188 \\ 16.999321\end{array}$ $\begin{array}{lllllllllllllllllllll}383185.7 & 3735361 & 13.61053 & 12.34616 & 18.3471 & 16.83709 & 18.3471 & 16.83709 & 17.99143 & 16.58285 & 17.99143 & 16.50605 & 18.17688 & 16.74949 & 13.61053 & 12.54104 & 18.3471 & 16.91509 & 18.3471 & 16.91509\end{array}$ $\begin{array}{llllllllllllllllllll}383227.7 & 3735384 & 13.48024 & 12.33084 & 18.17266 & 16.63407 & 18.17266 & 16.63407 & 17.81965 & 16.33213 & 17.81965 & 16.30673 & 18.0028 & 16.49532 & 13.48024 & 12.3502 & 18.17266 & 16.65977 & 18.17266 & 16.65977\end{array}$ $\begin{array}{llllllllllllllllllll}383269.7 & 3735406 & 13.338 & 12.15451 & 17.98252 & 16.39812 & 17.98252 & 16.39812 & 17.63256 & 16.12268 & 17.63256 & 16.12268 & 17.81319 & 16.28319 & 13.338 & 12.19063 & 17.98252 & 16.44622 & 17.98252 & 16.44622\end{array}$ $\begin{array}{lllllllllllllllllllll}383311.7 & 3735428 & 13.18774 & 12.10991 & 17.78166 & 16.33837 & 17.78166 & 16.33837 & 17.43552 & 16.01668 & 17.43552 & 16.01668 & 17.61332 & 16.17573 & 13.18774 & 12.10991 & 17.78166 & 16.33837 & 17.78166 & 16.33837\end{array}$ $\begin{array}{llllllllllllllllllll}383353.6 & 3735450 & 13.05539 & 11.93831 & 17.60508 & 16.10949 & 17.60508 & 16.10949 & 17.26182 & 15.79189 & 17.26182 & 15.79189 & 17.43714 & 15.94769 & 13.05539 & 11.93831 & 17.60508 & 16.10949 & 17.60508 & 16.10949\end{array}$ $\begin{array}{lllllllllllllllllllllllll}383395.6 & 3735473 & 12.91893 & 11.80781 & 17.42297 & 15.93563 & 17.42297 & 15.93563 & 17.08288 & 15.62036 & 17.08288 & 15.62036 & 17.25561 & 15.77343 & 12.91893 & 11.80781 & 17.42297 & 15.93563 & 17.42297 & 15.93563\end{array}$ $\begin{array}{lllllllllllllllllll}383437.6 & 3735495 & 12.7947 & 11.74456 & 17.25727 & 15.85109 & 17.25727 & 15.85109 & 16.91964 & 15.53731 & 16.91964 & 15.53731 & 17.08989 & 15.68912 & 12.7947 & 11.74456 & 17.25727 & 15.85109 & 17.25727\end{array} 15.85109$ $\begin{array}{llllllllllllllllllll}383479.6 & 3735517 & 12.68516 & 11.67121 & 17.11127 & 15.75313 & 17.11127 & 15.75313 & 16.77526 & 15.44107 & 16.77526 & 15.44107 & 16.94318 & 15.59165 & 12.68516 & 11.67121 & 17.11127 & 15.75313 & 17.11127 & 15.75313\end{array}$ $\begin{array}{lllllllllllllllllll}383521.6 & 3735539 & 12.56895 & 11.59335 & 16.95629 & 15.64908 & 16.95629 & 15.64908 & 16.62246 & 15.33912 & 16.62246 & 15.33912 & 16.78796 & 15.48817 & 12.56895 & 11.59335 & 16.95629 & 15.64908 & 16.95629\end{array} 15.64908$ $\begin{array}{llllllllllllllllllll}383563.6 & 3735561 & 12.44403 & 11.53354 & 16.78967 & 15.56943 & 16.78967 & 15.56943 & 16.4584 & 15.26025 & 16.4584 & 15.26025 & 16.62148 & 15.40806 & 12.44403 & 11.53354 & 16.78967 & 15.56943 & 16.78967 & 15.56943\end{array}$ $\begin{array}{lllllllllllllllllllll}383605.6 & 3735584 & 12.31066 & 11.47667 & 16.61174 & 15.49365 & 16.61174 & 15.49365 & 16.28364 & 15.18508 & 16.28364 & 15.18508 & 16.44419 & 15.33169 & 12.31066 & 11.47667 & 16.61174 & 15.49365 & 16.61174 & 15.49365\end{array}$ $\begin{array}{lllllllllllllllllll}383647.6 & 3735606 & 12.19404 & 11.40836 & 16.45629 & 15.38253 & 16.45629 & 15.38573 & 16.13039 & 15.09519 & 16.13039 & 15.09519 & 16.28867 & 15.24042 & 12.19404 & 11.40836 & 16.45629 & 15.40259 & 16.45629\end{array} 15.40259$ $\begin{array}{llllllllllllllllllllll}383689.6 & 3735628 & 12.09222 & 11.31323 & 16.32068 & 15.2757 & 16.32068 & 15.2757 & 15.99623 & 14.97039 & 15.99623 & 14.97039 & 16.15236 & 15.1138 & 12.09222 & 11.31323 & 16.32068 & 15.2757 & 16.32068 & 15.2757\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382952.3 & 3735295 & 14.24144 & 13.36306 & 19.18838 & 18.01032 & 19.18838 & 18.01032 & 18.81976 & 17.66379 & 18.81976 & 17.66379 & 19.01785 & 17.84746 & 14.24144 & 13.36306 & 19.18838 & 18.01032 & 19.18838 & 18.01032\end{array}$ | 382994.3 | 3735317 | 14.1094 | 13.25838 | 19.01207 | 17.87038 | 19.01207 | 17.87038 | 18.6456 | 17.52526 | 18.6456 | 17.49246 | 18.8411 | 17.70697 | 14.1094 | 13.25838 | 19.01207 | 17.87038 | 19.01207 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | 17.87038 $\begin{array}{llllllllllllllllllll}383036.3 & 3735339 & 14.05819 & 13.02073 & 18.94419 & 17.55382 & 18.94419 & 17.55382 & 18.57825 & 17.21443 & 18.57825 & 17.21443 & 18.7724 & 17.39148 & 14.05819 & 13.02073 & 18.94419 & 17.55382 & 18.94419 & 17.55382\end{array}$ $\begin{array}{lllllllllllllllllllll}383078.3 & 3735361 & 13.96984 & 12.9362 & 18.82618 & 17.44094 & 18.82618 & 17.44094 & 18.46212 & 17.1026 & 18.46212 & 17.1026 & 18.65463 & 17.27786 & 13.96984 & 12.9362 & 18.82618 & 17.44094 & 18.82618 & 17.44094\end{array}$ $\begin{array}{llllllllllllllllllll}383120.3 & 3735383 & 13.86322 & 12.84094 & 18.6839 & 17.3141 & 18.6839 & 17.3141 & 18.32257 & 16.97686 & 18.32257 & 16.97686 & 18.51301 & 17.15004 & 13.86322 & 12.84094 & 18.6839 & 17.3141 & 18.6839 & 17.3141\end{array}$ $\begin{array}{lllllllllllllllllllll}383162.3 & 3735406 & 13.72249 & 12.65995 & 18.49561 & 17.07297 & 18.49561 & 17.07297 & 18.13834 & 16.78242 & 18.13834 & 16.73882 & 18.3265 & 16.90819 & 13.72249 & 12.65995 & 18.49561 & 17.11737 & 18.49561 & 17.07297\end{array}$

 $\begin{array}{lllllllllllllllllllllll}383246.3 & 3735450 & 13.45315 & 12.30747 & 18.13539 & 16.62428 & 18.13539 & 16.60148 & 17.78361 & 16.3286 & 17.78361 & 16.316 & 17.9668 & 16.49259 & 13.45315 & 12.34766 & 18.13539 & 16.65498 & 18.13539 & 16.65498\end{array}$ $\begin{array}{llllllllllllllllllll}383288.3 & 3735472 & 13.29916 & 12.25523 & 17.92956 & 16.53147 & 17.92956 & 16.49487 & 17.5815 & 16.20729 & 17.5815 & 16.20729 & 17.76188 & 16.36957 & 13.29916 & 12.25523 & 17.92956 & 16.53147 & 17.92956 & 16.53147\end{array}$ $\begin{array}{llllllllllllllllllllll}383330.3 & 3735495 & 13.16137 & 12.10664 & 17.7456 & 16.33331 & 17.7456 & 16.33331 & 17.40086 & 16.01249 & 17.40086 & 16.01249 & 17.57863 & 16.17187 & 13.16137 & 12.10664 & 17.7456 & 16.33331 & 17.7456 & 16.33331\end{array}$ $\begin{array}{llllllllllllllllllllll}383372.3 & 3735517 & 13.02598 & 12.00243 & 17.56496 & 16.19427 & 17.56496 & 16.19427 & 17.22323 & 15.87558 & 17.22323 & 15.87558 & 17.39843 & 16.03296 & 13.02598 & 12.00243 & 17.56496 & 16.19427 & 17.56496 & 16.19427\end{array}$ $\begin{array}{llllllllllllllllllllll}383414.3 & 3735539 & 12.89654 & 11.83691 & 17.39227 & 15.97365 & 17.39227 & 15.97365 & 17.05327 & 15.65854 & 17.05327 & 15.65854 & 17.22587 & 15.81249 & 12.89654 & 11.83691 & 17.39227 & 15.97365 & 17.39227 & 15.97365\end{array}$ $\begin{array}{llllllllllllllllllll}383456.3 & 3735561 & 12.78025 & 11.67913 & 17.23734 & 15.76327 & 17.23734 & 15.76327 & 16.90013 & 15.45161 & 16.90013 & 15.45161 & 17.07034 & 15.60257 & 12.78025 & 11.67913 & 17.23734 & 15.76327 & 17.23734 & 15.76327\end{array}$ \begin{tabular}{lllllllllllllllllll}
383498.3 \& 3735583 \& 12.66433 \& 11.51768 \& 17.0828 \& 15.54791 \& 17.0828 \& 15.54791 \& 16.74749 \& 15.24011 \& 16.74749 \& 15.24011 \& 16.91543 \& 15.38792 \& 12.66433 \& 11.51768 \& 17.0828 \& 15.54791 \& 17.0828 <br>
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 15.54791 $\begin{array}{llllllllllllllllllllll}383540.2 & 3735606 & 12.54001 & 11.37279 & 16.91703 & 15.35483 & 16.91703 & 15.35483 & 16.58421 & 15.04997 & 16.58421 & 15.04997 & 16.74955 & 15.19495 & 12.54001 & 11.37279 & 16.91703 & 15.35483 & 16.91703 & 15.35483\end{array}$ $\begin{array}{lllllllllllllllllllllll}383582.2 & 3735628 & 12.40721 & 11.29492 & 16.73982 & 15.25109 & 16.73982 & 15.25109 & 16.41009 & 14.94728 & 16.41009 & 14.94728 & 16.57294 & 15.09048 & 12.40721 & 11.29492 & 16.73982 & 15.25109 & 16.73982 & 15.25109\end{array}$ $\begin{array}{lllllllllllllllllll}383624.2 & 3735650 & 12.276 & 11.23435 & 16.56473 & 15.17035 & 16.56473 & 15.17035 & 16.23799 & 14.86745 & 16.23799 & 14.86745 & 16.39835 & 15.00938 & 12.276 & 11.23435 & 16.56473 & 15.17035 & 16.56473 \\ 16.15 .17035\end{array}$ $\begin{array}{lllllllllllllllllllll}383666.2 & 3735672 & 12.17464 & 11.1596 & 16.42976 & 15.07061 & 16.42976 & 15.07061 & 16.1045 & 14.76938 & 16.1045 & 14.76938 & 16.26253 & 14.90992 & 12.17464 & 11.1596 & 16.42976 & 15.07061 & 16.42976 & 15.07061\end{array}$ $\begin{array}{llllllllllllllllllllll}382886.9 & 3735317 & 15.04488 & 13.98487 & 20.2565 & 19.04861 & 20.2565 & 19.04861 & 19.87262 & 18.47728 & 19.87262 & 18.44438 & 20.08801 & 18.88523 & 15.04488 & 14.14357 & 20.2565 & 19.04861 & 20.2565 & 19.04861\end{array}$ $\begin{array}{llllllllllllllllllll}382928.9 & 3735339 & 14.72462 & 13.84561 & 19.83033 & 18.71805 & 19.83033 & 18.71805 & 19.45239 & 18.29505 & 19.45239 & 18.29505 & 19.661 & 18.5558 & 14.72462 & 13.89561 & 19.83033 & 18.71805 & 19.83033 & 18.71805\end{array}$ $\begin{array}{llllllllllllllllllll}382970.9 & 3735361 & 14.4867 & 13.65555 & 19.51315 & 18.39787 & 19.51315 & 18.39787 & 19.13956 & 18.04511 & 19.13956 & 18.01551 & 19.34328 & 18.2355 & 14.4867 & 13.65555 & 19.51315 & 18.39787 & 19.51315 & 18.39787\end{array}$ $\begin{array}{lllllllllllllllllllllllllll} \\ 383012.9 & 3735383 & 14.28117 & 13.48671 & 19.24005 & 18.18831 & 19.24005 & 18.18831 & 18.8701 & 17.83955 & 18.8701 & 17.72025 & 19.0694 & 18.02678 & 14.28117 & 13.4982 & 19.24005 & 18.18831 & 19.24005 & 18.18831\end{array}$ $\begin{array}{lllllllllllllllllllllllll}383054.9 & 3735405 & 14.04096 & 13.32354 & 18.91955 & 17.95537 & 18.91955 & 17.95537 & 18.55494 & 17.6096 & 18.55494 & 17.3236 & 18.74953 & 17.79341 & 14.04096 & 13.32354 & 18.91955 & 17.95537 & 18.91955 & 17.95537\end{array}$ $\begin{array}{llllllllllllllllllll}383096.9 & 3735428 & 13.81009 & 13.14086 & 18.61201 & 17.71243 & 18.61201 & 17.71243 & 18.25266 & 17.36966 & 18.25266 & 17.28626 & 18.44261 & 17.54945 & 13.81009 & 13.14086 & 18.61201 & 17.71243 & 18.61201 & 17.71243\end{array}$ $\begin{array}{llllllllllllllllllll}383138.9 & 3735450 & 13.67907 & 13.05029 & 18.43722 & 17.59196 & 18.43722 & 17.59196 & 18.08135 & 17.2502 & 18.08135 & 17.1611 & 18.26893 & 17.42789 & 13.67907 & 13.05029 & 18.43722 & 17.59196 & 18.43722 & 17.59196\end{array}$ $\begin{array}{lllllllllllllllllllll}383180.9 & 3735472 & 13.56971 & 12.86673 & 18.29111 & 17.34699 & 18.29111 & 17.34699 & 17.93752 & 17.00911 & 17.93752 & 17.00911 & 18.12293 & 17.18333 & 13.56971 & 12.86673 & 18.29111 & 17.34699 & 18.29111 & 17.34699\end{array}$ $\begin{array}{llllllllllllllllllll}383222.9 & 3735494 & 13.42991 & 12.60422 & 18.10401 & 16.99623 & 18.10401 & 16.99623 & 17.75336 & 16.66483 & 17.75336 & 16.66483 & 17.93639 & 16.83427 & 13.42991 & 12.60422 & 18.10401 & 16.99623 & 18.10401 & 16.99623\end{array}$ $\begin{array}{lllllllllllllllllllll}383264.9 & 3735517 & 13.28201 & 12.39794 & 17.9062 & 16.72105 & 17.9062 & 16.72105 & 17.55916 & 16.39441 & 17.55916 & 16.39441 & 17.73943 & 16.55976 & 13.28201 & 12.39794 & 17.9062 & 16.72105 & 17.9062 & 16.72105\end{array}$ $\begin{array}{lllllllllllllllllll}383306.9 & 3735539 & 13.14722 & 12.24012 & 17.72621 & 16.51066 & 17.72621 & 16.51066 & 17.38252 & 16.18744 & 17.38252 & 16.18744 & 17.56034 & 16.34981 & 13.14722 & 12.24012 & 17.72621 & 16.51066 & 17.72621\end{array} 16.51066$ 

383348.9 \& 3735561 \& 13.02047 \& 12.09511 \& 17.55709 \& 16.31728 \& 17.55709 \& 16.31728 \& 17.21615 \& 15.99738 \& 17.21615 \& 15.99738 \& 17.39152 \& 16.15685 \& 13.02047 \& 12.09511 \& 17.55709 \& 16.31728 <br>
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 $17.55709 \quad 16.31728$ $\begin{array}{lllllllllllllllllllll}383390.9 & 3735583 & 12.89292 & 11.95241 & 17.38697 & 16.12698 & 17.38697 & 16.12698 & 17.04865 & 15.81009 & 17.04865 & 15.81009 & 17.22158 & 15.96666 & 12.89292 & 11.95241 & 17.38697 & 16.12698 & 17.38697 & 16.12698\end{array}$ $\begin{array}{lllllllllllllllllllll}383432.9 & 3735605 & 12.77658 & 11.81022 & 17.23179 & 15.93738 & 17.23179 & 15.93738 & 16.8957 & 15.62358 & 16.8957 & 15.62358 & 17.06621 & 15.77738 & 12.77658 & 11.81022 & 17.23179 & 15.93738 & 17.23179 & 15.93738\end{array}$ $\begin{array}{lllllllllllllllllllllll}383474.9 & 3735628 & 12.69048 & 11.67919 & 17.11741 & 15.76286 & 17.11741 & 15.76286 & 16.78227 & 15.45183 & 16.78227 & 15.45183 & 16.95081 & 15.60297 & 12.69048 & 11.67919 & 17.11741 & 15.76286 & 17.11741 & 15.76286\end{array}$ $\begin{array}{llllllllllllllllllll}383516.9 & 3735650 & 12.5478 & 11.60896 & 16.92683 & 15.66881 & 16.92683 & 15.66881 & 16.59452 & 15.35951 & 16.59452 & 15.35951 & 16.76043 & 15.50954 & 12.5478 & 11.60896 & 16.92683 & 15.66881 & 16.92683 & 15.66881\end{array}$ $\begin{array}{llllllllllllllllllll}383558.9 & 3735672 & 12.42202 & 11.51821 & 16.759 & 15.5479 & 16.759 & 15.5479 & 16.42957 & 15.24003 & 16.42957 & 15.24003 & 16.59301 & 15.38808 & 12.42202 & 11.51821 & 16.759 & 15.5479 & 16.759 & 15.5479\end{array}$ $\begin{array}{lllllllllllllllllll}383600.9 & 3735694 & 12.28696 & 11.37847 & 16.57883 & 15.36179 & 16.57883 & 15.36179 & 16.25266 & 15.05644 & 16.25266 & 15.05644 & 16.41353 & 15.20156 & 12.28696 & 11.37847 & 16.57883 & 15.36179 & 16.57883 \\ 16.36179\end{array}$ $\begin{array}{llllllllllllllllllllll}383642.9 & 3735716 & 12.19493 & 11.24048 & 16.45637 & 15.178 & 16.45637 & 15.178 & 16.13143 & 14.87539 & 16.13143 & 14.87539 & 16.29025 & 15.01773 & 12.19493 & 11.24048 & 16.45637 & 15.178 & 16.45637 & 15.178\end{array}$ $\begin{array}{llllllllllllllllllllllllll} \\ 383741.9 & 3735620 & 11.9144 & 11.05751 & 16.08412 & 14.93497 & 16.08412 & 14.93497 & 15.76281 & 14.63577 & 15.76281 & 14.63577 & 15.91496 & 14.77411 & 11.9144 & 11.05751 & 16.08412 & 14.93497 & 16.08412 & 14.93497\end{array}$ $\begin{array}{lllllllllllllllllll}383785.6 & 3735644 & 11.79678 & 10.97282 & 15.92725 & 14.82193 & 15.92725 & 14.82193 & 15.60842 & 14.5246 & 15.60842 & 14.5246 & 15.75842 & 14.66131 & 11.79678 & 10.97282 & 15.92725 & 14.82193 & 15.92725 \\ 14.8 .82193\end{array}$ $\begin{array}{lllllllllllllllllll}383722.6 & 3735678 & 12.00503 & 11.12662 & 16.20382 & 15.02616 & 16.20382 & 15.02616 & 15.88147 & 14.72648 & 15.88147 & 14.72648 & 16.03605 & 14.86668 & 12.00503 & 11.12662 & 16.20382 & 15.02616 & 16.20382 \\ 14.026 & 15.02616\end{array}$ $\begin{array}{llllllllllllllllllllll}383829.2 & 3735669 & 11.67057 & 10.8551 & 15.75879 & 14.66453 & 15.75879 & 14.66453 & 15.44318 & 14.371 & 15.44318 & 14.371 & 15.5908 & 14.50575 & 11.67057 & 10.8551 & 15.75879 & 14.66453 & 15.75879 & 14.66453\end{array}$ $\begin{array}{lllllllllllllllllllll}383785 & 3735704 & 11.84821 & 11.03856 & 15.995 & 14.90875 & 15.995 & 14.90875 & 15.6758 & 14.61094 & 15.6758 & 14.61094 & 15.82715 & 14.74939 & 11.84821 & 11.03856 & 15.995 & 14.90875 & 15.995 & 14.90875\end{array}$ $\begin{array}{llllllllllllllllllll}383736.7 & 3735726 & 11.993 & 10.93554 & 16.18762 & 14.77147 & 16.18762 & 14.77147 & 15.86577 & 14.47627 & 15.86577 & 14.47627 & 16.02021 & 14.61271 & 11.993 & 10.93554 & 16.18762 & 14.77147 & 16.18762 & 14.77147\end{array}$ $\begin{array}{lllllllllllllllllll}383759.7 & 3735538 & 11.68829 & 10.94835 & 15.78417 & 14.78444 & 15.78417 & 14.78444 & 15.4666 & 14.51061 & 15.4666 & 14.51061 & 15.61366 & 14.64654 & 11.68829 & 10.96209 & 15.78417 & 14.80873 & 15.78417 \\ 14.80873\end{array}$ 

383722.8 \& 3735508 \& 11.74666 \& 11.12035 \& 15.86217 \& 15.01478 \& 15.86217 \& 15.01478 \& 15.54351 \& 14.73297 \& 15.54351 \& 14.73297 \& 15.69167 \& 14.87199 \& 11.74666 \& 11.13213 \& 15.86217 \& 15.03572 \& 15.86217 <br>
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\end{tabular} 15.03572 $\begin{array}{lllllllllllllllllllll}383788.9 & 3735500 & 11.48285 & 11.1254 & 15.51108 & 15.00841 & 15.51108 & 15.02138 & 15.19741 & 14.72437 & 15.19741 & 14.72437 & 15.33994 & 14.8634 & 11.48285 & 11.1254 & 15.51108 & 15.02656 & 15.51108 & 15.02656\end{array}$ $\begin{array}{llllllllllllllllllll}383816.4 & 3735565 & 11.53724 & 10.8656 & 15.5826 & 14.67986 & 15.5826 & 14.67986 & 15.26846 & 14.38414 & 15.26846 & 14.38414 & 15.41264 & 14.51828 & 11.53724 & 10.8656 & 15.5826 & 14.67986 & 15.5826 & 14.67986\end{array}$ $\begin{array}{lllllllllllllllllllllll}383748.2 & 3735465 & 11.53595 & 11.27105 & 15.58226 & 15.2143 & 15.58226 & 15.2211 & 15.26736 & 14.91482 & 15.26736 & 14.91482 & 15.41087 & 15.05645 & 11.53595 & 11.27105 & 15.58226 & 15.2211 & 15.58226 & 15.2211\end{array}$

| Reduction to Peak | 0.0010 | 0.0009 | 0.0037 | 0.0035 | 0.0037 | 0.0034 | 0.0021 | 0.0019 | 0.0021 | 0.0019 | 0.0058 | 0.0055 | 0.0014 | 0.0013 | 0.0055 | 0.0052 | 0.0055 | 0.0052 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction | 48.55\% | 48.55\% | 44.40\% | 44.40\% | 44.40\% | 44.40\% | 78.71\% | 78.71\% | 78.71\% | 78.71\% | 70.88\% | 70.88\% | 67.78\% | 67.78\% | 66.42\% | 66.4 | 66.42\% | 66.42\% |
|  | 389450 | 389450_3 | 382683. | 382683.8 | 382683.8 | 382683.8 | $150{ }^{3}$ | $39200$ | $\overline{9450}$ | 89200_3 | 382683.8 | $683.8$ | 389450_3 | 389450_37 | 382683.8 | 2683.8_ | 382683.8 |  |

$\begin{array}{lllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$ 2033_ALT4_ 2033_ALT4_ 2033_ALT5_ 2033_ALT5_ 2033_PP_CA 2033_PP_N 2038_ALT1_ 2038_ALT1_ 2038_NP_C 2038_NP_N 2038_ALT3_ 2038_ALT3_ 2038_ALT4_ 2038_ALT4_ 2038_ALT5_ 2038_ALT5_ 2038_PP_CA 2038_PP_N $\begin{array}{lllllllllllllllllllllllllll}383816.1 & 3735459 & 11.4128 & 11.059 & 15.41836 & 14.93861 & 15.41836 & 14.93861 & 15.10557 & 14.63698 & 15.10557 & 14.63698 & 15.24641 & 14.77433 & 11.4128 & 11.059 & 15.41836 & 14.93861 & 15.41836 & 14.93861\end{array}$ $\begin{array}{lllllllllllllllllllllll} \\ 383850.5 & 3735504 & 11.31034 & 11.01856 & 15.28123 & 14.88394 & 15.28123 & 14.88394 & 14.97137 & 14.58447 & 14.97137 & 14.58447 & 15.1105 & 14.72152 & 11.31034 & 11.01856 & 15.28123 & 14.88394 & 15.28123 & 14.88394\end{array}$ $\begin{array}{llllllllllllllllllll}383864.2 & 3735555 & 11.33878 & 10.84461 & 15.31833 & 14.65156 & 15.31833 & 14.65156 & 15.00866 & 14.35707 & 15.00866 & 14.35707 & 15.14878 & 14.49104 & 11.33878 & 10.84461 & 15.31833 & 14.65156 & 15.31833 & 14.65156\end{array}$

 $\begin{array}{llllllllllllllllllll}383773.5 & 3735422 & 11.54681 & 11.0873 & 15.59731 & 14.97668 & 15.59731 & 14.97668 & 15.2814 & 14.67429 & 15.2814 & 14.67429 & 15.4247 & 14.81205 & 11.54681 & 11.0873 & 15.59731 & 14.97668 & 15.59731 & 14.97668\end{array}$ $\begin{array}{llllllllllllllllllll}383673 & 3735451 & 11.75671 & 11.39414 & 15.87602 & 15.38103 & 15.87602 & 15.38103 & 15.55775 & 15.08711 & 15.55775 & 15.08711 & 15.70605 & 15.23132 & 11.75671 & 11.40241 & 15.87602 & 15.39628 & 15.87602 & 15.39628\end{array}$ $\begin{array}{llllllllllllllllllll}383642.4 & 3735417 & 11.77067 & 11.46828 & 15.8949 & 15.4806 & 15.8949 & 15.4806 & 15.57643 & 15.1817 & 15.57643 & 15.1817 & 15.72487 & 15.32736 & 11.77067 & 11.47449 & 15.8949 & 15.49248 & 15.8949 & 15.49248\end{array}$ $\begin{array}{lllllllllllllllllllll}383611.7 & 3735384 & 11.79518 & 11.44991 & 15.92806 & 15.45927 & 15.92806 & 15.45927 & 15.60861 & 15.15542 & 15.60861 & 15.15542 & 15.75723 & 15.30057 & 11.79518 & 11.45404 & 15.92806 & 15.46542 & 15.92806 & 15.46542\end{array}$ $\begin{array}{llllllllllllllllllll}383581.1 & 3735350 & 11.90293 & 11.42443 & 16.072 & 15.42582 & 16.072 & 15.42582 & 15.74988 & 15.11982 & 15.74988 & 15.11982 & 15.90051 & 15.26444 & 11.90293 & 11.42648 & 16.072 & 15.42887 & 16.072 & 15.42887\end{array}$ $\begin{array}{lllllllllllllllllllll} & 15.42582 & 15.74988 & 15.11982 & 15.74988 & 15.11982 & 15.90051 & 15.26444 & 11.90293 & 11.42648 & 16.072 & 15.42887 & 16.072 & 15.42887 \\ 383550.4 & 3735317 & 11.99396 & 11.41589 & 16.19364 & 15.41344 & 16.19364 & 15.41344 & 15.86956 & 15.10603 & 15.86956 & 15.10603 & 16.02184 & 15.25012 & 11.99396 & 11.41594 & 16.19364 & 15.41529 & 16.19364 & 15.41529\end{array}$ $\begin{array}{lllllllllllllllll}383709.9 & 3735417 & 11.61611 & 11.25757 & 15.68947 & 15.20372 & 15.68947 & 15.20372 & 15.37305 & 14.89709 & 15.37305 & 14.89709 & 15.51807 & 15.03812 & 11.61611 & 11.25757 & 15.68947 \\ 15.5 & 15.20372 & 15.68947 & 15.20372\end{array}$ $\begin{array}{llllllllllllllllllll}383679.2 & 3735383 & 11.70722 & 11.26582 & 15.81101 & 15.20766 & 15.81101 & 15.20766 & 15.4931 & 14.90806 & 15.4931 & 14.90806 & 15.63992 & 15.0491 & 11.70722 & 11.26582 & 15.81101 & 15.21505 & 15.81101 & 15.21505\end{array}$ $\begin{array}{lllllllllllllllllll}383648.6 & 3735350 & 11.80234 & 11.26446 & 15.93804 & 15.21348 & 15.93804 & 15.21348 & 15.6179 & 14.90659 & 15.6179 & 14.90659 & 15.76651 & 15.04753 & 11.80234 & 11.26446 & 15.93804 & 15.21348 & 15.93804 \\ 15.21348\end{array}$ $\begin{array}{llllllllllllllllll}383617.9 & 3735316 & 11.89208 & 11.27405 & 16.05812 & 15.22641 & 16.05812 & 15.22641 & 15.73555 & 14.91963 & 15.73555 & 14.91963 & 15.88562 & 15.06076 & 11.89208 & 11.27405 & 16.05812 & 15.22641\end{array} 16.05812 \quad 15.22641$ $\begin{array}{llllllllllllllllllll}383587.2 & 3735283 & 11.96197 & 11.27434 & 16.1516 & 15.22728 & 16.1516 & 15.22728 & 15.82726 & 14.92064 & 15.82726 & 14.92064 & 15.97864 & 15.06162 & 11.96197 & 11.27434 & 16.1516 & 15.22728 & 16.1516 & 15.22728\end{array}$ $\begin{array}{lllllllllllllllllllll}383746.7 & 3735383 & 11.64061 & 11.1033 & 15.72268 & 14.99859 & 15.72268 & 14.99859 & 15.40467 & 14.73024 & 15.40467 & 14.69488 & 15.54974 & 14.8326 & 11.64061 & 11.1033 & 15.72268 & 14.99859 & 15.72268 & 14.99859\end{array}$ $\begin{array}{llllllllllllllllllllll}383716.1 & 3735349 & 11.70981 & 11.13426 & 15.81506 & 15.04021 & 15.81506 & 15.04021 & 15.49583 & 14.76682 & 15.49583 & 14.76682 & 15.64227 & 14.87358 & 11.70981 & 11.13426 & 15.81506 & 15.04021 & 15.81506 & 15.04021\end{array}$ $\begin{array}{llllllllllllllllllll}383685.4 & 3735316 & 11.75947 & 11.13205 & 15.88145 & 15.03757 & 15.88145 & 15.03757 & 15.56158 & 14.77925 & 15.56158 & 14.77925 & 15.70912 & 14.87065 & 11.75947 & 11.13205 & 15.88145 & 15.08491 & 15.88145 & 15.06069\end{array}$ $\begin{array}{lllllllllllllllllll}383654.7 & 3735283 & 11.82152 & 11.16668 & 15.96454 & 15.084 & 15.96454 & 15.084 & 15.64298 & 14.80193 & 15.64298 & 14.80193 & 15.79147 & 14.91706 & 11.82152 & 11.16668 & 15.96454 & 15.10783 & 15.96454 \\ 15.5 .09715\end{array}$ $\begin{array}{lllllllllllllllllllll}383624.1 & 3735249 & 11.88399 & 11.20391 & 16.04857 & 15.13433 & 16.04857 & 15.13433 & 15.72509 & 14.82835 & 15.72509 & 14.82835 & 15.87444 & 14.96748 & 11.88399 & 11.20391 & 16.04857 & 15.14491 & 16.04857 & 15.13433\end{array}$ $\begin{array}{lllllllllllllllllllll}383491.1 & 3735284 & 12.09394 & 11.48597 & 16.32686 & 15.50799 & 16.32686 & 15.50799 & 16.00157 & 15.20132 & 16.00157 & 15.20132 & 16.15609 & 15.34661 & 12.09394 & 11.48812 & 16.32686 & 15.50898 & 16.32686 & 15.50898\end{array}$ $\begin{array}{lllllllllllllllllllll}383446.4 & 3735262 & 12.17756 & 11.55347 & 16.43851 & 15.59919 & 16.43851 & 15.59919 & 16.11162 & 15.28944 & 16.11162 & 15.28944 & 16.26775 & 15.43591 & 12.17756 & 11.55514 & 16.43851 & 15.60109 & 16.43851 & 15.60159\end{array}$ $\begin{array}{llllllllllllllllllllll}383401.7 & 3735240 & 12.27494 & 11.61014 & 16.56897 & 15.67481 & 16.56897 & 15.67481 & 16.23946 & 15.36303 & 16.23946 & 15.36303 & 16.39723 & 15.51043 & 12.27494 & 11.6109 & 16.56897 & 15.67674 & 16.56897 & 15.67674\end{array}$ $\begin{array}{lllllllllllllllllllll}383357.1 & 3735217 & 12.35797 & 11.66672 & 16.68031 & 15.75002 & 16.68031 & 15.75002 & 16.34881 & 15.45555 & 16.34881 & 15.44165 & 16.50792 & 15.58987 & 12.35797 & 11.67007 & 16.68031 & 15.75642 & 16.68031 & 15.75642\end{array}$ $\begin{array}{llllllllllllllllllllllllll}383312.4 & 3735195 & 12.43997 & 11.83803 & 16.79081 & 15.97824 & 16.79081 & 15.97824 & 16.45697 & 15.67436 & 16.45697 & 15.67116 & 16.6171 & 15.82225 & 12.43997 & 11.84482 & 16.79081 & 15.99081 & 16.79081 & 15.99081\end{array}$ $\begin{array}{lllllllllllllllllllll}383267.7 & 3735173 & 12.51274 & 12.04023 & 16.88896 & 16.24897 & 16.88896 & 16.24897 & 16.55337 & 15.94277 & 16.55337 & 15.94277 & 16.71456 & 16.09732 & 12.51274 & 12.05139 & 16.88896 & 16.26761 & 16.88896 & 16.26761\end{array}$ $\begin{array}{llllllllllllllllllll}383223.1 & 3735151 & 12.75408 & 12.22622 & 17.2119 & 16.49937 & 17.2119 & 16.49937 & 16.87084 & 16.19254 & 16.87084 & 16.19254 & 17.03627 & 16.35031 & 12.75408 & 12.24094 & 17.2119 & 16.52161 & 17.2119 & 16.52161\end{array}$ $\begin{array}{llllllllllllllllllll}383178.4 & 3735129 & 13.01351 & 12.39914 & 17.55793 & 16.7313 & 17.55793 & 16.7313 & 17.21136 & 16.42169 & 17.21136 & 16.42169 & 17.3812 & 16.58245 & 13.01351 & 12.41476 & 17.55951 & 16.75468 & 17.55951 & 16.75468\end{array}$ $\begin{array}{lllllllllllllllllllll}383133.7 & 3735107 & 13.22534 & 12.51047 & 17.84021 & 16.88059 & 17.84021 & 16.88059 & 17.48998 & 16.56639 & 17.48998 & 16.56639 & 17.66329 & 16.72914 & 13.22534 & 12.52354 & 17.84021 & 16.88731 & 17.84021 & 16.88333\end{array}$ $\begin{array}{llllllllllllllllllllll}383089.1 & 3735085 & 13.34596 & 12.61061 & 18.00306 & 17.00942 & 18.00306 & 17.00942 & 17.65101 & 16.69745 & 17.65101 & 16.69745 & 17.82276 & 16.84355 & 13.34754 & 12.62174 & 18.00306 & 17.00942 & 18.00306 & 17.00942\end{array}$ $\begin{array}{lllllllllllllllllllll}383044.4 & 3735063 & 13.3987 & 12.6944 & 18.07441 & 17.12718 & 18.07441 & 17.12718 & 17.72195 & 16.80815 & 17.72195 & 16.87225 & 17.89536 & 16.95529 & 13.3987 & 12.6944 & 18.07441 & 17.12718 & 18.07441 & 17.12718\end{array}$ $\begin{array}{llllllllllllllllllllll}383513.3 & 3735239 & 12.08424 & 11.39438 & 16.31513 & 15.38818 & 16.31513 & 15.38818 & 15.98884 & 15.07869 & 15.98884 & 15.07869 & 16.14251 & 15.2217 & 12.08424 & 11.39438 & 16.31513 & 15.38818 & 16.31513 & 15.38818\end{array}$ $\begin{array}{llllllllllllllllllll}383468.6 & 3735217 & 12.15471 & 11.4945 & 16.40955 & 15.52235 & 16.40955 & 15.52235 & 16.08192 & 15.21023 & 16.08192 & 15.21023 & 16.23692 & 15.35486 & 12.15471 & 11.4945 & 16.40955 & 15.52235 & 16.40955 & 15.52235\end{array}$ $\begin{array}{llllllllllllllllllll}383423.9 & 3735195 & 12.24325 & 11.65944 & 16.52836 & 15.74318 & 16.52836 & 15.74318 & 16.19826 & 15.42706 & 16.19826 & 15.42706 & 16.35452 & 15.57453 & 12.24325 & 11.65944 & 16.52836 & 15.74318 & 16.52836 & 15.74318\end{array}$ $\begin{array}{lllllllllllllllllllll}383379.3 & 3735173 & 12.31018 & 11.77948 & 16.6185 & 15.90413 & 16.6185 & 15.90413 & 16.28665 & 15.58571 & 16.28665 & 15.58571 & 16.44395 & 15.73523 & 12.31018 & 11.77948 & 16.6185 & 15.90413 & 16.6185 & 15.90413\end{array}$ $\begin{array}{lllllllllllllllllllll}383334.6 & 3735150 & 12.43158 & 11.88725 & 16.78121 & 16.04918 & 16.78121 & 16.04918 & 16.44628 & 15.73493 & 16.44628 & 15.73493 & 16.60555 & 15.8861 & 12.43158 & 11.89288 & 16.78121 & 16.05668 & 16.78121 & 16.05668\end{array}$ $\begin{array}{lllllllllllllllllllll}383289.9 & 3735128 & 12.53781 & 12.03036 & 16.92392 & 16.24115 & 16.92392 & 16.24115 & 16.58644 & 15.93581 & 16.58644 & 15.91591 & 16.74741 & 16.06931 & 12.53781 & 12.03036 & 16.92392 & 16.24115 & 16.92392 & 16.24115\end{array}$ $\begin{array}{lllllllllllllllllllll}383245.2 & 3735106 & 12.69623 & 12.17784 & 17.13639 & 16.43908 & 17.13639 & 16.43908 & 16.79529 & 16.16684 & 16.79529 & 16.11044 & 16.9589 & 16.26619 & 12.69623 & 12.17784 & 17.13639 & 16.43908 & 17.13639 & 16.43908\end{array}$ \begin{tabular}{lllllllllllllllllll}
383200.6 \& 3735084 \& 12.89943 \& 12.30056 \& 17.40869 \& 16.60223 \& 17.4083 \& 16.59876 \& 17.0622 \& 16.27249 \& 17.0622 \& 16.27249 \& 17.22917 \& 16.43026 \& 12.89943 \& 12.30056 \& 17.40869 \& 16.60386 \& 17.40869 <br>
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 16.60386 $\begin{array}{llllllllllllllllllllllll}383155.9 & 3735062 & 13.07569 & 12.43315 & 17.64117 & 16.76249 & 17.64117 & 16.76249 & 17.29394 & 16.44803 & 17.29394 & 16.44803 & 17.46381 & 16.6084 & 13.07569 & 12.43324 & 17.6449 & 16.78136 & 17.6449 & 16.78136\end{array}$ $\begin{array}{llllllllllllllllll}383111.2 & 3735040 & 13.18559 & 12.56638 & 17.78773 & 16.95307 & 17.78773 & 16.95307 & 17.43869 & 16.63891 & 17.43869 & 16.63891 & 17.61062 & 16.80218 & 13.18559 & 12.57808 & 17.78773 & 16.96158 \\ 17.78773 & 16.95697\end{array}$ $\begin{array}{llllllllllllllllllll}383066.6 & 3735018 & 13.23407 & 12.61835 & 17.85599 & 17.02688 & 17.85599 & 17.02688 & 17.50668 & 16.69047 & 17.50668 & 16.73257 & 17.67578 & 16.85412 & 13.23407 & 12.61835 & 17.85599 & 17.02688 & 17.85599 & 17.02688\end{array}$ $\begin{array}{lllllllllllllllllllll}383580.1 & 3735216 & 11.95944 & 11.26125 & 16.15009 & 15.21165 & 16.15009 & 15.21165 & 15.82466 & 14.90417 & 15.82466 & 14.90417 & 15.97508 & 15.04405 & 11.95944 & 11.26125 & 16.15009 & 15.21165 & 16.15009 & 15.21165\end{array}$ $\begin{array}{lllllllllllllllllll}383535.4 & 3735194 & 12.02141 & 11.42094 & 16.23314 & 15.42529 & 16.23314 & 15.42529 & 15.90665 & 15.11385 & 15.90665 & 15.11385 & 16.05818 & 15.25654 & 12.02141 & 11.42094 & 16.23314 & 15.42529 & 16.23314 \\ 15.45 .42529\end{array}$ $\begin{array}{lllllllllllllllllll}383490.8 & 3735172 & 12.11669 & 11.59679 & 16.36061 & 15.66058 & 16.36061 & 15.66058 & 16.03257 & 15.34528 & 16.03257 & 15.34528 & 16.18593 & 15.4911 & 12.11669 & 11.59679 & 16.36061 & 15.66058 & 16.36061\end{array} 15.66058$ $\begin{array}{lllllllllllllllllllll}383446.1 & 3735150 & 12.2459 & 11.70973 & 16.53365 & 15.81204 & 16.53365 & 15.81204 & 16.20205 & 15.49388 & 16.20205 & 15.49388 & 16.3576 & 15.64158 & 12.2459 & 11.70973 & 16.53365 & 15.81204 & 16.53365 & 15.81204\end{array}$ $\begin{array}{lllllllllllllllllllll}383401.4 & 3735128 & 12.36697 & 11.80961 & 16.69606 & 15.94627 & 16.69606 & 15.94627 & 16.36145 & 15.62624 & 16.36145 & 15.62624 & 16.51896 & 15.77548 & 12.36697 & 11.80961 & 16.69606 & 15.94627 & 16.69606 & 15.94627\end{array}$ $\begin{array}{llllllllllllllllllllll} & 383356.8 & 3735106 & 12.46336 & 11.90737 & 16.82539 & 16.0779 & 16.82539 & 16.0779 & 16.48848 & 15.75451 & 16.48848 & 15.75451 & 16.64761 & 15.90511 & 12.46336 & 11.90737 & 16.82539 & 16.0779 & 16.82539 & 16.0779\end{array}$ $\begin{array}{llllllllllllllllllll}383312.1 & 3735084 & 12.54414 & 12.00217 & 16.93395 & 16.20524 & 16.93395 & 16.20524 & 16.59519 & 15.87976 & 16.59519 & 15.87976 & 16.75552 & 16.03184 & 12.54414 & 12.00217 & 16.93395 & 16.20524 & 16.93395 & 16.20524\end{array}$ $\begin{array}{lllllllllllllllllllll}383267.4 & 3735061 & 12.60601 & 12.16309 & 17.01751 & 16.42073 & 17.01751 & 16.42073 & 16.67734 & 16.10771 & 16.67734 & 16.09151 & 16.83843 & 16.24637 & 12.60601 & 12.16309 & 17.01751 & 16.42073 & 17.01751 & 16.42073\end{array}$ $\begin{array}{llllllllllllllllllll}383222.8 & 3735039 & 12.7208 & 12.23302 & 17.17148 & 16.47756 & 17.17148 & 16.47756 & 16.82831 & 16.2938 & 16.82831 & 16.1841 & 16.9913 & 16.34002 & 12.7208 & 12.23302 & 17.17148 & 16.51486 & 17.17148 & 16.51486\end{array}$ $\begin{array}{lllllllllllllllllllll}383178.1 & 3735017 & 12.85482 & 12.37782 & 17.35086 & 16.70787 & 17.35086 & 16.70787 & 17.00418 & 16.37513 & 17.00418 & 16.37513 & 17.16932 & 16.53392 & 12.85482 & 12.37782 & 17.35086 & 16.7082 & 17.35086 & 16.7082\end{array}$ $\begin{array}{lllllllllllllllllllll}383133.4 & 3734995 & 12.94884 & 12.56068 & 17.47295 & 16.94957 & 17.47295 & 16.94957 & 17.12787 & 16.63274 & 17.12787 & 16.63274 & 17.29483 & 16.79562 & 12.94884 & 12.57369 & 17.47651 & 16.94996 & 17.47651 & 16.94996\end{array}$ $\begin{array}{lllllllllllllllllll}383088.8 & 3734973 & 13.04508 & 12.48956 & 17.60449 & 16.85561 & 17.60449 & 16.85561 & 17.25438 & 16.53554 & 17.25804 & 16.53554 & 17.42354 & 16.69748 & 13.04508 & 12.48956 & 17.60449 & 16.85981 & 17.60449\end{array} 16.85561$ $\begin{array}{lllllllllllllllllllllllll}383116.6 & 3734898 & 12.9952 & 12.45803 & 17.53679 & 16.81245 & 17.53679 & 16.81245 & 17.18714 & 16.47813 & 17.18808 & 16.47857 & 17.35567 & 16.63961 & 12.9952 & 12.45803 & 17.53679 & 16.81245 & 17.53679 & 16.81245\end{array}$ $\begin{array}{llllllllllllllllllll}383135.3 & 3734857 & 12.94167 & 12.44376 & 17.46439 & 16.79203 & 17.46439 & 16.79203 & 17.11573 & 16.45908 & 17.11573 & 16.45908 & 17.2835 & 16.61929 & 12.94167 & 12.44376 & 17.46439 & 16.79203 & 17.46439 & 16.79203\end{array}$ $\begin{array}{lllllllllllllllllllll}383154 & 3734816 & 12.88136 & 12.42496 & 17.38302 & 16.76577 & 17.38302 & 16.76577 & 17.03535 & 16.4344 & 17.03535 & 16.4585 & 17.20225 & 16.59307 & 12.88136 & 12.4267 & 17.38302 & 16.76577 & 17.38302 & 16.76577\end{array}$ $\begin{array}{llllllllllllllllllllll}383172.7 & 3734774 & 12.8311 & 12.37929 & 17.31566 & 16.70317 & 17.31566 & 16.70317 & 16.96866 & 16.40588 & 16.96866 & 16.40588 & 17.13458 & 16.53046 & 12.8311 & 12.37929 & 17.31566 & 16.70317 & 17.31566 & 16.70317\end{array}$ $\begin{array}{lllllllllllllllllllll}383191.4 & 3734733 & 12.8095 & 12.38581 & 17.28682 & 16.64764 & 17.28682 & 16.64764 & 16.93976 & 16.37917 & 16.93976 & 16.37917 & 17.10516 & 16.47531 & 12.8095 & 12.38581 & 17.28682 & 16.64764 & 17.28682 & 16.64764\end{array}$ $\begin{array}{lllllllllllllllllllll}383162.2 & 3734919 & 12.83959 & 12.43985 & 17.32956 & 16.78791 & 17.32956 & 16.78791 & 16.9827 & 16.47783 & 16.9827 & 16.47783 & 17.14795 & 16.61459 & 12.83959 & 12.43985 & 17.32956 & 16.78791 & 17.32956 & 16.78791\end{array}$ $\begin{array}{lllllllllllllllllllllll} \\ 383180.9 & 3734878 & 12.7806 & 12.34221 & 17.24995 & 16.65679 & 17.24995 & 16.65679 & 16.90412 & 16.35174 & 16.90412 & 16.35174 & 17.06848 & 16.48376 & 12.7806 & 12.34221 & 17.24995 & 16.65679 & 17.24995 & 16.65679\end{array}$ $\begin{array}{lllllllllllllllllllllll} \\ 383199.6 & 3734836 & 12.74214 & 12.30005 & 17.19835 & 16.60033 & 17.19835 & 16.60033 & 16.85297 & 16.29369 & 16.85297 & 16.29369 & 17.01663 & 16.42693 & 12.74214 & 12.30005 & 17.19835 & 16.60033 & 17.19835 & 16.60033\end{array}$ $\begin{array}{llllllllllllllllllll}383218.3 & 3734795 & 12.71892 & 12.30775 & 17.16733 & 16.61052 & 17.16733 & 16.61052 & 16.8219 & 16.30103 & 16.8219 & 16.30103 & 16.98505 & 16.4364 & 12.71892 & 12.30775 & 17.16733 & 16.61052 & 17.16733 & 16.61052\end{array}$ $\begin{array}{llllllllllllllllllll}383237 & 3734753 & 12.69661 & 12.3173 & 17.13766 & 16.62349 & 17.13766 & 16.62349 & 16.79211 & 16.31079 & 16.79211 & 16.31079 & 16.95473 & 16.46297 & 12.69661 & 12.3244 & 17.13766 & 16.62349 & 17.13766 & 16.62349\end{array}$ $\begin{array}{llllllllllllllllllllll}383207.8 & 3734940 & 12.68029 & 12.30775 & 17.11806 & 16.61509 & 17.11806 & 16.61509 & 16.77431 & 16.28264 & 16.77431 & 16.28264 & 16.93599 & 16.43977 & 12.68029 & 12.30775 & 17.11806 & 16.61509 & 17.11806 & 16.61509\end{array}$ $\begin{array}{lllllllllllllllllll}383226.5 & 3734898 & 12.65769 & 12.29846 & 17.08785 & 16.60304 & 17.08785 & 16.60119 & 16.74409 & 16.27001 & 16.74409 & 16.27001 & 16.90534 & 16.42675 & 12.65769 & 12.29846 & 17.08785 & 16.60304 & 17.08785 \\ 16.60304\end{array}$ $\begin{array}{llllllllllllllllllll}383245.2 & 3734857 & 12.63665 & 12.30347 & 17.05977 & 16.6045 & 17.05977 & 16.59598 & 16.71593 & 16.27616 & 16.71593 & 16.27616 & 16.87665 & 16.43278 & 12.63665 & 12.30347 & 17.05977 & 16.61 & 17.05977 & 16.61\end{array}$ $\begin{array}{llllllllllllllllllll}383263.9 & 3734815 & 12.6152 & 12.31165 & 17.03139 & 16.61351 & 17.03139 & 16.60476 & 16.68754 & 16.28643 & 16.68754 & 16.28643 & 16.84762 & 16.44305 & 12.6152 & 12.31165 & 17.03139 & 16.62124 & 17.03139 & 16.62124\end{array}$ $\begin{array}{lllllllllllllllllllll}383282.6 & 3734774 & 12.58807 & 12.29289 & 16.99534 & 16.59625 & 16.99534 & 16.59625 & 16.65151 & 16.26127 & 16.65151 & 16.26127 & 16.81104 & 16.41729 & 12.58807 & 12.29289 & 16.99534 & 16.59625 & 16.99534 & 16.59625\end{array}$ $\begin{array}{llllllllllllllllllll}383171.7 & 3734669 & 12.89941 & 12.49431 & 17.40666 & 16.84281 & 17.40666 & 16.84264 & 17.05751 & 16.53547 & 17.05751 & 16.52086 & 17.22481 & 16.68354 & 12.89941 & 12.49431 & 17.40666 & 16.84281 & 17.40666 & 16.8428\end{array}$ $\begin{array}{llllllllllllllllllll}383219.4 & 3734654 & 12.79283 & 12.40306 & 17.26511 & 16.73693 & 17.26511 & 16.73693 & 16.91712 & 16.41654 & 16.91712 & 16.41654 & 17.08193 & 16.57705 & 12.79283 & 12.41309 & 17.26511 & 16.73693 & 17.26511 & 16.73693\end{array}$ $\begin{array}{lllllllllllllllllllll}383164.4 & 3734606 & 12.97479 & 12.57194 & 17.50801 & 16.96444 & 17.50801 & 16.96282 & 17.15677 & 16.62521 & 17.15677 & 16.62521 & 17.32517 & 16.7885 & 12.97479 & 12.57194 & 17.50801 & 16.96444 & 17.50801 & 16.96444\end{array}$ $\begin{array}{lllllllllllllllllllll}383245.2 & 3734611 & 12.75782 & 12.40709 & 17.21915 & 16.73859 & 17.21915 & 16.73859 & 16.87091 & 16.40826 & 16.87091 & 16.40826 & 17.03466 & 16.56267 & 12.75782 & 12.40709 & 17.21915 & 16.73859 & 17.21915 & 16.73859\end{array}$ $\begin{array}{llllllllllllllllllll}383286.9 & 3734703 & 12.60564 & 12.29819 & 17.01792 & 16.60181 & 17.01792 & 16.60181 & 16.67311 & 16.26693 & 16.67311 & 16.26693 & 16.83314 & 16.42367 & 12.60564 & 12.29819 & 17.01792 & 16.60181 & 17.01792 & 16.60181\end{array}$ $\begin{array}{lllllllllllllllllll}383190.2 & 3734564 & 12.94998 & 12.58917 & 17.47571 & 16.98405 & 17.47571 & 16.98405 & 17.1238 & 16.64695 & 17.1238 & 16.64695 & 17.29119 & 16.80628 & 12.94998 & 12.58917 & 17.47571 & 16.98405 & 17.47571 \\ 16.98405\end{array}$ $\begin{array}{llllllllllllllllllllll}383069.6 & 3734667 & 13.28026 & 12.87297 & 17.91578 & 17.36732 & 17.91578 & 17.3613 & 17.55949 & 17.02156 & 17.55949 & 17.02156 & 17.73402 & 17.19025 & 13.28026 & 12.87297 & 17.91578 & 17.36732 & 17.91578 & 17.36732\end{array}$ $\begin{array}{lllllllllllllllllllllll}383045.9 & 3734708 & 13.36785 & 12.87612 & 18.03353 & 17.3713 & 18.03353 & 17.3713 & 17.67533 & 17.04075 & 17.67533 & 17.04075 & 17.85113 & 17.20926 & 13.36785 & 12.88634 & 18.03353 & 17.3713 & 18.03353 & 17.3713\end{array}$ $\begin{array}{llllllllllllllllllllll}383057.1 & 3734619 & 13.36598 & 12.94577 & 18.03021 & 17.46451 & 18.03021 & 17.46451 & 17.67158 & 17.11659 & 17.67158 & 17.11659 & 17.84764 & 17.28662 & 13.36598 & 12.94577 & 18.03021 & 17.46451 & 18.03021 & 17.46451\end{array}$ $\begin{array}{lllllllllllllllllllllll}383002.7 & 3734683 & 13.67553 & 13.19346 & 18.44461 & 17.79713 & 18.44461 & 17.79713 & 18.08827 & 17.44751 & 18.10909 & 17.44751 & 18.26089 & 17.61795 & 13.69865 & 13.19623 & 18.44461 & 17.79713 & 18.44461 & 17.79713\end{array}$ $\begin{array}{lllllllllllllllllllll}383013.9 & 3734593 & 13.63397 & 13.15138 & 18.38817 & 17.73972 & 18.38817 & 17.73972 & 18.02349 & 17.38672 & 18.02349 & 17.38672 & 18.20446 & 17.56024 & 13.63397 & 13.15138 & 18.38817 & 17.73972 & 18.38817 & 17.73972\end{array}$ $\begin{array}{llllllllllllllllllllll}383113.7 & 3734552 & 13.18995 & 12.89033 & 17.79522 & 17.38988 & 17.79522 & 17.38988 & 17.43979 & 17.04798 & 17.47101 & 17.05207 & 17.61225 & 17.21121 & 13.18995 & 12.89797 & 17.79522 & 17.38988 & 17.79522 & 17.38988\end{array}$ $\begin{array}{lllllllllllllllllll}382959.5 & 3734657 & 13.96643 & 13.3616 & 18.83288 & 18.00423 & 18.83288 & 18.00423 & 18.46088 & 17.66443 & 18.46088 & 17.66443 & 18.64788 & 17.82448 & 13.96643 & 13.3616 & 18.83288 & 18.00423 & 18.83288 \\ 18.025 & 18.00423\end{array}$ $\begin{array}{llllllllllllllllllll}382935.8 & 3734698 & 14.03286 & 13.36165 & 18.92089 & 18.00544 & 18.92089 & 18.00544 & 18.54828 & 17.66488 & 18.54828 & 17.66488 & 18.73698 & 17.82659 & 14.03286 & 13.36165 & 18.92089 & 18.00544 & 18.92089 & 18.00544\end{array}$ 

383126.3 \& 3734636 \& 13.0688 \& 12.74119 \& 17.63287 \& 17.1776 \& 17.63287 \& 17.1776 \& 17.28102 \& 16.84759 \& 17.28102 \& 16.84759 \& 17.45161 \& 17.0143 \& 13.0688 \& 12.74119 \& 17.63287 \& 17.19002 \& 17.63287 <br>
\hline
\end{tabular} 17.18847 $\begin{array}{llllllllllllllllllll}382881.5 & 3734689 & 14.28091 & 13.54058 & 19.25023 & 18.24147 & 19.25023 & 18.24147 & 18.8731 & 17.89913 & 18.8731 & 17.89913 & 19.06732 & 18.06366 & 14.28091 & 13.54058 & 19.25023 & 18.24147 & 19.25023 & 18.24147\end{array}$ $\begin{array}{llllllllllllllllllllllll}382864.9 & 3734641 & 14.43094 & 13.67877 & 19.45031 & 18.44297 & 19.45031 & 18.44297 & 19.06934 & 18.08025 & 19.06934 & 18.08025 & 19.26639 & 18.26445 & 14.43094 & 13.67877 & 19.45031 & 18.44297 & 19.45031 & 18.44297\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllll}382929.6 & 3734619 & 14.16644 & 13.49786 & 19.09944 & 18.2026 & 19.09944 & 18.2026 & 18.72299 & 17.84287 & 18.72299 & 17.84287 & 18.91406 & 18.0215 & 14.16644 & 13.49786 & 19.09944 & 18.2026 & 19.09944 & 18.2026\end{array}$

| Reduction to Peak | ${ }_{0} 00010$ | 0.0009 | 0.0037 | 0.0035 | 0.0037 | 0.0034 | 0.0021 | 0.0019 | 0.0021 | 0.0019 | 0.0058 | 0.0055 | 0.0014 | 0.0013 | 0.0055 | 0.0052 | 0.0055 | 0.0052 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent Reduction | 48.55\% | 48.55\% | 44.40\% | 44.40\% | 44.40\% | 44.40\% | 78.71\% | 78.71\% | 78.71\% | 78.71\% | 70.88\% | 70.88\% | 67.78\% | 67.78\% | 66.42\% | 66.42\% | 66.42\% | 66.42\% |
|  | 389450_3 | 89450_3 | 2683 | 382683.8_3 | 382683.8_3 | 382683.8_3 | 38945 | 8920 | 38945 | 389200_3 | 2683.8 | 2683.8_3 | 389450_3 | 389450_373 | 82683.8_3 | 82683.8_3 | 32683.8_3 | 382683.8_3 |
|  | 9850 | 9850 | 734051.76 | 734051.76 | 734051.76 | 734051.76 | 9850 | 0100 | 9850 | 0100 | 734051.7 | 734051.76 | 9850 | 9850 | 734051.76 | 734051.7 | 734051 | 3405 |

$\begin{array}{lllllllllllllllllllll}\text { Peak Concentratior } 3.755034 & 3.661377 & 15.51017 & 14.64333 & 15.51017 & 14.63191 & 4.995903 & 4.510162 & 4.995903 & 4.510162 & 15.37303 & 14.54545 & 3.755034 & 3.661377 & 15.51017 & 14.67307 & 15.51017 & 14.67307\end{array}$ 2033_ALT4_ 2033_ALT4_ 2033_ALTS_ 2033_ALT5_ 2033_PP_CA 2033_PP_N 2038_ALT1_ 2038_ALT1_ 2038_NP_C 2038_NP_N 2038_ALT3_ 2038_ALT3_ 2038_ALT4_ 2038_ALT4_ 2038_ALT5_ 2038_ALT5_ 2038_PP_CA 2038_PP_N $\begin{array}{llllllllllllllllllllll}382820.5 & 3734619 & 14.66048 & 13.85616 & 19.75569 & 18.62985 & 19.75569 & 18.62985 & 19.37036 & 18.313 & 19.37036 & 18.313 & 19.57227 & 18.45237 & 14.66048 & 13.85616 & 19.75569 & 18.62985 & 19.75569 & 18.62985 & \end{array}$ $\begin{array}{lllllllllllllllllllll}382913 & 3734572 & 14.32362 & 13.65328 & 19.30932 & 18.4038 & 19.30932 & 18.4038 & 18.92892 & 18.03991 & 18.92892 & 18.04909 & 19.12277 & 18.22234 & 14.32362 & 13.655 & 19.30932 & 18.4038 & 19.30932 & 18.4038\end{array}$ $\begin{array}{lllllllllllllllllllll}382765.6 & 3734635 & 14.90327 & 14.10812 & 20.07901 & 19.01437 & 20.07901 & 19.01437 & 19.68968 & 18.64411 & 19.68968 & 18.64411 & 19.89681 & 18.83737 & 14.90327 & 14.10812 & 20.07901 & 19.01437 & 20.07901 & 19.01437\end{array}$ $\begin{array}{lllllllllllllllllll}382746.9 & 3734571 & 15.05654 & 14.22176 & 20.28313 & 19.16621 & 20.28313 & 19.16621 & 19.8911 & 18.79287 & 19.8911 & 18.79287 & 20.10134 & 18.98816 & 15.05654 & 14.22176 & 20.28313 & 19.16621 & 20.28313\end{array} 19.16621$ $\begin{array}{lllllllllllllllllll}382847.7 & 3734563 & 14.65174 & 13.87268 & 19.74563 & 18.57361 & 19.74563 & 18.57361 & 19.359 & 18.33491 & 19.359 & 18.33491 & 19.55995 & 18.39391 & 14.65174 & 13.87268 & 19.74563 & 18.57361 & 19.74563\end{array} 18.57361$ $\begin{array}{llllllllllllllllllll}382768.1 & 3734526 & 15.0203 & 14.21989 & 20.23519 & 19.1639 & 20.23519 & 19.1639 & 19.84309 & 18.78985 & 19.84309 & 18.78985 & 20.05236 & 18.98503 & 15.0203 & 14.21989 & 20.23519 & 19.1639 & 20.23519 & 19.1639\end{array}$ $\begin{array}{lllllllllllllllllll}382784.2 & 3734476 & 15.0257 & 14.23683 & 20.24301 & 19.18704 & 20.24301 & 19.18331 & 19.84998 & 18.81201 & 19.84998 & 18.81201 & 20.05902 & 19.00652 & 15.0257 & 14.23683 & 20.24301 & 19.18704 & 20.24301\end{array} 19.18704$ $\begin{array}{lllllllllllllllllllll}382802.4 & 3734430 & 14.99254 & 14.17852 & 20.1991 & 19.04427 & 20.1991 & 19.04427 & 19.80596 & 18.73539 & 19.80596 & 18.73539 & 20.0141 & 18.92818 & 14.99254 & 14.17852 & 20.1991 & 19.08907 & 20.1991 & 19.05146\end{array}$ $\begin{array}{lllllllllllllllllll}382820.6 & 3734384 & 14.92394 & 14.10811 & 20.10737 & 18.90351 & 20.10737 & 18.90351 & 19.71519 & 18.58439 & 19.71519 & 18.64242 & 19.92209 & 18.77587 & 14.92394 & 14.10811 & 20.10737 & 18.9568 & 20.10737 \\ 18.9564\end{array}$ $\begin{array}{llllllllllllllllllllllllll} & 1882838.8 & 3734337 & 14.85242 & 14.10124 & 20.01207 & 18.8512 & 20.01207 & 18.8512 & 19.62105 & 18.50876 & 19.62105 & 18.6329 & 19.82642 & 18.67174 & 14.85242 & 14.10124 & 20.01207 & 18.8512 & 20.01207 & 18.8512\end{array}$ $\begin{array}{llllllllllllllllll}382857 & 3734291 & 14.80498 & 14.02918 & 19.94934 & 18.84952 & 19.94934 & 18.84952 & 19.55857 & 18.47909 & 19.55857 & 18.53817 & 19.76262 & 18.66916 & 14.80498 & 14.02918 & 19.94934 & 18.84952\end{array} 19.94934 \quad 18.84952$ $\begin{array}{lllllllllllllllllll}382830.7 & 3734495 & 14.83865 & 13.97947 & 19.99461 & 18.77165 & 19.99461 & 18.77165 & 19.60444 & 18.4755 & 19.60444 & 18.4755 & 19.80805 & 18.59072 & 14.83865 & 13.97947 & 19.99461 & 18.77165 & 19.99461\end{array} 18.77165$ $\begin{array}{llllllllllllllllllll}382848.9 & 3734448 & 14.78909 & 13.97386 & 19.92926 & 18.77158 & 19.92926 & 18.77158 & 19.53878 & 18.46743 & 19.53878 & 18.46743 & 19.742 & 18.58979 & 14.78909 & 13.97386 & 19.92926 & 18.77158 & 19.92926 & 18.77158\end{array}$ $\begin{array}{llllllllllllllllllllll}382867.1 & 3734402 & 14.707 & 13.91527 & 19.81929 & 18.6966 & 19.81929 & 18.6966 & 19.43004 & 18.38969 & 19.43004 & 18.38969 & 19.63182 & 18.51497 & 14.707 & 13.91527 & 19.81929 & 18.6966 & 19.81929 & 18.6966\end{array}$ $\begin{array}{llllllllllllllllllllll}382885.3 & 3734356 & 14.6187 & 13.89108 & 19.70134 & 18.57114 & 19.70134 & 18.53764 & 19.31356 & 18.35713 & 19.31356 & 18.35713 & 19.51373 & 18.54216 & 14.6187 & 13.89108 & 19.70134 & 18.72344 & 19.70134 & 18.57374\end{array}$ $\begin{array}{lllllllllllllllllllll}382903.5 & 3734309 & 14.56411 & 13.89945 & 19.62893 & 18.73533 & 19.62893 & 18.73533 & 19.24163 & 18.3678 & 19.24163 & 18.3678 & 19.44039 & 18.55565 & 14.56411 & 13.89945 & 19.62893 & 18.73653 & 19.62893 & 18.73653\end{array}$ $\begin{array}{lllllllllllllllllllll}382877.3 & 3734513 & 14.59982 & 13.80279 & 19.6766 & 18.51285 & 19.6766 & 18.51285 & 19.291 & 18.24354 & 19.291 & 18.24354 & 19.49019 & 18.33146 & 14.59982 & 13.80279 & 19.6766 & 18.51326 & 19.6766 & 18.51285\end{array}$ $\begin{array}{lllllllllllllllllllll}382895.5 & 3734467 & 14.53359 & 13.8051 & 19.58904 & 18.42892 & 19.58904 & 18.42892 & 19.2033 & 18.24559 & 19.2033 & 18.24559 & 19.40114 & 18.43114 & 14.53359 & 13.8051 & 19.58932 & 18.55929 & 19.58904 & 18.42892\end{array}$ $\begin{array}{lllllllllllllllllllll}382913.7 & 3734420 & 14.43527 & 13.78486 & 19.45732 & 18.58554 & 19.45732 & 18.58554 & 19.07309 & 18.21773 & 19.07309 & 18.21773 & 19.26928 & 18.4032 & 14.43527 & 13.78486 & 19.45732 & 18.58554 & 19.45732 & 18.58554\end{array}$ $\begin{array}{llllllllllllllllllllll}382931.9 & 3734374 & 14.34559 & 13.69001 & 19.33754 & 18.45856 & 19.33754 & 18.45856 & 18.95483 & 18.09257 & 18.95483 & 18.09257 & 19.14921 & 18.27624 & 14.34559 & 13.69001 & 19.33754 & 18.45856 & 19.33754 & 18.45856\end{array}$ $\begin{array}{lllllllllllllllllllll}382950.1 & 3734328 & 14.30055 & 13.67828 & 19.27809 & 18.44367 & 19.27809 & 18.44367 & 18.89552 & 18.07709 & 18.89552 & 18.07709 & 19.0887 & 18.26012 & 14.30055 & 13.67828 & 19.27809 & 18.44367 & 19.27809 & 18.44367\end{array}$ $\begin{array}{lllllllllllllllllll}382871.9 & 3734241 & 14.81239 & 14.08805 & 19.96022 & 18.77625 & 19.96022 & 18.77625 & 19.56835 & 18.57257 & 19.56835 & 18.61501 & 19.77203 & 18.59409 & 14.81239 & 14.08805 & 19.96022 & 18.77625 & 19.96022\end{array} 18.77625$ $\begin{array}{lllllllllllllllllll}382885.3 & 3734196 & 14.80494 & 14.1303 & 19.95142 & 19.00351 & 19.95142 & 19.00351 & 19.55898 & 18.66985 & 19.55898 & 18.66985 & 19.76196 & 18.81944 & 14.80494 & 14.1303 & 19.95142 & 19.00351 & 19.95142\end{array} 19.00351$ $\begin{array}{lllllllllllllllllllll}382919.8 & 3734255 & 14.63354 & 14.00688 & 19.72406 & 18.884 & 19.72406 & 18.88315 & 19.33347 & 18.5091 & 19.33347 & 18.5091 & 19.53241 & 18.69761 & 14.63354 & 14.00688 & 19.72406 & 18.884 & 19.72406 & 18.884\end{array}$ $\begin{array}{lllllllllllllllllllll}382933.3 & 3734210 & 14.59725 & 14.01084 & 19.67627 & 18.88931 & 19.67627 & 18.88931 & 19.28587 & 18.51355 & 19.28587 & 18.51392 & 19.48383 & 18.70209 & 14.59725 & 14.01084 & 19.67627 & 18.88931 & 19.67627 & 18.88931\end{array}$ $\begin{array}{llllllllllllllllllll}382967.8 & 3734270 & 14.48874 & 13.89873 & 19.53534 & 18.74397 & 19.53534 & 18.74397 & 19.14546 & 18.36892 & 19.14546 & 18.36892 & 19.33951 & 18.55339 & 14.48874 & 13.89873 & 19.53534 & 18.74397 & 19.53534 & 18.74397\end{array}$ $\begin{array}{lllllllllllllllllllllll}382981.2 & 3734224 & 14.46338 & 13.89879 & 19.50223 & 18.7442 & 19.50223 & 18.7442 & 19.11203 & 18.37313 & 19.11203 & 18.37313 & 19.30517 & 18.55231 & 14.46338 & 13.9022 & 19.50223 & 18.7442 & 19.50223 & 18.7442\end{array}$ $\begin{array}{lllllllllllllllllllll}382876.7 & 3734151 & 14.92135 & 14.20097 & 20.1071 & 19.13229 & 20.1071 & 19.12377 & 19.71158 & 18.7625 & 19.71158 & 18.7625 & 19.91653 & 18.95537 & 14.92135 & 14.20097 & 20.1071 & 19.13229 & 20.1071 & 19.13229\end{array}$ $\begin{array}{lllllllllllllllllllllll}382827.3 & 3734088 & 15.28482 & 14.37017 & 20.5895 & 19.33771 & 20.5895 & 19.33771 & 20.18829 & 18.98341 & 20.18829 & 18.9846 & 20.40047 & 19.17993 & 15.28482 & 14.37017 & 20.59192 & 19.35079 & 20.59192 & 19.33771\end{array}$ $\begin{array}{lllllllllllllllllllll}382925.8 & 3734141 & 14.65355 & 14.08786 & 19.75097 & 18.99105 & 19.75097 & 18.99105 & 19.3599 & 18.61324 & 19.3599 & 18.61324 & 19.55914 & 18.80353 & 14.65355 & 14.08786 & 19.75097 & 18.99105 & 19.75097 & 18.99105\end{array}$ $\begin{array}{llllllllllllllllllllll}382891.4 & 3734088 & 14.9236 & 14.21938 & 20.11128 & 19.16493 & 20.11128 & 19.16493 & 19.71439 & 18.78449 & 19.71439 & 18.78612 & 19.91888 & 18.97745 & 14.9236 & 14.21938 & 20.11128 & 19.16493 & 20.11128 & 19.16493\end{array}$ $\begin{array}{lllllllllllllllllllll}382842 & 3734025 & 15.33469 & 14.44991 & 20.66026 & 19.47393 & 20.66026 & 19.47393 & 20.25367 & 19.08871 & 20.25367 & 19.0889 & 20.46577 & 19.2861 & 15.33469 & 14.44991 & 20.66026 & 19.47393 & 20.66026 & 19.47393\end{array}$ $\begin{array}{lllllllllllllllllll}382970 & 3734121 & 14.47614 & 13.95439 & 19.51624 & 18.81228 & 19.51624 & 18.81228 & 19.12681 & 18.43598 & 19.12681 & 18.43858 & 19.32153 & 18.62283 & 14.47614 & 13.95439 & 19.51624 & 18.81228 & 19.51624\end{array} 18.81228$ $\begin{array}{llllllllllllllllllll}382930.7 & 3734057 & 14.70809 & 14.14413 & 19.82472 & 19.06526 & 19.82472 & 19.06526 & 19.43188 & 18.68512 & 19.43188 & 18.68649 & 19.63171 & 18.87611 & 14.70809 & 14.14413 & 19.82472 & 19.06526 & 19.82472 & 19.06526\end{array}$ $\begin{array}{llllllllllllllllllllllll}382881.3 & 3733995 & 15.12205 & 14.33931 & 20.3775 & 19.32444 & 20.3775 & 19.32444 & 19.97477 & 18.94052 & 19.97477 & 18.94346 & 20.18235 & 19.13527 & 15.12205 & 14.33931 & 20.3775 & 19.32444 & 20.3775 & 19.32444\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}382783.6 & 3734041 & 15.60686 & 14.63209 & 21.02131 & 19.7143 & 21.02131 & 19.71252 & 20.61039 & 19.32767 & 20.61039 & 19.32792 & 20.82866 & 19.52965 & 15.60686 & 14.63209 & 21.02131 & 19.71491 & 21.02131 & 19.71491\end{array}$ $\begin{array}{llllllllllllllllllllllll}382704.1 & 3734006 & 16.12671 & 15.24397 & 21.71466 & 20.52533 & 21.71466 & 20.52533 & 21.29239 & 20.12471 & 21.29239 & 20.13075 & 21.52098 & 20.3388 & 16.12671 & 15.24397 & 21.71466 & 20.52533 & 21.71466 & 20.52533\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}382624.7 & 3733971 & 16.82833 & 15.98897 & 22.64967 & 21.52442 & 22.64967 & 21.52442 & 22.21376 & 21.10834 & 22.21376 & 21.10834 & 22.45661 & 21.33719 & 16.82833 & 15.98897 & 22.64967 & 21.52442 & 22.64967 & 21.52442\end{array}$ $\begin{array}{llllllllllllllllllllllllll}382545.2 & 3733935 & 17.56116 & 16.66658 & 23.62569 & 22.42731 & 23.62569 & 22.42731 & 23.17618 & 21.99719 & 23.17618 & 21.99719 & 23.43423 & 22.23963 & 17.56116 & 16.66658 & 23.62569 & 22.42731 & 23.62569 & 22.42731\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382804 & 3733996 & 15.61056 & 14.66842 & 21.02827 & 19.76113 & 21.02827 & 19.76113 & 20.61541 & 19.37141 & 20.61541 & 19.37615 & 20.83287 & 19.5731 & 15.61056 & 14.66842 & 21.02827 & 19.76113 & 21.02827 & 19.76113\end{array}$ $\begin{array}{lllllllllllllllllllll}382724.5 & 3733960 & 16.07127 & 15.18412 & 21.64127 & 20.44413 & 21.64127 & 20.44413 & 21.2195 & 20.0515 & 21.2195 & 20.0515 & 21.44665 & 20.2567 & 16.07127 & 15.18412 & 21.64127 & 20.44413 & 21.64127 & 20.44413\end{array}$ $\begin{array}{lllllllllllllllllllllll}382645 & 3733925 & 16.72089 & 15.88512 & 22.50697 & 21.38598 & 22.50697 & 21.38598 & 22.07282 & 20.97151 & 22.07282 & 20.97151 & 22.31323 & 21.19809 & 16.72089 & 15.88512 & 22.50697 & 21.38598 & 22.50697 & 21.38598\end{array}$ $\begin{array}{llllllllllllllllllllllll}382565.5 & 3733890 & 17.49338 & 16.57359 & 23.53628 & 22.30416 & 23.53628 & 22.30416 & 23.08728 & 21.87506 & 23.08728 & 21.87506 & 23.34351 & 22.1153 & 17.49338 & 16.57359 & 23.53628 & 22.30416 & 23.53628 & 22.30416\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382824.3 & 3733950 & 15.55531 & 14.5782 & 20.95555 & 19.63676 & 20.95555 & 19.63676 & 20.54294 & 19.25783 & 20.54294 & 19.25783 & 20.75881 & 19.4475 & 15.55531 & 14.5782 & 20.95555 & 19.63676 & 20.95555 & 19.63676\end{array}$ $\begin{array}{llllllllllllllllllllll}382744.8 & 3733915 & 16.07102 & 15.16608 & 21.64278 & 20.4296 & 21.64278 & 20.4296 & 21.21938 & 20.02866 & 21.21938 & 20.02866 & 21.44561 & 20.23991 & 16.07102 & 15.16608 & 21.64278 & 20.4296 & 21.64278 & 20.4296\end{array}$

 $\begin{array}{lllllllllllllllllllllllllllllllllll}382461.5 & 3733897 & 18.28071 & 17.34709 & 24.58353 & 23.3322 & 24.58353 & 23.3322 & 24.1198 & 22.8894 & 24.1198 & 22.8894 & 24.3929 & 23.14651 & 18.28071 & 17.34709 & 24.58353 & 23.3322 & 24.58353 & 23.3322\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}382417 & 3733877 & 18.64432 & 17.81347 & 25.06737 & 23.95254 & 25.06737 & 23.95254 & 24.59681 & 23.50054 & 24.59681 & 23.50054 & 24.87758 & 23.7676 & 18.64432 & 17.81347 & 25.06737 & 23.95254 & 25.06737 & 23.95254\end{array}$ $\begin{array}{llllllllllllllllllllll}382372.5 & 3733856 & 19.09828 & 18.51077 & 25.6718 & 24.8808 & 25.6718 & 24.8808 & 25.19241 & 24.41471 & 25.19241 & 24.41471 & 25.48247 & 24.69622 & 19.09828 & 18.51077 & 25.6718 & 24.8808 & 25.6718 & 24.8808\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}382328 & 3733836 & 19.59873 & 19.20274 & 26.33831 & 25.80192 & 26.33831 & 25.80192 & 25.84899 & 25.32128 & 25.84899 & 25.32128 & 26.1495 & 25.61695 & 19.59873 & 19.20274 & 26.33831 & 25.80192 & 26.33831 & 25.80192\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}382283.4 & 3733815 & 20.13977 & 19.58338 & 27.05881 & 26.30867 & 27.05881 & 26.30867 & 26.55895 & 25.8215 & 26.55895 & 25.8215 & 26.87054 & 26.12531 & 20.13977 & 19.58338 & 27.05881 & 26.30867 & 27.05881 & 26.30867\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}382238.9 & 3733794 & 20.73345 & 20.09509 & 27.84943 & 26.99976 & 27.84943 & 26.99976 & 27.3376 & 26.50273 & 27.3376 & 26.50273 & 27.66143 & 26.81737 & 20.73345 & 20.09509 & 27.84943 & 26.99976 & 27.84943 & 26.99976\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllllll}382194.4 & 3733774 & 21.36967 & 20.44953 & 28.69694 & 27.47137 & 28.69694 & 27.47137 & 28.17147 & 26.96753 & 28.17147 & 26.95751 & 28.50806 & 27.28956 & 21.36967 & 20.44953 & 28.69694 & 27.47137 & 28.69694 & 27.47137\end{array}$ $\begin{array}{llllllllllllllllllllllllllll}382482.5 & 3733852 & 18.23639 & 17.20645 & 24.52559 & 23.14586 & 24.52559 & 23.14586 & 24.06165 & 22.70501 & 24.06165 & 22.70501 & 24.33325 & 22.95873 & 18.23639 & 17.20645 & 24.52559 & 23.14586 & 24.52559 & 23.14586\end{array}$ $\begin{array}{lllllllllllllllllllllll}382438 & 3733831 & 18.60949 & 17.67801 & 25.02212 & 23.77318 & 25.02212 & 23.77318 & 24.5513 & 23.3231 & 24.5513 & 23.3231 & 24.83076 & 23.58685 & 18.60949 & 17.67801 & 25.02212 & 23.77318 & 25.02212 & 23.77318\end{array}$ $\begin{array}{llllllllllllllllllllllllll}382393.5 & 3733811 & 19.01581 & 18.36384 & 25.56301 & 24.68598 & 25.56301 & 24.68598 & 25.08431 & 24.22205 & 25.08431 & 24.22205 & 25.37217 & 24.50008 & 19.01581 & 18.36384 & 25.56301 & 24.68598 & 25.56301 & 24.68598\end{array}$ $\begin{array}{lllllllllllllllllllllll}382349 & 3733790 & 19.48174 & 19.05712 & 26.1832 & 25.60865 & 26.1832 & 25.60865 & 25.6956 & 25.13042 & 25.6956 & 25.13042 & 25.99327 & 25.42285 & 19.48174 & 19.05712 & 26.1832 & 25.60865 & 26.1832 & 25.60865\end{array}$ $\begin{array}{lllllllllllllllllllllll}382304.4 & 3733770 & 20.02323 & 19.54388 & 26.90435 & 26.25673 & 26.90435 & 26.25673 & 26.40612 & 25.76952 & 26.40612 & 25.76952 & 26.71498 & 26.07212 & 20.02323 & 19.54388 & 26.90435 & 26.25673 & 26.90435 & 26.25673\end{array}$ $\begin{array}{llllllllllllllllllllllll}382259.9 & 3733749 & 20.59445 & 20.03682 & 27.66515 & 26.9212 & 27.66515 & 26.9212 & 27.15554 & 26.42477 & 27.15554 & 26.42477 & 27.47612 & 26.73795 & 20.59445 & 20.03682 & 27.66515 & 26.9212 & 27.66515 & 26.9212\end{array}$ $\begin{array}{llllllllllllllllllllllll}382215.4 & 3733728 & 21.24924 & 20.25954 & 28.53738 & 27.21666 & 28.53738 & 27.21666 & 28.01365 & 26.7159 & 28.01365 & 26.71423 & 28.34751 & 27.03367 & 21.24924 & 20.25954 & 28.53738 & 27.21666 & 28.53738 & 27.21666\end{array}$ $\begin{array}{llllllllllllllllllllllll}382503.5 & 3733807 & 18.15918 & 17.14362 & 24.4235 & 23.06278 & 24.4235 & 23.06278 & 23.96041 & 22.62241 & 23.96041 & 22.62241 & 24.22999 & 22.87444 & 18.15918 & 17.14362 & 24.4235 & 23.06278 & 24.4235 & 23.06278\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllll}382459 & 3733786 & 18.52895 & 17.53884 & 24.91559 & 23.5883 & 24.91559 & 23.5883 & 24.44567 & 23.14042 & 24.44567 & 23.14042 & 24.72319 & 23.40097 & 18.52895 & 17.53884 & 24.91559 & 23.5883 & 24.91559 & 23.5883\end{array}$ $\begin{array}{lllllllllllllllllllllll}382414.5 & 3733765 & 18.92079 & 18.19372 & 25.43729 & 24.46003 & 25.43729 & 24.46003 & 24.95971 & 23.99893 & 24.95971 & 23.99893 & 25.24525 & 24.27309 & 18.92079 & 18.19372 & 25.43729 & 24.46003 & 25.43729 & 24.46003\end{array}$ $\begin{array}{lllllllllllllllllllllllllll}382369.9 & 3733745 & 19.38147 & 18.92513 & 26.05082 & 25.43394 & 26.05082 & 25.43394 & 25.56424 & 24.9577 & 25.56424 & 24.9577 & 25.85931 & 25.24688 & 19.38147 & 18.92513 & 26.05082 & 25.43394 & 26.05082 & 25.43394\end{array}$
 $\begin{array}{llllllllllllllllllllllll}382280.9 & 3733704 & 20.44861 & 19.9772 & 27.47166 & 26.83386 & 27.47166 & 26.83386 & 26.96445 & 26.3383 & 26.96445 & 26.3383 & 27.28169 & 26.64981 & 20.44861 & 19.9772 & 27.47166 & 26.83386 & 27.47166 & 26.83386\end{array}$ $\begin{array}{lllllllllllllllllllllll}382236.4 & 3733683 & 21.11843 & 20.22888 & 28.36399 & 27.16928 & 28.36399 & 27.16928 & 27.84228 & 26.66848 & 27.84228 & 26.66848 & 28.1731 & 26.98508 & 21.11843 & 20.22888 & 28.36399 & 27.16928 & 28.36399 & 27.16928\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}382173.9 & 3733684 & 21.82604 & 21.17419 & 29.30542 & 28.42674 & 29.30542 & 28.42674 & 28.76939 & 27.90644 & 28.76939 & 27.90644 & 29.11504 & 28.24295 & 21.82604 & 21.17419 & 29.30542 & 28.42674 & 29.30542 & 28.42674\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllllll}382096.2 & 3733669 & 23.15458 & 22.16962 & 31.075 & 29.75302 & 31.075 & 29.75302 & 30.51114 & 29.21169 & 30.51114 & 29.21169 & 30.88373 & 29.56815 & 23.15458 & 22.16962 & 31.075 & 29.75302 & 31.075 & 29.75302\end{array}$ $\begin{array}{lllllllllllllllllllllll}382183 & 3733635 & 21.89545 & 21.20408 & 29.39902 & 28.46791 & 29.39902 & 28.46791 & 28.86077 & 27.9458 & 28.86077 & 27.9458 & 29.20728 & 28.28217 & 21.89545 & 21.20408 & 29.39902 & 28.46791 & 29.39902 & 28.46791\end{array}$ $\begin{array}{lllllllllllllllllllllll}382105.4 & 3733620 & 23.20698 & 22.12598 & 31.14553 & 29.69568 & 31.14553 & 29.69568 & 30.58 & 29.15467 & 30.58 & 29.15467 & 30.95326 & 29.50991 & 23.20698 & 22.12598 & 31.14553 & 29.69568 & 31.14553 & 29.69568\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}382256.9 & 3733611 & 20.92494 & 20.1249 & 28.10587 & 27.02959 & 28.10587 & 27.02959 & 27.58783 & 26.53038 & 27.58783 & 26.53038 & 27.91468 & 26.84517 & 20.92494 & 20.1249 & 28.10587 & 27.02959 & 28.10587 & 27.02959\end{array}$ $\begin{array}{lllllllllllllllllllllll}382308.6 & 3733648 & 20.24951 & 19.7187 & 27.20706 & 26.4899 & 27.20706 & 26.4899 & 26.70337 & 25.99901 & 26.70337 & 25.99901 & 27.0163 & 26.3051 & 20.24951 & 19.7187 & 27.20706 & 26.4899 & 27.20706 & 26.4899\end{array}$ $\begin{array}{llllllllllllllllllllll}382192.2 & 3733585 & 21.86594 & 21.1583 & 29.36005 & 28.4071 & 29.36005 & 28.4071 & 28.82225 & 27.88549 & 28.82225 & 27.88549 & 29.16799 & 28.22089 & 21.86594 & 21.1583 & 29.36005 & 28.4071 & 29.36005 & 28.4071\end{array}$ $\begin{array}{llllllllllllllllllllllllllllllll}382114.5 & 3733571 & 23.21462 & 22.05374 & 31.15621 & 29.59994 & 31.15621 & 29.59994 & 30.59005 & 29.05997 & 30.59005 & 29.05997 & 30.96327 & 29.41361 & 23.21462 & 22.05374 & 31.15621 & 29.59994 & 31.15621 & 29.59994\end{array}$ $\begin{array}{lllllllllllllllllllllllll}382137.1 & 3733720 & 22.22754 & 21.47996 & 29.83975 & 28.83415 & 29.83975 & 28.83415 & 29.29581 & 28.30776 & 29.29581 & 28.30776 & 29.64982 & 28.65044 & 22.22754 & 21.47996 & 29.83975 & 28.83415 & 29.83975 & 28.83415\end{array}$ $\begin{array}{lllllllllllllllllllllllllllll}382053.5 & 3733594 & 24.25206 & 23.17255 & 32.53737 & 31.08954 & 32.53737 & 31.08954 & 31.95013 & 30.52644 & 31.95013 & 30.52644 & 32.34476 & 30.90308 & 24.25206 & 23.17255 & 32.53737 & 31.08954 & 32.53737 & 31.0895 & \end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllll}382054.7 & 3733544 & 24.41209 & 23.27413 & 32.75087 & 31.22492 & 32.75087 & 31.22492 & 32.16024 & 30.65966 & 32.16024 & 30.65966 & 32.55808 & 31.03827 & 24.41209 & 23.27413 & 32.75087 & 31.22492 & 32.75087 & 31.22492\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}382118.9 & 3733507 & 23.36363 & 22.13997 & 31.35539 & 29.71513 & 31.35539 & 29.71513 & 30.78584 & 29.17289 & 30.78584 & 29.17289 & 31.16172 & 29.52791 & 23.36363 & 22.13997 & 31.35539 & 29.71513 & 31.35539 & 29.71513\end{array}$ $\begin{array}{lllllllllllllllllllllllllllllllll}382171.4 & 3733530 & 22.2907 & 21.61771 & 29.92694 & 29.01993 & 29.92694 & 29.01993 & 29.37938 & 28.48783 & 29.37938 & 28.48783 & 29.73319 & 28.8321 & 22.2907 & 21.61771 & 29.92694 & 29.01993 & 29.92694 & 29.01993\end{array}$ $\begin{array}{llllllllllllllllllllllllllllll}382056 & 3733494 & 24.60197 & 23.32743 & 33.00443 & 31.2967 & 33.00443 & 31.2967 & 32.40982 & 30.73036 & 32.40982 & 30.73036 & 32.81121 & 31.10981 & 24.60197 & 23.32743 & 33.00443 & 31.2967 & 33.00443 & 31.2967\end{array}$

# 3.2.10 Changes Made to Appendix B.4, Draft General Conformity Determination 

## Section 3-1, Page 3-2

Revise the first bullet, as follows:

- The proposed improvements at Berths 230-232 are also designed to accommodate larger ships and would include: 1) dredging to increase the depth from -45 to -47 feet MLLW plus two feet of over depth tolerance (for a total of -49 feet MLLW); and 2) the installation of approximately 1,400 linear feet of sheet piles to stabilized the wharf.

Revise the second bullet, as follows:

- The LAHD has proposed to dispose of approximately 38,000 cubic yards of dredged materials ( 30,000 cubic yards from Berths 226-229 and 8,000 cubic yards from Berths 230-232) at an approved ocean disposal site (i.e., LA-2), an approved upland disposal facility, or a combination of the two. However, the Los Angeles Region Dredged Materials Management Team/Contaminated Sediments Task Force has evaluated the sediments and determined all the dredged material is suitable for ocean disposal at LA-2. Approval of ocean disposal by the USACE and USEPA is pending.

Revise MM AQ-5, as follows:
MM AQ-5: General Construction Mitigation Measure. All dredging equipment must be electric; however, this is subject to availability of the equipment. For MM AQ-1 through MM AQ-4, if a California Air Resources Board (CARB)-certified technology becomes available that is as good as or better than the existing measure in terms of emissions performance, the technology could replace the existing technology if approved by LAHD

## Section 3-1, Page 3-3

Delete the final paragraph and MM AQ-6, as follows:
In addition, the following measure will reduce operational impacts associated with the delivery by cargo ship of the new wharf cranes:

MM AQ-6: Vessel Speed Reduction Program (VSRP). Starting Janmary 1, 2019 and thereafter, 95 percent of Evergreen ships calling at the Everport Container Terminal shall be required to comply with the expanded VSRP at 12 knots between 40 mm from Point Fermin and the Preattionary Area. Starting Jantary 1, 2026, 95 percent of all ships calling at the Everport Container Terminal will follow this requirement. Alternative Compliance Plans will be considered where a different speed that would result in fewer emissions compared to the current speed limits.

Any alternative compliance plan shall be submitted to LAHD at least 90 days in advance for approval and shall be supported by data that demonstrates the ability of the alternative compliance plan for the specific vessel and type to achieve emissions
reductions comparable to or greater than those achievable by compliance with VSRP. The alternative compliance plan shall be implemented once written notice of approval is granted by the LAHD.

## Section 4-2, Pages 4-1 through 4-2

Revise the last sentence in the final paragraph, as follows:
The emission estimating process is discussed in more detail in Berths 226-236 [Everport] Container Terminal Improvements Project Draft EIS/EIR (see Section 3.2, Air Quality and Meteorology, and Appendix B of the Draft EIS/EIR - USACE/USLAHD 2017a).

## Section 5-3, Page 5-3, Table 5-2

Revise Table 5-1, as follows:
Table 5-2 General Conformity de minimis Thresholds for the South Coast Air Basin

| Criteria Pollutant: and Quantified Precursors | SCAB Attainment Status Designations | de minimis Threshold tons per year (tpy) |
| :---: | :---: | :---: |
| Nitrogen Dioxide: NOx | Attainment/Maintenance | $100$ |
| Ozone: <br> NOx <br> VOC | Nonattainment/Extreme | $\begin{array}{\|l\|} \hline--- \\ 10 \\ 10 \end{array}$ |
| Carbon Monoxide | Attainment/Maintenance | 100 |
| Particulate Matter PM10 | Attainment/Maintenance | 100 |
| Particulate Matter PM2.5: Directly Emitted PM2.5 SOx NOx VOC | Nonattainment/Serious | $\begin{array}{\|l} \hline--- \\ 70 \\ 70 \\ 70 \\ 70 \end{array}$ |
| Lead | Nonattainment | $\underline{25}$ |

Source: 40 CFR § 93.153(b)(1)

## Section 5-4, Page 5-3

Add a new sentence to the paragraph following Table 5-3, as follows:
The total of direct and indirect emissions of VOC, CO, SOx, PM10, and PM2.5 from the federal action are less than the general conformity de minimis threshold emission rates shown in Table 5-2. In addition, the federal action does not generate lead ( Pb ) emissions. Therefore, the general conformity regulations do not apply to these pollutants, and no additional conformity evaluation need be made for these pollutants.

## Section 8-2, Page 8-1

Revise the second sentence in the paragraph, as follows:
On behalf of tThe USACE, LAHD will also place a notice in a daily newspaper of general circulation in the SCAB announcing the availability of its final GCD within 30 days of its promulgation.

## Section 10, Page 10-2

Revise the fourth reference, as follows:
U.S. Army Corps of Engineers/Los Angeles Harbor Department (USACE/LAHD). 2017. Berths 226-236 [Everport] Container Terminal Iimprovements Project Draft EIS/EIR. April.

Revise the page number, as follows:
Berths 226-236 [Everport] Container 20-110-2 Port of Los Angeles
Terminal Improvements Project
September 2017

### 3.2.11 Changes Made to Appendix F.2, Evaluation of Dredged Material Disposal Option

Page 10
Revise first two paragraphs under "Impacts of Ocean Disposal" on Page 10, as follows:

## IMPACTS of OCEAN DISPOSAL

The environmental impacts from ocean disposal at LA-2 were considered during the site designation process, and re-evaluated at an increased disposal volume (USEPA and USACE 2005). Impacts to water quality, sediment quality, and biological resources were considered "not significant." The continued use of the site to dispose of sediments that meet the acceptance criteria, including disposal of sediments from the Everport Container Terminal, is unlikely to interfere with other ocean uses, such as shipping, fishing, recreation, and oil and gas development. Based on the results of the sediment characterization study, the sediments to be dredged from the proposed Project site are suitable for disposal at LA-2. The testing also confirmed there would be little to no risk of bioaccumulation or risk to humans, marine life, and the marine environment from ocean disposal.

## Impacts to Aesthetic, Recreational, and Economic Values

The environmental impacts from ocean disposal at LA-2 were considered during the site designation process, and re-evaluated at an increased disposal volume (USEPA and USACE 2005). Dredged material disposal activities have occurred at LA-2 since the late 1970s. The continued use of the site is unlikely to interfere with other ocean uses, such as shipping, fishing, and recreation. The disposal of sediments from the Everport Container Terminal would not result in an unacceptable aesthetic nuisance in recreational areas, nor contain pathogenic organisms that may cause a public health hazard, either directly or through contamination of the marine environment, fisheries or shell fisheries. The disposal of materials considered hazardous is prohibited at LA-2. The dredged material would not contain chemical constituents that may affect would adversely affect marine life or humans directly, or that may bioaccumulate or persist, and subsequently have an adverse effect on the marine environment, on humans directly or through food chain interactions (Ramboll Environ 2015).

### 3.3 Additional Appendices

Investigation of 2033 HRA Start Year for the Everport Container Terminal Improvements Project
Attached is the Investigation of 2033 HRA Start Year for the Everport Container Terminal Improvements Project.

Investigation of 2033 HRA Start Year for the Everport Container
Terminal Improvements Project

## Memorandum

## To: Port of Los Angeles Environmental Management Division <br> From: John Castleberry/CEC <br> Date: 8/14/2017 <br> Re: Investigation of $\mathbf{2 0 3 3}$ HRA Start Year for the Everport Container Terminal Improvements Project

The estimate of cancer risk in the DEIS/EIR for the Everport Container Terminal Improvements Project assumed an exposure period start year of 2018. The 2018 start year was conservatively selected to capture the combined effect of construction and operational emissions during the first two years of the 30 -year exposure period. Moreover, the risk calculation conservatively assumed that the exposed persons (receptors) would be at their most sensitive life stage ( $3^{\text {rd }}$ trimester fetus to age 2 ) during this overlapping construction and operational period.

In its June 5, 2017 comment letter, the California Air Resources Board (CARB) suggested that the Port revise the Everport HRA to include an evaluation of the potential cancer risk starting in 2033, when operational PM10 and PM2.5 emissions from certain source categories would reach their peak. This memorandum investigates the potential cancer risks associated with a 2033 HRA start year.

## Analysis Approach

Maximum cancer risks associated with a 2033 start year were estimated by scaling the maximum cancer risks in the DEIS/EIR (which correspond to a 2018 start year). The NEPA increment cancer risks at residential and sensitive receptors were selected for the scaling analysis because they represent the highest cancer risks estimated in the DEIS/EIR for the proposed Project. Tables B3-6 and B3-8 of the DEIS/EIR Appendix B3 show the following maximum NEPA increment (proposed Project minus NEPA baseline) cancer risks associated with a 2018 start year:

- Unmitigated proposed Project: 16.1 in a million at a residential receptor
- Unmitigated proposed Project: 11.7 in a million at a sensitive receptor
- Mitigated proposed Project: 9.0 in a million at a residential receptor
- Mitigated proposed Project: 7.0 in a million at a sensitive receptor

The contributions by source category to these four risk results are shown in Tables 1 through 4, below. The source contributions are provided by exposure sub-period, where the sub-periods correspond to receptor age ranges with common cancer risk calculation assumptions as set forth in OEHHA (2015). The sub-periods are defined as follows:

- Project Year 1-2 represents the first two years of project emissions and a receptor age of $3^{\text {rd }}$ trimester fetus to age 2.
- Project Year 3-16 represents the $3^{\text {rd }}$ through $16^{\text {th }}$ year of project emissions and a receptor age of 2 to 16 .
- Project Year 17-30 represents the $17^{\text {th }}$ through $30^{\text {th }}$ year of project emissions and a receptor age of 16 to 30 .

The contributions to risk in Tables 1 through 4 show the absolute proposed Project risks prior to subtracting the NEPA baseline. The absolute proposed Project risks correspond to the third column in Tables B3-6 and B3-8 of the DEIS/EIR Appendix B3.

Table 1. Cancer Risk by Source Category at the Maximum Residential Receptor under NEPA - Proposed Project without Mitigation - 2018 HRA Start Year

| Source Category | Exposure Sub-Period |  |  | Total Risk | Percent Contribution |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Project Year 1-2 | Project <br> Year 3-16 | Project Year 17-30 |  |  |
| Construction |  |  |  |  |  |
| Construction Offroad Equipment | 8.81E-06 | 0 | 0 | 8.81E-06 | 14.9\% |
| Construction Onroad Vehicles | 2.09E-08 | 0 | 0 | 2.09E-08 | 0.04\% |
| Construction Crane Delivery Ship | $7.97 \mathrm{E}-08$ | 0 | 0 | $7.97 \mathrm{E}-08$ | 0.1\% |
| Construction Harborcraft | $1.32 \mathrm{E}-06$ | 0 | 0 | 1.32E-06 | 2.2\% |
| Construction Asphalt Paving | 4.39E-09 | 0 | 0 | 4.39E-09 | 0.007\% |
| Operation |  |  |  |  |  |
| Ships in Transit | 6.76E-06 | 8.57E-06 | 1.17E-06 | $1.65 \mathrm{E}-05$ | 27.9\% |
| Ships at Berth | $2.63 \mathrm{E}-06$ | 4.35E-06 | 6.75E-07 | 7.66E-06 | 12.9\% |
| Ships at Anchorage | 6.36E-09 | $1.01 \mathrm{E}-07$ | $1.51 \mathrm{E}-08$ | 1.23E-07 | 0.2\% |
| Tugboats | 9.89E-07 | $1.18 \mathrm{E}-06$ | $1.36 \mathrm{E}-07$ | 2.30E-06 | 3.9\% |
| Trucks at Gates and On-Terminal | $9.20 \mathrm{E}-07$ | 3.26E-07 | 9.84E-09 | $1.26 \mathrm{E}-06$ | 2.1\% |
| Trucks Driving Off-Terminal | 1.23E-06 | 7.24E-07 | $5.54 \mathrm{E}-08$ | 2.01E-06 | 3.4\% |
| Locomotives | $1.17 \mathrm{E}-06$ | 1.09E-06 | 9.02E-08 | $2.35 \mathrm{E}-06$ | 4.0\% |
| Cargo Handling Equipment | 6.37E-06 | 9.04E-06 | $1.24 \mathrm{E}-06$ | $1.67 \mathrm{E}-05$ | 28.1\% |
| Worker Vehicles | 3.44E-08 | 3.91E-08 | 6.61E-09 | 8.01E-08 | 0.1\% |
| Total | $3.03 \mathrm{E}-05$ | $2.54 \mathrm{E}-05$ | $3.40 \mathrm{E}-06$ | 5.92E-05 | 100.0\% |

Notes:

1. Risks by source category and exposure sub-period were calculated using HARP2.
2. Risks shown are for the absolute proposed Project, prior to subtracting the NEPA baseline risk.
3. Project Year 1-2 represents 2018-2019; Project Year 3-16 represents 2020-2033; Project Year 17-30 represents 2034-2047.

Table 2. Cancer Risk by Source Category at the Maximum Sensitive Receptor under NEPA Proposed Project without Mitigation - 2018 HRA Start Year

| Source Category | Exposure Sub-Period |  |  | Total Risk | Percent Contribution |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Project <br> Year 1-2 | Project <br> Year 3-16 | Project Year 17-30 |  |  |
| Construction |  |  |  |  |  |
| Construction Offroad Equipment | 6.08E-06 | 0 | 0 | 6.08E-06 | 13.3\% |
| Construction Onroad Vehicles | $1.57 \mathrm{E}-08$ | 0 | 0 | $1.57 \mathrm{E}-08$ | 0.03\% |
| Construction Crane Delivery Ship | 5.05E-08 | 0 | 0 | 5.05E-08 | 0.1\% |
| Construction Harborcraft | 1.23E-06 | 0 | 0 | 1.23E-06 | 2.7\% |
| Construction Asphalt Paving | $2.07 \mathrm{E}-09$ | 0 | 0 | 2.07E-09 | 0.005\% |
| Operation |  |  |  |  |  |
| Ships in Transit | 5.20E-06 | 6.59E-06 | $9.02 \mathrm{E}-07$ | $1.27 \mathrm{E}-05$ | 27.7\% |
| Ships at Berth | $1.55 \mathrm{E}-06$ | $2.56 \mathrm{E}-06$ | $3.97 \mathrm{E}-07$ | 4.50E-06 | 9.8\% |
| Ships at Anchorage | 4.52E-09 | 7.19E-08 | $1.07 \mathrm{E}-08$ | 8.72E-08 | 0.2\% |
| Tugboats | 9.95E-07 | 1.18E-06 | 1.37E-07 | 2.32E-06 | 5.1\% |
| Trucks at Gates and On-Terminal | 5.67E-07 | $1.97 \mathrm{E}-07$ | 5.64E-09 | 7.69E-07 | 1.7\% |
| Trucks Driving Off-Terminal | $1.19 \mathrm{E}-06$ | 7.00E-07 | $5.41 \mathrm{E}-08$ | 1.95E-06 | 4.2\% |
| Locomotives | $1.09 \mathrm{E}-06$ | $1.01 \mathrm{E}-06$ | 8.42E-08 | 2.19E-06 | 4.8\% |
| Cargo Handling Equipment | 5.28E-06 | 7.50E-06 | $1.03 \mathrm{E}-06$ | 1.38E-05 | 30.2\% |
| Worker Vehicles | 3.69E-08 | 4.09E-08 | 6.95E-09 | 8.47E-08 | 0.2\% |
| Total | 2.33E-05 | 1.98E-05 | 2.63E-06 | 4.58E-05 | 100.0\% |

Notes:

1. Risks by source category and exposure sub-period were calculated using HARP2.
2. Risks shown are for the absolute proposed Project, prior to subtracting the NEPA baseline risk.
3. Project Year 1-2 represents 2018-2019; Project Year 3-16 represents 2020-2033; Project Year 17-30 represents 2034-2047.

Table 3. Cancer Risk by Source Category at the Maximum Residential Receptor under NEPA - Proposed Project with Mitigation - 2018 HRA Start Year

| Source Category | Exposure Sub-Period |  |  | Total Risk | Percent Contribution |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Project Year 1-2 | Project <br> Year 3-16 | Project <br> Year 17-30 |  |  |
| Construction |  |  |  |  |  |
| Construction Offroad Equipment | 8.08E-06 | 0 | 0 | 8.08E-06 | 14.8\% |
| Construction Onroad Vehicles | 1.93E-08 | 0 | 0 | 1.93E-08 | 0.0\% |
| Construction Crane Delivery Ship | 7.97E-08 | 0 | 0 | 7.97E-08 | 0.1\% |
| Construction Harborcraft | 6.59E-07 | 0 | 0 | $6.59 \mathrm{E}-07$ | 1.2\% |
| Construction Asphalt Paving | 4.39E-09 | 0 | 0 | 4.39E-09 | 0.0\% |
| Operation |  |  |  |  |  |
| Ships in Transit | 6.76E-06 | 8.57E-06 | 1.17E-06 | $1.65 \mathrm{E}-05$ | 30.2\% |
| Ships at Berth | $2.36 \mathrm{E}-06$ | 1.97E-06 | $2.76 \mathrm{E}-07$ | 4.60E-06 | 8.4\% |
| Ships at Anchorage | 6.36E-09 | $1.01 \mathrm{E}-07$ | $1.51 \mathrm{E}-08$ | $1.23 \mathrm{E}-07$ | 0.2\% |
| Tugboats | 9.89E-07 | $1.18 \mathrm{E}-06$ | 1.36E-07 | $2.30 \mathrm{E}-06$ | 4.2\% |
| Trucks at Gates and On-Terminal | $9.20 \mathrm{E}-07$ | $3.26 \mathrm{E}-07$ | 9.84E-09 | 1.26E-06 | 2.3\% |
| Trucks Driving Off-Terminal | $1.23 \mathrm{E}-06$ | $7.24 \mathrm{E}-07$ | $5.54 \mathrm{E}-08$ | 2.01E-06 | 3.7\% |
| Locomotives | 1.17E-06 | 1.09E-06 | 9.02E-08 | $2.35 \mathrm{E}-06$ | 4.3\% |
| Cargo Handling Equipment | 6.37E-06 | $9.04 \mathrm{E}-06$ | $1.24 \mathrm{E}-06$ | $1.67 \mathrm{E}-05$ | 30.4\% |
| Worker Vehicles | $3.44 \mathrm{E}-08$ | $3.91 \mathrm{E}-08$ | 6.61E-09 | 8.01E-08 | 0.1\% |
| Total | $2.87 \mathrm{E}-05$ | 2.30E-05 | $3.00 \mathrm{E}-06$ | 5.47E-05 | 100.0\% |

Notes:

1. Risks by source category and exposure sub-period were estimated by scaling from the unmitigated risks by the ratio of mitigated emissions/unmitigated emissions.
2. Risks shown are for the absolute proposed Project, prior to subtracting the NEPA baseline risk.
3. Project Year 1-2 represents 2018-2019; Project Year 3-16 represents 2020-2033; Project Year 17-30 represents 2034-2047.

Table 4. Cancer Risk by Source Category at the Maximum Sensitive Receptor under NEPA Proposed Project with Mitigation - 2018 HRA Start Year

| Source Category | Exposure Sub-Period |  |  | Total Risk | Percent Contribution |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Project Year 1-2 | Project <br> Year 3-16 | Project Year 17-30 |  |  |
| Construction |  |  |  |  |  |
| Construction Offroad Equipment | 5.58E-06 | 0 | 0 | 5.58E-06 | 13.0\% |
| Construction Onroad Vehicles | 1.45E-08 | 0 | 0 | $1.45 \mathrm{E}-08$ | 0.0\% |
| Construction Crane Delivery Ship | $5.05 \mathrm{E}-08$ | 0 | 0 | 5.05E-08 | 0.1\% |
| Construction Harborcraft | 6.15E-07 | 0 | 0 | 6.15E-07 | 1.4\% |
| Construction Asphalt Paving | 2.07E-09 | 0 | 0 | 2.07E-09 | 0.0\% |
| Operation |  |  |  |  |  |
| Ships in Transit | 5.20E-06 | 6.59E-06 | 9.02E-07 | 1.27E-05 | 29.6\% |
| Ships at Berth | $1.39 \mathrm{E}-06$ | $1.16 \mathrm{E}-06$ | 1.62E-07 | $2.71 \mathrm{E}-06$ | 6.3\% |
| Ships at Anchorage | 4.52E-09 | 7.19E-08 | $1.07 \mathrm{E}-08$ | 8.72E-08 | 0.2\% |
| Tugboats | 9.95E-07 | $1.18 \mathrm{E}-06$ | 1.37E-07 | 2.32E-06 | 5.4\% |
| Trucks at Gates and On-Terminal | $5.67 \mathrm{E}-07$ | 1.97E-07 | 5.64E-09 | 7.69E-07 | 1.8\% |
| Trucks Driving Off-Terminal | $1.19 \mathrm{E}-06$ | 7.00E-07 | $5.41 \mathrm{E}-08$ | 1.95E-06 | 4.5\% |
| Locomotives | $1.09 \mathrm{E}-06$ | $1.01 \mathrm{E}-06$ | 8.42E-08 | 2.19E-06 | 5.1\% |
| Cargo Handling Equipment | $5.28 \mathrm{E}-06$ | $7.50 \mathrm{E}-06$ | 1.03E-06 | $1.38 \mathrm{E}-05$ | 32.2\% |
| Worker Vehicles | 3.69E-08 | 4.09E-08 | 6.95E-09 | 8.47E-08 | 0.2\% |
| Total | 2.20E-05 | $1.84 \mathrm{E}-05$ | 2.39E-06 | $4.28 \mathrm{E}-05$ | 100.0\% |

Notes:

1. Risks by source category and exposure sub-period were estimated by scaling from the unmitigated risks by the ratio of mitigated emissions/unmitigated emissions.
2. Risks shown are for the absolute proposed Project, prior to subtracting the NEPA baseline risk.
3. Project Year 1-2 represents 2018-2019; Project Year 3-16 represents 2020-2033; Project Year 17-30 represents 2034-2047.

Table 5 shows the scaling factors that were applied to the source contributions in Tables 1 through 4 to estimate the risks for the 2033 start year. The scaling factors were derived from the ratio of proposed Project-related PM10 exhaust emissions during the exposure sub-periods within the 20332062 exposure duration relative to the 2018-2047 exposure duration. The ratio of PM10 emissions is a good surrogate for the ratio of cancer risk because almost all PM10 is diesel particulate matter (DPM) exhaust for the key sources in the HRA, and DPM is responsible for nearly all of the cancer risk.

Table 5. Scaling Factors by Source Category to Convert from a 2018 HRA Start to a 2033 HRA Start

| Source Category | Unmitigated Project |  |  | Mitigated Project |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Project <br> Year 1-2 | Project <br> Year 3-16 | Project Year 17-30 | Project <br> Year 1-2 | Project <br> Year 3-16 | Project Year 17-30 |
| Construction |  |  |  |  |  |  |
| Construction Offroad Equipment | 0 | 0 | 0 | 0 | 0 | 0 |
| Construction Onroad Vehicles | 0 | 0 | 0 | 0 | 0 | 0 |
| Construction Crane Delivery Ship | 0 | 0 | 0 | 0 | 0 | 0 |
| Construction Harborcraft | 0 | 0 | 0 | 0 | 0 | 0 |
| Construction Asphalt Paving | 0 | 0 | 0 | 0 | 0 | 0 |
| Operation |  |  |  |  |  |  |
| Ships in Transit | 1.47 | 1.22 | 1.00 | 1.47 | 1.22 | 1.00 |
| Ships at Berth | 2.43 | 1.24 | 1.00 | 1.11 | 1.12 | 1.00 |
| Ships at Anchorage | 21.05 | 1.28 | 1.00 | 21.05 | 1.28 | 1.00 |
| Tugboats | 1.44 | 1.03 | 0.96 | 1.44 | 1.03 | 0.96 |
| Trucks at Gates and On-Terminal | 0.03 | 0.11 | 1.00 | 0.03 | 0.11 | 1.00 |
| Trucks Driving Off-Terminal | 0.30 | 0.51 | 0.98 | 0.30 | 0.51 | 0.98 |
| Locomotives | 0.90 | 0.71 | 0.92 | 0.90 | 0.71 | 0.92 |
| Cargo Handling Equipment | 1.50 | 1.18 | 1.00 | 1.50 | 1.18 | 1.00 |
| Worker Vehicles | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Notes:

1. Scaling factors were derived from the ratio of PM10 exhaust emissions from a 2033 start relative to a 2018 start during each of the indicated exposure sub-periods.
2. Construction scaling factors are zero because there would be no construction during an exposure period that starts in 2033.

## Analysis Results

Tables 6 through 9 show the estimated proposed Project cancer risks associated with a 2033 HRA start year for residential and sensitive receptors, without and with mitigation. The risks were obtained by multiplying the risk contributions in Tables 1 through 4 by the scaling factors in Table 5. The risks in Tables 6 through 9 are the absolute proposed Project risks prior to subtracting the NEPA baseline.

The bottom two rows of Tables 6 through 9 show how the cancer risks would change for a 2033 start year relative to a 2018 start year:

- Table 6 shows that, without mitigation, the estimated risk at the maximum residential receptor would increase by approximately 2.3 in a million ( 3.9 percent of proposed Project absolute) with a 2033 start year. Therefore, the estimated NEPA increment cancer risk would increase from 16.1 to approximately 18.4 in a million. Both results would exceed the significance threshold of 10 in a million.
- Table 7 shows that, without mitigation, the estimated risk at the maximum sensitive receptor would increase by approximately 1.7 in a million (3.6 percent of proposed Project absolute)
with a 2033 start year. Therefore, the estimated NEPA increment cancer risk would increase from 11.7 to approximately 13.4 in a million. Both results would exceed the significance threshold of 10 in a million.
- Table 8 shows that, with mitigation, the estimated risk at the maximum residential receptor would decrease by approximately 0.6 in a million ( 1.1 percent of proposed Project absolute) with a 2033 start year. Therefore, the estimated NEPA increment cancer risk would decrease from 9.0 to approximately 8.4 in a million. Neither result would exceed the significance threshold of 10 in a million.
- Table 9 shows that, with mitigation, the estimated risk at the maximum sensitive receptor would increase by approximately 0.2 in a million ( 0.6 percent of proposed Project absolute) with a 2033 start year. Therefore, the estimated NEPA increment cancer risk would increase from 7.0 to approximately 7.2 in a million. Neither result would exceed the significance threshold of 10 in a million.

In summary, the scaling analysis described in this memorandum predicts that the maximum cancer risks for the proposed Project would differ by a range of -0.6 to +2.3 in a million at the maximum NEPA increment receptors, depending on the receptor type and whether mitigation is applied, for a 2033 start year relative to a 2018 start year. None of the four scenarios analyzed in this memorandum would change its significance finding with a 2033 HRA start year.

Table 6. Estimated Cancer Risk by Source Category at the Maximum Residential Receptor under NEPA - Proposed Project without Mitigation - 2033 HRA Start Year

| Source Category | Exposure Sub-Period |  |  | Total Risk | Percent Contribution |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Project <br> Year 1-2 | Project <br> Year 3-16 | Project <br> Year 17-30 |  |  |
| Construction |  |  |  |  |  |
| Construction Offroad Equipment | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Onroad Vehicles | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Crane Delivery Ship | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Harborcraft | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Asphalt Paving | 0 | 0 | 0 | 0 | 0.0\% |
| Operation |  |  |  |  |  |
| Ships in Transit | 9.97E-06 | 1.05E-05 | 1.17E-06 | $2.16 \mathrm{E}-05$ | 35.2\% |
| Ships at Berth | $6.39 \mathrm{E}-06$ | 5.40E-06 | 6.75E-07 | $1.25 \mathrm{E}-05$ | 20.3\% |
| Ships at Anchorage | $1.34 \mathrm{E}-07$ | $1.29 \mathrm{E}-07$ | $1.51 \mathrm{E}-08$ | $2.78 \mathrm{E}-07$ | 0.5\% |
| Tugboats | 1.43E-06 | $1.21 \mathrm{E}-06$ | $1.30 \mathrm{E}-07$ | $2.76 \mathrm{E}-06$ | 4.5\% |
| Trucks at Gates and On-Terminal | $2.81 \mathrm{E}-08$ | 3.68E-08 | $9.84 \mathrm{E}-09$ | $7.47 \mathrm{E}-08$ | 0.1\% |
| Trucks Driving Off-Terminal | 3.69E-07 | $3.72 \mathrm{E}-07$ | $5.44 \mathrm{E}-08$ | 7.95E-07 | 1.3\% |
| Locomotives | $1.06 \mathrm{E}-06$ | $7.73 \mathrm{E}-07$ | $8.30 \mathrm{E}-08$ | $1.91 \mathrm{E}-06$ | 3.1\% |
| Cargo Handling Equipment | $9.56 \mathrm{E}-06$ | $1.07 \mathrm{E}-05$ | $1.24 \mathrm{E}-06$ | $2.15 \mathrm{E}-05$ | 35.0\% |
| Worker Vehicles | $3.44 \mathrm{E}-08$ | 3.91E-08 | 6.61E-09 | $8.01 \mathrm{E}-08$ | 0.1\% |
| Total | $2.90 \mathrm{E}-05$ | 2.91E-05 | $3.39 \mathrm{E}-06$ | $6.15 \mathrm{E}-05$ | 100\% |
| Change Relative to 2018 HRA Start |  |  |  | 2.32E-06 |  |
| Change Relative to 2018 HRA Start (\%) |  |  |  | 3.9\% |  |

## Notes:

1. Risks associated with a 2033 start were estimated by applying the scaling factors (Table 5) to the risks associated with a 2018 start (Table 1).
2. Project Year 1-2 represents 2033-2034; Project Year 3-16 represents 2035-2048; Project Year 17-30 represents 2049-2062.
3. Risks shown are for the absolute proposed Project, prior to subtracting the NEPA baseline risk.

Table 7. Estimated Cancer Risk by Source Category at the Maximum Sensitive Receptor under NEPA - Proposed Project without Mitigation - 2033 HRA Start Year

| Source Category | Exposure Sub-Period |  |  | Total Risk | Percent Contribution |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Project Year 1-2 | Project <br> Year 3-16 | Project <br> Year 17-30 |  |  |
| Construction |  |  |  |  |  |
| Construction Offroad Equipment | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Onroad Vehicles | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Crane Delivery Ship | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Harborcraft | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Asphalt Paving | 0 | 0 | 0 | 0 | 0.0\% |
| Operation |  |  |  |  |  |
| Ships in Transit | 7.67E-06 | 8.05E-06 | 9.02E-07 | 1.66E-05 | 35.0\% |
| Ships at Berth | $3.76 \mathrm{E}-06$ | $3.17 \mathrm{E}-06$ | $3.97 \mathrm{E}-07$ | 7.33E-06 | 15.5\% |
| Ships at Anchorage | 9.52E-08 | 9.20E-08 | 1.07E-08 | 1.98E-07 | 0.4\% |
| Tugboats | 1.43E-06 | $1.21 \mathrm{E}-06$ | $1.31 \mathrm{E}-07$ | $2.78 \mathrm{E}-06$ | 5.9\% |
| Trucks at Gates and On-Terminal | $1.73 \mathrm{E}-08$ | 2.22E-08 | 5.64E-09 | 4.52E-08 | 0.1\% |
| Trucks Driving Off-Terminal | $3.58 \mathrm{E}-07$ | 3.59E-07 | 5.31E-08 | $7.71 \mathrm{E}-07$ | 1.6\% |
| Locomotives | $9.84 \mathrm{E}-07$ | 7.20E-07 | 7.75E-08 | $1.78 \mathrm{E}-06$ | 3.8\% |
| Cargo Handling Equipment | 7.92E-06 | 8.87E-06 | 1.03E-06 | $1.78 \mathrm{E}-05$ | 37.6\% |
| Worker Vehicles | 3.69E-08 | 4.09E-08 | 6.95E-09 | 8.47E-08 | 0.2\% |
| Total | 2.23E-05 | 2.25E-05 | 2.61E-06 | 4.74E-05 | 100\% |
| Change Relative to 2018 HRA Start |  |  |  | 1.65E-06 |  |
| Change Relative to 2018 HRA Start (\%) |  |  |  | 3.6\% |  |

## Notes:

1. Risks associated with a 2033 start were estimated by applying the scaling factors (Table 5) to the risks associated with a 2018 start (Table 2).
2. Project Year 1-2 represents 2033-2034; Project Year 3-16 represents 2035-2048; Project Year 17-30 represents 2049-2062.
3. Risks shown are for the absolute proposed Project, prior to subtracting the NEPA baseline risk.

Table 8. Estimated Cancer Risk by Source Category at the Maximum Residential Receptor under NEPA - Proposed Project with Mitigation - 2033 HRA Start Year

| Source Category | Exposure Sub-Period |  |  | Total Risk | Percent Contribution |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Project Year 1-2 | Project <br> Year 3-16 | Project <br> Year 17-30 |  |  |
| Construction |  |  |  |  |  |
| Construction Offroad Equipment | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Onroad Vehicles | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Crane Delivery Ship | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Harborcraft | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Asphalt Paving | 0 | 0 | 0 | 0 | 0.0\% |
| Operation |  |  |  |  |  |
| Ships in Transit | 9.97E-06 | 1.05E-05 | 1.17E-06 | $2.16 \mathrm{E}-05$ | 39.9\% |
| Ships at Berth | 2.62E-06 | 2.21E-06 | $2.76 \mathrm{E}-07$ | 5.10E-06 | 9.4\% |
| Ships at Anchorage | $1.34 \mathrm{E}-07$ | $1.29 \mathrm{E}-07$ | $1.51 \mathrm{E}-08$ | 2.78E-07 | 0.5\% |
| Tugboats | 1.43E-06 | $1.21 \mathrm{E}-06$ | $1.30 \mathrm{E}-07$ | $2.76 \mathrm{E}-06$ | 5.1\% |
| Trucks at Gates and On-Terminal | $2.81 \mathrm{E}-08$ | 3.68E-08 | 9.84E-09 | $7.47 \mathrm{E}-08$ | 0.1\% |
| Trucks Driving Off-Terminal | 3.69E-07 | $3.72 \mathrm{E}-07$ | $5.44 \mathrm{E}-08$ | 7.95E-07 | 1.5\% |
| Locomotives | $1.06 \mathrm{E}-06$ | 7.73E-07 | 8.30E-08 | $1.91 \mathrm{E}-06$ | 3.5\% |
| Cargo Handling Equipment | $9.56 \mathrm{E}-06$ | $1.07 \mathrm{E}-05$ | $1.24 \mathrm{E}-06$ | $2.15 \mathrm{E}-05$ | 39.7\% |
| Worker Vehicles | $3.44 \mathrm{E}-08$ | $3.91 \mathrm{E}-08$ | 6.61E-09 | 8.01E-08 | 0.1\% |
| Total | $2.52 \mathrm{E}-05$ | $2.59 \mathrm{E}-05$ | 2.99E-06 | 5.41E-05 | 100\% |
| Change Relative to 2018 HRA Start |  |  |  | -5.93E-07 |  |
| Change Relative to 2018 HRA Start (\%) |  |  |  | -1.1\% |  |

## Notes:

1. Risks associated with a 2033 start were estimated by applying the scaling factors (Table 5) to the risks associated with a 2018 start (Table 3).
2. Project Year 1-2 represents 2033-2034; Project Year 3-16 represents 2035-2048; Project Year 17-30 represents 2049-2062.
3. Risks shown are for the absolute proposed Project, prior to subtracting the NEPA baseline risk.

Table 9. Estimated Cancer Risk by Source Category at the Maximum Sensitive Receptor under NEPA - Proposed Project with Mitigation - 2033 HRA Start Year

| Source Category | Exposure Sub-Period |  |  | Total Risk | Percent Contribution |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Project <br> Year 1-2 | Project <br> Year 3-16 | Project <br> Year 17-30 |  |  |
| Construction |  |  |  |  |  |
| Construction Offroad Equipment | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Onroad Vehicles | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Crane Delivery Ship | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Harborcraft | 0 | 0 | 0 | 0 | 0.0\% |
| Construction Asphalt Paving | 0 | 0 | 0 | 0 | 0.0\% |
| Operation |  |  |  |  |  |
| Ships in Transit | 7.67E-06 | 8.05E-06 | 9.02E-07 | $1.66 \mathrm{E}-05$ | 38.6\% |
| Ships at Berth | $1.54 \mathrm{E}-06$ | $1.30 \mathrm{E}-06$ | $1.62 \mathrm{E}-07$ | 3.00E-06 | 7.0\% |
| Ships at Anchorage | 9.52E-08 | 9.20E-08 | $1.07 \mathrm{E}-08$ | 1.98E-07 | 0.5\% |
| Tugboats | $1.43 \mathrm{E}-06$ | $1.21 \mathrm{E}-06$ | $1.31 \mathrm{E}-07$ | 2.78E-06 | 6.4\% |
| Trucks at Gates and On-Terminal | $1.73 \mathrm{E}-08$ | 2.22E-08 | 5.64E-09 | $4.52 \mathrm{E}-08$ | 0.1\% |
| Trucks Driving Off-Terminal | 3.58E-07 | 3.59E-07 | $5.31 \mathrm{E}-08$ | 7.71E-07 | 1.8\% |
| Locomotives | $9.84 \mathrm{E}-07$ | 7.20E-07 | $7.75 \mathrm{E}-08$ | $1.78 \mathrm{E}-06$ | 4.1\% |
| Cargo Handling Equipment | 7.92E-06 | 8.87E-06 | 1.03E-06 | $1.78 \mathrm{E}-05$ | 41.3\% |
| Worker Vehicles | 3.69E-08 | 4.09E-08 | 6.95E-09 | 8.47E-08 | 0.2\% |
| Total | 2.01E-05 | 2.07E-05 | 2.38E-06 | $4.31 \mathrm{E}-05$ | 100\% |
| Change Relative to 2018 HRA Start |  |  |  | 2.47E-07 |  |
| Change Relative to 2018 HRA Start (\%) |  |  |  | 0.6\% |  |

Notes:

1. Risks associated with a 2033 start were estimated by applying the scaling factors (Table 5) to the risks associated with a 2018 start (Table 4).
2. Project Year 1-2 represents 2033-2034; Project Year 3-16 represents 2035-2048; Project Year 17-30 represents 2049-2062.
3. Risks shown are for the absolute proposed Project, prior to subtracting the NEPA baseline risk.

## References

OEHHA, 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

DRAFT FINDINGS OF FACT AND STATEMENT OF OVERRIDING CONSIDERATIONS Document considered draft until Board review and approval

## Berths 226-236 [Everport] Container Terminal Improvements Project Environmental Impact Report



October 2017
Prepared by:
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THE PORT OF LOS ANGELES

With assistance from:

US Army Corps of Engineers

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### 1.1 Introduction

These Findings of Fact have been prepared by the Los Angeles Harbor Department (LAHD, or Port) as the Lead Agency pursuant to Section 21081 of the Public Resources Code (PRC) and Section 15091 of the State California Environmental Quality Act (CEQA) Guidelines to support a decision to adopt Alternative 5 (referred to herein as the Recommended Alternative) considered as part of the Environmental Impact Statement and Environmental Impact Report (EIS/EIR) prepared for the Berths 226-236 [Everport] Container Terminal Improvements Project. Section 21081 of the Public Resources Code and Section 15091 of the CEQA Guidelines provide that no public agency shall approve or carry out a project for which an Environmental Impact Report (EIR) has been certified that identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:

1. Changes or alterations have been required in, or incorporated into, the project, which avoid or substantially lessen the significant environmental effects as identified in the Final EIR.
2. Such changes or alterations are the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
3. Specific economic, legal, social, technological, or other considerations, including provisions of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Additionally, the Lead Agency must not approve a project that will have a significant effect on the environment unless it finds that specific overriding economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of the project outweigh the unavoidable adverse environmental effects, thereby rendering them "acceptable" to the decision maker. (PRC Section 21081(b); 14 California Code of Regulations [CCR] Section 15093). The Board of Harbor Commissioners (Board) adopts the Statement of Overriding Considerations set forth below, which identifies the specific overriding economic, legal, social, technological, or other benefits of the project that outweigh the significant environmental impacts identified in the Final EIR.

The Recommended Alternative includes project elements that will require federal permits from the U.S. Army Corps of Engineers (USACE). As such, an Environmental Impact Statement
(EIS) was also prepared. The USACE and LAHD prepared a joint EIS/EIR in the interest of efficiency and to avoid duplication of effort. The USACE will consider certification and approval of the EIS separate from the Board of Harbor Commissioner's (Board's) consideration of the EIR. The Findings of Fact are based on substantial evidence, including the evaluations and impact determinations made in the EIR prepared pursuant to CEQA; however, because a joint EIS/EIR was prepared, references to both the Draft and Final EIS/EIR are made throughout this document.

### 2.1 Introduction

This section describes the alternative that is recommended by staff for adoption (hereafter referred to as the 'Recommended Alternative') as analyzed under Alternative 5 in the Berths 226-236 [Everport] Container Terminal Improvements Project EIR/EIS. The EIR/EIS fully analyzed the reasonably foreseeable and potentially significant adverse environmental effects associated with construction and operation of the Recommended Alternative (Alternative 5).

### 2.1.1 Project Purpose

The LAHD operates the Port under the legal mandates of the Port of Los Angeles Tidelands Trust (Los Angeles City Charter, Article VI, Section 601) and the California Coastal Act (PRC Division 20 Section 30700 et seq.), which identify the Port and its facilities as a primary economic and coastal resource of the State of California and an essential element of the national maritime industry for the promotion of commerce, navigation, fisheries, and Harbor operations. Activities should be water dependent and the LAHD must give highest priority to navigation, shipping, and necessary support and access facilities to accommodate the demands of foreign and domestic waterborne commerce. The LAHD is chartered to develop and operate the Port to benefit maritime uses, and it functions as a landlord by leasing Port properties to more than 300 tenants.

As explained in the EIS/EIR, the purpose of the Recommended Alternative is to optimize marine shipping and commerce by upgrading the Everport Container Terminal's infrastructure in, over, and under the water while increasing and improving terminal backlands to accommodate the projected throughput and fleet mix of larger container ships [up to 16,000 twenty-equivalent units (TEUs)] that are anticipated to call at the Everport Container Terminal through 2038.

The Recommended Alternative is needed for several reasons; however, it is primarily related to an increase in the size of vessels that will be entering the fleet mix throughout the life of the project. Forecasts show that vessel fleets calling at the Port of Los Angeles and the Everport Container Terminal would include larger vessels (up to 16,000 TEUs), creating a need to improve Port facilities to accommodate larger vessels. The existing berths that serve the Everport Container Terminal are not deep enough to accommodate the projected fleet mix through 2038 (the existing berths can only accommodate up to 8,000 TEU vessels). These berths would be upgraded (deepened) as part of the Recommended Alternative. In addition to existing berth depth restrictions, additional cranes are needed to efficiently load and unload the larger container ships. Finally, additional container yard backlands are needed to accommodate future operations and the projected Port-wide throughput (The Tioga Group, 2009). The final
project component would be to increase Everport's Terminal Island Container Transfer Facility (TICTF) by one rail track to allow additional cargo to be transported offsite by rail rather than via heavy-duty truck.

### 2.1.2 CEQA Objectives

CEQA Guidelines (Section 15124[b]) require that the project description contain a statement of objectives, including the underlying purpose of the Recommended Alternative. The underlying fundamental purpose and project objective is to optimize the container-handling efficiency and capacity of the Port to accommodate the projected fleet mix of larger container vessels (up to 16,000 TEUs) that are anticipated to call at the Everport Container Terminal (i.e., Project site) through 2038. The fundamental purpose, in turn, gives rise to the following additional project objectives:

- Optimize the use of existing land at the Everport Container Terminal and associated waterways in a manner that is consistent with the LAHD's public trust obligations;
- Provide sufficient depth along Berths 226-229 [-53 mean lower low water (MLLW) plus two feet of overdepth tolerance for a total depth of -55 feet MLLW] and Berths 230-232 (47 MLLW plus two feet of overdepth tolerance for a total depth of -49 feet MLLW) to ensure the terminal's ability to accommodate up to 16,000 TEU vessels anticipated to call at the terminal;
- Provide new cranes and raise existing cranes to efficiently service the larger container ships anticipated to call at the terminal;
- Improve the container terminal and container handling facilities to accommodate more efficient loading/unloading of the larger and increased number of ships anticipated to call at the terminal;
- Improve the container terminal backland capacity;
- Maximize container land use and operations at the Everport Container Terminal consistent with the Port Master Plan; and
- Promote the long-term development and growth of the Port.


### 2.1.3 Project Description (Recommended Alternative)

This section describes the Recommended Alternative for the Berths 226-236 [Everport] Container Terminal Improvements Project EIR. The EIR analyzes the construction and operation of the Recommended Alternative under Alternative 5 in the EIS/EIR. The Project site is located at 389 Terminal Way on Terminal Island in the Port of Los Angeles within the Port of Los Angeles Community Plan area of the City, and within the County of Los Angeles, California.

The existing 205-acre container terminal at the Project site includes 180 acres under lease and an existing space assignment for 25 acres of backland area behind Berths 232-236. The Recommended Alternative would increase the existing terminal size from 205 acres to approximately 229 acres by incorporating an additional 23.5 acres (consisting of a 1.5 -acre parcel and a 22 -acre parcel) into the lease. Below is a summary of the improvements that would occur:

- Dredging (including installation of king piles and approximately 1,400 linear feet of sheet piling to stabilize the wharf) at Berths 226-229 to a design depth of -53 feet MLLW plus
two feet of overdepth tolerance (for a total depth of -55 feet MLLW) to accommodate larger ships (the existing design depth is -45 feet MLLW);
- Dredging (including installation of approximately 1,400 linear feet of sheet piling to stabilize the wharf) at Berths 230-232 to a design depth of -47 feet MLLW plus two feet of overdepth tolerance (for a total depth of -49 feet MLLW) to accommodate larger ships (the existing design depth is -45 feet MLLW);
- Disposal of approximately 38,000 cubic yards of dredged material ( 30,000 cubic yards from Berths 226-229 and 8,000 cubic yards from Berths 230-232) at an ocean disposal site (i.e., LA-2), an approved upland disposal facility, or a combination of the above;
- Addition of five new 100 -foot gauge A-frame over-water gantry (wharf) cranes manufactured by Shanghai Zhenhua Heavy Industry Co., Ltd. (ZPMC), or equivalent. These additional cranes would be installed upon existing crane rails at Berths 226-229 to accommodate larger ships at the proposed deeper berths. Addition of the new cranes would require infrastructure improvements (such as cable and electrical upgrades);
- The raising of up to five of the existing operational cranes in order to accommodate larger vessels.
- Addition of five AMP vaults (throughout wharf area adjacent to Berths 226 to 232) and associated infrastructure (e.g., electrical conduit and wires);
- Installation of three-foot spacers between the wharf and existing wharf fenders to provide better clearance between the berthed vessels and the new king and sheet piles;
- Development of approximately 1.5 acres of vacant land as new backlands;
- Development of approximately 22 acres as new backlands and modified inbound and outbound gates associated with the relocation of the main gate. The development of the 22 acres would require closure (vacation) of streets within this backlands expansion area (see next bullet) and demolition of existing structures (with the exception of the existing electrical substation);
- Closure of portions of Terminal Way, Barracuda Street, Tuna Street, and Ways Street within the Project site and rerouting of Terminal Way traffic to Cannery Street;
- Improvements to Cannery Street, including: street realignment, pavement improvements, street widening, striping, traffic lighting and signals, drainage, and sidewalk improvements;
- Infrastructure to support 23.5 acres ( $1.5+22$ acres) of new backlands (such as lighting, paving, and drainage improvements);
- Addition of one rail track at the TICTF to increase the capacity of the Everport portion of the on-dock railyard;
- Amendment of the lease to add approximately 48.5 acres of terminal backlands comprised of approximately 25 acres of existing developed terminal backlands currently under space assignment, and the 23.5 acres ( 1.5 plus 22 acres) of new backland area, for a total terminal acreage of approximately 229 acres; and,
- Extension of the facility lease by 10 years for continued operations from the current end date of 2028 to 2038.

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### 3.1 Environmental Impacts of the Recommended Alternative

The Findings of Fact are based on information contained in the Draft EIS/EIR and the Final EIS/EIR for the Recommended Alternative (analyzed in the EIS/EIR as Alternative 5), as well as information contained within the administrative record. The administrative record includes, but is not limited to, the proposed Project application, project staff reports, reports and studies referenced in the Draft EIS/EIR and Final EIS/EIR, project public hearing records, public notices, written comments on the project and responses to those comments, proposed decisions and findings on the Recommended Alternative, and other documents relating to the agency decision on the project. When making CEQA findings required by Public Resources Code Section 21081(a), a public agency shall specify the location and custodian of the documents or other materials, which constitute the record of proceedings upon which its decision is based. These records are in the care of the Director of Environmental Management, Los Angeles Harbor Department, 222 West 6 ${ }^{\text {th }}$ Street, San Pedro, California 90731.

The Draft EIS/EIR addresses the Recommended Alternative's potential effects on the environment, and was circulated for public review and comment pursuant to the State CEQA Guidelines for a period of 45 days. Comments were received from a variety of public agencies, organizations, and individuals. The Final EIS/EIR contains copies of all comments and recommendations received on the Draft EIS/EIR, a list of persons, organizations and public agencies commenting on the Draft EIS/EIR, responses to comments received during the public review, and changes to the Draft EIS/EIR. This section provides a summary of the environmental effects of the Recommended Alternative that are discussed in the EIS/EIR and provides written findings for each of the significant effects which are accompanied by a brief explanation of the rationale for each finding.

### 3.1.1 Environmental Impacts Found to Be Significant and Unavoidable

The EIS/EIR concludes that some, but not all, impacts of the Recommended Alternative in the following environmental resource areas would remain significant and unavoidable despite incorporation of all feasible mitigation:

- Air Quality and Meteorology
- Biological Resources
- Cultural Resources
- Greenhouse Gas Emissions

The Board hereby finds that, despite the imposition of all feasible mitigation measures, the following environmental impacts of the Recommended Alternative are significant and unavoidable. Table 1 lists the required mitigation measures (MM), lease measures (LM), and standard conditions of approval (SC) and potential remaining impacts after mitigation.

Table 1: Significant and Unavoidable Adverse Environmental Impacts for the Recommended Alternative (Alternative 5)

| Environmental Impact | Impact Determination | Mitigation Measures | Impacts after Mitigation |
| :---: | :---: | :---: | :---: |
| Air Quality and Meteorology |  |  |  |
| AQ-1: The Recommended Alternative would result in construction-related emissions that exceed an SCAQMD threshold of significance. | Construction would be significant for NOx in 2018 and 2019 and for VOC in 2019. Overlapping construction and operations would be significant for NOx in 2019. | MM AQ-1: Harbor Craft <br> Used During <br> Construction. <br> MM AQ-2: On-Road <br> Trucks Used during Construction. <br> MM AQ-3: Non-Road <br> Construction <br> Equipment. <br> MM AQ-4: Cargo <br> Ships Used During Construction. <br> MM AQ-5: General Mitigation Measure. | Construction would be significant and unavoidable for NOx in 2018 and 2019 and VOC in 2019. Overlapping construction and operations would be significant and unavoidable for NOx in 2019. |
| AQ-2: Recommended Alternative construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance. | Maximum off-site ambient air pollutant concentrations would be significant for $\mathrm{NO}_{2}$ (federal and state1-hour average). Overlapping construction and operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual average). | MM AQ-1 through MM AQ-5 | Maximum off-site ambient air pollutant concentrations would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1hour average). Overlapping construction and operations would be significant and unavoidable for PM10 (24-hour and annual average). |
| AQ-3: The Recommended Alternative would result in operational emissions that exceed an SCAQMD threshold of significance. | Operations would be significant for NOx in 2019 and CO and VOC in 2033 and 2038. | MM AQ-6: Vessel <br> Speed Reduction Program (VSRP). <br> MM AQ-7: Alternative Maritime Power (AMP). <br> LM AQ-1: | Operations would be significant and unavoidable for CO and VOC in 2033 and 2038. |

Table 1: Significant and Unavoidable Adverse Environmental Impacts for the Recommended Alternative (Alternative 5)

| Environmental Impact | Impact <br> Determination | Mitigation Measures | Impacts after <br> Mitigation |
| :--- | :--- | :--- | :--- |

Table 1: Significant and Unavoidable Adverse Environmental Impacts for the Recommended Alternative (Alternative 5)

| Environmental Impact | $\begin{gathered} \text { Impact } \\ \text { Determination } \end{gathered}$ | Mitigation Measures | Impacts after Mitigation |
| :---: | :---: | :---: | :---: |
| Greenhouse Gas Emissions |  |  |  |
| GHG-1: The Recommended Alternative would generate GHG emissions, either directly or indirectly that would exceed the SCAQMD 10,000 mty $\mathrm{CO}_{2} \mathrm{e}$ threshold. | Potentially significant | MM AQ-2. On-road <br> Trucks Used during Construction. <br> MM AQ-6. VSRP. <br> MM AQ-7. AMP. <br> MM GHG-1. LED <br> Lighting. <br> MM GHG-2. Solar <br> Electricity. <br> LM GHG-1. GHG <br> Credit Fund. <br> LM AQ-1: <br> Replacement of Equipment and Review of New Technology and Regulations. <br> LM AQ-2: Priority Access System. | Significant and unavoidable |

### 3.1.2 Environmental Impacts Found to Be Less than Significant after Mitigation

The EIS/EIR concludes that some, but not all, significant impacts of the Recommended Alternative in the following environmental resource areas would be less than significant after mitigation:

- Biological Resources
- Noise

In addition, the EIS/EIR concludes that some, but not all, impacts of the Recommended Alternative in the following resource area was found to be less than significant prior to mitigation. However, mitigation measures and/or standard conditions of approval were still identified for the less-than-significant impacts in the following areas, to further ensure that impacts remain minimal.

- Biological Resources
- Cultural Resources

The Board hereby finds that the following environmental impacts of the Recommended Alternative are less than significant after implementation of mitigation measures, as summarized in Table 2, which also lists the mitigation measures applied and the impacts after mitigation. Mitigation measures and/or standard conditions of approval were also identified where impacts would be less than significant prior to mitigation but are applied to ensure that impacts would be minimal.

Table 2: Significant Environmental Impacts that Can be Mitigated for the Recommended Alternative (Alternative 5)

| Environmental Impact | Impact Determination | Mitigation Measures | Impacts after Mitigation |
| :---: | :---: | :---: | :---: |
| Biological Resources |  |  |  |
| BIO-1: The Recommended Alternative could cause a loss of individuals or habitat of a state- or federally listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or the loss of federally listed critical habitat. | Potentially Significant | MM BIO-1: Protect Marine Mammals. MM AQ-6: VSRP. | Less than significant |
| Cultural Resources |  |  |  |
| CR-3: The Recommended Alternative would not result in the permanent loss of, or loss of access to, a significant paleontological resource. | Less than significant | No mitigation is required. <br> SC CR-2: Unanticipated <br> Discovery of Paleontological Resources. | Less than significant |
| Noise |  |  |  |
| NOI-1: Construction of the Recommended Alternative could result in daytime construction activities lasting more than 10 days in a three-month period that would exceed existing ambient exterior noise levels by 5 dBA or more at noise-sensitive receptors. | Significant impact | MM NOI-1: Noise <br> Reduction during Pile Driving. <br> MM NOI-2: Utilize <br> Temporary Noise Attenuation Curtain Adjacent to Pile Driving Equipment. | Less than significant |

### 3.1.3 Environmental Impacts Found to Be Less than Significant

The EIS/EIR concludes that all impacts of the Recommended Alternative in the following environmental resource areas would be less than significant.

- Aesthetics and Visual Resources
- Ground Transportation
- Groundwater and Soils
- Hazards and Hazardous Materials
- Marine Transportation
- Water Quality, Sediments, and Oceanography

In addition, the EIS/EIR concludes that some, but not all, impacts of the Recommended Alternative in the following environmental resource areas would be less than significant.

- Air Quality and Meteorology
- Biological Resources
- Noise

The Board finds that the following environmental impacts of the Recommended Alternative are less than significant and hereby makes the same determination based on the conclusions in the Final EIS/EIR, as summarized in Table 3. No mitigation measures are required for impacts that are less than significant (14 CCR Section 15126.4(3)(a)).

Table 3: Less Than Significant Environmental Impacts for the Recommended Alternative (Alternative 5)

| Environmental Impact | Impact <br> Determination | Mitigation Measures | Impacts after Mitigation |
| :---: | :---: | :---: | :---: |
| Aesthetics and Visual Resources |  |  |  |
| AES-1: Construction and operation of the Recommended Alternative would not result in a substantial adverse effect on a scenic vista. | Less than significant | No mitigation is required | Less than significant |
| AES-2: Construction and operation of the Recommended Alternative would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a state scenic highway. | Less than significant | No mitigation is required | Less than significant |
| AES-3: Construction and operation of the Recommended Alternative would not substantially degrade the existing visual character or quality of the site and its surroundings. | Less than significant | No mitigation is required | Less than significant |
| AES-4: Construction and operation of the Recommended Alternative would not create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area. | Less than significant | No mitigation is required | Less than significant |
| Air Quality and Meteorology |  |  |  |
| AQ-5: The Recommended Alternative would not generate on-road traffic that would contribute to an exceedance of the 1 -hour or 8 -hour CO standards. | Less than significant | No mitigation is required | Less than significant |
| AQ-6: The Recommended Alternative would not create an objectionable odor at the nearest sensitive receptor. | Less than significant | No mitigation is required | Less than significant |

Table 3: Less Than Significant Environmental Impacts for the Recommended Alternative (Alternative 5)

| Environmental Impact | Impact Determination | Mitigation Measures | Impacts after Mitigation |
| :---: | :---: | :---: | :---: |
| AQ-7: The Recommended Alternative would expose receptors to significant levels of TACs. | Less than significant | No mitigation is required | Less than significant |
| AQ-8: The Recommended Alternative would not conflict with or obstruct implementation of an applicable AQMP. | Less than significant | No mitigation is required | Less than significant |
| Biological Resources |  |  |  |
| BIO-2: The Recommended Alternative would not interfere with wildlife movement that could diminish the chances for long-term survival of a species. | Less than significant. | No mitigation is required. | Less than significant. |
| BIO-4: The Recommended Alternative would not result in a permanent loss of marine habitat. | Less than significant | No mitigation is required | Less than significant |
| Ground Transportation |  |  |  |
| TRANS-1: The Recommended Alternative would not result in a short-term, temporary increase in truck and auto traffic. | Less than significant | No mitigation is required | Less than significant |
| TRANS-2: Long-term vehicular traffic associated with the Recommended Alternative would not significantly impact volume/capacity ratios or level of service. | Less than significant | No mitigation is required | Less than significant |
| TRANS-3: An increase in onsite employees due to Recommended Alternative operations would not significantly increase public transit use. | Less than significant | No mitigation is required | Less than significant |
| TRANS-4: Recommended Alternative operations would not significantly increase freeway congestion. | Less than significant | No mitigation is required | Less than significant |
| TRANS-5 (For Informational Purposes): Recommended Alternative operations would not cause a significant impact in vehicular delay at at-grade railroad crossings within the | Less than significant | No mitigation is required | Less than significant |

Table 3: Less Than Significant Environmental Impacts for the Recommended Alternative (Alternative 5)

| Environmental Impact | Impact Determination | Mitigation Measures | Impacts after Mitigation |
| :---: | :---: | :---: | :---: |
| proposed project vicinity or in the region. |  |  |  |
| TRANS-6: The Recommended Alternative would not substantially increase transportation hazards due to a design feature. | Less than significant | No mitigation is required | Less than significant |
| Groundwater and Soils |  |  |  |
| GW-1: Implementation of the Recommended Alternative could expose soils containing toxic substances, associated with prior uses, which would be deleterious to humans, based on regulatory standards established by the lead agency. | Less than significant | No mitigation is required | Less than significant |
| GW-2: Construction and operation of the Recommended Alternative would not result in changes in the rate or direction of movement of existing contaminants; expansion of the area affected by contaminants; or increased level of soil or groundwater contamination, which would increase risk of harm to humans. | Less than significant | No mitigation is required | Less than significant |
| Hazards and Hazardous Materials |  |  |  |
| RISK-1: Recommended <br> Alternative related terminal modifications would not result in a measurable increase in the probability of a terrorist attack and would not result in adverse consequences to the Project site and nearby areas. | Less than significant | No mitigation is required | Less than significant |
| Marine Transportation |  |  |  |
| VT-1a: Recommended Alternative construction-related marine traffic would not substantially interfere with operation of designated vessel traffic lanes and/or impair the level of safety for vessels navigating the Main Channel, Harbor, or Precautionary Area. | Less than significant | No mitigation is required | Less than significant |

Table 3: Less Than Significant Environmental Impacts for the Recommended Alternative (Alternative 5)

| Environmental Impact | Impact Determination | Mitigation Measures | Impacts after Mitigation |
| :---: | :---: | :---: | :---: |
| VT-1b: Recommended Alternative operation-related marine traffic would not substantially interfere with operation of designated vessel traffic lanes and/or impair the level of safety for vessels navigating the Main Channel, Harbor, or Precautionary Area. | Less than significant | No mitigation is required | Less than significant |
| Noise |  |  |  |
| NOI-2: Construction of the Recommended Alternative would not result in noise levels that would exceed the ambient noise level by 5 dBA at noisesensitive receptors between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday. | Less than significant | No mitigation is required | Less than significant |
| NOI-3: Operations of the Recommended Alternative would not cause the ambient noise level measured at the property line of affected uses (i.e., sensitive receptors) to increase by a CNEL of 3 dBA to or within 'normally unacceptable' or 'clearly unacceptable' land use categories, or any increase in CNEL of 5 dBA or greater. | Less than significant | No mitigation is required | Less than significant |
| Water Quality, Sediments, and Oceanography |  |  |  |
| WQ-1: The Recommended Alternative would not create pollution, contamination, or a nuisance as defined in Section 13050 of the California Water Code or cause regulatory standards to be violated in Harbor waters. | Less than significant | No mitigation is required. | Less than significant |

### 3.2 Findings Regarding Environmental Impacts Found to Be Significant and Unavoidable

The EIS/EIR concludes that unavoidable significant impacts on the following environmental resources would occur if the Recommended Alternative was implemented.

- Air Quality and Meteorology
- Biological Resources
- Cultural Resources
- Greenhouse Gas Emissions

All available feasible mitigation measures have been incorporated into the Recommended Alternative to reduce significant impacts. However, even with the incorporation of all feasible mitigation measures, impacts on these environmental resources would remain significant and unavoidable. The Board has determined that no additional feasible mitigation measures or alternatives would reduce significant impacts to less-than-significant levels, and in light of specific economic, legal, social, technological, and other considerations, the Board intends to adopt a Statement of Overriding Considerations (see Chapter 1 of this document for additional details). The impacts, mitigation measures, findings, and rationale for the findings are presented for all significant and unavoidable impacts identified in the Final EIS/EIR below.

### 3.2.1 Air Quality and Meteorology

As discussed in Section 3.2 of the EIS/EIR, there would be four unavoidable significant impacts to air quality and meteorology related to construction and operation as a result of the Recommended Alternative. However, mitigation measures were identified for the significant and unavoidable impacts to air quality. The impacts and mitigation measures are discussed below.

## Impact AQ-1: The Recommended Alternative would result in construction-related emissions that exceed an SCAQMD threshold of significance in Table 3.2-6.

As shown in Tables 3.2-76A and Table 3.2-76B in Section 3.2, Air Quality and Meteorology, of the Draft EIS/EIR, the unmitigated peak daily construction emissions would exceed the South Coast Air Quality Management District (SCAQMD) daily emission thresholds for NOx in 2018 and 2019 and for VOC in 2019. Overlapping construction and operations would be significant for NOx in 2019. Therefore, unmitigated project construction emissions would be significant for VOC and NOx both prior and subsequent to mitigation.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. Implementation of the following mitigation measures would substantially lessen emissions from criteria pollutants associated with construction of the Recommended Alternative, as well as lessen emissions from criteria pollutants during overlap of construction and operation.

However, as shown in Tables 3.2-76A and Table 3.2-76B, construction emissions of NOx in 2018 and 2019 and VOC in 2019 would remain significant. Additionally, overlapping construction and operations for NOx in 2019 would remain significant. Specific economic, legal, social, technological, or other considerations make any additional mitigation measures infeasible. The following mitigation measures have been included to reduce impacts.

MM AQ-1: Harbor Craft Used During Construction. Harbor craft used during construction must be equipped with U.S. Environmental Protection Agency (EPA) Tier 3 engine standards or cleaner at all times during construction.
MM AQ-2: On-road Trucks Used during Construction. On-road trucks shall comply with EPA 2010 on-road emission standards or better, unless the contractor provides a written finding consistent with project contract or lease management requirements and obtains written approval from the Lead Agency that such equipment is unavailable.
MM AQ-3: Non-Road Construction Equipment (except vessels, harbor craft, onroad trucks, and dredging equipment). All non-road construction equipment greater than 50 hp must meet EPA Tier 4 emission standards, unless the contractor provides a written finding consistent with project contract or lease management requirements and obtains written approval from the Lead Agency that such equipment is unavailable.
MM AQ-4: Cargo Ships Used During Construction. All ships and barges used primarily to deliver construction-related materials or cranes shall comply with the expanded Vessel Speed Reduction Program (VSRP) of 12 knots between 40 nautical miles (nm) from Point Fermin and the Precautionary Area.

MM AQ-5: General Construction Mitigation Measure. All dredging equipment must be electric, if available. For MM AQ-1 through MM AQ-4, if a CARB-certified technology becomes available that is as good as or better than the existing measure in terms of emissions performance, the technology could replace the existing technology if approved by LAHD.

## Rationale for Finding

Changes or alterations have been incorporated into the Recommended Alternative in the form of mitigation measures MM AQ-1 through MM AQ-5, which would reduce criteria pollutant emissions associated with construction. While mitigation measures presented in the Final EIS/EIR reduce emissions, emissions would still exceed SCAQMD significance criteria during construction for NOx in 2018 and 2019 and for VOC in 2019. In addition, although emissions from overlapping construction and operation would be reduced with mitigation, they would remain significant and unavoidable for NOx in 2019.

Emissions would largely come from off-road construction equipment (including dredging equipment) and marine sources (including ships used to deliver cranes and tugboats used to assist dredging barges), as well as haul trucks used for pile deliveries and disposal of dredged material. As part of the Draft EIS/EIR, mitigation was developed aimed at reducing these emissions through construction equipment fleet modernization and the Vessel Speed Reduction Program (VSRP). Mitigation measures MM AQ-1 through MM AQ-5 represent feasible means to reduce air pollution impacts from construction sources.

Mitigation measures MM AQ-2 and MM AQ-3 have been modified in the Final EIS/EIR in response to public comments to clarify that if equipment identified in the mitigation measure is unavailable, a contractor must make a written finding and obtain written approval from LAHD. In addition, mitigation measure MM AQ-5 was modified in the Final EIS/EIR in response to public comments to require that all dredging equipment must be electric, if available. The modifications to mitigation measures MM AQ-2, MM AQ-3, and MM AQ-5 would not lessen the effectiveness of the mitigation measures and thus the modifications would not result in any new significant environmental impacts or a substantial increase in the severity of an existing environmental effect. However, NOx and VOC impacts would remain significant and unavoidable with implementation of mitigation measures MM AQ-2, MM AQ-3, and MM $\mathbf{A Q - 5}$, as modified. All mitigation measures determined feasible by LAHD have been identified in the Final EIS/EIR.

## Impact AQ-2: Recommended Alternative construction would result in off-site ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-7.

As shown in Table 3.2-78 of the Draft EIS/EIR, maximum off-site ambient air pollutant concentrations would exceed SCAQMD thresholds for $\mathrm{NO}_{2}$ (federal and state 1-hour average). Additionally, as shown on Tables 3.2-80 and 3.2-81in the Draft EIS/EIR respectively, overlapping construction and operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual average). Therefore, without mitigation, maximum offsite ambient pollutant concentrations associated with the construction of the Recommended Alternative would be significant for $\mathrm{NO}_{2}$ (federal and state 1-hour average), and overlapping construction and operations would be significant for $\mathrm{PM}_{10}$ (24-hour and annual average).

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into the Recommended Alternative that avoid or substantially lessen the significant environmental effects identified in the Final EIS/EIR. Implementation of mitigation measures MM AQ-1 through MM AQ-5, as presented above under Impact AQ-1, would substantially lessen offsite ambient pollutant concentrations associated with the construction of the Recommended Alternative, as well as overlap of construction and operation relative to the unmitigated project levels.

Table 3.2-78 in the Draft EIS/EIR shows that the maximum off-site federal 1-hour $\mathrm{NO}_{2}$ concentration from construction activities would be reduced with mitigation but would remain significant; however maximum off-site state 1 -hour $\mathrm{NO}_{2}$ concentration from construction activities would be reduced with mitigation to less than significant levels. Table 3.2-80 in the Table 3.2-81 in the Draft EIS/EIR shows that the maximum off-site incremental PM $_{10}$ (24-hour and annual average) concentration from overlapping construction and operational activities would be reduced with mitigation but would remain significant.

Therefore, even with implementation of mitigation measures, maximum off-site ambient air pollutant concentrations for construction emissions would be significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average). Overlapping construction and operations would be significant and unavoidable for $\mathrm{PM}_{10}$ (24-hour and annual average). The residual air quality impacts would be temporary but significant after mitigation. Specific economic, legal, social, technological, or other considerations make any additional mitigation measures infeasible.

## Rationale for Finding

Changes or alternations have been incorporated into the Recommended Alternative in the form of mitigation measures MM AQ-1 through MM AQ-5, which would reduce the ambient impact relative to project levels. Emissions would largely come from off-road construction equipment (including dredging equipment) and marine sources (including ships used to deliver cranes and tugboats used to assist dredging barges), as well as haul trucks used for pile deliveries and disposal of dredged material.

As part of the Draft EIS/EIR, mitigation was developed aimed at reducing these emissions through construction equipment fleet modernization, fugitive dust controls, and Best Management Practices (BMPs). Construction equipment emissions would be reduced as a result of the mitigation measures, but would remain significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour) and $\mathrm{PM}_{10}$ (24-hour average). Mitigation measures MMAQ-1 through MM AQ-5 represent feasible means to reduce air pollution impacts from construction sources. Mitigation measures MM AQ-2, MM AQ-3, and MMAQ-5 were modified in the Final EIR (See Rationale for Finding under Impact AQ-1 above). All mitigation measures determined feasible by LAHD have been identified in the Final EIS/EIR.

## AQ-3: The Recommended Alternative would result in operational emissions that exceed an SCAQMD threshold of significance in Table 3.28.

As shown in Table 3.2-86 in Chapter 3, Section 3.2.2, of the Final EIS/EIR, emissions from the Recommended Alternative's peak daily operations would exceed SCAQMD significance thresholds for NOx in 2019 and CO and VOC in 2033 and 2038 prior to mitigation. While the Draft EIS/EIR identified that operations would also be significant for $\mathrm{NO}_{\mathrm{x}}$ in 2033 and 2038
(see Table 3.2-86 in the Draft EIS/EIR), NOx emissions were recalculated in the Final EIR based on based on comments received during the public review period for the Draft EIS/EIR (see modifications made to Appendix B. 1 in Chapter 3 Section 3.2.9 of the Final EIR). As a result of the modifications, impacts for NOx were determined to be below SCAQMD thresholds in 2033 and 2038 prior to mitigation, however, impacts for NOx in 2019 remain significant.

The largest contributors to peak daily operational emissions in all analysis years would be emissions from container ship transit. Container ship hoteling, trucks, and locomotives would be key secondary contributors. Emissions for CO, VOC, $\mathrm{PM}_{10}, \mathrm{PM}_{2.5}$, and $\mathrm{SO}_{\mathrm{x}}$ would increase between years 2019 and 2033 due to terminal throughput increase. Emissions would decline slightly for all pollutants from year 2033 to 2038 as regulatory requirements for trucks, locomotives, and cargo handling equipment (CHE) continue to reduce emission factors after the terminal reached its operating capacity in 2033. Therefore, air quality impacts associated with project daily peak operations would be significant for NOx in 2019 and CO and VOC in 2033 and 2038 prior to mitigation.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. The implementation of mitigation measures MM AQ-6 and MM AQ-7 and LAHD's standard lease measures LM AQ-1 and LM AQ-2 would reduce operational emissions.

MM AQ-6: Vessel Speed Reduction Program (VSRP). Starting January 1, 2019, and thereafter, 95 percent of Evergreen ships calling at the Everport Container Terminal shall be required to comply with the expanded VSRP at 12 knots between 40 nm from Point Fermin and the Precautionary Area. Starting January 1, 2026, 95 percent of all ships calling at the Everport Container Terminal will follow this requirement. Alternative Compliance Plans will be considered where a different speed that would result in fewer emissions compared to the current speed limits.
Any alternative compliance plan shall be submitted to LAHD at least 90 days in advance for approval and shall be supported by data that demonstrates the ability of the alternative compliance plan for the specific vessel and type to achieve emissions reductions comparable to or greater than those achievable by compliance with VSRP. The alternative compliance plan shall be implemented once written notice of approval is granted by the LAHD.
MM AQ-7: Alternative Maritime Power (AMP). By 2020 or upon substantial completion of construction, 90 percent of Evergreen ships calling at the Everport Terminal must use AMP. By 2026, 95 percent of all ship calls at the Everport Container Terminal must use AMP or approved equivalent under the CARB Shore-Power Regulation. The equivalent alternative technology must, at a minimum, meet the emissions reductions that would be achieved from AMP.

LM AQ-1: Replacement of Equipment and Review of New Technology. When the tenant needs to replace or turnover equipment in its fleet, the tenant shall meet with the LAHD to determine if something is feasible or technologically available that may result in fewer emissions. If any kind of technology
becomes available and is shown to be as good as or better than the existing measure in terms of emissions reduction performance, the technology could replace the requirements of other mitigation measures pending approval by LAHD.
LAHD shall require the tenant to review any new emissions-reduction technology for feasibility and report back to LAHD every five years beginning five years after lease agreement if no new purchase or equipment turnover occurs sooner as noted in the abovementioned paragraph. If LAHD and tenant determine the technology is feasible in terms of cost and operations, the tenant shall work with LAHD to implement such technology.
LM AQ-2: Priority Access System. A priority access system shall be evaluated to identify one or more ways to provide preferential access to zero- and near-zeroemission trucks. The tenant shall provide a report to LAHD on preferential access system options by January 1, 2020.

Following the implementation of the mitigation and lease measures, the Recommended Alternative's peak daily operational emissions for NOx in 2019 would be reduced to a less-than-significant level with mitigation. Operational emissions for CO and VOC would be reduced but would remain above the level of significance in 2033 and 2038. Specific economic, environmental, legal, social, technological, or other considerations make any additional mitigation measures infeasible.

The Board finds that specific economic, environmental, legal, social, technological, or other considerations make infeasible additional mitigation measures or project alternatives identified in the Final EIS/EIR (refer to Chapter 6 of this document for additional information on mitigation and Chapter 2, Master Response 1 - Feasible Mitigation - Guidance and Applicability, of the Final EIS/EIR). All mitigation measures determined feasible by LAHD as identified in the Final EIS/EIR have been incorporated into the Recommended Alternative. Nevertheless, even with the incorporation of feasible mitigation measures, impacts would remain significant and unavoidable.

## Rationale for Finding

For the Recommended Alternative, terminal activity would increase in each study year. However, regulatory requirements would serve to reduce emission factors from most project sources. In addition, as equipment ages, engine efficiency would decrease and emission factors would increase in comparison to brand-new equipment. The largest contributors to peak daily operational emissions in all analysis years would be emissions from container ship transit. Container ship hoteling, trucks, and locomotives would be key secondary contributors. Emissions for CO, VOC, $\mathrm{PM}_{10}, \mathrm{PM}_{2.5}$, and $\mathrm{SO}_{\mathrm{x}}$ would increase between years 2019 and 2033 due to terminal throughput increase. Emissions would decline slightly for all pollutants from year 2033 to 2038 as regulatory requirements for trucks, locomotives, and CHE continue to reduce emission factors after the terminal reached its operating capacity in 2033.

As part of the Draft EIS/EIR, mitigation was developed aimed at reducing these emissions through compliance with the VSRP, implementation of AMP while hoteling at the Port, and periodic review and substitution of new technology and regulations. Mitigation measures MM AQ-6 and MM AQ-7 and lease measures LM AQ-1 and LM AQ-2 have been incorporated into the project, which substantially lessen significant daily peak operational emissions and represent feasible means to reduce air pollution impacts from project operational sources.

Mitigation measure MM AQ-7 has been modified in the Final EIS/EIR in response to public comments to increase the percentage of Evergreen ships calling at the Everport Container Terminal that must use AMP from 85 percent to 90 percent. The modifications to mitigation measure MM AQ-7 would slightly improve the effectiveness of the mitigation measure and thus the modifications to the mitigation measure would not result in any new significant environmental impacts or a substantial increase in the severity of an existing environmental effect. Peak day emissions of $\mathrm{NO}_{\mathrm{x}}$ would be reduced to levels that are less than significant. CO and VOC emissions from operations associated with the Recommended Alternative would be reduced as a result of the mitigation measures, including mitigation measure MM AQ-7 as modified, but would remain significant and unavoidable. All mitigation measures determined feasible by LAHD have been identified in the Final EIS/EIR.

## Impact AQ-4: Recommended Alternative operations would result in offsite ambient air pollutant concentrations that exceed a SCAQMD threshold of significance in Table 3.2-9.

As shown in Tables 3.2-87 and 3.2-88 of the Draft EIS/EIR, the maximum off-site $\mathrm{NO}_{2}$ (federal 1-hour average) concentration from operational activities and maximum off-site incremental $\mathrm{PM}_{10}$ (24-hour and annual average) and $\mathrm{PM}_{2.5}$ (24-hour average) concentrations from operational activities would exceed SCAQMD thresholds. Therefore, maximum off-site ambient pollutant concentrations associated with operation of the Recommended Alternative would be significant under CEQA for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual average), and $\mathrm{PM}_{2.5}$ (24-hour average) prior to mitigation.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. Implementation of mitigation measures MM AQ-6 and MM AQ-7, as presented above under Impact AQ-3, would substantially lessen offsite ambient air pollutant concentrations associated with the operation of the Recommended Alternative. However, ambient pollutant levels would remain significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual averages), and $\mathrm{PM}_{2.5}$ (24-hour average). Specific economic, legal, social, technological, or other considerations make any additional mitigation measures infeasible.

## Rationale for Finding

Similar to Impact AQ-3, operational emissions would vary over the life of the Recommended Alternative due to several factors, such as regulatory requirements, activity levels, source characteristics (container ships, tugboats, trucks, locomotives, CHE, and worker vehicles), and emission factors. As part of the Draft EIS/EIR, mitigation was developed aiming at reducing these emissions through compliance with VSRP and implementation of AMP.

Changes or alternations have been incorporated into the Recommended Alternative in the form of mitigation measures MM AQ-6 and MM AQ-7, which would reduce the ambient impact relative to Recommended Alternative levels and represent feasible means to reduce air pollution impacts from operation sources. Mitigation measure MM AQ-7 was modified in the Final EIR (See Rationale for Finding under Impact AQ-3 above). Ambient pollutant levels during operations would be reduced as a result of the mitigation measures, but would remain significant and unavoidable for $\mathrm{NO}_{2}$ (federal 1-hour average), $\mathrm{PM}_{10}$ (24-hour and annual
averages), and $\mathrm{PM}_{2.5}$ (24-hour average). All mitigation measures determined feasible by LAHD have been identified in the Final EIS/EIR.

### 3.2.2 Biological Resources

As discussed in Section 3.3 of the Draft EIS/EIR, there would be one significant and unavoidable impact to Biological Resources as a result of the Recommended Alternative. The impact and mitigation measure is discussed below.

## Impact BIO-3: The Recommended Alternative has the potential to introduce noise, light, or nonnative species into the Harbor that could substantially disrupt local biological communities.

The Recommended Alternative would increase the annual ship calls relative to the baseline. As such, operation of the Recommended Alternative has the potential to result in the introduction of nonnative species into the Harbor via ballast water or vessel hulls which could substantially disrupt local biological communities. Impacts, therefore, would be significant without mitigation.

## Finding

The Board hereby finds that no feasible mitigation is currently available to totally prevent the introduction of invasive species via vessel. This infeasibility of mitigation to address invasive species is confirmed by the National Marine Fisheries Service (refer to Comment NMFS in Chapter 2 of the Final EIS/EIR). Therefore, impacts associated with the potential for invasive species to be introduced that may disrupt marine biological communities would remain significant and unavoidable.

## Rationale for Finding

The annual ship calls and amount of ballast water discharged into the Main Channel area would increase relative to the baseline conditions as a result of the Recommended Alternative. However, no feasible mitigation is available to prevent or minimize the accidental introduction of non-native species via vessels. Impacts would remain significant and unavoidable for the introduction of invasive exotic species due to more and larger container ships using the Port as a result of the Recommended Alternative. There is no feasible mitigation identified by LAHD to eliminate this impact.

### 3.2.3 Cultural Resources

As discussed in Section 3.4 of the Draft EIS/EIR, there would be two significant and unavoidable impacts to Cultural Resources as a result of the Recommended Alternative. The impacts and mitigation measures are discussed below.

## Impact CR-1: The Recommended Alternative would have a significant impact on built environment historical resources.

The former Canner's Steam Company Plant and associated distribution pipelines, eligible for listing in the CRHR and as a City of Los Angeles Historic Cultural Monument would be demolished as part of backlands development.

The Recommended Alternative would expand the terminal onto the 22-acre backlands expansion area and include the demolition of the former Canner's Steam Company Plant, which would result in a significant adverse impact to a historic resource.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. The implementation of mitigation measure MM CR-1, presented below, would reduce the impacts of demolition on a historic property. However, impacts to a historical property would remain significant and unavoidable. The development of the backland expansion area is an essential element of the Recommended Alternative (relocated gate and expanded backland storage area), which contributes to the Recommended Alternative meeting the project objectives. Specific economic, environmental, legal, social, technological, or other considerations make any additional mitigation measures infeasible.

MM CR-1: Historic Resource Recordation. Prior to demolition of the former Canner's Steam Company Plant (located within the 22-acre backland improvement area shown in Figure 2-4 of Chapter 2, Project Description, and Figure 3.4-6 of Section 3.4, Cultural Resources of the Draft EIS/EIR), archival documentation of the building will be completed in the form of a Historic American Building Survey (HABS) that shall comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation. The documentation shall include largeformat photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian and shall be placed in the Port archives.

## Rationale for Finding

Expansion of the backlands would require demolition of the former Canner's Steam Company Plant. As part of the Draft EIS/EIR, mitigation measures have been incorporated into the Recommended Alternative in the form of mitigation measure MM CR-1, which requires archival documentation of the building. MM CR-1 lessens but does not completely eliminate the significant impact to historic resources. Therefore, even with mitigation measure MM CR1, impacts to historic resources would remain significant and unavoidable.

## Impact CR-2: The Recommended Alternative would cause a substantial adverse change in the significance of an archaeological or ethnographic resource.

One historic period archaeological site has been identified in the 22-acre backlands expansion area. It is associated with a former Japanese Fishing Village. Excavation for the development of the 22 -acre backlands expansion area under the Recommended Alternative would likely disturb, damage, and/or degrade associated archaeological resources, which would be a significant impact.

Impacts to archaeological resources from construction within the existing terminal boundary and 1.5 -acre backland expansion area are not expected to be significant due to the disturbed nature of the subsurface. However, as it is impossible to completely rule out encountering previously unknown archaeological or ethnographic resources during construction.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. The implementation of mitigation measures MM CR-2, presented below, would address impacts to archaeological resources within the 22-acre backlands area. In addition, mitigation measure MM CR-3 and standard condition SC CR-1 would also address unanticipated cultural resources discoveries during construction. However, development of the 22 -acre backland expansion area would likely disturb, damage, and/or degrade archaeological resources associated with the former Japanese Fishing Village and therefore impacts to a historical property would remain significant and unavoidable. Specific economic, legal, social, technological, or other considerations make any additional mitigation measures infeasible. Application of SC CR-1 and implementation of mitigation measure MM CR-3 would address potential impacts associated with development within the existing terminal and 1.5 -acre expansion area; therefore, impacts would be less than significant.

MM CR-2: Completion of Phase I Cultural Resource Investigation. A Phase I investigation shall be completed by a qualified archaeologist for all unsurveyed areas of the 22-acre backlands (shown in Figure 2-4 of Chapter 2, Project Description, and Figure 3.4-6 of Section 3.4, Cultural Resources of the Draft EIS/EIR) to rule out the presence of significant resources. Phase II and III investigations shall be completed if significant archaeological resources are not ruled out. Furthermore, preconstruction worker training shall be completed if significant resources are not ruled out. Furthermore, pre-construction worker training shall be completed as described in MM CR-3.
MM CR-3: Pre-construction Worker Training. Prior to the commencement of landside construction activities, qualified archaeologist and paleontologist retained by the LAHD or their designee shall provide training to construction personnel to provide information on regulatory requirements for the protection of cultural resources. This training may take the form of examples of cultural resources to look for and protocols to follow if discoveries are made. The archaeologist/paleontologist shall develop the training and any supplemental materials necessary to execute said training.
SC CR-1: Stop Work in the Area if Prehistoric and/or Archaeological Resources are Encountered. In the unlikely event that any prehistoric artifact is encountered during construction, work shall be immediately stopped and the area secured until the materials found can be assessed by a qualified archaeologist.

## Rationale for Finding

Expansion of the backlands would likely disturb, damage, and/or degrade archaeological resources associated with the former Japanese Fishing Village. As part of the Draft EIS/EIR, mitigation measures and standard conditions have been incorporated into the Recommended Alternative in the form of mitigation measure MM CR-2, MM CR-1, and standard condition SC CR-1 which lessens but does not completely eliminate the significant impact to archaeological resources. Therefore, even with mitigation measure MM CR-2, MM CR-1, and standard condition SC CR-1, impacts to archaeological resources would remain significant and unavoidable. All mitigation measures determined feasible by LAHD have been identified in the Final EIS/EIR.

### 3.2.4 Greenhouse Gas Emissions

As discussed in Section 3.5 of the Draft EIS/EIR, there would be one unavoidable significant impact on GHG emissions related to construction and operation of the Recommended Alternative. The impact and mitigation measures are discussed below.

## Impact GHG-1: The Recommended Alternative would generate GHG emissions, either directly or indirectly, that would exceed the SCAQMD 10,000 mty $\mathrm{CO}_{2 \mathrm{e}}$ threshold.

The Recommended Alternative's GHG emissions minus the CEQA baseline would exceed the GHG threshold of 10,000 mty in 2026, 2033, and 2038's operational analysis years. Emissions from all source types would increase over the life of the Recommended Alternative because of terminal throughput increase. Recommended Alternative GHG emissions would be significant under CEQA in analysis years 2026, 2033, and 2038 prior to mitigation.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. The implementation of mitigation measures MM AQ-2, MM AQ-6, and MM AQ-7 and LAHD's standard lease measures LM AQ-1 and LM AQ-2 as described above under Section 3.2.1, Air Quality and Meteorology, would reduce GHG emissions. In addition, mitigation measures MM GHG-1 and MM GHG-2 and LAHD's standard lease measure LM GHG-1 shown below would further reduce future GHG emissions. However, annual GHG emissions would remain significant and unavoidable. Specific economic, legal, social, technological, or other considerations make any additional mitigation measures infeasible.

> MM GHG-1: LED Lighting. All fixtures on the high mast poles at the Everport Container Terminal shall be replaced with LED fixtures or a technology with similar energy-saving capabilities.
> MM GHG-2: Solar Electricity. Photovoltaic panels shall be installed over the employee parking lot as part of the development of the 22 acres, pending a feasibility study.
> LM GHG-1: GHG Credit Fund. Project GHG emissions are 99,856 metric tons of CO2e in the peak year of operations in 2038. They exceed the 10,000 metric ton CO2e significance threshold by 89,856 metric tons. Because operational GHG emissions exceed the
significance threshold with the incorporation of all feasible mitigation measures, LAHD shall establish a carbon offset fund, which may be accomplished through a Memorandum of Understanding with the California Air Resources Board or another appropriate entity, to mitigate project GHG impacts to the maximum extent feasible. The fund shall be used for GHGreducing projects and programs on Port of Los Angeles property. It shall be the responsibility of the Tenant to contribute to the fund. Fund contribution shall be the equivalent of $1 \%$ of the minimum annual guarantee (MAG) at the time that project construction will commence. This amount will be approximately $\$ 300,000$, payable upon substantial completion of project construction. This amount is appropriate because it takes into account the tenant's actual container throughput and assesses a fee in correlation with the facility's GHG maximum feasible contribution level. This also takes into account the cost of the project, including on-site GHG-reducing mitigation measures that the tenant will be required to implement (LED high mast lighting and solar panels over the employee parking lot). If LAHD is unable to establish the fund within a reasonable period of time, Tenant shall instead purchase credits from an approved GHG offset registry in the amount of approximately $\$ 300,000$.

## Rationale for Finding

Emissions would increase because of terminal throughput increase over the life of the Recommended Alternative. As part of the Draft EIS/EIR, mitigation and lease measures were developed that are aimed at reducing emissions through reduced fossil fuel use and installing power-saving technology. Changes or alternations have been incorporated into the Recommended Alternative in the form of mitigation measures MMAQ-2, MM AQ-6, MM AQ-7, MM GHG-1, and MM GHG-2, and lease measures LM AQ-1, LM AQ-2, and LM GHG-1 which represent feasible means to reduce GHG emissions. Lease measure LM GHG-1 has been modified in the Final EIS/EIR in order to clarify how contributions to the credit fund are determined, to revise the amount GHG emissions associated with the Recommended Alternative and to increase the amount of GHG off-set credits to be paid by the Tenant from $\$ 250,000$ to approximately $\$ 300,000$. The modifications to lease measure LM GHG-1 would not reduce the effectiveness of the lease measure and thus the modifications would not result in any new significant environmental impacts or a substantial increase in the severity of an existing environmental effect. Impacts would be reduced as a result of implementation of mitigation measures MM AQ-2, MM AQ-6, MM AQ-7, MM GHG-1, and MM GHG-2, and lease measures LM AQ-1, LM AQ-2, and LM GHG-1 (as modified), but impacts would remain significant and unavoidable for annual GHG emissions. All mitigation measures determined feasible by LAHD have been identified in the Final EIS/EIR. In addition, refer to Chapter 6 of this document for additional information on mitigation.

### 3.3 Findings Regarding Environmental Impacts Found to Be Less than Significant after Mitigation

The Final EIS/EIR concludes that less-than-significant impacts would occur after mitigation on the following environmental resources if the Recommended Alternative was implemented.

- Biological Resources
- Noise

In addition, the Final EIS/EIR concludes that some, but not all, impacts of the Recommended Alternative in the following resource areas were found to be less than significant prior to mitigation. However, mitigation measures and/or standard conditions of approval were still identified for the less-than-significant impacts in the following areas, to further ensure that impacts remain minimal.

- Biological Resources
- Cultural Resources

The following Findings pertain to environmental impacts of the Recommended Alternative for which mitigation measures and/or standard conditions of approval have been identified in the Final EIS/EIR that will avoid or substantially lessen the significant environmental effects to a less-than-significant level.

### 3.3.1 Biological Resources

As discussed in Section 3.3 of the Draft EIS/EIR, there would be one significant impact to Biological Resources that would be mitigated to less than significant levels as a result of mitigation measures incorporated into the Recommended Alternative. The impact and mitigation measures are discussed below.

> Impact BIO-1: The Recommended Alternative could cause a loss of individuals or habitat of a state- or federally listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or the loss of federally listed critical habitat.

King and sheet pile driving is anticipated to result in disturbance (Level B harassment) to marine mammals (particularly harbor seals and sea lions) in the vicinity of pile driving operations. Impacts to marine mammals in the vicinity of pile driving operations would be significant before mitigation.

Increased vessel activity from the Recommended Alternative would result in increased noise levels. However, impacts are not considered significant because this would not lead to the loss of individuals or habitat of sensitive species. The increase in vessel traffic would also increase the likelihood of a vessel collision with a marine mammal or sea turtle, which could result in injury or mortality. This impact is considered less than significant because of the low probability of vessel strikes; however, any increase in vessel traffic caused by the Recommended Alternative may incrementally increase the potential for vessel strikes.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the environmental effect identified in the Final EIS/EIR. The implementation of mitigation measure MM BIO-1, shown below would reduce impacts on marine mammals as a result of pile driving during construction to a less than significant level. While impacts to marine mammals and sea turtles from vessel strikes during project operation are less than significant without mitigation, MM AQ-6, described under Impact AQ-3 would further reduce impacts.

MM BIO-1 Protect Marine Mammals. Although it is expected that marine mammals will voluntarily move away from the area at the commencement of the vibratory or "soft start" of pile driving activities, as a precautionary measure, pile driving activities occurring as part of the sheet pile and king pile installation will include establishment of a safety zone, by a qualified marine mammal professional, and the area surrounding the operations (including the safety zones) will be monitored for marine mammals by a qualified marine mammal observer. ${ }^{1}$

The pile driving site will move with each new pile; therefore, the safety zones will move accordingly.
${ }^{1}$ Marine mammal professional qualifications shall be identified based on criteria established by LAHD during the construction bid specification process. Upon selection as part of the construction award winning team, the qualified marine mammal professional shall develop site specific pile driving safety zone requirements, which shall follow NOAA Fisheries Technical Guidance Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NOAA Fisheries 2016) in consultation with the Acoustic Threshold White paper prepared for this purpose by LAHD (LAHD 2017). Final pile driving safety zone requirements developed by the selected marine mammal professional shall be submitted to LAHD Construction and Environmental Management Divisions.

## Rationale for Finding

Changes or alternations have been incorporated into the Recommended Alternative in the form of mitigation measures MM AQ-6 and MM BIO-1. Mitigation measure MM AQ-6 would be implemented to mitigate air quality impacts rather than to mitigate a significant impact to biological resources, but would have the added benefit of further decreasing the likelihood of a vessel collision with a marine mammal or sea turtle by requiring 95 percent of the Evergreen ships calling at the Everport Container Terminal to comply with the expanded Vessel Speed Reduction Program at 12 knots between 40 nm from Point Fermin and the Precautionary Area. Mitigation measure MM BIO-1 would reduce potentially significant impacts on marine mammals resulting from noise associated with pile driving by requiring initiation of pile driving with a soft start and establishment of a safety zone, as well as monitoring by a qualified marine mammal observer. The footnote for mitigation measure MM BIO-1 was modified in the Final EIR to remove specified timing for submitting pile driving safety zone requirements to LAHD. Thus, the modifications to the MM BIO-1 would not lessen the effectiveness of the mitigation measure in reducing impacts associated with pile driving. Therefore, implementation of mitigation measure MM BIO-1 would reduce impacts associated with the loss of individuals, or the reduction of existing habitat, of a state- or federally-listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern to a less-than-significant level. While MM AQ-6 is not necessary to mitigate a significant impact to marine mammals to a less than significant level, its implementation to mitigate air quality
impacts would have the additional effect of further lessening an already less than significant impact to marine mammals.

### 3.3.2 Cultural Resources

As discussed in Section 3.4 of the Draft EIS/EIR, there would be one less than significant impact to Cultural Resources for which an additional condition is applied. The standard condition of approval is discussed below.

## Impact CR-3: The Recommended Alternative would not result in the permanent loss of, or loss of access to, a significant paleontological resource.

The Project site is located on Terminal Island, which was created by filling over and extending Rattlesnake Island with dredge material. Because the site was created primarily using dredged material (imported fill) and Rattlesnake Island has been heavily disturbed and/or overlain with imported fill, project excavation would not be expected to encounter or yield significant paleontological resources or unique geologic features, and significant impacts to paleontological resources are not expected.

## Finding

The Board hereby finds that although the Recommended Alternative would result in a less-than- significant impact on paleontological resources, changes or alterations have been required in, or incorporated into, the Recommended Alternative to ensure the appropriate actions are carried out should any paleontological resources be encountered. This standard condition is described below and will be incorporated into the Recommended Alternative via the Mitigation Monitoring and Reporting Program.

SC CR-2: Unanticipated Discovery of Paleontological Resources. In the event that a paleontological resource is encountered during construction, the contractor shall stop construction and a qualified paleontologist shall evaluate the significance of the resource. Additional monitoring recommendations may be made at that time. If the resource is found to be significant, the paleontologist shall systematically remove and stabilize the specimen(s) in anticipation of preservation. Curation of the specimen shall be in a qualified research facility, such as the Los Angeles County Natural History Museum.

## Rationale for Finding

In the highly unlikely event that paleontological resources are identified during construction, SC CR-2 would ensure that the resources were evaluated and removed for preservation according to professional standards. Residual impacts would remain less than significant.

The Recommended Alternative would not disturb, damage, or degrade paleontological resources. However, as it is impossible to completely rule out encountering previously unknown paleontological resources during construction, changes or alternations have been incorporated into the Recommended Alternative in the form of standard condition SC CR-2 which requires construction activities to cease in the area if paleontological resources are encountered until a qualified paleontologist can be retained to evaluate the find. Standard condition SC CR-2 would be implemented not to mitigate a potentially significant
environmental impact, but rather to further reduce any potential impacts to any previously unknown paleontological resource during construction. Therefore, implementation of standard condition SC CR-2 would ensure that impacts associated with paleontological resources remain less than significant.

### 3.3.3 Noise

As discussed in Section 3.10 of the Draft EIS/EIR, there would be one significant impact related to Noise generated during project construction. This impact would be mitigated to less than significant levels as a result of mitigation measures incorporated into the Recommended Alternative. The impacts and mitigation measures are discussed below.

## Impact NOI-1: Construction of the Recommended Alternative could result in daytime construction activities lasting more than 10 days in a threemonth period that would exceed existing ambient exterior noise levels by 5 dBA or more at noise-sensitive receptors.

Noise produced by daytime pile driving during wharf construction alone or pile driving in combination with general construction would increase average ambient noise levels at Fish Harbor by 6 dBA and at San Pedro waterfront commercial- and tourism-based uses by 8 dBA over existing levels. These impacts would be temporary but significant without mitigation.

Finding
The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. The implementation of mitigation measures MM NOI-1 and MM NOI-2, as follows, would reduce impacts on the ambient noise level at Fish Harbor and San Pedro waterfront commercial- and tourism-based uses as a result of construction of the Recommended Alternative.

MM NOI-1: Noise Reduction during Pile Driving. The contractor shall be required to use a pile driving system which is capable of limiting maximum noise levels at 50 feet from the pile driver to 104 dBA , or less, for wharf construction.

MM NOI-2: Utilize Temporary Noise Attenuation Curtain Adjacent to PileDriving Equipment. If under MM NOI-1 the reduced pile driving noise exceeds 103 dBA at 50 feet from the pile driver, utilize temporary noise attenuation curtain suitable for pile driving equipment as needed. This noise attenuation device should be installed directly between the equipment and the nearest noise sensitive receptor to the construction site.

## Rationale for Finding

The closest sensitive receptor to the pile driving site is the San Pedro business/tourism area west of the Project site followed by the liveaboards at Fish Harbor (see Table 3.10-9 of the Draft EIS/EIR). Noise levels at these locations will exceed ambient levels by 8 dBA and 6 dBA without mitigation. As part of the Draft EIS/EIR, changes or alternations have been incorporated into the Recommended Alternative in the form of mitigation measures MM NOI-1 and MM NOI-2. Mitigation measure MM NOI-1 requires the contractor to use a pile driving system that limits noise to 104 dBA at 50 feet from the driver. With MM NOI1, noise levels would be reduced to 104 dBA at 50 feet, and results in a 3 dBA reduction at
both the San Pedro business/tourism area and Fish Harbor, resulting in a noise level of 5 dBA over ambient for the San Pedro business/tourism area, which is the threshold for a significance determination. The resulting noise at Fish Harbor would be 3 dBA over ambient, which is not significant. If under MM NOI-1, the pile driving noise is reduced to 103 dBA (or less) at 50 feet from the driver, the noise levels at the closest sensitive receptor (San Pedro business/tourism area) would exceed ambient levels by 4 dBA or less, which is not significant. Thus, if MM NOI-1 reduced noise to 103 dBA or less at 50 feet, the significant impact would be mitigated to below significance and no further mitigation is required. Mitigation measure MM NOI-2 requires the contractor to utilize a temporary noise attenuation curtain suitable for pile driving equipment. Mitigation measure MM NOI-2 has been modified in the Final EIS/EIR to specify that a temporary noise attenuation curtain is only required if, after implementation of MM NOI-1, pile driving noise exceeds 103 dBA at 50 feet from the pile driver, for the reason explained above. Thus, the modifications to MM NOI-2 would not lessen the effectiveness of the mitigation measure in reducing ambient noise levels at Fish Harbor and the San Pedro waterfront commercial- and tourism-based uses to a less than significant level. Therefore, the modification to MM NOI-2 would not result in any new significant environmental impacts or a substantial increase in the severity of an existing environmental effect, and noise impacts would be less than significant with implementation of the mitigation measures as modified. Therefore, implementation of mitigation measures MM NOI- $\mathbf{1}$ and MM NOI- $\mathbf{2}$ would reduce impacts on the ambient noise level at Fish Harbor and San Pedro waterfront commercial- and tourism-based uses to a less-than-significant level.

### 3.3.4 Cumulatively Considerable Impacts

The State CEQA Guidelines (Section 15130) require an analysis of the project's contribution to significant and unavoidable cumulative impacts. Cumulative impacts include "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (State CEQA Guidelines, Section 15355). As shown on Figure 4-1 and detailed in Table 4-1 (in Chapter 4, Cumulative Analysis of the Draft EIS/EIR), a total of 70 current or reasonably foreseeable future projects (approved or proposed) were identified in the Ports of Los Angeles and Long Beach as well as the communities of San Pedro, Wilmington and Carson that have the potential to contribute to a cumulative impact.

The discussion below identifies cumulatively significant impacts that can either be mitigated to less than significant or that cannot be mitigated to a less than significant level and represent significant unavoidable impacts. All feasible mitigation measures to reduce or avoid the cumulatively considerable contribution of the Recommended Alternative to these impacts have been required in, or incorporated into, the project. However, even with the incorporation of all feasible mitigation measures, cumulative impacts on these environmental resources would remain significant and unavoidable. The Board has determined that no additional feasible mitigation measures or alternatives would reduce significant cumulative impacts to less-thansignificant levels, and-in light of specific economic, legal, social, technological, and other considerations-the Board intends to adopt a Statement of Overriding Considerations (see Chapter 1 of this document for additional details). The impacts, mitigation measures, findings, and rationale for the findings are presented for all significant and unavoidable cumulative impacts identified in the Final EIS/EIR below.

According to State CEQA Guidelines Section 15130(b): "The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone.

The discussion should be guided by the standards of practicality and reasonableness..." The information presented in the Draft EIS/EIR in Chapter 4 Cumulative Analysis, meets this criterion.

### 3.3.5 Air Quality and Meteorology

## Cumulative Impact AQ-1: The Recommended Alternative would contribute to cumulatively considerable construction-related emissions that exceed an SCAQMD threshold of significance - Cumulatively Considerable and Unavoidable

Recommended Alternative construction emissions would exceed SCAQMD significance thresholds for $\mathrm{NO}_{\mathrm{x}}$ in 2018 and 2019 and for VOC in 2019 under CEQA. Therefore, unmitigated Recommended Alternative construction emissions would be significant for $\mathrm{NO}_{\mathrm{x}}$ and VOC prior to mitigation under CEQA and NEPA. These impacts would combine with cumulatively significant impacts from concurrent related construction projects, and potentially other related projects. As a result, without mitigation, Recommended Alternative construction emissions would make a cumulatively considerable contribution to an existing significant cumulative impact for $\mathrm{NO}_{\mathrm{x}}$ and VOC emissions.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. The implementation of mitigation measures MM AQ-1 through MM AQ-5 would help reduce cumulatively considerable construction impacts. Although mitigation measures MM AQ-1 through MM AQ-5 would reduce the cumulative effect of construction emissions, the mitigation would not sufficiently reduce the Recommended Alternative's cumulatively considerable contribution to a less-than-significant level. The Board hereby finds that specific economic, legal, social, technological, or other considerations make infeasible additional mitigation measures or project alternatives identified in the Final EIS/EIR. Even with the incorporation of feasible mitigation measures, the Recommended Alternative would make a cumulatively considerable contribution to a significant cumulative impact for NOx and VOC emissions during construction. After mitigation, overlapping construction and operational emissions would remain significant for NOx. As such, after mitigation, overlapping construction and operations of the Recommended Alternative would make a cumulatively considerable and unavoidable contribution to an existing significant cumulative impact for NOx and VOC emissions.

## Rationale for Finding

The past, present, and reasonably foreseeable future projects for Cumulative Impact AQ-1 would result in significant cumulative impacts if their combined increase of a criteria pollutant would exceed SCAQMD significance thresholds during construction. Changes or alterations have been incorporated into the Recommended Alternative in the form of mitigation measures MM AQ-1 through MM AQ-5. Mitigation measures MM AQ-1 through MM AQ-5 would help reduce construction emissions but not to a less-than-significant level. Cumulative air quality impacts from Recommended Alternative construction would exceed NOX and VOC thresholds. Construction emissions would make a cumulatively considerable contribution to a significant cumulative impact. All mitigation measures determined feasible by LAHD as identified in the Final EIS/EIR have been incorporated into the Recommended Alternative.

Cumulative Impact AQ-2: The Recommended Alternative construction would result in off-site ambient air pollutant concentrations that exceed the SCAQMD thresholds of significance or substantially contribute to an existing or projected air quality standard violation-Cumulatively Considerable and Unavoidable

Construction of the Recommended Alternative would exceed the federal 1-hour ambient air thresholds for $\mathrm{NO}_{2}$. Overlapping construction and operations of the Recommended Alternative would exceed the federal 1-hour $\mathrm{NO}_{2}$, the 24-hour $\mathrm{PM}_{10}$, and annual $\mathrm{PM}_{10}$ ambient air thresholds. These impacts would combine with impacts from concurrent related construction projects, and potentially other related projects, which would be cumulatively significant. As a result, without mitigation, impacts from Recommended Alternative construction would make a cumulatively considerable contribution to a significant cumulative impact related to ambient $\mathrm{NO}_{2}$ levels. In addition, impacts from Recommended Alternative overlapping construction and operations would make a cumulatively considerable contribution to a significant cumulative impact related to ambient $\mathrm{NO}_{2}$ and $\mathrm{PM}_{10}$ levels.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. The implementation of mitigation measures MM AQ-1 through MM AQ-5 would help reduce cumulatively considerable construction emissions. Although mitigation measures MM AQ-1 through MM AQ-5 would reduce the cumulative effect of construction emissions, the mitigation would not sufficiently reduce the Recommended Alternative to a less-than-significant level for $\mathrm{NO}_{2}$ or $\mathrm{PM}_{10}$. The Board hereby finds that specific economic, environmental, legal, social, technological, or other considerations make infeasible additional mitigation measures or proposed project alternatives identified in the Final EIS/EIR.

## Rationale for Finding

The past, present, and reasonably foreseeable future projects would result in significant cumulative impacts for Cumulative Impact AQ-2 if their combined ambient pollutant concentrations, during construction, would exceed the SCAQMD ambient concentration thresholds for pollutants from construction. Changes or alternations have been incorporated into the Recommended Alternative in the form of mitigation measures MM AQ-1 through MM AQ-5 to help reduce construction emissions; however, they would not reduce all impacts to a less-than-significant level. Construction emissions could still make a cumulatively considerable contribution to a significant cumulative impact relative to ambient $\mathrm{NO}_{2}$ and $\mathrm{PM}_{10}$ levels from concurrent related project construction. All mitigation measures determined feasible by LAHD have been identified in the Final EIS/EIR.

Cumulative Impact AQ-3: The operation of the Recommended Alternative would produce a cumulatively considerable increase of a criteria pollutant that exceeds the SCAQMD peak day emission thresholds of significance-Cumulatively Considerable and Unavoidable
Recommended Alternative operational emissions would exceed SCAQMD significance thresholds for NOx in 2019, and for CO and VOC in 2033 and 2038. These impacts would combine with impacts from concurrent related projects, which would already be cumulatively significant. The Recommended Alternative's incremental contribution to that cumulatively
significant impact would be cumulatively considerable. As a result, without mitigation, project operational emissions would make a cumulatively considerable contribution to an existing significant cumulative impact for $\mathrm{NOx}, \mathrm{CO}$, and VOC .

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. The implementation of mitigation measures MM AQ-6 and MM AQ-7 and LAHD's standard lease measures LM AQ-1 and LM AQ-2 would help reduce cumulatively considerable operational emissions.

Although mitigation measures MM AQ-6 and MM AQ-7 and LAHD's standard lease measures LM AQ-1 and LM AQ-2 would reduce the cumulative effect of operational emissions, the mitigation would not sufficiently reduce the Recommended Alternative's cumulatively considerable contribution of the impact to a less-than-significant level. The Board hereby finds that specific economic, environmental, legal, social, technological, or other considerations make infeasible additional mitigation measures or proposed project alternatives identified in the Final EIS/EIR. Even with the incorporation of feasible mitigation measures, the Recommended Alternative would make a cumulatively considerable and unavoidable contribution to an existing significant cumulative impact related to $\mathrm{NOx}, \mathrm{CO}$, and VOC.

## Rationale for Finding

The emissions from cumulative projects would be cumulatively significant if their combined operational emissions would exceed the SCAQMD daily operational emission thresholds. This would be the case for all analyzed criteria pollutants; therefore, the past, present, and future related projects would result in a significant cumulative air quality criteria pollutant impact and the Recommended Alternative's incremental contribution to that cumulatively significant impact would be cumulatively considerable. Mitigation measures MM AQ-6 and MM AQ-7 and LAHD's standard lease measures LM AQ-1 and LM AQ-2 would help reduce operational emissions; however, they would not reduce the Recommended Alternative's contribution below a cumulatively considerable level. Consequently, emissions from operation of the Recommended Alternative would produce cumulatively considerable and unavoidable contributions to a significant cumulative impact for $\mathrm{NO}_{\mathrm{x}}, \mathrm{CO}$, and VOC.

## Cumulative Impact AQ-4: The operation of the Recommended Alternative would produce emissions that cumulatively exceed an ambient air quality standard or substantially contribute to an existing or projected air quality standard violation-Cumulatively Considerable and Unavoidable

Operation of the Recommended Alternative would exceed the federal 1-hour $\mathrm{NO}_{2}$, the 24-hour and annual $\mathrm{PM}_{10}$, and the $\mathrm{PM}_{2.5}$ ambient air thresholds. These impacts would combine with impacts from concurrent related projects, which would already be cumulatively significant. As a result, without mitigation, impacts from proposed project operations would make a cumulatively considerable contribution to an existing significant cumulative impact related to ambient $\mathrm{NO}_{2}, \mathrm{PM}_{10}$, and $\mathrm{PM}_{2.5}$ levels.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental
effect identified in the Final EIS/EIR. The implementation of mitigation measures MM AQ-6 and MM AQ-7 would help reduce cumulatively considerable operational emissions.

Although mitigation measures MM AQ-6 and MM AQ-7 would reduce the cumulative effect of operational emissions, the mitigation would not reduce cumulative impacts to a less-thansignificant level. The Board hereby finds that specific economic, environmental, legal, social, technological, or other considerations make infeasible additional mitigation measures or proposed project alternatives identified in the Final EIS/EIR. The Recommended Alternative would make a cumulatively considerable contribution to an existing significant cumulative impact related to ambient $\mathrm{NO}_{2}, \mathrm{PM}_{10}$, and $\mathrm{PM}_{2.5}$ levels.

## Rationale for Finding

The emissions from cumulative projects would be cumulatively significant if their combined operational emissions would exceed the SCAQMD daily operational emission thresholds. This would be the case for all analyzed criteria pollutants; therefore, the past, present, and future related projects would result in a significant cumulative ambient air emissions impact. The Recommended Alternative's incremental contribution to that cumulatively significant impact would be cumulatively considerable. Mitigation measures MMAQ-6 and MM AQ-7 would help reduce operational emissions; however, they would not reduce the Recommended Alternative's contribution below a cumulatively considerable level. Consequently, emissions from operation of the Recommended Alternative would produce cumulatively considerable and unavoidable contributions to a significant cumulative for ambient $\mathrm{NO}_{2}, \mathrm{PM}_{10}$, and $\mathrm{PM}_{2.5}$. All mitigation measures determined feasible by LAHD as identified in the Final EIS/EIR have been incorporated into the Recommended Alternative.

## Cumulative Impact AQ-7: The Recommended Alternative would exposure receptors to significant levels of toxic air contaminants (TACs) Cumulatively Considerable and Unavoidable

Recommended Alternative construction and operation emissions of TACs would not increase cancer risks above the significance threshold for any receptor type relative to the baseline. The Recommended Alternative would also not result in increases in non-cancer risk in excess of the significance thresholds. Although Recommended Alternative cancer risk and population cancer burden would be below SCAQMD's project-level significance thresholds, the impacts would be greater than the future baseline and would combine with impacts from concurrent related projects and background risk levels, which would already be cumulatively significant. As a result, the Recommended Alternative would make a cumulatively considerable contribution to an existing significant cumulative impact for cancer risk and population cancer burden.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. The implementation of mitigation measures MM AQ-1 through MM AQ-7 would help reduce cumulatively considerable exposure to significant TACs. Although mitigation measures MM AQ-1 through MM AQ-7 would reduce the cumulative effect of exposure to TACs, the mitigation would not sufficiently reduce the Recommended Alternative's cumulatively considerable contribution of the impact to a less-than-significant level. Therefore, the Board hereby finds that specific economic, legal, social, technological, or other considerations make infeasible additional mitigation measures or project alternatives identified in the Final EIS/EIR. Even with the incorporation of feasible mitigation
measures, the Recommended Alternative would make a cumulatively considerable contribution to an existing significant cumulative impact for cancer risk.

## Rationale for Finding

SCAQMD's Multiple Air Toxics Exposure Study (MATES IV) (SCAQMD, 2015) showed that the cancer risk in 2012 from toxic air contaminants was estimated at roughly 480 in a million in the San Pedro and Wilmington areas. In their Diesel Particulate Matter Exposure Assessment Study for the Ports of Los Angeles and Long Beach, the Califormia Air Resources Board (CARB) estimated that elevated levels of cancer risks due to operational emissions from the Ports of Los Angeles and Long Beach occur within and in proximity to the two ports (CARB 2006). Based on this information, cancer risk from TAC emissions within the project region, and non-cancer impacts associated with past, present, and reasonably foreseeable projects in the proposed project area, are therefore cumulatively significant.

Implementation of proposed project mitigation measures that reduce diesel combustion and other TAC emissions, specifically mitigation measures MM AQ-1 through MM AQ-7, would reduce TAC emissions from the Recommended Alternative. After implementation of these mitigation measures, although the overall emissions would be reduced, the Recommended Alternative would add to the TAC burden in the vicinity and result in a cumulatively considerable contribution to an existing cumulatively significant impact for cancer risk for marina-residential and occupational receptors. All mitigation measures determined feasible by LAHD as identified in the Final EIS/EIR have been incorporated into the Recommended Alternative.

### 3.3.6 Biological Resources

## Cumulative Impact BIO-3: The Recommended Alternative would contribute to a cumulatively considerable disruption of local biological communities (e.g., from construction impacts or the introduction of noise, light, or invasive species)—Cumulatively Considerable and Unavoidable

Past, present, and future related projects have increased and will continue to increase vessel traffic; therefore, the related projects could potentially increase the chances for the introduction of invasive species via vessel hulls or ballast water which is considered to be a cumulatively considerable and unavoidable significant cumulative impact. The Recommended Alternative would contribute to this overall increase in vessel traffic, thereby adding to the cumulative potential for introduction of exotic species. Potential effects related to the introduction of nonnative species have the potential to be cumulatively significant, and the Recommended Alternative could make a cumulatively considerable contribution to a significant cumulative impact related to the introduction of non-native species.

## Finding

Due to the lack of a proven technology, no feasible mitigation beyond legal requirements is currently available to prevent introduction of invasive exotic species via vessel hulls or ballast water. Therefore, the Recommended Alternative would have a cumulatively considerable contribution to the significant cumulative impacts on biological resources related to the potential introduction of invasive exotic species.

## Rationale for Finding

Cumulative biological resource impacts related to the introduction of invasive exotic species to Harbor waters would be significant and unavoidable from past, present, and reasonably foreseeable future projects, and the Recommended Alternative would make a cumulatively considerable contribution to a significant cumulative impact related to the introduction of nonnative species. No feasible mitigation beyond legal requirements is currently available to entirely prevent introduction of invasive exotic species via vessel hulls or ballast water. Therefore, there is no way to prevent the Recommended Alternative's cumulatively considerable contribution to the significant cumulative impacts on biological resources related to the potential introduction of invasive exotic species. New technologies are being explored and, if methods become available in the future, they would be implemented as required at that time. Consequently, the Recommended Alternative would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact on biological resources. All mitigation measures determined feasible by LAHD as identified in the Final EIS/EIR have been incorporated into the Recommended Alternative.

### 3.3.7 Cultural Resources

## Cumulative Impact CR-1: The Recommended Alternative would have the potential to make a cumulatively considerable contribution to a significant cumulative impact on built environment historical resourcesCumulatively Considerable and Unavoidable

Past projects within urban settings including the Recommended Alternative area have involved demolition of architectural structures (some that could be now considered historic had they not been demolished). Although demolition of historic structures in the redevelopment area of the Project site is a project-specific impact, there are other historic structures within the project vicinity that have historical significance (i.e., locally significant for association with the development of the Port of Los Angeles). As a result, the contribution of the Recommended Alternative would make a cumulatively considerable contribution to a significant cumulative impact on built environment historic resources.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. The implementation of mitigation measures MM CR-1 would help reduce cumulatively considerable impacts on built environment historic resources. Although mitigation measure MM CR-1 would reduce the cumulative effect, the mitigation would not sufficiently reduce the Recommended Alternative's cumulatively considerable contribution to a less-than-significant level. The Board hereby finds that specific economic, legal, social, technological, or other considerations make infeasible additional mitigation measures or proposed project alternatives identified in the Final EIS/EIR. Even with the incorporation of feasible mitigation measures, the Recommended Alternative would make a cumulatively considerable contribution to a significant cumulative impact on built environment historic resources.

## Rationale for Finding

Cumulative impacts associated with past, present, and reasonably foreseeable future projects regarding historical architectural resources could be cumulatively significant if they include the removal of significant or potentially significant historical architectural resources. Mitigation
measures MM CR-1 would help reduce impacts to historical architectural resources, but not to a level of less than significant. Consequently, the Recommended Alternative would make a cumulatively considerable and unavoidable contribution to historical architectural resources. All mitigation measures determined feasible by LAHD as identified in the Final EIS/EIR have been incorporated into the Recommended Alternative.

### 3.3.8 Greenhouse Gases

## Cumulative Impact GHG-1: The Recommended Alternative would generate GHG that would exceed the SCAQMD threshold-Cumulatively Considerable and Unavoidable

Past, present, and reasonably foreseeable future projects in the area have generated and will continue to generate GHGs from the combustion of fossil fuels and the use of refrigerants, and other products. Current and future projects will incorporate a variety of GHG reduction measures in response to federal, state, and local mandates and initiatives, and these measures are expected to reduce GHG emissions from future projects. However, because of the longlived nature of GHGs in the atmosphere and the global nature of GHG emissions impacts, no specific quantitative level of GHG emissions from related projects in the region or state-wide has been identified below which no impacts would occur. It is therefore conservatively assumed that related projects represent a significant cumulative impact.

Recommended Alternative impacts would combine with impacts from related projects, which would already be cumulatively significant. As a result, without mitigation, impacts from Recommended Alternative construction and operation would make a cumulatively considerable contribution to an existing significant cumulative impact related to GHG and global climate change under CEQA.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. The implementation of mitigation measures MM AQ-2, MM AQ-6, MM AQ-7, MM GHG-1, and MM GHG-2 would help reduce cumulatively considerable GHG emissions. Furthermore, LAHD's standard lease measures LM AQ-1, LM AQ-2, and LM GHG-1 would be included in the tenant lease. These measures would further reduce future GHG emissions. Although mitigation measures MM AQ-2, MM AQ-6, MM AQ-7, MM GHG-1, and MM GHG-2 and lease measures LM AQ-1, LM AQ-2, and LM GHG-1 would reduce the cumulative GHG emissions, the mitigation would not sufficiently reduce the Recommended Alternative's cumulatively considerable contribution of the impact to a less-than-significant level. The Board hereby finds that specific economic, legal, social, technological, or other considerations make infeasible additional mitigation measures or proposed project alternatives identified in the Final EIS/EIR. Even with the incorporation of feasible mitigation measures, the Recommended Alternative would make a cumulatively considerable contribution to a significant cumulative impact

## Rationale for Finding

The challenge in assessing the significance of an individual project's contribution to global GHG emissions and associated global climate change impacts is determining whether a project's GHG emissions, which are at a micro-scale relative to global emissions, result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale
impact. The Recommended Alternative would produce GHG emissions that would exceed SCAQMD significance thresholds for GHG and would therefore result in significant GHG impacts. Proposed project impacts would combine with impacts from related projects and add additional burden to existing cumulatively significant GHG impacts, thereby resulting in cumulatively considerable contributions to GHG impacts. Mitigation measures MM AQ-2, MM AQ-6, MM AQ-7, MM GHG-1, and MM GHG-2 and lease measures LM AQ-1, LM $\mathbf{A Q - 2}$, and LM GHG-1 would help reduce GHG emissions; however, they would not reduce impacts to a less-than-significant level and the Recommended Alternative would make a cumulatively considerable contribution to a significant cumulative impact. All feasible by LAHD as identified in the Final EIS/EIR have been incorporated into the Recommended Alternative.

### 3.3.9 Ground Transportation

## Cumulative Impact TRANS-2: The Recommended Alternative operations would not result in a cumulatively considerable long-term impact at study location intersection volume/capacity ratios or level of serviceCumulatively Considerable

Increases in traffic volumes on the surrounding roadways due to cumulative projects would result in a cumulative effect on the operating conditions of area intersections and roadways. Cumulative projects would cause significant cumulative impacts at these five study intersections. The Recommended Alternative would result in an increase in the V/C ratio at a number of study locations. However, the amount of Recommended Alternative-related traffic that would be added at the study intersection locations would not be of sufficient magnitude to meet or exceed any of the thresholds of significance at all but one intersection. Based on the comparison of the Project-related scenarios to the cumulative baseline scenarios, the Recommended Alternative would make a cumulatively considerable contribution to a significant cumulative impact at study Intersection \#14: Ferry Street at SR-47 (Terminal Island Freeway)/Seaside Ave Ramps in 2026 and 2038.

## Finding

Intersection \#14 is controlled by Caltrans, and is outside of the Port's/LAHD's jurisdiction. No mitigation within the LAHD's control is available to reduce the Project-level operational traffic impact at Intersection \#14 or the cumulatively considerable contributions to a significant cumulative impact for the Recommended Alternative. Therefore, the Board hereby finds that specific economic, legal, social, technological, or other considerations make infeasible additional mitigation measures or proposed project alternatives identified in the Final EIS/EIR. The Recommended Alternative would make a cumulatively considerable contribution to a significant cumulative impact at study Intersection \#14: Ferry Street at SR-47 (Terminal Island Freeway)/Seaside Ave Ramps.

## Rationale for Findings

Cumulative ground transportation impacts related to the increase in traffic volumes would be significant and unavoidable from part, present, and reasonably foreseeable future projects, and the Recommended Alternative would make a cumulatively considerable contribution to this increase in traffic volumes at study Intersection \#14: Ferry Street at SR-47 (Terminal Island Freeway)/Seaside Ave Ramps.

Because Intersection \#14 is controlled by Caltrans, no feasible mitigation is within the LAHD's control is available to reduce the project-level operational traffic impact at Intersection \#14 or the cumulatively considerable contributions to a significant cumulative impact for the Recommended Alternative. Therefore, there is no way to prevent the Recommended Alternative's cumulatively considerable contribution to the significant cumulative impacts on ground transportation related to the increase in traffic volumes. Consequently, the Recommended Alternative would make a cumulatively considerable and unavoidable contribution to a significant cumulative impact on ground transportation. All mitigation measures determined feasible by LAHD as identified in the Final EIS/EIR have been incorporated into the Recommended Alternative.

### 3.3.10 Noise

## Cumulative Impact NOI-1: Construction activities lasting more than 10 days in a 3-month period would result in a cumulatively considerable exceedance in existing ambient exterior noise levels by 5 dBA or more at noise-sensitive receptors-Cumulatively Considerable and Unavoidable

Noise produced by daytime pile driving during wharf construction alone or pile driving in combination with general construction has been identified as having a significant impact at Fish Harbor and at San Pedro waterfront commercial- and tourism-based uses. Therefore, during pile driving, the Recommended Alternative would have a cumulatively considerable noise impact when combined with any other project that would affect the same receptor locations and occur concurrently with the Recommended Alternative.

## Finding

The Board hereby finds that changes or alterations have been required in, or incorporated into, the Recommended Alternative that avoid or substantially lessen the significant environmental effect identified in the Final EIS/EIR. The implementation of mitigation measures MM NOI-1 and MM NOI- 2 would help reduce cumulatively considerable impacts from construction noise. Although mitigation measures MM NOI- $\mathbf{1}$ and MM NOI-2 would reduce the maximum noise levels during proposed project construction to a less-than-significant level, the Recommended Alternative could still contribute considerably to a cumulatively significant impact related to noise from pile driving. The Board hereby finds that specific economic, legal, social, technological, or other considerations make infeasible additional mitigation measures or proposed project alternatives identified in the Final EIS/EIR. Even with the incorporation of feasible mitigation measures and the reduction of significant project-level noise impacts to a less-than-significant level, the Recommended Alternative would make a cumulatively considerable contribution to a significant cumulative impact if other construction projects occur concurrently.

## Rationale for Findings

Construction of the Recommended Alternative independent of any other project would cause a significant noise impact on sensitive receptors at Fish Harbor and the San Pedro waterfront commercial- and tourism-based uses.

Noise produced by daytime pile driving during wharf construction alone or pile driving in combination with general construction would increase average ambient noise levels at Fish Harbor by up to 6 dBA and at San Pedro waterfront commercial- and tourism-based uses by 8 dBA over existing levels. Mitigation measures MM NOI-1 and MM NOI-2 would reduce
project- related noise impacts to a less-than-significant level. However, noise from the other construction projects in the project vicinity could increase noise levels in the area. Taking into consideration the location and scope of other projects, incremental noise increases from construction would exceed the 5-dBA significance threshold. Therefore, the Recommended Alternative would make a cumulatively considerable contribution to a significant cumulative impact when combined with past, present, and reasonably foreseeable future projects. All mitigation measures determined feasible by LAHD as identified in the Final EIS/EIR have been incorporated into the Recommended Alternative.

Eight alternatives, including the proposed Project, the No Federal Action Alternative, and No Project Alternative, were considered and evaluated in regards to how well each could feasibly meet the basic project objectives and avoid or substantially lessen any of the significant effects of the project. Two of these alternatives were eliminated from detailed consideration either because they could not feasibly meet the basic objectives of the project and/or because they would not avoid or substantially lessen any of the significant effects of the project, as discussed in Section 2.9.2. Six of the alternatives (including the proposed Project and then Recommended Alternative) were carried forward for further analysis to determine whether they could feasibly meet most of the project objectives but avoid or substantially lessen any of the significant effects of the project. These six alternatives are evaluated co-equally with the proposed Project for all environmental resources in Chapter 3 in the Draft EIS/EIR. Chapter 6 of the Draft EIS/EIR compares the proposed Project and these five alternatives and identifies the environmentally preferred and environmentally superior alternative. The six alternatives that were carried through the analysis of impacts in Chapter 3:

- Proposed Project
- Alternative 1 - No Federal Action
- Alternative 2 - No Project
- Alternative 3 - Reduced Project: Reduced Wharf Improvements
- Alternative 4 - Reduced Project: No Backland Improvements
- Alternative 5 - Expanded On-Dock Railyard: Wharf and Backland Improvements with an Expanded Terminal Island Container Transfer Facility (TICTF) (Recommended Alternative)


### 4.1 Reasonable Range of Alternatives

Lead agencies are required to evaluate a "reasonable range" of alternatives but are not required to evaluate every possible alternative: "an EIR need not consider every conceivable alternative to a project" (State CEQA Guidelines Section 15126.6(a)). The "range of alternatives required in an EIR is governed by a 'rule of reason' that requires an EIR to set forth only those alternatives necessary to permit a reasoned choice" (State CEQA Guidelines Section 15126.6(f)). The Draft EIS/EIR contained five alternatives (not including the proposed Project), discussed in Chapter 6 of the Draft EIS/EIR and shown in Table 4 below. This table compares the major features of the proposed Project to those for the alternatives. The five alternatives plus the proposed Project constitute a reasonable range of alternatives, which permits the decision makers to make a reasoned choice regarding proposed project approval (or
approval of one of its alternatives), approval with modifications, or disapproval. Furthermore, CEQA does not require an EIR to consider multiple variations on the alternatives analyzed in the Draft EIR. "What is required is the production of information sufficient to permit a reasonable choice of alternatives so far as environmental aspects are concerned" (Village Laguna of Laguna Beach, Inc. v. Board of Supervisors of Orange County (1982) 134 Cal.App.3d 1022).

Table 4: Summary of Proposed Project and Alternatives

|  | Proposed Project (2038) | Alt. 1: No Federal Action (2038) | Alt. 2: No Project (2038) | Alt. 3: Reduced Wharf (2038) | Alt 4: No Backland Improvements (2038) | Alt 5: Expanded On-Dock Railyard (2038) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Annual TEUs | 2,379,525 | 1,818,000 | 1,818,000 | 2,250,000 | 2,115,133 | 2,379,525 |
| Annual Peel-Off Yard Throughput ${ }^{1}$ | 129,525 | None | None | None | 115,133 | 129,525 |
| Terminal Acreage | 229 | 229 | 205 | 229 | 205 | 229 |
| $\begin{aligned} & \text { Annual Ship } \\ & \text { Calls }^{2} \end{aligned}$ | 208 | 208 | 208 | 208 | 208 | 208 |
| 24-hour Peak Day Ship Calls | 2 | 2 | 2 | 2 | 2 | 2 |
| Average Daily Truck Trips (peak month) | 7,028 | 4,815 | 4,815 | 6,516 | 5,985 | 6,818 |
| Average Daily Train Trips (peak month) | $5.5^{3}$ | 4.2 | 4.2 | 5.2 | 4.9 | $5.5^{3}$ |
| Operating Cranes | 13 | 8 | 8 | 13 | 13 | 13 |
| Total Dredging (cy) | 38,000 | 0 | 0 | 30,000 | 38,000 | 38,000 |
| Maximum Vessel Size |  |  |  |  |  |  |
| Berths 226-229 | 16,000 | 8,000 | 8,000 | 16,000 | 16,000 | 16,000 |
| Berths 230-232 | 10,000 | 8,000 | 8,000 | 8,000 | 10,000 | 10,000 |

Note: ${ }^{1}$ Peel-off yards serve as off-site backlands to the terminal. Peel-off yard throughput is included in the total annual throughput for the proposed Project and alternatives that are not berth-constrained.
${ }^{2}$ Although various alternatives handle different throughout, the vessel calls are the same because of vessel strings, which is described in Chapter 1, Section 1.2.2.3.
${ }^{3}$ Although the proposed Project and Alternative 5 have the same average daily train trips (during the peak month), there is a difference between the number of on-dock and off-dock trains.

### 4.2 Alternatives Eliminated from Further Consideration

Alternatives that are remote or speculative, or the effects of which cannot be reasonably ascertained, need not be considered (CEQA Guidelines, Section 15126.6(f)(3)). Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid any significant environmental effects (CEQA Guidelines, Section 15126.6(c)). The following alternatives were determined to be infeasible and were eliminated from further consideration in the Draft EIS/EIR (additional details regarding reasons for rejection are included in Section 2.9.2 of the Draft EIS/EIR):

- Use of West Coast Ports Outside Southern California
- Other Sites in the Port Complex


### 4.3 Alternatives Analyzed in the EIS/EIR

Chapter 6 of the Draft EIS/EIR contains a detailed comparative analysis of the alternatives that were required per CEQA (No Project Alternative), required per NEPA (No Federal Action Alternative), or were found to achieve most of the proposed project objectives, are considered ostensibly feasible, and may reduce environmental impacts associated with the proposed Project.

A summary of the impact analysis for the proposed Project and the alternatives is shown in Table 5 below, which identifies the resource areas where the proposed Project or alternative would result in an unavoidable significant impact, as discussed in resource analyses in Chapter 3 of the Draft EIS/EIR. The table also presents the resource areas that would have significant impacts mitigated to less-than-significant levels. Detailed discussions of these resources are provided in Chapter 6 of the Draft EIS/EIR. ${ }^{1}$ As shown in Table 5, the proposed Project, Recommended Alternative (Alternative 5) and all other alternatives would have significant unavoidable impacts in the areas of air quality and meteorology, biological resources, and GHG emissions. As detailed in the Final EIS/EIR, modifications have been made to the Draft EIS/EIR (see modifications made to Appendix B.1 in Chapter 3 Section 3.2.9 of the Final EIS/EIR). As a result of the modifications, impacts for NOx were determined to be below SCAQMD thresholds in 2033 and 2038 prior to mitigation, however impacts for NOx in 2019 remain significant.

Table 5: Summary of CEQA Significance Analysis by Alternative

| Environmental <br> Resource <br> Area | Proposed <br> Project | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Air Quality and <br> Meteorology | S | S | S | S | S | S |
| Biological <br> Resources | S | S | S | S | S | S |
| Cultural <br> Resources | S | S | N | S | L | S |
| Greenhouse <br> Gas Emissions | S | S | S | S | S | S |
| Noise | M | L | L | M | M | M |

Notes:
The analysis includes project-level impacts, not cumulative effects.
S = Unavoidable significant impacts
$\mathrm{M}=$ Significant but mitigable impact
$\mathrm{L}=$ Less than significant impact (not significant)
$\mathrm{N}=$ No impact

### 4.4 Environmentally Superior Alternative

As shown in Table 5, Alternative 2 would have the fewest impacts because it would create the fewest adverse impacts, including avoiding significant unavoidable impacts on cultural resources. Further, under the No Project Alternative, no construction would occur and impacts on air quality, biological resources, GHG emissions, and noise would be reduced in comparison to the Recommended Alternative. Therefore, Alternative 2 is deemed to be environmentally superior. However, none of the proposed project objectives would be met.

State CEQA Guidelines Section 15126.6(e)(2) requires that in cases where the No Project Alternative is determined to be the environmentally superior alternative, another alternative must also be identified as environmentally superior. As shown on Table 5, besides Alternative 2, Alternative 4 has the least significant environmental impact compared to the Recommended Alternative. because it would avoid a significant unavoidable impact on cultural resources. Therefore, in accordance with CEQA, Alternative 4 is deemed to be the environmentally superior alternative. Alternative 4 would include berth deepening, crane raising, and new cranes, which would increase the berth capacity by increasing container loading and unloading efficiency and allowing it to accommodate larger vessels. However, this alternative would not include backlands expansion that is needed to balance the added capacity of the waterside improvements. Because of this, the terminal under Alternative 4 would be backlandconstrained, which would limit the terminal's overall capacity and thus, Alternative 4 would not meet the project objectives as well as the Recommended Alternative.

### 4.5 CEQA Findings for Adoption of Alternative 5 in Lieu of the Originally Proposed Project

Alternative 5 is the Recommended Alternative for adoption in lieu of the originally proposed Project. Alternative 5 includes the same improvements to Berths 226-229, Berths 230-232, and backland improvements as the proposed Project, and would include one additional rail track at the TICTF.

Under the Recommended Alternative there would be two operating berths after construction, and the same amount of dredging as the proposed Project. The Recommended Alternative would also accommodate the largest vessels (16,000 TEUs) at Berths 226-229, and the new design depth at Berths 230-232 would be capable of handling vessels up to 10,000 TEUs. Based on the throughput projections, as with the originally proposed Project, the Recommended Alternative is expected to operate at a capacity of approximately $2,379,525$ TEUs by 2038. As with the proposed Project, 208 vessels are anticipated to call on the terminal by 2038 under the Recommended Alternative. Additionally, the Recommended Alternative would have the same number of operating berths and would result in a maximum of two ship calls (over a 24-hour period).

Throughput projections estimate that the capacity of the existing terminal $(1,818,000$ TEUs $)$ is expected to be reached by 2033 and be maintained through 2038. The Recommended Alternative would increase the throughput capacity of the Everport Container Terminal to $2,379,525$ TEUs annually, an increase of approximately 1.14 million TEUs over 2013 existing conditions. The Recommended Alternative would also result in 208 annual vessel calls, which is 42 more than the vessel calls in 2013.

Under the Recommended Alternative, the volume of cargo passing through the Everport Container Terminal's portion of the TICTF on-dock railyard is projected to increase from 230,227 TEUs in 2013 to 606,341 TEUs through 2038. The Everport Container Terminal's 2038 throughput is projected to result in an annual average of 5.0 trains per day, and an average of 5.6 trains per day during the peak month. The Recommended Alternative would increase the capacity of the Everport portion of TICTF from 606,341 TEUs annually to 659,841 TEUs.

## Finding

The Board hereby finds that the Recommended Alternative is more desirable than the proposed Project because it would better support the Port's overall goal to expand the use and capacity of on-dock rail to both move goods more efficiently and reduce traffic and emissions associated with truck trips. The Recommended Alternative would therefore result in reduced environmental impacts (particularly to traffic and air quality) as compared to the proposed Project. Although the proposed Project would have slightly less construction emissions as compared to the Recommended Alternative, the originally proposed Project would also result in higher NOx and PM emissions from operations in 2030 and 2038, and greater greenhouse gas emissions, due, in part, to more truck trips and length of truck trips from a reduced use of ondock rail, as would otherwise occur under the Recommended Alternative.

## Facts in Support of the Finding

The proposed Project would result in similar environmental impacts to the Recommended Alternative because its operational capacity would be the same, although construction emissions would be slightly reduced and operational air quality and greenhouse emissions
would be slightly greater. The proposed Project is less desirable than the Recommended Alternative which would expand the on-dock rail capacity and better support the project objective of promoting the long-term development of the Port.

### 4.6 CEQA Findings for Alternatives Analyzed <br> 4.6.1 Alternative 1 - No Federal Action

Alternative 1 is a NEPA-required no action alternative and represents the NEPA baseline. Under the No Federal Action Alternative, only activities that could occur absent a U.S. Army Corps of Engineers (USACE) permit would be allowed. Absent a USACE permit, no dredging, dredged material disposal, in-water pile installation, or raised and new crane installation would occur. The existing terminal's ability to handle larger ships would be facilitated by activities that require a USACE permit (dredging, in-water pile driving, and raised and new cranes). Therefore, without the activities that address the capacity constraints of the terminal's berths (which would allow the terminal to service larger ships), the existing terminal capacity would not be increased. The No Federal Action Alternative includes additional backlands (addition of the 1.5 -acre and 22-acre expansion areas) to improve efficiency; however, the additional backland area would not change the throughput capacity of the existing terminal.

## Finding

The Board hereby finds that although Alternative 1-No Federal Action would result in reduced environmental impacts compared to the Recommended Alternative, this alternative would not increase the capacity of the terminal, and thus it would not meet the underlying fundamental purpose and objective of the project - to optimize the container-handling efficiency and capacity of the Port to accommodate the projected fleet mix of larger container vessels (up to 16,000 TEUs) that are anticipated to call at the Everport Container Terminal through 2038. As a result, the Board finds that Alternative 1—No Federal Action is not a feasible alternative to the Recommended Alternative because it would not accomplish the fundamental project purpose and objective.

## Facts in Support of the Finding

The No Federal Action Alternative would result in reduced environmental impacts in the resource areas related to air quality, biological resources, GHG emissions, and noise as compared to the Recommended Alternative because this alternative would not include no dredging, dredged material disposal, in-water pile installation, or raised and new crane installation. Although the No Federal Action Alternative would result in reduced environmental impacts, it would not meet the underlying fundamental purpose and objective of the project to optimize the container-handling efficiency and capacity of the Port to accommodate the projected fleet mix of larger container vessels. Accordingly, the Board finds that Alternative 2-No Federal Action is not a feasible alternative to the Recommended Alternative because it would not fully accomplish fundamental project goals and objectives.

### 4.6.2 Alternative 2 - No Project

Under Alternative 2, none of the proposed construction activities would occur in water or in water-side or backland areas. LAHD would not implement any terminal improvements or increases in backland acreage. Raising of cranes would not occur, no new cranes would be added, and no dredging would occur. The current lease that expires in 2028 has an option for a ten-year extension, which would mean the existing terminal could operate through 2038.

Under the No Project Alternative, the existing Everport Container Terminal would continue to operate as an approximately 205-acre container terminal. Based on the throughput projections for the Port, the Everport Container Terminal is expected to operate at its existing capacity of approximately $1,818,000$ TEUs by 2038 and require 208 annual vessel calls.

## Finding

The Board hereby finds that although Alternative 2 - No Project would not feasibly meet the underlying fundamental purpose and any of the Recommended Alternative objectives and, on that basis, rejects the No Project Alternative. While Alternative 2 would result in reduced environmental impacts compared to the Recommended Alternative, this alternative would not result in the implementation of any terminal improvements or increases in backland acreage, and thus, would not meet the underlying fundamental purpose and objective of the project to optimize the container-handling efficiency and capacity of the Port to accommodate the projected fleet mix of larger container vessels that are anticipated to call at the Everport Container Terminal through 2038. As a result, the Board finds that Alternative 2 - No Project is not a feasible alternative to the Recommended Alternative because it would not accomplish the fundamental project goals and objectives.

## Facts in Support of the Finding

The No Project Alternative would result in reduced environmental impacts in the resource areas related to air quality, biological resources, GHG emissions, cultural resources, and noise as compared to the Recommended Alternative because this alternative would not implement any terminal improvements or increase backlands acreage. Although the No Project Alternative would result in reduced environmental impacts, it would not deepen the berths, raise and add new larger cranes, or improve backlands, which are necessary to increase container loading and unloading efficiency and accommodate larger vessels. In addition, Alternative 2 would not accommodate the long-term development and growth of the Port. Accordingly, the Board finds that the No Project Alternative is not a feasible alternative to the Recommended Alternative because it would not accomplish fundamental project goals and objectives.

### 4.6.3 Alternative 3 - Reduced Project: Reduced Wharf Improvements

Alternative 3 would involve slightly less construction than the Recommended Alternative but would result in a slightly reduced operational throughput capacity compared to the Recommended Alternative. Alternative 3, would deepen Berths 226-229 and expand the backlands by 23.5 acres. Under Alternative 3, there would be two operating berths after construction, similar to the Recommended Alternative, but Berths 230-232 would remain at their existing depth ( $-45^{\prime}$ MLLW). This alternative would require less dredging (by approximately 8,000 cubic yards) and sheet pile driving than the Recommended Alternative. Based on the throughput projections, this alternative is expected to operate at its capacity of $2,250,000$ TEUs by 2038. This alternative would accommodate the largest vessels ( 16,000 TEUs) at Berths 226-229. The existing design depth that remains at Berths 230-232 would only be capable of handling vessels up to 8,000 TEUs. While the terminal could handle greater throughput than the No Project and No Federal Action alternatives, this reduced project alternative would not achieve the same level of operational efficiency as achieved by the Recommended Alternative, because it would only accommodate the larger vessels at one wharf location compared to two wharf locations under the Recommended Alternative. Under this alternative, 208 vessels would call on the terminal by 2038, the same as for the Recommended Alternative. Additionally, because this alternative would have the same number of operating
berths as the Recommended Alternative, this alternative would result in a maximum of two ship calls (over a 24 -hour period), the same as for the Recommended Alternative.

Under Alternative 3, the terminal's 2038 throughput is projected to result in an annual average of 4.7 trains per day, and an average of 5.2 trains per day during the peak month. This alternative would also result in 6,516 average daily truck trips during the peak month. The volume of cargo passing through the Everport Container Terminal's portion of the TICTF ondock railyard is projected to increase from 230,227 TEUs in 2013 to 606,341 TEUs through 2038. The existing TICTF under Alternative 3 is projected to have sufficient capacity to handle the full amount of anticipated demand for on-dock rail facilities associated with the maximum terminal throughput of $2,250,000$ TEUs.

## Finding

The Board hereby finds that Alternative 3 - Reduced Project: Reduced Wharf Improvements would not maximize container-handling capacity and efficiency at the proposed project site and would not make the best use of the proposed project site. Therefore, Alternative 3 would not fully meet the underlying fundamental purpose and objective of the project - to optimize the container-handling efficiency and capacity of the Port to accommodate the projected fleet mix of larger container vessels (up to 16,000 TEUs) that are anticipated to call at the Everport Container Terminal through 2038. The impact determinations are the same as the Recommended Alternative, although Alternative 3 would result in slightly less criteria pollutant and GHG emissions and less pile driving noise impacts. However, the Board finds that Alternative 3 is not a feasible alternative to the Recommended Alternative because it would not accomplish the fundamental project goals and objectives.

## Facts in Support of the Finding

Alternative 3 has the same impact determinations as the Recommended Alternative. Although, Alternative 3 would results in slightly less criteria pollutant and GHG emissions than, which in turn would result in a slightly less impacts to air quality than the Recommended Alternative. In addition, Alternative 3 would result in less pile driving noise impacts than the Recommended Alternative. However, it would not maximize container-handling capacity and efficiency at the proposed project site and would not make the best use of the project site. Therefore, Alternative 3 would not optimize the container-handling efficiency and capacity of the Port to accommodate the projected fleet mix of larger container vessels (up to 16,000 TEUs) that are anticipated to call at the Everport Container Terminal through 2038. Thus, the Board finds that Alternative 3 - Reduced Project: Reduced Wharf Improvements is not a feasible alternative to the Recommended Alternative because it would not accomplish the fundamental project goals and objectives.

### 4.6.4 Alternative 4 - Reduced Project: No Backlands Improvements

Alternative 4 would deepen both operating berths at the terminal but would not increase backlands, which would limit the terminals ultimate throughput capacity compared to the Recommended Alternative.

Under this alternative, there would be two operating berths after construction, similar to the Recommended Alternative. This alternative would require the same dredging as the Recommended Alternative. This alternative would accommodate the largest vessels ( 16,000 TEUs) at Berths 226-229. The new design depth at Berths 230-232 would be capable of
handling vessels up to 10,000 TEUs. Based on the throughput projections, this alternative is expected to operate at its capacity of approximately $2,115,133$ TEUs by 2038 , which is less than the Recommended Alternative. Under this reduced project alternative, the container terminal would not improve or relocate the gate complex and would not result in any development on the 22-acre backlands expansion area (and would therefore not affect the former Canner's Steam Company Plant or archaeological resources); however, this alternative would handle a lower level of cargo throughput (up to 264,392 TEUs) than the Recommended Alternative. Under this alternative, 208 vessels would call on the terminal by 2038, the same as for the Recommended Alternative. Additionally, because this alternative would have the same number of operating berths as the Recommended Alternative, this alternative would result in a maximum of two ship calls (over a 24 -hour period), the same as for the Recommended Alternative.

Under Alternative 4, the terminal's 2038 throughput is projected to result in an annual average of 4.4 trains per day, and an average of 4.9 trains per day during the peak month. This alternative would also result in 5,985 average daily truck trips during the peak month. The volume of cargo passing through the Everport Container Terminal's portion of the TICTF ondock railyard is projected to increase from 230,227 TEUs in 2013 to 606,341 TEUs through 2038. The existing TICTF under Alternative 4 is projected to have sufficient capacity to handle the full amount of anticipated demand for on-dock rail facilities associated with the maximum terminal throughput of $2,115,133$ TEUs.

## Finding

The Board hereby finds that Alternative 4 - Reduced Project: No Backlands Improvements would not maximize container-handling capacity and efficiency at the proposed project site. Alternative 4 would be environmentally superior to the Recommended Alternative as it would avoid a significant unavoidable impact to cultural resources and would have slightly reduced criteria pollutant and GHG emissions. However, Alternative 4 would be backland-constrained, which would limit the terminal's overall capacity, and would not fully utilize the berth improvements. Alternative 4 would have the lowest throughput capacity (2,115,133 TEUs) compared to the other alternatives that include berth deepening, crane raising, new cranes, and backland expansion (2,379,525 TEUs for the Recommended Alternative and Alternative 5, and 2,250,000 TEUs for Alternative 3). Because it would have lower throughput and not fully utilize the berth improvements, Alternative 4 would not optimize the terminal and thus, would not meet the project objectives as well as the Recommended Alternative. Therefore, the Board finds that Alternative 4 is not a feasible alternative to the Recommended Alternative because it would not accomplish the fundamental goals and objectives of the Recommended Alternative.

## Facts in Support of the Finding

Alternative 4 would be environmentally superior to the Recommended Alternative because it would avoid a significant unavoidable impact to cultural resources and would have slightly reduced criteria pollutant and GHG emissions. However, it would be backlands constrained and thus would limit the terminal's overall capacity. Thus, Alternative 4 would have a lower throughput and would not and not fully utilize the berth improvements. Alternative $4-$ Reduced Project: No Backlands Improvements would not optimize the container-handling efficiency and capacity of the Port and thus it is not a feasible alternative to the Recommended Alternative because it would not fully accomplish fundamental project goals and objectives.

### 4.6.5 Alternative 5 - Expanded On-Dock Railyard: Wharf and Backland Improvements with an expanded TICTF (Recommended Alternative)

The Recommended Alternative (Alternative 5) would be the same as the proposed Project and include improvements to Berths 226-229, Berths 230-232, backland improvements, but also with an extra track at TICTF.

Under the Recommended Alternative, there would be two operating berths after construction, the same as the proposed Project. This alternative would require the same dredging as the proposed Project. This alternative would accommodate the largest vessels ( 16,000 TEUs) at Berths 226-229. The new design depth at Berths 230-232 would be capable of handling vessels up to 10,000 TEUs. Based on the throughput projections, the Recommended Alternative is expected to operate at its capacity of approximately $2,379,525$ TEUs by 2038 , the same as the proposed Project. Under this alternative, 208 vessels would call on the terminal by 2038, the same as the proposed Project. Additionally, because the Recommended Alternative would have the same number of operating berths as the proposed Project, the Recommended Alternative would result in a maximum of two ship calls (over a 24 -hour period), the same as for the proposed Project.

Under the Recommended Alternative, the terminal's 2038 throughput is projected to result in an annual average of 4.9 trains per day, and an average of 5.5 trains per day during the peak month. This alternative would also result in 6,818 average daily truck trips during the peak month. The terminal would have added capacity at the TICTF and be able to transport a greater number of containers via rail than the proposed Project (the additional rail at the TICTF would increase its capacity from 606,341 TEUs to 659,841 TEUs). Under the Recommended Alternative, the volume of cargo passing through the Everport Container Terminal's portion of the TICTF on-dock railyard is projected to increase from 230,227 TEUs in 2013 to 659,841 TEUs through 2038. The Recommended Alternative represents a decrease in truck trips with no additional air quality impacts to criteria pollutants. Alternative 5 has higher construction costs associated with it than the originally proposed Project but it still meets the objectives of the project with lower traffic emissions and truck trips. The improved TICTF under Alternative 5 is projected to have sufficient capacity to handle the full amount of anticipated demand for ondock rail facilities associated with the maximum terminal throughput of $2,379,525$ TEUs.

## Finding

The Board hereby finds that Alternative 5 would not result in substantially reduced environmental impacts compared to the proposed Project, and would not eliminate any significant and unavoidable impact of the proposed Project. Alternative 5 would meet the project goals and objectives, and would have reduced truck trips with the increased use of ondock rail. Although construction emissions increase slightly under Alternative 5, emissions of NOx, PM, and greenhouse gases decrease operationally in 2033 and 2038 due to the truck emission decreases. Alternative 5 was recommended by several commenters during the public comment period on the Draft EIR/EIS. It was not originally recommended by LAHD as the proposed Project due to its higher construction costs; however, LAHD now finds that the longterm environmental benefits outweigh the higher initial capital expenditure and have chosen this Alternative as the preferred project (Recommended Alternative).

## Facts in Support of the Finding

Alternative 5 would result in the same operational throughput capacity as the proposed Project and would meet the basic project objectives as well as the fundamental purpose of the project. Because it would also increase the capacity of the TICTF, it would allow for increased transport of containers via on-dock rail, which would reduce the number of truck trips, relative to the proposed Project.

Alternative 5 would result in similar environmental impacts to the proposed Project because its operational capacity would be the same. However, it would have fewer operational heavy-duty truck trips, resulting in slightly less operational emissions of NOx, PM, and greenhouse gases than the proposed Project towards the end of the lease term. Further, although no significant traffic impacts would occur, Alternative 5 would reduce the number of vehicle trips as compared to the proposed Project. Given the project purpose and objectives, Alternative 5 would support the projected increase in throughput demand and would also make efficient use of the terminal area. As a result, the project objectives could be accomplished by Alternative 5 as well as with the proposed Project. In response to public input and the long-term environmental benefit of reduced heavy-duty truck trips, Alternative 5 meets the objectives of the project and is a means of reducing or avoiding some of the project's adverse environmental impacts.

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Irreversible and irretrievable environmental changes caused by a project include uses of nonrenewable resources during construction and operation, long-term or permanent access to previously inaccessible areas, and irreversible damages that may result from project-related accidents.

## Finding and Rationale

The Recommended Alternative would require the use of nonrenewable resources to develop the site for Port-related activities. Fossil fuels and energy would be consumed during both the construction and the operational phases. These energy resources would for the most part be irretrievable, and would cause irreversible changes in supplies of fossil fuel available for other uses. However, some electricity provided by Southern California Edison and the Los Angeles Department of Water and Power is provided from renewable sources and recently adopted legislation raises California's renewable portfolio requirements for retail electricity sales.

Non-recoverable material resources committed to the Recommended Alternative other than fossil fuels would include: capital, labor, and construction materials such as rock, steel, concrete, and timber. Non-recoverable materials would be used during construction and operational activities, but the amounts needed would be accommodated by existing supplies. Although the increase in the amount of materials used would be limited, they would be unavailable for other uses. The irreversible changes discussed above are justified by the increased efficiency in cargo handling at the Port that the Recommended Alternative would provide.

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Changes were made to the Draft EIS/EIR following the public review period. Actual changes to the text can be found in Chapter 3, Modifications to the Draft EIS/EIR, of the Final EIS/EIR. Changes are identified by text strikeout and underline. Changes to the Draft EIS/EIR include:

- Modifications to mitigation measures in Section 3.2, Air Quality and Meteorology, Section 3.3, Biological Resources, and Section 3.10, Noise
- Modifications to operational emissions
- Modifications to GHG emissions
- Modifications to ground transportation tables
- Removal of reference to groundwater and soils having less than significant impacts with mitigation from Chapter 6, Comparison of Alternatives
- Minor text edits to Appendix F. 2
- Additional Appendix - Investigation of 2033 HRA Start Year for the Everport Container Terminal Improvements Project

Finding and Rationale - Recirculation
Many comments on the EIR/EIS urged the Board of Harbor Commissioners to recirculate some or all of the EIR/EIS for a second time. CEQA requires a lead agency to recirculate an EIR only when "significant new information" is added to the EIR after public notice is given of the availability of the draft EIR for public review but before certification. (CEQA Guidelines Section 15088.5(a).)

Although the Final EIR includes new information and clarification, generated in response to comments received on the Draft EIS/EIR, the information is not significant new information requiring recirculation. For instance, no new information was included that would result in: (1) A new significant environmental impact resulting from the project or from a new mitigation measure proposed to be implemented; (2) A substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance; and/or (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed were added that would clearly lessen the environmental impacts of the project. (CEQA Guidelines Section 15088.5(a).)

All information included in the Final EIR/EIS, including the additional energy information merely clarifies or amplifies or makes insignificant modifications to the EIR/EIS. (See Laurel Heights Improvement Association v. Regents of University of California (Laurel Heights II) (1993) 6 Cal.4th 1112, 1129-1130.) Although, for example, modeling results were updated, the
new modeling merely confirmed previous conclusions, and thus did not trigger any obligation to recirculate. (See San Francisco Baykeeper v. California State Lands Commission (2015) 242 Cal.App.4th 202, 224-225 [new modeling confirming earlier conclusion about effects of mining on Bay environment did not trigger recirculation]; Beverly Hills Unified School Dist. v. Los Angeles County Metropolitan Transportation Commission (2015) 241 Cal.App.4th 627, 660666 [Final EIR containing substantial amounts of new information, including numerous new seismic studies did not trigger recirculation].)

Consequently, the changes and clarifications presented in Chapter 3 of the Final EIS/EIR were reviewed by the Board to determine whether they constitute "significant new information" requiring recirculation prior to certification of the EIR. This information was found to merely clarify or amplify the information presented in the Draft EIS/EIR. No new feasible alternatives or mitigation measures considerably different from others previously analyzed were identified that would clearly lessen the significant effects of the Recommended Alternative. Further, as discussed in Chapter 3, modifications to mitigation measures (MM AQ-2, MM AQ-3, MM AQ-5, MM AQ-7, MM BIO-1, and MM NOI-2), would not reduce their effectiveness in reducing significant impacts. Therefore, the Draft and Final EIS/EIR is, and was, found not to require recirculation. Thus, the EIR can be certified without additional public review, consistent with PRC Section 21092.1 and State CEQA Guidelines Section 15088.5.

The Board of Harbor Commissioners finds that all information added to the Final EIS/EIR after public notice of the availability of the Draft EIS/EIR for public review but before certification merely clarifies or makes insignificant modifications to an adequate Draft EIS/EIR that does not require recirculation.

Several comment letters were received on the Draft EIS/EIR suggesting project modifications. Where the suggestions (1) requested minor modifications in adequate mitigation measures, (2) requested mitigation for impacts that the Draft EIR determined were less than significant, or (3) requested mitigation for impacts for which the Draft EIR already identified measures that would reduce the impact to less than significant, these requests were declined as unnecessary or not appropriate. Additionally, certain mitigation measures suggested in comments could reduce impacts that would otherwise be significant, but implementation of measures and/or alternatives would be infeasible due to specific economic, environmental, legal, social, technological, policy, or other considerations. LAHD has identified and proposes to incorporate all feasible mitigation measures, including feasible revisions to the existing mitigation measures recommended by commenters. No additional mitigation measures have been determined to be feasible to reduce significant impacts disclosed in the EIS/EIR.

The suggested mitigation measures and the reasons supporting why the recommended measures were rejected are summarized below. Additional detail can be found in the comments and responses to comments chapter of the Final EIS/EIR (Chapter 2). The Board adopts and incorporates by reference the specific reasons for declining such measures contained in the responses to comments in the Final EIR as its grounds for rejecting these measures.

## Emission Reductions

Comments were received suggesting that the proposed Project require additional emission reduction strategies, including requiring zero and near-zero emission technologies, requiring stricter engine emission standards for marine and land-based vehicles and equipment, increasing shore power compliance rates, and expanding the Port-wide emission reduction programs. As described in Chapter 3 above and in Chapter 3 of the Final EIS/EIR, several mitigation measures designed to reduce construction (MM AQ-2, MM AQ-3, and MM AQ-5) and operational emissions (MM AQ-7) were modified based on public comments for clarification and/or to further reduce emissions. It was determined that other recommended measures would be infeasible due to specific economic, environmental, legal, social, technological, or other considerations. As described in Master Response 2: Zero-Emission Technologies in Chapter 2 of the Final EIS/EIR, LAHD has invested in or secured funding to advance zero- and near-zero technologies in the goods movement industry. The Port believes that zero-emission container movement technologies show great promise for helping to reduce criteria pollutant and GHG emissions in the future. However, longer-term evaluations and realworld testing are required to establish the technical viability, operational reliability, and commercial availability of such technologies. Without the completion of the real-world fleet testing, it is infeasible to require Everport Terminal Services, Inc. (ETS) to use zero-emission
container movement technologies through mitigation. However, in recognition of the potential future promise of such technologies, LAHD has included a lease measure (LM) in the EIS/EIR that requires periodic technology reviews (LM AQ-1: Replacement of Equipment and Review of New Technology). This lease measure will ensure that ETS reconsiders the feasibility of emission reduction technologies in the future as the technologies continue to develop. Additionally, as described in Master Response 3: Port-wide Emission Reduction Programs in Chapter 2 of the Final EIS/EIR, LAHD and the Port of Long Beach are committed to updating the San Pedro Bay Ports Clean Air Action Plan (CAAP) this year. The CAAP will continue to push technological improvements for emission reductions at a pace faster than regulations alone. However, the Ports cannot yet rely on any programs in this update to be available and appropriate for claiming additional emission reductions in the EIS/EIR. As technologies become technologically feasible, economically viable, and commercially available in the region, they will become requirements at the Port of Los Angeles as required by lease measure LM AQ-1 described above.

It should be noted that the Recommended Alternative for approval is Alternative 5, which expands on-dock rail, and was fully analyzed in the EIS/EIR. This would serve to reduce operational air quality and greenhouse gases impacts due to an increase in rail use and a corresponding decrease in truck operations.

## Ground Transportation Improvements

Comments were received suggesting that the proposed Project implement ground transportation mitigation measures, including construction of an underground truck tunnel, implementation of a multi-story parking structure, and provision of a dedicated freeway and highway truck lanes. While the proposed Project would make a cumulatively considerable contribution to a significant cumulative impact at study Intersection \#14: Ferry Street at SR-47 (Terminal Island Freeway)/Seaside Ave Ramps in 2026 and 2038, the suggested mitigation measures would not address this impact as described in Chapter 2 of the Final EIS/EIR, including Responses to Comments CFSE-8 through 10.

It should be noted that the Recommended Alternative for approval is Alternative 5, which expands on-dock rail, and was fully analyzed in the EIS/EIR. This would serve to increase rail use with a corresponding decrease in truck operations.

## Noise Impacts

Comments were received suggesting that additional noise mitigation measures should be considered, including measures to address operational noise and measures contained in the Harbor Community Benefit Foundation four Wilmington Noise Reports. However, as described in Chapter 2 of the Final EIS/EIR Response to Comments CFSE-24 and PH4-1, the construction of the proposed Project would not result in significant noise impacts in Wilmington and would not result in significant noise impacts from operations. As a consequence, operational noise mitigation and construction noise mitigation in Wilmington is not required.

## Whale Strikes

A comment (Comment CFSE-26) was received stating that the potential for whale strikes should be mitigated. However, as described in Section 3.3, Biological Resources of the Draft EIS/EIR, beginning on page 3.3-18, this impact is considered less than significant because of the low probability of vessel strikes, including those which may be reasonably foreseeable due
to the project over existing baseline conditions. Even though impacts due to vessel strikes are considered less than significant, with no mitigation required, implementation of mitigation measure MM AQ-6, Vessel Speed Reduction Program, would further reduce the potential for vessel collision with marine mammals and sea turtles.

## Environmental Justice

Comments were received suggesting the need for additional mitigation measures to address disproportionate effects on minority and/or low-income populations. However, as described in Chapter 2 of the Final EIS/EIR Response to Comment USEPA-5, all feasible project-level mitigation measures have been applied to reduce any high and adverse impact to adjacent communities. Additional mitigation measures would be infeasible due to specific economic, legal, social, technological, or other considerations.

## Energy Mitigation

One commenter (Earthjustice) suggested that the EIS/EIR include energy mitigation. However, as described in Master Response 4: Energy Use and Appendix F in Chapter 2 of the Final EIS/EIR, there were no significant energy impacts identified as a result of the project. The project's objective is to improve energy efficiency and the overall efficiency of the facility, which the project would help to do over existing conditions and, therefore, will not result in an inefficient, wasteful or unnecessary consumption of energy. Because energy impacts were found to be less than significant, additional mitigation for energy impacts is not required.

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Pursuant to Section 15093 of the State CEQA Guidelines, the Board must balance the benefits of Alternative 5 against unavoidable environmental risks in determining whether to approve the project. As detailed in the Findings, the Recommended Alternative would result in significant unavoidable impacts on air quality, cultural resources, biological resources, and GHG emissions. The Recommended Alternative would also result in a cumulatively considerable contribution to significant cumulative impacts on air quality, biological resources, cultural resources, GHG emissions, ground transportation and noise.

### 8.1 Project Benefits

The Recommended Alternative offers several benefits that outweigh its unavoidable adverse environmental effects. The Board of Harbor Commissioners adopts the following Statement of Overriding Considerations. The Board recognizes that significant and unavoidable impacts will result from implementation of the Recommended Alternative, as discussed above. Having (i) adopted all feasible mitigation measures, (ii) rejected as infeasible any alternatives that would avoid or reduce the significant impacts of the Recommended Alternative, as discussed above, (iii) recognized all significant, unavoidable impacts, and (iv) balanced the benefits of the Recommended Alternative against the Recommended Alternative's significant and unavoidable impacts, the Board hereby finds that the benefits outweigh and override the significant unavoidable impacts for the reasons stated below.

The below stated reasons summarize the benefits, goals, and objectives of Alternative 5and provide the rationale for the benefits of the Recommended Alternative. The Board finds that any one of the environmental, technological, policy, and economic benefits of the Recommended Alternative set forth below is sufficient by itself to warrant approval of the Recommended Alternative. These overriding considerations justify adoption of the Recommended Alternative and certification of the completed Final EIR. This determination is based on the findings herein and the evidence in the record. These benefits include the following:

- Fulfills Harbor Department's legal mandates and objectives. The Recommended Alternative would fulfill the Harbor Department's legal mandate under the Port of Los Angeles Tidelands Trust (Los Angeles City Charter, Article VI, Sec. 601; California Tidelands Trust Act of 1911) to promote and develop commerce, navigation and fisheries, and other uses of statewide interest and benefit including industrial and transportation uses and the California Coastal Act (PRC Division 20, Section 30700 , et seq.), which identifies the Port and its facilities as a primary economic/coastal resource of the state and an essential element of the national maritime industry and obligates the Harbor Department to modernize and construct
necessary facilities to accommodate deep-draft vessels and to accommodate the demands of foreign and domestic waterborne commerce and other traditional waterdependent and related facilities in order to preclude the necessity for developing new ports elsewhere in the state. Further, the California Coastal Act provides that the Harbor Department should give highest priority to the use of existing land space within harbors for port purposes, including, but not limited to navigational facilities, shipping industries and necessary support and access facilities. The Recommended Alternative would also meet the Harbor Department's strategic green growth objectives by maximizing the efficiency and the capacity of facilities while applying mitigation measures that adhere to and/or exceed the San Pedro Bay Clean Air Action Plan (CAAP) requirements and raise environmental standards.
- Implements the CAAP. Project-specific standards and lease measures implemented through CEQA are one of several mechanisms for meeting CAAP requirements.
- Optimizes land use. The Recommended Alternative would maximize the utilization of Port lands by increasing the cargo handling efficiency of an existing container terminal to accommodate the demands of foreign and domestic waterborne commerce. The Recommended Alternative would be consistent with LAHD's public trust obligations. The Recommended Alternative would maximize container land use and operations at the Everport Container Terminal consistent with the Port Master Plan.
- Accommodate projected changes to cargo ship fleet mix. The Recommended Alternative would upgrade an existing facility to accommodate the servicing of larger container ships which are projected to enter the fleet mix calling at the Port in the future. In particular, the Recommended Alternative provide sufficient depth along Berths 226-229 [-53 MLLW plus two feet of overdepth tolerance for a total depth of 55 feet MLLW] and Berths 230-232 (-47 MLLW plus two feet of overdepth tolerance for a total depth of -49 feet MLLW) to ensure the terminal's ability to accommodate up to 16,000 TEU vessels anticipated to call at the terminal. The Recommended Alternative would improve container terminal backland capacity, and provide new cranes and raise existing cranes to efficiently service the larger container ships anticipated to call at the terminal.
- Fosters economic growth. The Recommended Alternative would augment local employment and business opportunities by directly supporting numerous short-term construction and long-term operational jobs and a variety of indirect jobs related to both the construction and operational phases (see Chapter 7, Socioeconomics, of the Draft EIS/EIR). The Recommended Alternative would promote the long-term development and growth of the Port and further the expansion of on-dock rail.

In summary, the Recommended Alternative would allow LAHD to meet its legal mandates to accommodate growing international commerce, while maintaining compliance with important environmental programs and policies. The Board hereby finds that each of the benefits of the Recommended Alternative described above outweighs the significant and unavoidable environmental effects and are therefore considered acceptable.

## DRAFT MITIGATION MONITORING AND REPORTING PROGRAM

Document considered draft until Board considers document

## Berths 226-236 [Everport] Container Terminal Improvements Project Environmental Impact Statement/ Environmental Impact Report



September 2017

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Table 1. Mitigation Monitoring and Reporting Program Summary for the Berths 226-23 [Everport] Container Terminal Improvements Project

| Mitigation Measure, Lease Measure or Standard Condition of Approval | Timing and Methods | Responsible Parties |
| :---: | :---: | :---: |
| Air Quality and Meteorology |  |  |
| MM AQ-1. Harbor Craft Used during Construction. Harbor craft used during construction must be equipped with U.S. Environmental Protection Agency (EPA) Tier 3 engine standards or cleaner at all times during construction. | Timing: During specified construction phases. <br> Methods: LAHD will include MM AQ-1 in the contract specifications for construction. LAHD will monitor implementation of mitigation measures during construction. <br> This measure shall be met unless one the following circumstances exist and the contractor is able to provide proof that such circumstances: <br> - A piece of specialized equipment is unavailable in a controlled form, or within the required Tier level, within the state of California, including through a leasing agreement; <br> - A contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use on the project, but the application process is not yet approved, or the application has been approved, but funds are not yet available; <br> - A contractor has ordered a control device for a piece of equipment planned for use on the project, or the contractor has ordered a new piece of controlled equipment to replace the uncontrolled equipment, but that order has not been completed by the manufacturer or dealer. In addition, for this exemption to apply, the contractor must attempt to lease controlled equipment to avoid using uncontrolled equipment, but no dealer within 200 miles of the project has the controlled equipment available for lease. | Implementation: LAHD through Construction Contractor <br> Monitoring and Reporting: Environmental Management Division, Construction Management Division |
| MM AQ-2. On-Road Trucks Used during Construction. On-road trucks shall comply with EPA 2010 on-road emission standards or better, unless the contractor provides a written finding consistent with project contract or lease management requirements and obtains written approval from the | Timing: During specified construction phases. <br> Methods: LAHD will include MM AQ-2 in the contract specifications for construction. LAHD will monitor implementation of mitigation measures during | Implementation: LAHD through Construction Contractor <br> Monitoring and Reporting: |


| Mitigation Measure, Lease Measure or Standard Condition of Approval | Timing and Methods | Responsible Parties |
| :---: | :---: | :---: |
| Lead Agency that such equipment is unavailable. | construction. <br> A written finding must demonstrate that one the following circumstances exist: <br> - A piece of specialized equipment is unavailable in a controlled form, or within the required Tier level, within the state of California, including through a leasing agreement. <br> - A contractor has applied for necessary incentive funds to put controls on a piece of uncontrolled equipment planned for use on the project, but the application process is not yet approved, or the application has been approved, but funds are not yet available. <br> - A contractor has ordered a control device for a piece of equipment planned for use on the project, or the contractor has ordered a new piece of controlled equipment to replace the uncontrolled equipment, but that order has not been completed by the manufacturer or dealer. In addition, for this exemption to apply, the contractor must attempt to lease controlled equipment to avoid using uncontrolled equipment, but no dealer within 200 miles of the project has the controlled equipment available for lease. | Environmental Management Division, Construction Management Division |
| MM AQ-3. Non-Road Construction Equipment (except vessels, harbor craft, on-road trucks, and dredging equipment). All non-road construction equipment greater than 50 hp must meet EPA Tier 4 emission standards, unless the contractor provides a written finding consistent with project contract or lease management requirements and obtains written approval from the Lead Agency that such equipment is unavailable. | Timing: During specified construction phases. <br> Methods: LAHD will include MM AQ-3 in the contract specifications for construction. LAHD will monitor implementation of mitigation measures during construction. <br> A written finding must demonstrate that one the following circumstances exist: <br> - A piece of specialized equipment is unavailable in a controlled form, or within the required Tier level, within the state of California, including through a leasing agreement. | Implementation: LAHD through Construction Contractor <br> Monitoring and Reporting: Environmental Management Division, Construction Management Division |


| $\begin{array}{\|l\|l\|}\hline \text { Mitigation Measure, Lease Measure or } \\ \text { Standard Condition of Approval }\end{array}$ | Timing and Methods | Responsible Parties |
| :--- | :--- | :--- |
|  | $\begin{array}{l}\text { - A contractor has applied for necessary incentive } \\ \text { funds to put controls on a piece of uncontrolled } \\ \text { equipment planned for use on the project, but the } \\ \text { application process is not yet approved, or the } \\ \text { application has been approved, but funds are not yet } \\ \text { available. } \\ \text { - A contractor has ordered a control device for a piece } \\ \text { of equipment planned for use on the project, or the } \\ \text { contractor has ordered a new piece of controlled } \\ \text { equipment to replace the uncontrolled equipment, } \\ \text { but that order has not been completed by the } \\ \text { manufacturer or dealer. In addition, for this } \\ \text { exemption to apply, the contractor must attempt to } \\ \text { lease controlled equipment to avoid using }\end{array}$ |  |
| uncontrolled equipment, but no dealer within 200 |  |  |
| miles of the project has the controlled equipment |  |  |
| available for lease. |  |  |$\}$


| Mitigation Measure, Lease Measure or Standard Condition of Approval | Timing and Methods | Responsible Parties |
| :---: | :---: | :---: |
| Container Terminal will follow this requirement. Alternative Compliance Plans will be considered where a different speed that would result in fewer emissions compared to the current speed limits. <br> Any alternative compliance plan shall be submitted to LAHD at least 90 days in advance for approval and shall be supported by data that demonstrates the ability of the alternative compliance plan for the specific vessel and type to achieve emissions reductions comparable to or greater than those achievable by compliance with VSRP. The alternative compliance plan shall be implemented once written notice of approval is granted by the LAHD. | operation. | Division |
| MM AQ-7. Alternative Maritime Power (AMP). By 2020 or upon substantial completion of construction, 90 percent of Evergreen ships calling at the Everport Terminal must use AMP. By 2026, 95 percent of all ship calls at the Everport Container Terminal must use AMP or approved equivalent under the CARB Shore-Power Regulation. The equivalent alternative technology must, at a minimum, meet the emissions reductions that would be achieved from AMP. | Timing: Throughout operation. <br> Methods: LAHD will include MM AQ-7 in the lease agreement with tenant. LAHD will monitor implementation of mitigation measures during operation. | Implementation: LAHD and Everport <br> Monitoring and Reporting: Environmental Management Division |
| LM AQ-1. Replacement of Equipment and Review of New Technology. When the tenant needs to replace or turnover equipment in its fleet, the tenant shall meet with the LAHD to determine if something is feasible or technologically available that may result in fewer emissions. If any kind of technology becomes available and is shown to be as good as or better than the existing measure in terms of emissions reduction performance, the technology could replace the requirements of other mitigation measures pending approval by LAHD. <br> LAHD shall require the tenant to review any new emissions-reduction technology for feasibility and report back to LAHD every five years beginning five years after lease agreement if no new purchase or equipment turnover occurs sooner as noted in the abovementioned paragraph. If LAHD and tenant determine the technology is feasible in terms of cost and operations, the tenant shall work with LAHD to implement such technology. | Timing: Throughout operation. <br> Methods LAHD will include LM AQ-1 in the lease agreement with tenant. LAHD will monitor implementation of lease measures during operation. | Implementation: LAHD and Everport <br> Monitoring and Reporting: Environmental Management Division |
| LM AQ-2: Priority Access System. A priority access system shall be evaluated to identify one or more ways to provide preferential access to zero- and near-zero-emission trucks. The tenant shall provide a report to LAHD on preferential access system options by January 1, 2020. | Timing: Throughout operation. <br> Methods: LAHD will include LM AQ-2 in the lease agreement with tenant. LAHD will monitor implementation of lease measures during operation. | Implementation: LAHD and Everport <br> Monitoring and Reporting: Environmental Management Division |

## Mitigation Measure, Lease Measure or Standard Condition of Approval

Timing and Methods
Responsible Parties

## Biological Resources

MM BIO-1: Protect Marine Mammals. Although it is expected that marine mammals will voluntarily move away from the area at the commencement of the vibratory or "soft start" of pile driving activities, as a precautionary measure, pile driving activities occurring as part of the sheet pile and king pile installation will include establishment of a safety zone, by a qualified marine mammal professional, and the area surrounding the operations (including the safety zones) will be monitored for marine mammals by a qualified marine mammal observer. ${ }^{1}$
The pile driving site will move with each new pile; therefore, the safety zones will move accordingly.
${ }^{1}$ Marine mammal professional qualifications shall be identified based on criteria established by LAHD during the construction bid specification process. Upon selection as part of the construction award winning team, the qualified marine mammal professional shall develop site specific pile driving safety zone requirements, which shall follow NOAA Fisheries Technical Guidance Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NOAA Fisheries 2016) in consultation with the Acoustic Threshold White paper prepared for this purpose by LAHD (LAHD 2017). Final pile driving safety zone requirements developed by the selected marine mammal professional shall be submitted to LAHD Construction and Environmental Management Divisions.

Timing: Throughout pile driving operations.
Methods: LAHD shall include MM BIO-1 in the contract specifications for construction. LAHD shall monitor implementation of mitigation measures during construction.

Implementation: LAHD through Construction Contractor

## Monitoring and Reporting:

 Environmental Management Division, Construction Management Division
## Cultural Resources

## MM CR-1: Historic Resource Recordation. Prior to demolition of the

 former Canner's Steam Company Plant (located within the 22-acre backland area shown in Figure 2-4 of Chapter 2, Project Description, and Figure 3.4-6 of Section 3.4, Cultural Resources of the Draft EIS/EIR), archival documentation of the building will be completed in the form of a Historic American Building Survey (HABS) that shall comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation. The documentation shall include large-format photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian and shall be placed in the Port archives.MM CR-2: Completion of Phase I Cultural Resource Investigation. A Phase I investigation shall be completed by a qualified archaeologist for all un-surveyed areas of the 22-acre backlands (shown in Figure 2-4 of Chapter 2, Project Description, and Figure 3.4-6 of Section 3.4, Cultural Resources of the Draft EIS/EIR) to rule out the presence of significant resources. Phase II and III investigations shall be completed if significant

Timing: Prior to the demolition of the former Canner's Steam Company Plant.
Methods: LAHD shall complete MM CR-1 prior to commencement of demolition activities. LAHD shall retain a qualified archaeologist to evaluate any potential finds prior to demolition.

Timing: Prior to construction within the 22-acre backlands expansion area.
Methods: LAHD shall complete MM CR-2 prior to commencement of construction activities of the 22-acre backlands. LAHD shall retain a qualified archaeologist

Implementation: LAHD
through Construction
Contractor
Monitoring and Reporting: Environmental Management Division, Construction Management Division

Implementation: LAHD
through Construction Contractor

Monitoring and Reporting: Environmental Management Division, Construction

| Mitigation Measure, Lease Measure or Standard Condition of Approval | Timing and Methods | Responsible Parties |
| :---: | :---: | :---: |
| archaeological resources are not ruled out. Furthermore pre-construction worker training shall be completed if significant resources are not ruled out. Furthermore, pre-construction worker training shall be completed as described in MM CR-3. | to evaluate any potential finds prior to construction. | Management Division |
| MM CR-3: Pre-construction Worker Training. Prior to the commencement of landside construction activities, qualified archaeologist and paleontologist retained by the LAHD or their designee shall provide training to construction personnel to provide information on regulatory requirements for the protection of cultural resources. This training may take the form of examples of cultural resources to look for and protocols to follow if discoveries are made. The archaeologist/paleontologist shall develop the training and any supplemental materials necessary to execute said training | Timing: Prior to construction activities. <br> Methods: LAHD shall include MM CR-3 in the contract specifications so that a qualified archaeologist shall perform the training to all construction personnel related to the protection of cultural resources. | Implementation: LAHD through Construction Contractor <br> Monitoring and Reporting: Environmental Management Division, Construction Management Division |
| SC CR-1: Stop Work in the Area if Prehistoric and/or Archaeological Resources are Encountered. In the unlikely event that any prehistoric artifact is encountered during construction, work shall be immediately stopped and the area secured until the materials found can be assessed by a qualified archaeologist. | Timing: Throughout construction. <br> Methods: LAHD shall include SC CR-1 in the contract specifications for construction. LAHD shall monitor implementation of standard conditions of approval during construction. | Implementation: LAHD through Construction Contractor <br> Monitoring and Reporting: Environmental Management Division, Construction Management Division |
| SC CR-2: Unanticipated Discovery of Paleontological Resources. In the event that a paleontological resource is encountered during construction, the contractor shall stop construction and a qualified paleontologist shall evaluate the significance of the resource. Additional monitoring recommendations may be made at that time. If the resource is found to be significant, the paleontologist shall systematically remove and stabilize the specimen(s) in anticipation of preservation. Curation of the specimen shall be in a qualified research facility, such as the Los Angeles County Natural History Museum. | Timing: Throughout construction. <br> Methods: LAHD shall include SC CR-2 in the contract specifications for construction. LAHD shall monitor implementation of standard conditions of approval during construction. | Implementation: LAHD through Construction Contractor <br> Monitoring and Reporting: Environmental Management Division, Construction Management Division |
| Greenhouse Gas Emissions |  |  |
| MM GHG-1 - LED Lighting. All fixtures on the high mast poles at the Everport Container Terminal shall be replaced with LED fixtures or a technology with similar energy-saving capabilities. | Timing: Tenant must complete replacement of lighting by December 31, 2020. <br> Methods: Tenant shall include MM GHG-1 in the construction specifications. | Implementation: Tenant through its own construction contractor in conjunction with LAHD <br> Monitoring and Reporting: Environmental Management |


| Mitigation Measure, Lease Measure or Standard Condition of Approval | Timing and Methods | Responsible Parties |
| :---: | :---: | :---: |
|  |  | Division, Construction Management Division |
| MM GHG-2 - Solar Electricity. Photovoltaic panels shall be installed over the employee parking lot as part of the development of the 22 acres, pending a feasibility study. | Timing: Feasibility study must be conducted prior to design and construction of the 22-acre backlands. <br> Methods: Tenant shall include MM GHG-2 and its feasibility potential into construction specifications | Implementation: Tenant through its own construction contractor in conjunction with LAHD <br> Monitoring and Reporting: <br> Environmental Management Division, Construction Management Division |
| LM GHG-1: GHG Credit Fund. Proposed Project GHG emissions are 99,856 metric tons of CO2e above the CEQA Baseline in the peak year of operations in 2038. They exceed the 10,000 metric ton CO2e significance threshold by 99,856 metric tons. Because operational GHG emissions exceed the significance threshold with the incorporation of all feasible mitigation measures, LAHD shall establish a carbon offset fund, which may be accomplished through a Memorandum of Understanding with the California Air Resources Board or another appropriate entity, to mitigate project GHG impacts to the maximum extent feasible. The fund shall be used for GHG-reducing projects and programs on Port of Los Angeles property. It shall be the responsibility of the Tenant to contribute to the fund. Fund contribution shall be the equivalent of 1 percent of the minimum annual guarantee (MAG) at the time that project construction will commence. This amount will be approximately $\$ 300,000$, payable upon substantial completion of Project construction. This amount is appropriate because it takes into account the tenant's actual container throughput and assesses a fee in correlation with the facility's GHG contribution level. If LAHD is unable to establish the fund within a reasonable period of time, the Tenant shall instead purchase credits from an approved GHG offset registry in the amount of approximately $\$ 300,000$. | Timing: Payable upon substantial completion of Project construction. <br> Methods: LAHD shall include LM GHG-1 in the lease agreement with tenant. LAHD shall monitor implementation of mitigation measures during operation. | Implementation: LAHD and Everport <br> Monitoring and Reporting: <br> Environmental Management Division |
| Noise |  |  |
| MM NOI-1: Noise Reduction during Pile Driving. The contractor shall be required to use a pile driving system which is capable of limiting maximum noise levels at 50 feet from the pile driver to 104 dBA , or less, for wharf construction. | Timing: Throughout pile driving operations. <br> Methods: LAHD shall include MM NOI-1 in the contract specifications for construction. LAHD shall monitor implementation of mitigation measures during construction. | Implementation: LAHD through Construction Contractor <br> Monitoring and Reporting: Environmental Management |


| Mitigation Measure, Lease Measure or <br> Standard Condition of Approval | Timing and Methods | Responsible Parties |
| :--- | :--- | :--- |
|  |  | Division, Construction <br> Management Division |
| MM NOI-2: Utilize Temporary Noise Attenuation Curtain Adjacent to <br> Pile Driving Equipment. If under MM NOI-1 the reduced pile driving noise <br> exceeds 103 dBA at 50 feet from the pile driver, utilize temporary noise <br> attenuation curtain suitable for pile driving equipment as needed. This noise <br> attenation device should be installed directly between the equipment and <br> the nearest noise sensitive receptor to the construction site. | Timing: Throughout pile driving operations. <br> Methods: LAHD shall include MM NOI-2 in the contract <br> specifications for construction. LAHD shall monitor <br> implementation of mitigation measures during <br> construction. | Implementation: LAHD <br> through Construction <br> Contractor |
| Monitoring and Reporting: |  |  |
| Environmental Management |  |  |
| Division, Construction |  |  |
| Management Division |  |  |


[^0]:    ${ }^{1}$ The Carl Moyer Program is a grant program implemented by CARB and administered by SCAQMD to fund the incremental cost of cleaner-than-required engines.

[^1]:    ${ }^{1}$ Allow exemptions only if: 1) a piece of specialized equipment is not available for purchase or lease within the United States; or 2) the relevant project contractor has been awarded funds to retrofit existing equipment, or purchase/lease new equipment, but the funds are not yet available.
    ${ }^{2}$ See EPA's Exhaust Emission Standards for Heavy-Duty Highway Compression-Ignition Engines and Urban Buses. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100O9ZZ.pdf
    ${ }^{3}$ See EPA's Exhaust Emission Standards for Federal Marine Compression-Ignition (CI) Engines. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA0B.pdf

[^2]:    ${ }^{4}$ See EPA's Exhaust Emission Standards for Locomotives. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1000A09.pdf
    ${ }^{5}$ San Pedro Bay Ports Clean Air Action Plan, 2017. Available at: http://www.cleanairactionplan.org/wp-content/uploads/2016/11/CAAP-2017-Draft-Discussion-Document-FINAL.pdf
    ${ }^{6}$ Available at: https://www.epa.gov/criteria-air-pollutants

[^3]:    ${ }^{7}$ See "Freight Advanced Traveler Information System (FRATIS)," U.S. Department of Transportation. Available at: https://www.its.dot.gov/research archives/dma/bundle/fratis_plan.htm

[^4]:    ${ }^{8}$ See the Council on Environmental Quality's (CEQ's) Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Question 19b. Available at: https://energy.gov/sites/prod/files/G-CEQ40Questions.pdf

[^5]:    The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: http://www.arb.ca.gov.

[^6]:    ${ }^{1}$ For the purposes of CEQA, "feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. (California Code of Regulations, title 14, section 15364.)

[^7]:    File Location: \Div Files\SCAR\CEQA Review\FINAL CEQA Response LTRs\Final Draft\Berths 226-236 [Everport] Container Terminal Improvements Project-NO Availability of a Draft EIR.doc

[^8]:    ${ }^{1}$ South Coast Air Quality Management District. March 3, 2017. 2016 Air Quality Management Plan. Available at: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan.

[^9]:    ${ }^{2}$ San Pedro Bay Ports. November 2016. Clean Air Action Plan 2017: Draft Discussion Document. Available at: http://www.cleanairactionplan.org/wp-content/uploads/2016/11/CAAP-2017-Draft-Discussion-DocumentFINAL.pdf.
    ${ }^{3}$ Draft EIS/EIR. Executive Summary. Page ES-11.
    ${ }^{4}$ Draft EIS/EIR. Project Description. Page 2-36. Table 2-3: Construction Schedule, Page 2-37.
    ${ }^{5}$ Draft EIS/EIR. Project Description. Table 2-1: Existing and Projected Berths 226-236 [Everport] Container Terminal Throughput. Page 2-4.
    ${ }^{6}$ Draft EIS/EIR. Project Description. Page 2-39.
    ${ }^{7}$ Draft EIS/EIR. Executive Summary. Page ES-68.
    ${ }^{8}$ Draft EIS/EIR. Executive Summary. Table ES-3: Summary of Potential Significant Impacts and Mitigation for the Proposed Project and Alternatives. Page ES-27.
    ${ }^{9}$ Ibid.
    ${ }^{10}$ Ibid.

[^10]:    ${ }^{11}$ Ibid.
    ${ }^{12}$ Ibid. Page ES-28.
    ${ }^{13}$ Draft EIS/EIR. Section 3.2, Air Quality and Meteorology. Table 3.2-26: Maximum CEQA Health Impacts Estimated for Construction and Operation of Proposed Project. Page 3.2-68.

[^11]:    ${ }^{14}$ Draft EIS/EIR. Executive Summary. Page ES-5.
    ${ }^{15}$ Draft EIS/EIR. Project Description. Table 2-2: Construction Schedule. Page 2-37.
    ${ }^{16}$ South Coast Air Quality Management District. SCAQMD Air Quality Significance Thresholds. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

[^12]:    ${ }^{17}$ Draft EIS/EIR. Appendix B3-Health Risk Assessment. Table B3-5: Maximum CEQA Health Impacts Estimated for Construction and Operation of the Proposed Project Without Mitigation. Page B3-17.
    18 South Coast Air Quality Management District. Meteorological Data for AERMOD. Available at: http://www.aqmd.gov/home/library/air-quality-data-studies/meteorological-data/data-for-aermod.
    ${ }^{19}$ Ibid.
    ${ }^{20}$ United States Environmental Protection Agency. February 2000. Meteorological Monitoring Guidance for Regulatory Modeling Applications. Page 6-30. Available at: https://www3.epa.gov/scram001/guidance/met/mmgrma.pdf. See also 40 CFR Ch. I (7-1-11 Edition). Appendix W to Part 51 - Guideline on Air Quality Models. Available at: https://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol2/pdf/CFR-2011-title40-vol2-part51-appW.pdf.

[^13]:    ${ }^{21}$ California Air Resources Board. August 31, 2010. Estimate Premature Deaths Associated with Long-term Exposure to Fine Particle Pollution (PM2.5) in California Using a U.S. Environmental Protection Agency Methodology. Available at: https://www.arb.ca.gov/research/health/pm-mort/pm-report 2010.pdf.

[^14]:    ${ }^{22}$ E-mail correspondence and attachment on May 17, 2017 from the Port of Los Angeles Harbor Department (Ms. Yolanda Mativa) to SCAQMD (Dr. Phillip Fine).

[^15]:    ${ }^{23}$ Draft EIS/EIR. Appendix B4, Draft General Conformity Determination. Table 4-1, Emission Scenario Years for General Conformity Evaluation Based on 2012 AQMP. Page 4-2. Footnote 2 to Table 4-1.

[^16]:    ${ }^{1}$ The Court disapproved Sunnyvale West "insofar as [it holds] an agency may never employ predicted conditions as the sole baseline for analysis of a project's environmental impacts." (Neighbors for Smart Rail, 57 Cal.4th at p. 457.)
    2 Note the operational emissions for the NEPA Baseline (Alternative 1) are identical to operational emissions for the CEQA No Project scenario (Alternative 2), as noted in the Draft EIS/EIR, Section 3.2.4.5, Alternative 2, Impact AQ-3, on page 3.2-110

[^17]:    AERMOO View - Lakes Environmental Software

[^18]:    ${ }^{1}$ San Pedro Bay Ports, Final Clean Air Action Plan 2010 Update 153 (Oct. 2010), available at http://www.cleanairactionplan.org/documents/2010-final-clean-air-action-plan-update.pdf at 156.
    ${ }^{2}$ Air Res. Bd., Sustainable Freight: Pathway to Zero and Near-Zero Emissions at 1 (April 2015), available at http://www.arb.ca.gov/gmp/sfti/sustainable-freight-pathways-to-zero-and-near-zero-emissions-discussiondocument.pdf.

[^19]:    ${ }^{3}$ Eelco den Boer et al., Zero Emissions Trucks: An Overview of State-of-The-Art Technologies and Their Potential 16-17 (July 2013) [hereinafter "CE Delft Report"], available at http://www.theicct.org/sites/default/files/publications/CE_Delft_4841_Zero_emissions_trucks_Def.pdf.

[^20]:    ${ }^{21}$ Marine mammal professional qualifications shall be identified based on criteria established by LAHD during the construction bid specification process. Upon selection as part of the construction award winning team, the qualified marine mammal professional shall develop site specific pile driving safety zone requirements, which shall follow NOAA Fisheries Technical Guidance Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NOAA Fisheries 2016) in consultation with the Acoustic Threshold White Paper prepared for this purpose by LAHD (LAHD 2017). Final pile driving safety zone requirements developed by the selected marine mammal professional shall be submitted to LAHD Construction and Environmental Management Divisionsprior to commencement of pile-driving.

[^21]:    ${ }^{1}$ Marine mammal professional qualifications shall be identified based on criteria established by LAHD during the construction bid specification process. Upon selection as part of the construction award winning team, the qualified marine mammal professional shall develop site specific pile driving safety zone requirements, which shall follow NOAA Fisheries Technical Guidance Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NOAA Fisheries 2016) in consultation with the Acoustic Threshold White

