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NOT TO BE PUBLISHED IN OFFICIAL REPORTS

IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA

FOURTH APPELLATE DISTRICT

DIVISION THREE

CITY OF RIVERSIDE, Plaintiff and Appellant, v. CITY OF LOS ANGELES et al., Defendants and Respondents.	G043651 (Super. Ct. No. 30-2009-00123216) O P I N I O N

Appeal from a judgment of the Superior Court of Orange County, Ronald L. Bauer, Judge. Affirmed.

Chatten-Brown & Carstens, Jan Chatten-Brown, Douglas P. Carstens, Michelle N. Black, Arthur Pugsley; Gregory Priamos, City Attorney, Kristi Smith and Anthony Beaumon, Deputy City Attorneys, for Plaintiff and Appellant.

Carmen A. Trutanich, City Attorney, Thomas A. Russell, Assistant City Attorney, Christopher B. Bobo, Deputy City Attorney; Meyers, Nave, Riback, Silver & Wilson, Amrit S. Kulkarni, Julia L. Bond and Peter S. Hayes for Defendants and Respondents.

* * *

INTRODUCTION

The Port of Los Angeles prepared an environmental impact statement/environmental impact report (EIR) for a project involving the construction and operation of a container terminal in the West Basin of the Port of Los Angeles. The Board of Harbor Commissioners of the City of Los Angeles approved the final EIR. The City of Riverside (the City) sought a writ of mandate from the trial court, challenging the EIR. The trial court denied the petition for a writ of mandate, and the City appeals. (We will refer to respondents the City of Los Angeles, the Los Angeles City Council, the Los Angeles Harbor Department, the Board of Harbor Commissioners, and the Port of Los Angeles collectively as the Port, for ease of reference.)

Having independently reviewed the administrative record, we conclude the Port did not abuse its discretion in certifying the final EIR, and we therefore affirm the trial court's judgment.

STATEMENT OF FACTS

The project involves the construction of a new wharf, additional cranes, the expansion and development of 142 acres of terminal backlands, and the construction of terminal infrastructure at the Port of Los Angeles. In 1997, the Board of Harbor Commissioners certified a program EIR for the West Basin Transportation Improvements Program at the Port of Los Angeles. (*Natural Resources Defense Council, Inc. v. City of Los Angeles* (2002) 103 Cal.App.4th 268, 272.) In March 2001, the City of Los Angeles entered into a lease with China Shipping Holding Co., covering construction of the project as well as later terminal operations. (*Id.* at pp. 277-278.) The city council determined that the 1997 EIR covered the project, and that no additional documentation pursuant to the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) was needed. (*Natural Resources Defense Council, Inc. v. City of Los Angeles*, *supra*, at p. 278.) The Natural Resources Defense Council, Inc., among others,

petitioned for a writ of mandate, alleging the City of Los Angeles violated CEQA by entering into the lease without completing an adequate EIR. (*Id.* at p. 279.) The trial court denied the petition. (*Ibid.*) On appeal, the court concluded the Port of Los Angeles had failed to prepare a proper EIR, and the environmental review had been improperly segmented. (*Id.* at pp. 284-285.) The Port was ordered to prepare a proper EIR. (*Id.* at pp. 285-286.)

Phase I of the project has been completed. The present matter involves the EIR for phases II and III of the project. The Port released a draft EIR for public comment in August 2006. Numerous comments were received. Based on the comments received, the Port thoroughly revised and expanded the draft EIR for a second round of public review and comment in April 2008 (the recirculated draft EIR).

The City and the Riverside County Transportation Commission (RCTC) submitted comments on the recirculated draft EIR, asserting it had not adequately analyzed impacts to rail and road traffic in the City and Riverside County. The RCTC identified 12 at-grade rail crossings it claimed would be seriously affected by the project. The Port investigated existing conditions at those rail crossings.

In the final EIR, the Port responded to the comments to the recirculated draft EIR, including those by the City and the RCTC. The final EIR found that project-related rail activity would not result in significant traffic delays at rail crossings in the City or in Riverside County.

The Board of Harbor Commissioners held a hearing on the recirculated draft EIR on December 18, 2008. At the end of the hearing, the board unanimously certified the final EIR and approved the project. In its findings, the board concluded that, apart from two rail crossings near the Port of Los Angeles itself, the project would not cause significant rail crossing delay impacts, or contribute to significant cumulative rail crossing impacts. Specifically responding to comments from the City and the RCTC, the final EIR concluded: "The comments from the City of Riverside and RCTC both suggest

that the findings in the Recirculated Draft EIS/EIR are not correct and that the proposed Project would cause significant impacts within Riverside from truck and rail traffic in addition to the two local intersections identified in the Recirculated Draft EIS/EIR. Characterizing congestion in Riverside County as caused by the Ports is incorrect and unsubstantiated. Rather, congestion in Riverside County is predominantly a result of land use planning and growth policies and decisions of the jurisdictions within the county."

PROCEDURAL HISTORY

The City filed a petition for a writ of mandate, and complaint for declaratory and injunctive relief, on February 18, 2009. (The case was originally filed in Los Angeles Superior Court, but was transferred to Orange County Superior Court pursuant to a stipulated order.)

The trial court issued a minute order denying the petition for a writ of mandate. The court entered judgment in favor of the Port on April 8, 2010. The City timely appealed.

DISCUSSION

I.

STANDARD OF REVIEW

The parties initially disagree on the standard of review this court must apply. The appropriate standard of review was set forth by the California Supreme Court in *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 426-427: "In reviewing an agency's compliance with CEQA in the course of its legislative or quasi-legislative actions, the courts' inquiry 'shall extend only to whether there was a prejudicial abuse of discretion.' [Citation.] Such an abuse is established 'if the agency has not proceeded in a manner required by law or if the determination or decision is not supported by substantial evidence.' [Citations.] [¶] An

appellate court's review of the administrative record for legal error and substantial evidence in a CEQA case, as in other mandamus cases, is the same as the trial court's: The appellate court reviews the agency's action, not the trial court's decision; in that sense appellate judicial review under CEQA is de novo. [Citations.]" (Fns. omitted.) In other words, on appeal, we independently review the administrative record to determine whether the Port prejudicially abused its discretion.

"'"'"Substantial evidence is defined as "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached."'"'" [Citation.] '"In determining whether substantial evidence supports a finding, the court may not reconsider or reevaluate the evidence presented to the administrative agency. [Citation.] All conflicts in the evidence and any reasonable doubts must be resolved in favor of the agency's findings and decision. [Citation.] [¶] In applying that standard, rather than the less deferential independent judgment test, 'the reviewing court must resolve reasonable doubts in favor of the administrative findings and decision.'"' [Citations.]" (*Citizens for Responsible Equitable Environmental Development v. City of San Diego* (2011) 196 Cal.App.4th 515, 522-523.)

Our role as a reviewing court is to consider the sufficiency of the EIR as an informational document. (*Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 392.) "A court may not set aside an agency's approval of an EIR on the ground that an opposite conclusion would have been equally or more reasonable. [Citation.] A court's task is not to weigh conflicting evidence and determine who has the better argument when the dispute is whether adverse effects have been mitigated or could be better mitigated. We have neither the resources nor scientific expertise to engage in such analysis, even if the statutorily prescribed standard of review permitted us to do so. Our limited function is consistent with the principle that 'The purpose of CEQA is not to generate paper, but to compel government at all levels to

make decisions with environmental consequences in mind. CEQA does not, indeed cannot, guarantee that these decisions will always be those which favor environmental considerations.' [Citation.]" (*Id.* at p. 393.)

II.

EXHAUSTION OF REMEDIES

The Port argues that many of the arguments raised by the City on appeal were neither raised in the administrative proceeding, nor preserved in the trial court.

Public Resources Code section 21177, subdivision (a) provides: "An action or proceeding shall not be brought pursuant to Section 21167 unless the alleged grounds for noncompliance with this division were presented to the public agency orally or in writing by any person during the public comment period provided by this division or prior to the close of the public hearing on the project before the issuance of the notice of determination."

The purpose of the exhaustion of administrative remedies doctrine is to give the public agency the opportunity to receive and respond to specific factual and legal issues. (*Coalition for Student Action v. City of Fullerton* (1984) 153 Cal.App.3d 1194, 1197-1198. "[T]he exact issue raised in the lawsuit must have been presented to the administrative agency so that it will have had an opportunity to act and render the litigation unnecessary." (*Resource Defense Fund v. Local Agency Formation Com.* (1987) 191 Cal.App.3d 886, 894; see *Citizens for Responsible Equitable Environmental Development v. City of San Diego*, *supra*, 196 Cal.App.4th at p. 527 ["general, unelaborated objections [are] insufficient to satisfy the exhaustion doctrine"]; *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 535 [""""exact issue""" must have been presented to administrative agency in order to exhaust administrative remedies in CEQA case]; *Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 791 [arguments against plan on same general topic do not save specific statutory argument that was not raised at administrative proceeding level].) If the exhaustion of

administrative remedies doctrine applies, a court does not have the discretion to refuse to apply it. (*Azusa Land Reclamation Co. v. Main San Gabriel Basin Watermaster* (1997) 52 Cal.App.4th 1165, 1215-1216.)

The City bears the burden of demonstrating that the issues raised in its appellate briefs were first raised at the administrative proceeding level. (*Sierra Club v. City of Orange*, *supra*, 163 Cal.App.4th at p. 536.)

An exception to the exhaustion of administrative remedies doctrine applies when the agency fails to provide sufficient opportunity to the public to raise objections to the project. Public Resources Code section 21177, subdivision (e) provides: "This section does not apply to any alleged grounds for noncompliance with this division for which there was no public hearing or other opportunity for members of the public to raise those objections orally or in writing prior to the approval of the project, or if the public agency failed to give the notice required by law." As will be explained *post*, the City cannot establish any lack of notice by the Port, and the City does not claim any lack of a public hearing or lack of an opportunity to provide written comments.

Additionally, the City cannot argue on appeal issues that were not raised in the trial court. (*A Local & Regional Monitor v. City of Los Angeles* (1993) 12 Cal.App.4th 1773, 1804.) This rule, too, is subject to exceptions. An appellate court may consider issues that are pure questions of law, such as whether the EIR was adequate as a matter of law, or whether the issue is one of public interest. (*Woodward Park Homeowners Assn., Inc. v. City of Fresno* (2007) 150 Cal.App.4th 683, 713-714.)

III.

THE PORT'S RESPONSE TO COMMENTS BY THE CITY AND THE RCTC WAS TIMELY.

The City argues the Port failed to comply with the requirements of Public Resources Code section 21092.5, subdivision (a), which provides, in part: "At least 10 days prior to certifying an environmental impact report, the lead agency shall provide a

written proposed response to a public agency on comments made by that agency." (See also Cal. Code Regs., tit. 14, § 15088, subd. (b).) The City claims it received the Port's responses to its comments on December 9, 2008, while the EIR was certified fewer than 10 days later, on December 18.

But the administrative record contains a cover letter dated December 5, 2008, under which the response to comments document was sent to all commenting agencies. Additionally, at the final hearing, the director of environmental management of the Port of Los Angeles testified that the Port both mailed and e-mailed the response to comments to the Riverside City Attorney's Office on December 5. The City concedes, in its reply brief on appeal, that the Port's response was mailed 13 days before the hearing. The City argues, without any authority, that the Port failed to meet its obligation because the City did not receive the response until four days later.

We conclude the Port met its obligation to provide a written response to comments at least 10 days prior to certifying the EIR by mailing and e-mailing the response 13 calendar days before the hearing. The City has failed to establish a lack of compliance with the applicable notice requirements.

IV.

THE RECIRCULATED DRAFT EIR DID NOT DEFINE THE AREA AFFECTED BY THE PROJECT TOO NARROWLY.

The recirculated draft EIR identified two at-grade rail crossings near the Port of Los Angeles, which would experience significant, unavoidable impacts from the project. The recirculated draft EIR determined there would be no other negative impacts from the project due to rail-related issues: "[R]ail-related impacts due to the proposed Project are limited to the at-grade crossings that are located south of the downtown rail yards, and are focused on the at-grade crossings on local lines in and near the Port."

The recirculated draft EIR concluded the project would not cause significant rail-related impacts outside the general Port of Los Angeles area. "The Project will not cause significant rail-related impacts on lines that lead north or east of the downtown rail yards. Rail trips are not controlled by the Port. Currently, the unit trains built at the on-dock and near dock facilities can be picked up by [Burlington Northern Santa Fe Railway] and/or [Union Pacific]. Both rail companies use the Alameda Corridor to travel to the downtown rail yards. To the east of the downtown rail yards, some of the trains are broken down, reconfigured and otherwise modified at the location of the downtown rail yards from that point to the east. Other trains remain unit trains through the downtown rail yard; there are approximately nine major routes with a number of subroutes that the trains can take to leave the state. The rail operators, and not the Port, make the choice of what routes the trains will take, the day they will move and the time of day the trains will move. Furthermore, the rail mainline tracks were designed and built to accommodate the anticipated rail activity in the region. Rail volumes on the mainline are controlled and limited by the capacity of the mainline itself, thus by definition the project's trains could not traverse the mainline unless it still has remaining capacity. The number of trains generated by the project would not cause the mainline rail tracks to exceed the regional capacity. Once the regional mainline rail track capacity would be exceeded due to increases in regional rail activity, separate environmental studies on the mainline expansion would be undertaken by the rail companies, not by each shipper or carrier generating rail volumes."

The City and the RCTC made numerous comments regarding the recirculated draft EIR, all of which were tied to the effect of increased rail traffic. The Port responded to those comments in the final EIR. The City, however, argues that the Port erred in its response to those comments. The City's arguments in this regard are lengthy and detailed.

Although the City does not make this specific argument in its appellate briefs, a theme running through the entirety of its arguments is that the Port erred by failing to consider the rail-related impacts on the City and Riverside County in the recirculated draft EIR. (This argument was raised specifically in the trial court.) An EIR must include the proper boundaries for a project when determining the environmental impact it might have. "An EIR is required to discuss significant impacts that the proposed project will cause in the area that is affected by the project. [Citation.] This area cannot be so narrowly defined that it necessarily eliminates a portion of the affected environmental setting." (*Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1216.)

The area considered by the recirculated draft EIR was not too narrowly defined. The recirculated draft EIR considered rail-related impacts in the areas immediately adjacent to the project site, and as far away as the Los Angeles rail yards, 20 miles from the project site. This case is distinguishable from the cases cited by the City. In *Bakersfield Citizens for Local Control v. City of Bakersfield*, *supra*, 124 Cal.App.4th at page 1216, the appellate court concluded the EIR's for two retail shopping centers, which were located 3.6 miles apart and shared four arterial roadways, were insufficient for failing to consider the other center when examining the cumulative impacts of each. In *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 724, the appellate court concluded an EIR that described the project site as surrounded by farmland was deficient for failing to consider that the project site was adjacent to the San Joaquin River, a wildlife preserve was nearby, and wetlands might be located on the project site.

"An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental

setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant." (Cal. Code Regs., tit. 14, § 15125, subd. (a).) The California Code of Regulations does not define "vicinity" and no published case appears to have considered the issue. "Vicinity" has been defined as "1: the quality or state of being near: nearness, propinquity, proximity . . . 3: a surrounding area or district: locality, neighborhood . . . ." (Webster's 3d New Internat. Dict. (2002) p. 2550, capitalization omitted.) Another definition for "vicinity" is: "A place near to a place designated, but not adjoining or abutting on it." (Ballentine's Law Dict. (3d ed. 1969) p. 1342.)

The recirculated draft EIR and final EIR included several depictions of the "Project Site and Vicinity," which were limited in scope to the Port of Los Angeles and the area immediately around it. No commenter appears to have questioned or criticized the EIR's use of the term "vicinity."

We conclude neither the City nor the County of Riverside is in the "vicinity" of the project. The Port did not abuse its discretion by failing to include in the recirculated draft EIR an analysis of rail-related impacts on the City and County of Riverside. Nevertheless, as explained in section VI *post*, in the final EIR, the Port did consider the potential impact of the project in the City and County of Riverside in its response to the comments of the City and the RCTC.

V.

THE CITY FAILED TO EXHAUST ITS REMEDIES REGARDING CHALLENGES TO THE METHODOLOGY USED BY THE PORT IN THE RECIRCULATED DRAFT EIR TO ANALYZE RAIL-RELATED IMPACTS.

The recirculated draft EIR identified the level of significance for traffic delays at railroad crossings as follows: "An increase in rail activity could cause delays to motorists at the affected at-grade crossings where additional project trains would cross and/or where the project would result in additional vehicular traffic flow. The project is

considered to have a significant impact at the affected at-grade crossings if the average vehicle control delay caused by the project at the crossing would exceed the Highway Capacity Manual (HCM) threshold for level of service E at a signalized intersection, which is 55 seconds of average vehicle delay."

In its respondent's brief on appeal, the Port explains its methodology of analyzing rail crossing delays as follows: "The AVD [(average vehicle delay)] methodology, and 55-second AVD threshold of significance, work as follows: First, the Port collects data on gate blockage time per passing train (in minutes); average 'arrival rate' of vehicles at a crossing (in minutes per road lane); frequency of passing trains at a crossing (per hour); and number of road lanes at a crossing. . . . Using those data, and a formula set out in the EIR, the Port calculates the 'total traffic delay' – i.e., the aggregate amount of delay, experienced by the *entire body of vehicles as a whole*, at a given crossing in a given hour, due to the passage of trains. . . . Then, the Port averages 'total traffic delay' over the number of vehicles using that crossing in a given hour (whether delayed by a train or not), to identify 'average vehicle delay,' i.e., *how much delay is experienced, on average, by each individual vehicle* which uses the crossing in that hour. . . . Finally, the Port compares 'average vehicle delay,' expressed in seconds, to a standard, drawn from the HCM, under which a crossing is determined to operate at an unacceptable LOS [(level of service)] if average vehicle delay, among all vehicles using a given crossing in the peak traffic hour, is equal to or greater than 55 seconds. . . . [¶] The Port's methodology therefore (1) yields information on how much delay an individual vehicle will experience, on average, at a given rail crossing in a given hour and (2) allows for comparison to a recognized standard for determining the significance of a project's impacts on the operational LOS of a roadway intersection."

The RCTC attached to its comment letter a technical review of the recirculated draft EIR's analysis of potential environmental impacts in Riverside County. The technical review analyzed the impact of rail-related traffic delays, as well as

increased emission of pollutants and traffic delays caused by an increased number of trucks transporting goods from the Port of Los Angeles. The technical review noted that the recirculated draft EIR did not identify any potential impacts in Riverside County, but made its own finding that an anticipated impact of the project would be "additional freight rail traffic carrying containers through Riverside County (particularly the impacts caused by the trains passing through at-grade rail crossings, where traffic is delayed waiting for the trains)." It concluded that the effect of the additional cargo containers carried through Riverside County by train due to the increased traffic from the project would result in an increased delay of 36.3 vehicle hours per day. The technical review also identified 12 crossings in Riverside County "where the additional container traffic would increase the existing delay by at least one vehicle-hour of delay per day."

The City raises numerous challenges to the average vehicle delay methodology in the EIR. These challenges, however, are barred by the City's failure to exhaust the issue. The City admits this issue was not raised in its comments on the recirculated draft EIR, but argues it did not realize the Port's methodology was an issue until the trial court hearing on the petition for a writ of mandate. Having thoroughly reviewed the administrative record and the appellate record, we conclude the Port fully and accurately explained its methodology in the recirculated draft EIR. The confusion resulting from a mistaken description of the EIR's methodology in the Port's trial brief does not mean the recirculated draft EIR misrepresented the methodology, so as to relieve the City of its failure to exhaust the issue in the administrative proceedings.

VI.

DID THE PORT PROVIDE ADEQUATE RESPONSES TO THE COMMENTS RAISED BY THE CITY AND THE RCTC?

The City argues that the Port failed to respond to many of the comments raised by the City and the RCTC regarding rail-related environmental impacts from the

project, and failed to provide analysis specifically requested by the City. The failure to respond to public comments on a draft EIR can constitute an abuse of discretion by the lead agency. "The Port [of Oakland]'s response fell far short of the 'good faith reasoned analysis' mandated by CEQA for responding to significant conflicting information generated by the public. [Citations.] Much information of vital interest to the decision makers and to the public pertaining to toxic air contamination was simply omitted. In other instances, the information provided was either incomplete or misleading. The dispute in this regard goes beyond a disagreement of qualified experts over the reasoned conclusions as to what the data reveals. The EIR failed to acknowledge the opinions of responsible agencies and experts who cast substantial doubt on the adequacy of the EIR's analysis of this subject. The conclusory and evasive nature of the response to comments is pervasive, with the EIR failing to support its many conclusory statements by scientific or objective data. These violations of CEQA constitute an abuse of discretion." (*Berkeley Keep Jets Over the Bay Com. v. Board of Port Cmrs.* (2001) 91 Cal.App.4th 1344, 1371.)

The Port notes that in responding to the comments of the City and the RCTC, the Port conducted a field investigation and analysis of existing conditions at the rail crossings identified by the RCTC. Based on this analysis, the Port concluded there would not be any significant impact to rail crossings in the City and County of Riverside as a result of the project.

In determining whether the Port responded adequately to the comments, we consider whether substantial evidence in the record supports the response. An agency must provide a good faith, reasoned response to public comments on a draft EIR. "The written response shall describe the disposition of significant environmental issues raised . . . . In particular, the major environmental issues raised when the lead agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail giving reasons why specific comments and suggestions were not

accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice." (Cal. Code Regs., tit. 14, § 15088, subd. (c).) The response need not be exhaustive as long as it adequately addresses the issues raised in the comments. (*Towards Responsibility in Planning v. City Council* (1988) 200 Cal.App.3d 671, 683.) A lead agency is "not required to exhaust all suggested testing before EIR certification [citation], particularly since there was expert opinion indicating that further investigation was not necessary. 'Just as an agency has the discretion for good reason to approve a project which will admittedly have an adverse environmental impact, it has discretion to reject a proposal for additional testing or experimentation.' [Citation.]" (*Cadiz Land Co. v. Rail Cycle* (2000) 83 Cal.App.4th 74, 102.)

A.

The final EIR did not fail to disclose the basis of train projections, as requested by the City's comments.

The recirculated draft EIR projected 817 annual rail round trips attributable to the project by 2030. The City's comment letter complained that the basis for this estimate was not included: "The data and calculations underlying the 817 estimated rail round-trips were not included in the [recirculated draft] EIR or its appendices. There is a passing citation to the 'Rail Master Plan and actual Yang Ming rail yard projections' on [the recirculated draft] EIR page 2-2, but those projections are never revealed. There is no way to verify the timeliness, accuracy, applicability, or even the existence of the data. Those data must be included and analyzed in the [recirculated draft] EIR discussions and analysis, or at the very least, as an appendix." The Port's response to this comment reads: "The count of 817 rail round trips required for the projected Project is based on the projected terminal TEU[1] throughput and the percentage of total throughput that

[1] TEU stands for 20-foot equivalent unit, which is the typical means for expressing the amount of cargo. The City's opening appellate brief includes the

would be transported via rail. Please see Table E12.-13 in Appendix E of the Recirculated Draft EIS/EIR."[2]

It is probably self-evident that correct assumptions regarding the estimated increase in rail traffic generated by the project are necessary. Without a reasonable, good faith analysis, the EIR is not proper. And without a realistic estimate of what impact the project might have on the environment, a reasonable, good faith analysis is not possible. Did the Port, in its response to the City's comments or in the EIR itself, provide the evidence from which we can conclude the estimates of increased rail traffic are realistic?

The City contends that the Port's "failure to disclose the assumptions upon which the projections were based is a fatal flaw in the EIR." Having reviewed the recirculated draft EIR, it appears the Port provided an estimate of the TEU's generated annually by the project (figures that the City does not challenge), as well as an estimate

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following discussion of the TEU's that are anticipated from the project (parenthetical references are the City's citations to the administrative record): "With 10 cranes and the expansion of terminal backlands from 11 to 142 acres (6:2869-2870), by 2030 the increased cargo capacity allowed by Phases II and III would accommodate delivery of 838,338 containers per year. (1:6-9; 6:2892.) Cargo is typically expressed in terms of twenty-foot-equivalent units (TEUs), and each container contains approximately two TEUs. The current Project will make possible more than a threefold increase in container throughput over Phase 1 of the Project, and more than a tenfold increase over levels prior to Phase I. (8:3784.) [¶] The EIR estimates by 2030 the Project would generate 817 annual 'roundtrip' rail movements, or 1,634 actual trips in and out of the port. (1:34; 6:2870.) [The Port] estimates that nearly 40 percent of TEUs arriving from overseas at the China Shipping terminal travel by near-dock and on-dock rail to further destinations. (6:2870.) Furthermore, the 40 percent of TEUs identified as traveling by rail does not appear to include the large percentage of TEUs trucked to railyards to be transferred to rail and ultimately through Riverside. (6:2870 [train trips described are only from on-dock and near-dock. It is unclear whether the term 'local delivery' includes the delivery of TEUs by truck to the Vernon or East Los Angeles rail yards].)"

[2] The Port's response contains a typographical error, where it references table E12.-13; the correct reference is to table E1.2-13. While the error might have caused some confusion, the City's December 17, 2008 letter to the Port, regarding the responses to the comments, shows it was able to identify the table to which the Port was referring in its response.

of the TEU's that would be distributed to rail yards. Those estimates form the basis for the estimate of the increased number of train trips. Reference to the EIR itself may constitute a satisfactory response to a comment. (*Eureka Citizens for Responsible Government v. City of Eureka* (2007) 147 Cal.App.4th 357, 378.)

The City argues the estimate of the percentage of TEU's that would be transported by rail in the EIR is contradicted by two other studies included in the EIR—the EIR prepared for the West Basin Transportation Improvements Program and the Ports of Long Beach/Los Angeles Transportation Study. The final EIR for the West Basin Transportation Improvements Program estimates, "[a]pproximately 50 percent of all containers passing through the West Basin terminals are expected to be transported by rail. This assumption is consistent with the *Alameda Corridor Environmental Impact Statement* (Federal Highway Administration, Federal Railroad Administration, and California Department of Transportation 1996) and the Deep Draft Navigation Improvements Project (COE, LAHD 1992)." Although the 50 percent estimate in the West Basin Transportation Improvement Program EIR is more than the 36.5 percent figure used in the EIR for this project, the West Basin program was vastly different in size, and that EIR was prepared 10 years before the EIR in this case. An earlier, different EIR's use of different estimates of rail transportation of containered material does not make the EIR for this project inaccurate or incomplete.

Similarly, the Ports of Long Beach/Los Angeles Transportation Study estimates that by 2010, "50 percent of all containers that move through the Ports will be transported by rail to inland destinations via on-dock and off-dock railyards." The purposes of this study, performed in 2001, were to identify potential problems in the transportation system throughout the Port of Los Angeles and Port of Long Beach, and develop an implementation plan for addressing any deficiencies in the system. The study was not intended as an environmental review document, and dealt with a much larger

area than does the EIR for this project. Its applicability to the present issue is limited, at best.

Moreover, as the Port notes, the Port's additional analysis regarding traffic delays due to increased rail traffic that was performed in the City and County of Riverside in response to the comments raised by the City and the RCTC did not use the rail estimates included in the recirculated draft EIR; the analysis used the RCTC's technical review's estimate that four additional trains per day attributable to the project would pass through Riverside and its environs. In its response to the comments, the Port accepted the technical review's assumptions. The Port's reliance on one set of assumptions rather than that contained in other documents does not invalidate the EIR, as long as the assumptions and conclusions on which the Port relied are supported by substantial evidence. (*Laurel Heights Improvement Assn. v. Regents of University of California*, *supra*, 47 Cal.3d at pp. 392-393.)

The City also argues that the EIR's estimate of rail trips does not account for the EIR's inclusion of an incentive program to promote rail use. Its citation to the administrative record for this factual statement is actually a reference to the initial draft EIR; the City does not cite to any spot in the recirculated draft EIR or the final EIR that includes a reference to an incentive program for the Port of Los Angeles tenants to use rail rather than trucks. We do not find the argument compelling.

Finally, the City argues that the EIR is not clear about whether rail trips from other nonproject areas of the Port of Los Angeles are included in the estimate of rail trips generated by the project. (The Port does not specifically address this argument.) We discern no such lack of clarity. The recirculated draft EIR provides estimates of the increase in container traffic, and the attendant increase in rail-related traffic related to the project.

B.

The final EIR did not fail to address impacts to emergency services.

The City argues the Port failed to adequately respond to its comment that increased rail traffic due to the project would adversely impact the provision of emergency services in the City and County of Riverside. The comment letter stated: "Police, fire and EMT officials reported 491 delays at Riverside's at-grade crossings between 2002 and 2007. Responder delays averaged 3 minutes and were as long as 21 minutes. [¶] In the first half of 2007, Riverside experienced 82 rail-delayed fire trucks and ambulances, for a total of 256 minutes. Each of those minutes can represent life or death. Heart attack survival rates can drop from 7% to 10% for each minute of delay. Brain damage can occur in 3 to 4 minutes. From December 1, 2006 to April 24, 2007, rail delays affected 270 police vehicles, for a total of 1,327 minutes (22.12 hours). Again, those minutes can mean life or death."

The reference to emergency vehicle delays is one of several examples in the City's comment letter of how the project and the increased number of trains attributable to the project will adversely impact the City and County of Riverside. (After stating that "[r]epeated rail-scheduling conflicts result in serious delays in Riverside, and elsewhere," the comment letter reads, "For example," and then lists several bullet points that describe specific problems caused by rail-related delays.) Although the City does not specifically make this point, considering its comment letter in toto, the City was arguing the increase in rail traffic from the project would exacerbate problems with emergency service delays. We therefore reject the Port's argument that this issue was not fully raised or developed by the City.

The problem is that there is no evidence supporting any one of the factual claims made in the City's comment letter. The City apparently provided the Port with a copy of an August 2006 report by the Federal Railroad Administration on the impact of blocked highway and rail grade crossings on emergency response services. That report

includes the unassailable finding that "[b]locked crossings . . . can be a particularly serious problem for emergency responders." The report does not include any data or analysis specific to the City or County of Riverside (although, interestingly, it uses the improvements to the Alameda corridor, which are discussed in the EIR, as a case study for dealing with problems of grade crossing delays to emergency responders).

The Port's response to this comment cross-referenced its response to other comments, which in turn cross-referred to other responses. As with the City's comment, it appears that the Port's response to this specific comment was subsumed by its general response to the overall complaint by the City and the RCTC—that the project would result in more rail traffic, causing greater traffic delays in the City and County of Riverside. (We can find no prohibition on such cross-referencing of comments or responses to comments.)

The Port's analysis determined that the increase in rail traffic due to the project would not have a significant impact on traffic delayed at at-grade rail crossings in the City and County of Riverside. As there was substantial evidence supporting this finding, then it must be true that there would not be a significant impact on other environmental concerns, such as delays experienced by emergency responders, which the City claimed was directly related to the increase in rail-related delays. The City does not provide any authority for its contention that the increase in delays to emergency responders must be studied and analyzed separately from the analysis of the rail crossing delays.

C.

The final EIR did not fail to discuss air pollution and other impacts from vehicles stopped by trains.

The City argues the Port failed to adequately respond to the City's comment regarding the environmental impact of increased air pollution resulting from cars stopped at rail crossings: "[I]dling vehicles stopped at at-grade crossings contribute

45 tons of air pollutants annually. By 2020, idling vehicles stopped at at-grade crossings will generate 208 tons of air pollutants annually: a staggering 450 percent increase in just 12 years. The Riverside County Department of Health indicates that City of Riverside children, 5-14 years of age, suffer more asthma-related hospitalizations than any other group." As with the preceding argument regarding emergency services, the City's comment letter raises the concern that increased vehicular traffic delays due to the increase in rail traffic from the project will exacerbate air pollution problems. And we again observe that the Port's response to this specific comment was subsumed by its general response to the overall comment that the project would have a significant adverse impact on vehicular traffic delays in the City and County of Riverside.

The Port's analysis determined that the increase in rail traffic due to the project would not have a significant impact on vehicular traffic delayed at at-grade rail crossings in the City and County of Riverside. As there was substantial evidence supporting this finding, then it must be true that there would not be a significant impact on other environmental concerns, such as air pollution, which the City claimed were directly related to the increase in rail-related delays.

D.

The City failed to exhaust the issue of failure to report actual train count data.

The City criticizes the Port for failing to obtain actual train count data from the Union Pacific and Burlington Northern Santa Fe railroads. This argument was neither raised in the administrative proceedings, nor in the trial court, and has therefore been forfeited.

E.

The Port did not err in omitting passenger trains from its analysis.

The City next argues the Port understated rail-related traffic delays by omitting passenger trains from its analysis. The Port excluded passenger trains when

collecting data on existing conditions in the City and County of Riverside, because passenger trains do not block grade crossings as long as freight trains do. Therefore, the Port contends, including passenger trains in the analysis for this case would have undercounted rail-related delays caused by the project. Additionally, the Port noted that its expert concluded there was no appreciable difference in terms of the significance of environmental impacts between the RCTC's data (which included passenger trains) and the Port's data (which did not). We find no abuse of discretion in the Port's exclusion of passenger trains from its analysis.

F.

The City failed to exhaust the issue of failure to include gate downtimes when no train is present.

The City argues the Port erred in omitting from its analysis the delays resulting from closed gates at crossings when no train is present. The City failed to raise this issue in the administrative proceedings, or in the trial court. The issue has been forfeited.

VII.

SUBSTANTIAL EVIDENCE SUPPORTS THE PORT'S FINDING THAT THE PROJECT WILL HAVE NO SIGNIFICANT IMPACT ON THE CITY OR COUNTY OF RIVERSIDE.

The City argues there is no substantial evidence to support the Port's findings that (1) the project-specific impact of increased train-induced delays in the City and County of Riverside would not be significant, and (2) the cumulative impact of new train traffic generated by overall port development would not have significant adverse impacts on the City and County of Riverside.

"Challenges to an EIR based on a dispute about the scope of the analysis, the validity of the methodology used, or the accuracy of data it relied on involve factual issues; in those instances, the question for the court is whether the agency's reasons for studying the impact as it did are supported by substantial evidence. [Citations.] [¶] A

reviewing court will resolve any disputes regarding the adequacy of the EIR's analysis in favor of the lead agency if there is any substantial evidence in the record supporting the EIR's approach. [Citations.]" (1 Kostka & Zischke, Practice Under the Cal. Environmental Quality Act (Cont.Ed.Bar 2d ed. 2011) § 11.35, pp. 564-565 (rel. 1/11).)

"An EIR should be prepared with a sufficient degree of analysis to provide decisionmakers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure." (Cal. Code Regs., tit. 14, § 15151.)

The lead agency is responsible for determining whether an environmental impact of a proposed project is significant. (Cal. Code Regs., tit. 14, § 15064, subd. (b).)

The City contends that the Port relied on incomplete or insufficient train counts and included nondelayed vehicles in its delay calculations in concluding the impact on the City and County of Riverside would not be significant. The City cites *Center for Biological Diversity v. County of San Bernardino* (2010) 185 Cal.App.4th 866, 879-880, in which the appellate court affirmed the judgment following the trial court's order granting a petition for a writ of mandate setting aside the certification of a final EIR for an open-air human waste composting facility. The trial court found that the final EIR's finding that the alternative of an enclosed facility was not economically and technically feasible was not supported by substantial evidence, and that the final EIR failed to include a required water supply assessment. (*Ibid.*) As discussed in more detail *ante*, we conclude the Port did not abuse its discretion in basing its analysis on the selected criteria.

The City also argues the Port was required to mitigate the impacts of the project by contributing its fair share to grade separation projects in the City and County of Riverside. CEQA requires that significant environmental impacts from a project be mitigated when feasible. (*City of Marina v. Board of Trustees of California State University* (2006) 39 Cal.4th 341, 369.) The City points to a statement by the Board of Harbor Commissioners in the findings of fact in the final EIR, which the City claims, proves the Port was required to undertake mitigation of rail-related delays in the City and County of Riverside due to the cumulative significant impacts of the project. The findings read, in part: "The only at-grade crossings potentially affected by the proposed Project are at Avalon Boulevard and Henry Ford Avenue. The grade crossing at Fries Avenue would be eliminated as part of the South Wilmington Grade Separation project. Impacts from the proposed Project along with other cumulative projects on the regional rail corridors north of the proposed Project site would not be significant since the Alameda Corridor project has been completed. The completion of the corridor has eliminated the regional at-grade rail/highway crossings between the Port and the downtown rail yards; therefore, there would be no change in vehicular delay at any of those crossings due to proposed Project-related rail activity (they are now all grade separated). Significant cumulative impacts would occur at Avalon Boulevard and Henry Ford Avenue crossings. Cumulatively, there would also be a significant impact on the at-grade rail crossings east of downtown Los Angeles. *This cumulative impact would be due to the overall growth in rail activity* that would occur to serve the added cargo throughput in the Southern California region and the nation."[3] (Italics added.)

The Port discounts this statement as a simple typographical error; the statement does conflict with other findings within the same section of the final EIR: "The Project will not cause significant rail related impacts on lines that lead north or east

[3] The City quotes only the italicized portion of the final EIR's finding.

of the downtown rail yards"; "[S]ignificant vehicle delay impacts at the at-grade crossings in Riverside County (and City of Riverside) are not anticipated. Therefore, no mitigation for such impacts is required."

So we are left with the situation of a final EIR that contains conflicting findings on the key issue before us. Neither party addresses how this court should evaluate such conflicting factual findings. Because of the overall rules for considering challenges to EIR's under CEQA, we consider whether substantial evidence supports the different findings. As explained *ante*, we have determined that substantial evidence supports the Port's findings that the project would not cause significant rail-related delays in the City and County of Riverside.

If the Port correctly determined that there were no significant adverse impacts on the City and County of Riverside due to the project, then the Port had no obligation to consider, much less contribute to, their mitigation.

The City candidly admits that long before the recirculated draft EIR was published for comment, the County of Riverside had analyzed the problems within its community due to delays at at-grade rail crossings, had developed a plan for correcting those problems, and had begun trying to secure funding for its plan.

The Port does not have a "fair share" of Riverside County's mitigation plan, and therefore cannot be faulted for failing to contribute its fair share.

Ultimately, our role as a reviewing court is not to decide whether the Port acted wisely in approving the project. We only determine whether the EIR contained sufficient information about the project and the potential environmental impacts that would arise from the project, so as to allow for an informed decision. (*Eureka Citizens for Responsible Government v. City of Eureka*, *supra*, 147 Cal.App.4th at p. 378.) We conclude that the EIR was sufficient in this respect, and that the City has failed to meet its burden to show otherwise.

DISPOSITION

The judgment is affirmed. Respondents to recover costs on appeal.

FYBEL, J.

WE CONCUR:

MOORE, ACTING P. J.

IKOLA, J.

Coalition For A Safe Environment

1601 N. Wilmington Blvd., Ste. B Wilmington, California 90744
jnm4ej@yahoo.com 310-704-1265

November 18, 2014

Port of Long Beach (POLB)
Long Beach Harbor Department
Richard D. Cameron
Managing Director of Environmental Planning
Heather A. Tomley
Director of Environmental Planning
heather.tomley@polb.com
Janna Watanabe
Environmental Specialist
4801 Airport Plaza Drive
Long Beach, CA 90815
janna. watanabe@polb.com
562-590-4156
562-901-1728 Fax

Re: MCC Cement Facility Modification Project
Draft Environmental Impact Report (DEIR)
SCH No. 2011081098

Su: Request To Deny Approval of the MCC Cement Facility Modification Project
And Certification of the Draft EIR until the DEIR complies 100% with CEQA

The Coalition For A Safe Environment (CFASE) wishes to request the Port of Long Beach Board of Harbor Commissioners (POLB BOHC), City of Long Beach (COLB) deny the MCC Cement Facility Modification Project proposal application and certification of the Draft Environmental Impact Report (DEIR) non-compliance and in violation of CEQA, the Federal Clean Air Act, Clean Water Act, Executive Order 12898, Council on Environmental Quality (CEQ) *Guidance for Environmental Justice Under NEPA* (CEQ, 1997), AB 32 Global Warming Solutions Act and U.S. Civil Rights Act, the California Health and Safety Code. CSE-1

The Coalition For A Safe Environment (CFASE) is an Environmental Justice Community based non-profit organization with members in Long Beach and 25 cities in California.

We find the proposed MCC Cement Facility Modification Project DEIR to be unacceptable because it fails to meet evaluation factors approval criteria, fails to adequately justify its purpose, fails to eliminate where feasible all negative impacts, fails to mitigate negative impacts where feasible to less than significant and fails to include all reasonable and available feasible mitigation measures.

The following information and outlined points, concerns, references, examples, issues, recommendations and requests describe the inadequacies of the DEIR and our areas of support: CSE-2

CFASE supports the following:

CSE-2 CFASE does support ES.2 Project Object # 3 Modify the South Coast Air Quality Management District (SCAQMD) air permit for Bulk Cement Ship Unloading, which currently requires shore-to-ship power ("cold-ironing") for ships at berth, to allow either shore-to-ship power or alternative control technologies to reduce the emissions of the fleet.

CFASE does not support the proposed DoCCS technology for the venting to NOx emission control equipment, because there is a superior ship emission capture technology available which is the Advanced Maritime Emissions Control System (AMECS) manufactured by Advanced Cleanup Technologies, Inc. (ACTI).

CFASE however, requests that the language in the DEIR/FEIR, "DoCCS" and "venting to NOx emission control equipment," be changed to reflect the CARB Final Regulation Order Airborne Toxic Control Measure For Auxiliary Diesel Engine Operated On Ocean-Going Vessels At- Berth In A California Port – "Equivalent Emissions Reduction Option - alternative control technologies to reduce the emissions of the fleet."

CFASE further wishes to state that CEQA and NEPA do not require a technology to be certified or verified by CARB or any governmental agency to be included as Mitigation. CEQA only requires that a technology proposed for Mitigation be a proven, feasible, available and cost effective technology when the project is complete.

CSE-3 **CFASE identified deficiencies in the DEIR:**

1. CFASE does not support ES.2 Project Object # 2 To install an emission control system (Dockside Catalytic Control System (DoCCS) to reduce at-berth nitrogen oxide (NOx) emissions from ship auxiliary generator engines when vessels are not using shore-to-ship power. CFASE has researched DoCCS and found that it is not the most effective technology available.

   CFASE has researched companies that would qualify to meet this object and only one company has had its test protocol approved by the California Air Resources Board and the only one that has complied with all test protocol requirements. The company and technology that we request to be incorporated into the DEIR/FEIR is the Advanced Maritime Emissions Control System (AMECS) manufactured by Advanced Cleanup Technologies, Inc. (ACTI).

   The AMECS technology has been demonstrated on over 40 ships over the past 6 years which have included: oil tankers, liquid bulk loading, dry bulk loading and container ships. The AMECS technology can capture emissions from the main engines, auxiliary engines and boilers. The POLB shore-power-to-ship power cannot prevent boiler emissions from being released into the atmosphere. Additionally, a ship may still have to turn on its ship auxiliary generators for extra power for special unloading equipment even when connected to shore power to complete the unloading of cement in difficult locations. AMECS will significantly capture numerous other ship emission criteria and toxic pollutants in addition to NOX. See attachments. AMECS test results have shown reductions of:

PM	94.5%
NOX	99+%
SOX	98.5%
VOCs	99.5%

Further, Mitsubishi does not own all of the ships which may service the MMC Facility which have not been retrofitted for electric shore power. Ships visiting the Mitsubishi Facility may be charter leased or owned by other 3rd parties and may only occasionally visit the port, so the AMECS systems can accommodate these situations. CSE-4

In addition, should there ever be a major power outage on the electric grid for an extended period of time, AMECS has its own stand-alone power and can still operate. There are times when a ship must wait for an available berth or cement trucks to arrive.

2. DEIR section 3.2 Air Quality and Health Risk fails to identify, assess and Mitigate all impacts to all potential residents, neighboring Environmental justice Communities, Federally Protected Classes, Sensitive Receptors, nearby businesses workers and port facility workers whose health, safety and life may be negatively impacted by the MCC Project. CSE-5

   This includes the EJ Communities of West Long Beach, East Wilmington and South East Carson which border public transportation routes that cement trucks will take to go to construction project sites who will be exposed to diesel fuel exhaust, fugitive dust and particles. This includes: PM 10.0, PM 2.5 and PM 1.0< Ultrafine Particles.

   The DEIR failed to identify, assess and mitigate the following:

   a. Residents who live-on-board boats at port marinas who live near the MCC Facility and along public transportation routes that cement trucks will take to go to construction project sites who will be exposed to diesel fuel exhaust, fugitive dust and particles. The project will increase its truck trips from 53,067 annually to 166,400 truck trips annually.
   b. Residents, Environmental Justice Communities, Federally Protected Classes and Sensitive Receptors such as Pregnant Women and Prenatal, who live along public transportation routes that cement trucks will take to go to construction project sites who will be exposed to diesel fuel exhaust, fugitive dust and particles. The project will increase its truck trips from 53,067 annually to 166,400 truck trips annually.
   c. Workers at nearby businesses who work along public transportation routes the cement trucks will take to go to construction project sites. The project will increase its truck trips from 53,067 annually to 166,400 truck trips annually.
   d. MCC workers who will be exposed to cement-like materials and/or cement mixture and composition additives which have a higher hazardous and toxicity level to the environment and human health as an individual substance when stored in bulk and would require as a minimum special storage requirements, fugitive emissions protection, special handling gear, fire prevention protocols and safe mixture level standards.
   e. Include additional Mitigation Measures such as enclosed bulk storage areas (i.e. Petro-Coke/Coal Storage Warehouse/Barn, Enclosed Conveyor System, adding a Mobile Cover over the open bulk loading roofs which can move with the vacuum and other types of unloading equipment, watering down periodically of stock piles and dry cleaning the exterior of cement trucks to reduce fugitive dust and particles prior to leaving MCC Facility.

   The Zone of Impact (ZOI), environmental justice, minority populations and low income populations project area of influence one mile area of influence is an arbitrary decision and was not based on any study or assessment of actual CEQA/NEPA evaluation criteria such as environmental, public health, land use, traffic impacts of environmental justice, minority and low income communities. We request a minimum a 5 mile radius.

CSE-5 CFASE requests that the Port and DEIR/FEIR to identify, assess and mitigate all impacts to all potential residents, neighboring Environmental justice Communities, Federally Protected Classes, Sensitive Receptors, nearby businesses workers and port facility workers whose health, safety and life may be negatively impacted by the MCC Project.

CSE-6 3. The DEIR section 3.2 Air Quality and Health Risk references the use of Health Risk Assessment (HRA)

The Draft EIR failed to include a comprehensive Health Impact Assessment (HIA) and Public Health Survey of the impacted Harbor Residents, Port Workers, Contracted Workers, Environmental Justice Communities, Federally Protected Classes and Sensitive Receptors who live near the MCC Facility and along public transportation routes that cement trucks will take to go to construction project sites who will be exposed to diesel fuel exhaust, fugitive dust and particles.

CFASE has requested numerous times in the past that an HIA be included as a standard practice in all POLB EIR's. The Ports reliance on an outdated Health Risk Assessment and limited supplemental other health information fails to identify significant numbers of health impacted residents, their existing health problems and/or premature death.

CFASE also submits with this Draft EIR public comments a Health Impact Assessment Bibliography of 181 HIA abstracts and technical documents describing the benefits of an HIA which overwhelmingly validates our request.

Without an HIA and/or Public Health Survey the Port has no Public Health Baseline of which to accurately know the depths of its public health impacts, base it decisions on the type and amount of mitigation and the mitigation funds necessary to off-set the impacts and reduce the negative impacts to less than significant. As an example and as identified in previous public comments:

a. The Port can provide no accurate information of the number of Harbor, Freight Transportation Corridor and Distribution Center Residents, Sensitive Receptors and Port Industry Workers afflicted with Asthma, Bronchitis, Sinusitis, Emphysema, COPD, Lung Cancer or any other health problem. For example: The FEIR contains no rates of asthma for children or adults in Wilmington, San Pedro, Carson or West Long Beach the most common community health factor measurement reference and one of the most common air pollution respiratory health problem. With no baseline rate it is impossible to determine if public health is improving or getting worse as a result of the ports expansion and operations.
b. The Port can provide no accurate information on the severity of public health problems, the length of time afflicted, loss of income, cost of health care, permanent disabilities or the availability of necessary health care services, medicines or equipment.
c. The Port can provide no accurate information on the number of people who have died from COPD, an Acute Asthma Attach, Lung Cancer or any other respiratory disease, blood disease or other medical health condition as a result of its ports operations and freight transportation.
d. An HIA can also disclose the loss of state funds which is a significant negative community socio-economic impact for local public schools due to missed schools days, thus impacting the quality of education and services of children.

e. An HIA can also disclose the loss of income, state and federal taxes from workers who must miss worker due to ill family members or their own personal illness which is a significant negative community socio-economic impact to low income communities and also impacts the loss of revenues to support public services. CSE-6

We submit our CFASE HIA Bibliography which contains 181 document citations which validate our request and the value of HIA's. We submit our CFASE Pregnant Women and Prenatal Air Pollution Health Impacts Bibliography as an example of Sensitive Receptor impacts. We request that the POLA review each citation in its entirety to understand the value and necessity. We request that the POLA review each citation in its entirety to update the Final EIR to address the inadequacies and non-compliance issues.

CFASE and the public have requested that the Port of Long Beach establish a Public Health Care Mitigation Trust Fund which can provide financial assistance for immediate, short term and long term such as:

a. Public health care & treatment.
b. Financial assistance to pay for health care at local clinics & county hospitals.
c. Financial assistance to pay for health insurance.
d. Financial assistance to pay for medical equipment.
e. Financial assistance to pay for medical supplies.
f. Financial assistance to pay for medical prescriptions.
g. Financial assistance for funeral expenses.
h. Financial assistance for short & long term convalescent care.
i. Financial assistance for rehabilitation.
j. Financial assistance for job retraining.
k. Financial assistance for lost income.
l. Financial assistance for special learning disability assistance.

CFASE requests that the Port of Long Beach establish a Public Health Care Mitigation Trust Fund and charge a Public Health Care Mitigation Tariff of $1.00 per Metric ton of cement.

4. The DEIR ES.4 Green Port Policy - Program Goal - Implement sustainable practices in design and construction, operations, and administrative practices throughout the Port fails to adequately describe and require numerous Alternative Green Construction Options and Mitigation Measures. CSE-7

Potential Community & Port Sustainable Community Mitigation Measures include:

a. POLA can require installation of solar energy panels on all building roofs, carports and open space areas.
b. POLA can require the project to include Recycled, Non-GHG & Low GHG Green Construction Building & Office Supply Materials.

- Low Carbon Footprint Concrete/Cement. Note: Incorporates Non-Toxic Residual Fly Ash, Carbon by-Products, Residue and Captured Fuel Exhaust Emissions.
- Recycled Metal Rebar.
- Recycled Fiberglass Rebar.

CSE-7

- Recycled Carbon Rebar.
- Incorporate ZBAR: Corrosion Resistant Rebar.
- Incorporate Design Recycle Inc.: Thermo Pole Core Rubber Products For Utility Light Poles, Pier Pilings, Telephone Poles, Guard Rail Posts, Boat Docks, Sign Posts, Shore Erosion Pilings.
- Incorporate Malama Composites: Which Are Non-Petroleum, Carbon Neutral, Zero VOC, Recyclable: AinaCore, BioFoam, Pacifi BioFoam used in wall door core/panel insulation, insulating piping/packaging/containers, moldings and castings.
- Paints, Coatings, Adhesives/Caulks Which Are Non-Toxic, No/Low VOC, Non-GHG & Soy Based.
- Eco-Friendly & Recycled Roofing & Flooring Materials.
- Eco-Friendly Non-Toxic, No/Low VOC Cleaning Solvents & Supplies.
- Recycled Lumber & Wood Products such as fencing, doors, decks, patio frames.
- Weatherization Products such window/doors sealers, stripping, tapes.
- Room & Restroom Products such as Trash Cans, Toilets, Sinks, Curtains

CSE-8

5. The DEIR section 1.1 Introduction first paragraph states that in addition to receiving bulk cement the Mitsubishi facility can also receive, "cement-like materials," including furnace slag, pozzolans and fly ash, but does clarify whether they will. If at any point in time in the future they do accept these other cement-like material the DEIR failed to include an assessment and appropriate mitigation measures to reduce any potential negative impacts to less than significant. CEQA requires that the Port, "EIR evaluates the direct, indirect and cumulative impacts of the proposed project," which is also referenced in the DEIR 1.1.1 CEQA.

   These cement-like materials and/or cement mixture and composition additives have a higher hazardous and toxicity level to the environment and human health as an individual substance when stored in bulk and would require as a minimum special storage requirements, fugitive emissions protection, special handling gear, fire prevention protocols and safe mixture level standards.

CSE-9

6. The DEIR ES.5 Environmental Issues – Air Quality & Health Risk references Mitigation Measures AQ-2 Modernization of Truck Fleet failed to include other potential feasible mitigation measures.

   CFASE has researched companies and technologies that could qualify to be another alternative Mitigation Measure and one company Vision Motor Corp. has this capability. In addition, the Vision Motor Corps Tyrano Class VIII Zero Emissions Truck has been certified by the California Air Resources Board for sale in the State of California. Reference the ARB March 18, 2013 Certification Letter No. CIHD-2013-002.

   CFASE Requests that the company and technology to be incorporated into the DEIR/FEIR as a Mitigation Measure is a Demonstration Project of the Vision Motor Corp. Zero Emission Class VIII or Class VII Drayage Truck being modified to be a cement truck. A Zero Emissions Cement Truck would eliminate all diesel emissions from a traditional cement diesel fuel truck fleet old or new.

CSE-10

7. The DEIR ES.5 Environmental Issues – Biological Resources & Habitats fails to identify, include, assess or mitigate potential Ship Whale Strikes, destruction and loss of Fish Habitats. Several Ship

Whale Strikes have already occurred in the San Pedro Bay. The Long Beach Press Telegram newspaper several years ago published a story with a color photo showing a dead whale lodged on the bow of a ship as it entered the port. CSE-10

CFASE requests that the DEIR/FEIR identify, include, assess and mitigate potential Ship Whale Strikes.

8. The DEIR ES.5 Environmental Issues – Biological Resources & Habitats fails to identify, include, assess or mitigate potential on-site, off-site and near-site fires and explosions, ship collision accidents. The neighboring Port of Los Angeles in October 2014 had a dock fire that lasted close to 24 hrs. and a toxic flame retardant white foam was used in huge quantities that covered the entire water surface area between two dock terminals. In addition, there was a light breeze that blew the foam into the air which also blew over the adjacent land areas and buildings. CSE-11

   CFASE has requests that the Port of Long Beach include the establishment of a Marine Fish Hatchery to restore the fish population that the Port has destroyed in San Pedro Bay. The Ports fish inventory is unacceptable because it is based after the natural fish population has been decimated.

   CFASE believes that the establishment of a Marine Fish Hatchery could replenish the decreasing fish population. Various types of native fish could be raised and released into San Pedro Bay. CFASE supports the restoration of reefs and seaweed beds in the outer harbor, however, CFASE does support the sinking of ships and dumping of junk to create new habitats. New habitats should created as close to the original natural materials that used to exist.

   CFASE requests that the Port of Long Beach establish fish hatcheries, reefs and seaweed beds in San Pedro Bay as Biological Mitigation. CFASE requests that the Port of Long Beach establish a Marine Biological Restoration Mitigation Trust Fund based on $.25 per Metric Ton of Cement.

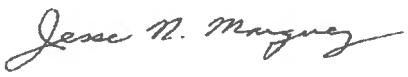
   CFASE requests that the DEIR/FEIR identify, include, assess and mitigate potential on-site, off-site and near-site fires and explosions, ship collision accidents.

9. The DEIR ES.5 Environmental Issues – Ground Transportation failed to acknowledge, assess and mitigate the project truck congestion and public transportation infrastructure damage impacts when leaving the Port of Long Beach property and travel on public streets, highways, freeways and bridges. CSE-12

   CFASE requests that the DEIR/FEIR acknowledge, identify, include, assess and mitigate the off-site cement truck impacts which include diesel exhaust, residual dry and wet cement particles and dust that spill onto public roads while traveling. The assessment shall also include an estimate of the financial costs of maintenance, repair and replacement of public transportation infrastructure.

In conclusion, the DEIR fails to comply with Title VI of the Civil Rights Act and Federal and State Environmental Justice Executive Orders, Laws, Rules, Regulations and Programs for the protection of Environmental Justice Communities, Federally Protected Classes and Sensitive Receptors who live near the MCC Facility and along public transportation routes that cement trucks will take to go to construction project sites who will be exposed to toxic emissions, fugitive dust and substances as described above. The project construction and facility will cause an increase in negative environmental, biological, public health, socio-economic and traffic congestion cumulative Impacts. CSE-13

Respectfully Submitted,



Jesse N. Marquez
Executive Director

And as an individual negatively health and socio-economically impacted resident of Harbor City living near the proposed project.

Drew Wood
Executive Director
California Kids IAQ
Wilmington, CA

Ricardo Pulido
Executive Director
Community Dreams
Wilmington, CA

Pastor Alfred Carrillo
Apostolic Faith Center
Wilmington, CA

Comment Letter: Coalition For A Safe Environment

Response to Comment CSE-1:

Comment noted. The opinions expressed in this comment will become part of the Final EIR for the decision makers to consider.

Response to Comment CSE-2:

Comment noted.

Response to Comment CSE-3:

The Commenter's preference for the AMECS in lieu of the DoCCS is noted. However, MCC proposes to use the DoCCS as a component of the proposed Project and not as a mitigation measure. Regarding the purpose of the proposed DoCCS, please see the Responses to Comments NRDC-12 and NRDC-14.

Regarding the infeasibility of using the AMECS as a mitigation measure to reduce emissions from proposed OGV hoteling operations, please refer to the Responses to Comments NRDC-12 and NRDC-14. While it is not feasible to replace the DoCCS with the AMECS technology for the proposed Project, as discussed in Response to Comments NRDC-12 and NRDC-14, it might be possible to test the AMECS technology on a bulk vessel at the MCC facility if the timing of the AMECS testing and MCC facility operations overlap. Mitigation measure AQ-5: Participation in AMECS Emissions Testing has been added to the Final EIR relating to this issue.

As discussed in the Response to Comment NRDC-12, the CARB Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port Regulation is not applicable to dry bulk cement vessels, and therefore its requirements do not pertain to OGV operations associated with the proposed Project. The Port agrees that technology must be proven, feasible, available and cost effective to be a mitigation measure. For the reasons set forth in Response to Comments NRDC-12 and NRDC-14, AMECS does not meet these requirements at this time.

Response to Comment CSE-4:

Please refer to the Response to Comment CSE-3. Regarding the infeasibility of using the AMECS as a mitigation measure to reduce NOx emissions from proposed bulk vessel hoteling operations, please refer to the response to Comment NRDC-12.

Response to Comment CSE-5:

Section 3.2 of the Draft EIR assesses the potential project-related impacts to air quality and human health risks. The project health risk assessment (HRA) evaluated the presence of all receptor types in proximity to the project terminal and connecting trucking routes within the Port area, including residents, workers, and sensitive receptors. Appendix A-3 Table A-3-2 of the Draft EIR lists these sensitive receptors and their locations evaluated in the project HRA. The assessment follows accepted protocols and criteria to determine the significance of project impacts on the environment and human health. The HRA determined that proposed emissions would produce less than significant health impacts to all receptor types in the project region. The project air quality analysis/HRA also includes all feasible measures to mitigate proposed air emissions. Therefore, the Port

disagrees with the comment that the EIR does not address and mitigate potential air quality and human health risks.

The following responds specifically to topics a. through e. itemized in the comment:

a. The project HRA evaluated impacts to residential receptors in proximity to the project terminal, including live-aboards along the downtown Long Beach waterfront located more than one mile from the project site. The HRA also evaluated project impacts to residents that live adjacent to I-710, the direct route taken to and from the project terminal by project cement trucks to deliver cement to concrete batch plants in the Los Angeles region. The cement is not trucked directly to construction sites.
b. The project HRA evaluated impacts to all applicable receptors, as mentioned in the first paragraph of this response. Regarding the need to evaluate impacts to sensitive receptors along public transportation routes used by project cement trucks to travel to construction sites, please see the response to paragraph a. above.
c. The project HRA evaluated impacts to nearby locations of workers, as mentioned in the first paragraph of this response. Regarding the need to evaluate impacts to workers along public transportation routes used by project cement trucks to travel to construction sites, please see the response to paragraph a. above.
d. Evaluation of air quality impacts to on-site workers and employees falls under the jurisdiction of the California Division of Occupational Safety and Health (DOSH or Cal/OSHA) and is not a CEQA requirement. However, the working conditions at the project terminal historically have complied with all applicable health and safety requirements and they would continue to do so during future project operations.
e. Regarding the request for additional mitigation measures to reduce emissions of cement dust, please see the Response to Comment NRDC-9. The cement product is already "enclosed as it is unloaded from the ships," as explained in section 1.5.4 of the Draft EIR. The cement handling process line from ship to truck is entirely closed to the atmosphere, other than at the (1) opening of the ship hold where the vessel unloader accesses the cement cargo, (2) bag houses venting from cement storage areas, and (3) the small joint between the truck loader and truck opening. The entire process is regulated by the SCAQMD and is covered by various SCAQMD operating permits.

   Regarding the request to add a mobile cover to the vessel hold during cement unloading, it would be infeasible to completely enclose the holds during unloading as the hatches to the ships hold are large and fold upwards. Any type of "shroud" that could enclose each of the holds would be accompanied by its own significant set of problems, including safety concerns, space constraints, and costs far exceeding the resulting marginal emissions reductions. Neither the applicant nor the Port is aware of any such apparatus.

   Regarding the request to dry clean the exterior of cement trucks prior to leaving the project terminal, there are already measures in place (e.g., vacuuming the site, and the ability to vacuum the cement trucks if necessary) to ensure that the trucks do not track fugitive dust off-site. Nevertheless, very little cement dust results from loading the trucks. This is because the cement is loaded into trucks through small hatches using an emission-controlled nozzle. If any cement does get on the exterior of the trucks, which is infrequent in the usual course of operations, there

is an industrial vacuum at the truck hatch closing station. Further, it is unnecessary and undesirable to wash a cement truck. Not only would washing every truck generate its own set of potential impacts, such as increased use of water in a time of serious drought, wastewater discharge concerns, and potential safety issues, washing cement with water causes the cement product to become hard and adhere to surfaces.

The portion of the comment stating that the Draft EIR only evaluated a zone of impact (ZOI) that extends out one mile from project sources is incorrect. Appendix A-2 Figure A-2.2a in the Final EIR identifies the extent of the domain used in the project HRA. This domain extended out several miles from the project terminal and roadways travelled by project trucks, such that project-related ambient air pollutants at the edges of this domain were at very low concentrations. Therefore, the extent of this domain is adequate to evaluate the project HRA.

With regard to the comment's reference with environmental justice-related issues, please note that CEQA does not require an assessment of environmental justice issues in an EIR. See Response to Comment NRDC-35.

As demonstrated in the Draft EIR, the air quality analysis includes all feasible measures to mitigate significant air quality impacts from the proposed Project.

Response to Comment CSE-6:

Performance of a Health Impact Assessment (HIA) suggested in the comment is beyond the scope of the project EIR and CEQA process. The HRA performed in connection with the Draft EIR follows protocols and criteria recommended by the CARB and SCAQMD and provides an adequate evaluation of potential health impacts from the proposed Project for CEQA purposes, as discussed in the Response to Comment CSE-5. Since the results of the HRA conclude that the project would produce less than significant health impacts, CEQA requires no mitigation of these effects.

The Port is actively following the development of HIA methodologies with the USEPA. The Port provided comments to the USEPA on the draft scoping document for HIA (http://www.epa.gov/region9/nepa/PortsHIA). At this time, the USEPA has not finalized its proposed methodology for conducting such an assessment, nor has it released guidelines to the public. As the process proceeds, the Port will continue to be involved in the development of guidelines and methodologies for HIAs for Port documents. The Port believes that a HIA may be better designed for regional planning rather than project-specific analyses under CEQA for modifications to an existing facility.

The Port acknowledges receipt of the HIA documents included as part of the comment.

Regarding the request to establish a Public Health Care Mitigation Trust Fund and charge a public health care mitigation tariff of $1.00 per metric ton of cement, the Port has developed grant programs as one element of its efforts to lessen the impact of significant cumulative air pollution from Port development projects. The grant programs were developed as a mechanism for the Board of Harbor Commissioners to fund projects outside of Port boundaries to improve community health that might be impacted by Port projects. These funds are divided between the Schools and Related Sites Grant Program and the Healthcare and Senior Facilities Grant Program and they represent the types of community outreach efforts undertaken as part of the HIA process. However, since the project would produce less than significant health impacts, MCC will not be required to make a contribution to these programs.

Response to Comment CSE-7:

The comment refers to the POLA, but the Port assumes the Commenter was intending to reference the Port. The Commenter requests that the Port require MCC (1) to install solar energy panels into the project design and (2) to include numerous recycled, non-GHG, and low-GHG/green construction materials as mitigation measures into the proposed Project construction. Regarding the request that MCC install solar energy panels into the project design, project mitigation measure GCC-1 already states that MCC shall install about 1,000 square feet of solar energy panels on the roof of the existing office building. Mitigation measure GCC-1 also requires installation of low-energy demand lighting, which would minimize electrical demand and resulting GHGs from proposed operations. While the requested recycled and green materials would contribute to a lower carbon footprint from construction activities, it is unknown at this time whether and to what extent the requested materials are applicable to the types of structures and construction techniques proposed for the terminal modifications. Further, some of the materials, such as low-VOC solvents, paints, and materials, are already required under SCAQMD rules. In particular, the green construction measures mentioned in the comment apply almost entirely to occupied buildings. However, the proposed Project includes the construction of very specific industrial structures (i.e. cement storage silos), rather than new occupied buildings. Therefore, few, if any, of the materials listed by the Commenter could even apply to the type of structures that would be constructed for the terminal modification. That said, where metal needs to be coated in order to protect it in the marine environment, it would be painted with low-VOC paint that is compliant with SCAQMD Rule 1113 governing architectural coatings.

Response to Comment CSE-8:

The proposed Project would handle and store the same general types of cement and cement-like materials as historically handled at the MCC facility. The existing facilities and handling procedures meet all applicable legal requirements. The use of the robust cement containment infrastructure and implementation of standard BMPs, established in a site-specific SWPPP, would reduce impacts associated with accidental release of hazardous materials during operations. The facility also must meet all permit conditions imposed by the SCAQMD or any other agency with regulatory jurisdiction over the MCC facility. Therefore, for the reasons described in Draft EIR Section 3.9.2.3, impacts will be less than significant. Since there is no change in the material handled at the facility, there is no need for further environmental analysis and the development of new standards and procedures associated with the handling and storage of these cement-like materials. The EIR adequately addresses the environmental impacts associated with handling, storing, and distributing the cement mixtures as currently envisioned and described in the Project Description section of the EIR.

Response to Comment CSE-9:

The Draft EIR demonstrates that it includes all feasible measures to mitigate significant air quality and global climate change impacts. Regarding the feasibility of implementing zero emission trucks, please see the Responses to Comments NRDC-18 and NRDC-21. While zero emission technologies are promising, zero emission trucks have not yet proven, through demonstration and evaluation, to be functional in port operations. Zero emission truck technology, as explained in the response to comment NDRC-18, is not proven to work in this application and is not currently available. Therefore, it is not a feasible mitigation measure. Nonetheless, the Port has added an additional mitigation measure (AQ-6) to the Final EIR that will require periodic review of the feasibility of zero-emissions trucks in connection with each five-year update of MCC's lease.

The statement in the comment that the CARB approved the Tyrano Class 8 truck for sale in California is true. However, this certification does not pertain to the feasibility of this technology, rather only that the vehicle "does not emit any vehicle exhaust emissions or fuel-based evaporative emissions." In addition, although approved for sale in California, the Tyrano truck would still need to be certified as a zero-emission heavy duty vehicle by CARB. As stated in the CARB letter (March 18, 2013 Reference No. CIHD-2013-002) referenced by the Commenter, the certification protocol and test procedures for zero-emission heavy duty vehicles are still in the development process. Through the Technology Advancement Program (TAP), the Port of Los Angeles and the Port of Long Beach partnered with Vision Industries to fund the development and testing of the Tyrano. The truck was deployed in mid-2012 and achieved 200 miles on a single tank of hydrogen. However, On October 20, 2014, the *LA Business Journal* reported that Vision Industries Corporation, which did business as Vision Motor Corp., filed for bankruptcy despite receiving millions in grant money from local, state and federal agencies. The article states that the largest impediment to marketability of the company's product was the difficulty in getting the hydrogen fuel that powers the trucks.

CEQA provides that environmental analysis should emphasize feasible mitigation measures (PRC Section 21003(c). An agency may, however, reject mitigation measures or project alternatives if it finds them to be "infeasible" (PRC Section (a)(3); CEQA Guidelines Section 15091(c)(3)). A "feasible" action is one 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 Section 21061.1; 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).

Response to Comment CSE-10:

Impacts from the proposed Project associated with the potential for ship strikes of whales and loss of habitat are addressed in Section 3.5 of the Draft EIR. The Draft EIR noted that data strongly suggest that ships going slower than 14 knots are less likely to collide with large whales, and vessel speed restrictions in the range of 10-13 knots could reduce the risk of ship strikes and facilitate whale avoidance. The Port promotes a Green Flag VSRP of 12 knots or slower within 40 nm of Point Fermin, and tracks compliance with that speed reduction target within two distance categories: 20 nm and 40 nm. While the VSRP was implemented to reduce smog-forming emissions, it also has the potential to reduce the

risk of serious injury to whales from accidental collision with maritime vessels using the Port.

Although the proposed Project would result in only a small increase in vessel traffic, the incremental contribution of the Project's operations to the incidence of migrating whale strikes is considered potentially cumulatively significant and unavoidable. The Draft EIR acknowledges that the potential for serious injury to whales is reduced by the Port's VSRP (**EC BIO-1**); however, other than the required vessel speed reduction, there is no feasible mitigation to fully eliminate the risk of whale strikes outside the Port.

As discussed in the Draft EIR, the proposed Project does not require any in-water construction activities, dredging, or placement of fill with the potential for destroying or altering fish habitat. Impacts to fish habitat from project operations are considered less than significant because all project-related discharges would be regulated to prevent adverse changes to beneficial uses of the harbor, and measures to prevent and respond to accidental spills would be in place, thereby minimizing the potential for effects on fish habitat.

Response to Comment CSE-11:

The comment references the need to assess and mitigate the potential for on-site and off-site fires and explosions. Section 3.9.1 of the Draft EIR states that the proposed Project would not involve risk of fire or explosion hazards from sources such as tanker vessels, oil tanks, or refineries. Therefore, in accordance with the POLB Risk Management Program (RMP), the EIR did not include a risk of upset analysis and associated hazard footprint analysis. Further, as described in the Draft EIR in Section 3.9.1.2, cement is not considered a hazardous substance. The Draft EIR in Section 3.9.2.3 describes that the proposed Project would involve the storage of urea solution, which is hazardous and which may be combustible at high temperatures. However, as explained in the Draft EIR, the handling of the urea will be conducted in accordance with OSHA's requirements and should pose no threat of fire or other hazards. Therefore, the proposed Project would not result in significant increases in risk of fire or explosion, and no mitigation is required.

Impacts from the proposed Project to vessel transportation, including the potential for the project to increase risks of vessel collisions and other accidents, are addressed in Section 3.7 of the Draft EIR. This assessment focuses on the potential risks to public safety, and concludes that impacts from vessel transportation would be less than significant. Section 3.5 of the Draft EIR addresses project-related impacts to biological habitats, including potential impacts from vessel spills to biological resources. This assessment concluded that impacts to biological habitats, including fish, would be less than significant. Because project-related impacts to habitats and fish would be less than significant, no mitigation measures are required to reduce or minimize the magnitude of the impacts. Consequently, establishing a marine fish hatchery or requiring a restoration trust fund as mitigation for project impacts is not necessary.

The comment also states that the Port's "Fish Inventory" is "unacceptable" because it reflects the effects of historical changes to fish populations and habitats. It is unclear what the term "Fish Inventory" is referring to as this term is not used in the Draft EIR. Regardless, historical changes to the fish populations in the harbor (i.e., prior to the project baseline conditions) are not germane to the assessment of impacts associated with the proposed Project. The proposed Project does not involve any in-water work and the assessment presented in Section 3.5 was performed in accordance with standard

professional practices and procedures, using prescribed significance criteria. This assessment determined that the impacts to fish and fish habitat associated with the proposed Project would be less than significant.

Response to Comment CSE-12:

Section 3.6 of the Draft EIR discusses the contributions from the proposed Project to traffic congestion. As discussed in Section 3.6 of the Draft EIR, ground transportation impacts from the facility modifications will be less than significant. The type of analysis requested by the Commenter is not possible because there is no methodology to determine whether the incremental increase in traffic volumes from this proposed Project will result in any public infrastructure damage beyond normal roadway usage. Even if it were possible to determine whether and to what extent the cement trucks associated with the proposed Project contributed to physical damage to transportation infrastructure, it would not be possible to determine the significance of the effect or assign costs for maintaining and repairing damage caused by Project-related truck traffic. Note that heavy trucks are already required to pay a road use fee, called the heavy vehicle use tax or HVUT that is assessed annually on heavy vehicles operating on public highways at registered gross weights equal to or exceeding 55,000 pounds. Section 3.2 of the Draft EIR discusses the health impacts from cement delivery truck emissions and identifies the mitigation measures added to the project to reduce all air quality impacts to the extent feasible. In addition, please see Response to Comment CSE-5 regarding cement dust from trucks.

Response to Comment CSE-13:

CEQA does not require an assessment of environmental justice issues in an EIR. See Response to Comment NRDC-35. In addition, the Draft EIR identifies all potentially significant project-specific and cumulative impacts of the proposed Project and has incorporated all feasible mitigation measures to reduce those impacts.

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The Chamber
Long Beach Area Chamber of Commerce

November 18, 2014

Ms. Heather Tomley
Director of Environmental Planning
Port of Long Beach
4801 Airport Plaza Drive
Long Beach, CA 90815

Subject: **Public Comment on Draft Environmental Impact Report of the Modernization project for MCCs Pier F import Terminal – SUPPORT**

Dear Ms. Tomley:

On behalf of the Long Beach Area Chamber of Commerce, we strongly support Mitsubishi Cement Corporation's modernization project at the import facility site, Pier F. LBCC-1

We understand Mitsubishi Cement will increase in size of its current location onto the vacant area of the former Pacific Banana Terminal while retrofitting the birth with new state of the art technologies. This includes a larger, yet more efficient and environmentally friendly vacuum unloader along with the construction of new storage facilities. As you know, Mitsubishi Cement also has plans to retrofit an existing vacuum unloader to current efficiency standards – again being environmentally conscious. LBCC-2

Many of the main points and themes that revolve around the modernization project include the creation of jobs while maintaining the highest environmental standards in the industry. In fact, the project calls for a first in a commercial installation of a dock-side emission control system for ship emissions when ships cannot "plug-in." Again, showing a willingness to meet and surpass environmental standards for the industry. LBCC-3

Mitsubishi Cement is investing over $40 million in private capital improvements in order to prepare for future cement demand in our state which in turn will support the rebound of the construction industry. The additional storage, coupled with the upgrading of the unloaders, will reduce ship unloading times and improve terminal efficiencies. This will allow for the reduction of demurrage and time in birth – further reducing greenhouse gas emissions. LBCC-4

This privately funded modernization project will create jobs, create efficiency within the terminal, and prepare Mitsubishi Cement for future growth in a sustainable – environmentally friendly manner. LBCC-5

Thank you for the opportunity to add our comments during the public review period on this critical modernization project for the Port and regional communities.

Sincerely,

Randy Gordon

Randy Gordon
President and CEO

Comment Letter: Long Beach Area Chamber of Commerce

Response to Comment LBCC-1

Thank you for your comment, and your support for the proposed Project is noted. The comment is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment LBCC-2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment LBCC-3

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment LBCC-4

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment LBCC-5

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Southern California Regional
DISTRICT EXPORT COUNCIL

District Export Council of Southern California

Guy Fox, MBA LCB
Chairman

Heather A. Tomley
Director of Environmental Planning
Port of Long Beach
P.O.Box 570
Long Beach, California 90801

October 17, 2014

Dear Ms. Tomley,

Re: Mitsubishi Cement Corporation
MCC Marine Import Terminal, Pier F, Port of Long Beach

This letter is in support of Mitsubishi Cement Facility Modification Project. DEC-1

International Trade is critical to all of Southern California, and we feel that the expansion of the terminal for Mitsubishi will create more business for the Port of Long Beach, and will indeed create more jobs for the area.

It is also important to recognize the fact that Mitsubishi Cement Corporation will implement many points of environmental controls in order to keep the Port of Long Beach clean and to keep particulate matter to a complete minimum, and would indeed implement mitigation measures to insure that all environmental requirements are followed. DEC-2

Mitsubishi will also reduce indirect Greenhouse Gas Emissions through the reduction of electricity use, through conservation by adopting state-of-the art technology and by undergoing an Energy Audit in 2018, and every five years thereafter. They understand that the Port of Long Beach needs every bit of electricity for their future endeavors of "Cold Ironing", and Mitsubishi's program would lend itself to that process. DEC-3

We ask that you approve the Mitsubishi Cement Facility Modification Project, as this will not only be a great step forward for the environment, but would be a great step forward for International Trade and the Port of Long Beach.

Sincerely,

Guy Fox, MBA, LCB
Chairman Emeritus

U.S. COMMERCIAL SERVICE
United States of America
Department of Commerce

District Export Council | U.S. Commercial Service
18620 Sandolo Road. Yorba Linda, CA 92886
Tel: 714-695-1948 -- Cell: 310-413-8884

Comment Letter: District Export Council of Southern California

Response to Comment DEC-1

Thank you for your comment, and your support for the proposed Project is noted. The comment is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment DEC-2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment DEC-3

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

FUTUREPORTS

Elizabeth Warren, Executive Director
New Mailing Address:
P.O. Box 768
San Pedro, CA 90733-0768
www.FuturePorts.org

November 18, 2014

Heather Tomley
Director of Environmental Planning
The Port of Long Beach
P.O. Box 570
Long Beach, CA 90801

RE: Mitsubishi Cement Facility Modification Project: SUPPORT

Dear Ms. Tomley,

On behalf of FuturePorts, I am writing to express our strong support for the Mitsubishi Cement Facility Modification Project Draft Environmental Impact Report (DEIR). This project will ensure that there is an adequate supply of cement to fulfill the demands for the Port of Long Beach and regional building and infrastructure projects. Cement is a critical component of concrete, which is a material for use by construction industry. FP-1

Over the next decade, over $10 Billion is proposed to be invested in and around the San Pedro Bay Ports on new bridges, rail yards, piers, freeways and other construction projects. The Port of Long Beach will spend $4.5 Billion during this time to facilitate the efficient movement of cargo during this period in order to stay competitive in a global market.

FuturePorts' members represent a broad range of goods movement industry businesses that operate throughout the Southern California region. Members range from small to large companies in the goods movement supply chain sector, from engineering and construction companies and their suppliers, to labor, and transportation providers. FuturePorts' members have a vested interest in an economically viable and sustainable supply chain from the waterfront throughout the entire distribution network. FP-2

Although the Mitsubishi Project DEIR will require overriding considerations, with regard to 1-hour NO2 impacts, the worst-case NO2 background concentration is itself very close to the threshold and even minor additional increases in NO2 emissions from the Project would cause an exceedance of the standard. Moreover, the incremental effect of adding NO2 emissions from the Project was analyzed as part of the acute Hazard Index (HI). The Project Health Risk Analysis determined that the unmitigated acute HI for all Project emissions is substantially less than the threshold for all receptor types, as are all estimated cancer risks.

FP-3 Additionally, in order for the project to meet the highest standards of environmental protection, Mitsubishi Cement Corporation (MCC) is making the following commitments:

• MCC will participate in a demonstration project for diesel particulate filters on the dock-side emission control system (DoCCS) system and, if it is determined through mutual agreement by MCC and the Port that the system is compatible with MCC's equipment and operations, permanently install the diesel particulate filters and use them whenever ships are treated with the DoCCS

• MCC will reduce indirect Greenhouse Gas Emissions through the reduction of electricity use through conservation by adopting state-of-the art technology, and by undergoing an Energy Audit in 2018, and every five years thereafter, to identify future conservation opportunities. In addition, they will make a one-time payment to the POLB Greenhouse Gas Mitigation fund.

• MCC will adopt the Expanded Vessel Speed Reduction Program that requires ships to slow down within 40 nautical miles, in order to reduce vessel emissions offshore.

• In 2006, MCC adopted a unique Shore-to-Ship Power/Cold Ironing program; under the modernization program, they will guarantee that it will be used 66% of the time.

• Lastly, MCC will ensure that only newer cement trucks call on the facility.

FP-4 MCC has demonstrated a strong commitment to the environment. In 2006, MCC adopted a unique Shore-to-Ship Power/Cold Ironing program, and under the modernization program, they will guarantee that it will be used at least 66% of the time. In 2009, MCC received a coveted "Clean Air Action Plan" award for its groundbreaking achievement in plugging-in 80% of the ships that called upon its terminal. This new project will enable MCC to continue as an environmental steward at the Port, and as a maritime leader in environmental protection.

FP-5 We urge your support for this project which will help keep the Port of Long Beach competitive. With the expanded Panama Canal in 2016, gulf and east coast ports are aggressively pursuing opportunities to attract cargo away from the San Pedro Bay Ports. Completing the Mitsubishi Cement Facility Modification Project signals that the Port of Long Beach is committed to remaining a part of North America's premier gateway for efficient and environmentally sustainable cargo handling.

Sincerely,

Elizabeth Warren
Executive Director
FuturePorts

Comment Letter: FuturePorts

Response to Comment FP-1

Thank you for your comment, and your support for the proposed Project is noted. The comment is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment FP-2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment FP-3

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment FP-4

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment FP-5

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

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HARBOR ASSOCIATION OF INDUSTRY & COMMERCE
P.O. Box 4250, Sunland, CA 91041
Phone: 818.951.6088 * Fax: 818.353.5976
Email; info@harborassn.com * Website: www.harborassn.com

November 5, 2014

Heather A. Tomley
Director of Environmental Planning
Port of Long Beach
PO Box 570
Long Beach, CA 90801

Re: Mitsubishi Cement Corp Facility Modification Project Proposal

Dear Ms. Tomley:

The Harbor Association of Industry & Commerce (HAIC) is an industrial trade association in the South Bay and harbor areas of southern California and was established to speak with a united voice on issues such as energy, infrastructure, environmental and land-use regulations. HAIC has a total membership that includes close to 100 companies with a combined employment of nearly 375,000 employees. HAIC-1

We urge the Port of Long Beach and its Board of Harbor Commissioners to support the Facility Modification Project proposed for the Mitsubishi Cement Corporation import terminal at Pier F in Long Beach, CA.

Our twin ports of Los Angeles-Long Beach are the driving economic force in Southern California and we need to help not only the ports of Los Angeles and Long Beach, but the businesses within the ports. California continues to face stiff competition from North American, East Coast and Mexican Ports. Gulf and East Coast ports are aggressively pursuing California's market share in anticipation of the widened Panama Canal becoming operational in 2015. Not only are these other ports investing billions of dollars in capital improvement programs, they have also put powerful tax credit incentives in place to attract trade. If we cede our leadership to those states, we will likely never see that business again. We need business like the Mitsubishi project to help us grow jobs - business, manufacturing and trade-related jobs - over the years to come and to maintain our competitive edge as the international trade leader of the nation. The expansion of this operation will further maximize the assets of the Port of Long Beach, increasing direct jobs, and helping support other jobs by providing cement, one of the basic ingredients in both commercial and residential construction, to the local economy in a more cost effective and efficient manner. HAIC-2

We note that in its Draft Environmental Impact Report Mitsubishi Cement Corporation fully supports the Port of Long Beach's environmental programs by increasing cargo throughput while at the same time decreasing harmful emissions. HAIC-3

As you heard during our testimony at the public hearing on October 22, HAIC strongly urges your support and approval of this project.

Sincerely,

John M. Cruikshank
President

Comment Letter: Harbor Association of Industry and Commerce

Response to Comment HAIC-1

Thank you for your comment, and your support for the proposed Project is noted. The comment is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment HAIC-2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment HAIC-3

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

LOS ANGELES CUSTOMS BROKERS & FREIGHT FORWARDERS ASSOCIATION
P.O. Box 4250, Sunland, CA 91041
Phone: 818.951.2841 * Fax: 818.353.5976
Email: la.cbffa@verizon.net Website: www.lacbffa.org

October 22, 2014

Heather A. Tomley
Director of Environmental Planning
Port of Long Beach
PO Box 570
Long Beach CA 90801

Re: Mitsuibishi Cement Corp Facility Modification Project Proposal

Dear Ms. Tomley,

On behalf of the 300+ member companies of the Los Angeles Customs Brokers and Freight Forwarders Association, Inc. (LACBFFA) and their 6,000+ employees we are writing in support for your approval of the **Facility Modification Project proposed** for the Mitsubishi Cement Corporation import terminal at Pier F in Long Beach, CA. LACB-1

International Trade is a jobs multiplier and the expansion of this operation will further maximize the assets of the Port of Long Beach, increasing direct jobs at the terminal operation, and helping support other jobs by providing cement, one of the basic ingredients in both commercial and residential construction, to the local economy in a more cost effective and efficient manner.

In our review of the Draft Environmental Impact Report we see Mitsubishi Cement Corporation's pledge to the Port of Long Beach's Environmental programs by increasing cargo through-put while simultaneously deceasing harmful emissions LACB-2

Our ports are an asset that aid to the financial health of our region. The LACBFFA stands in full support of this project and asks for your approval. LACB-3

Sincerely,

Mark Hirzel
President, Los Angeles Customs Brokers and Freight Forwarders Association, Inc.

Comment Letter: Los Angeles Customs Brokers and Freight Forwarders Association

Response to Comment LACB-1

Thank you for your comment, and your support for the proposed Project is noted. The comment is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment LACB-2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment LACB-3

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Pile Drivers, Bridge, Dock and Wharf Builders
Local Union 2375
Affiliated with
United Brotherhood of Carpenters & Joiners of America
Office: 728 Lagoon Avenue • Wilmington, California 90744-5635
Telephone: (310) 830-5300 FAX: (310) 830-2375

October 22, 2014

Heather A. Tomley
Director of Environmental Planning
Port of Long Beach
PO Box 570
Long Beach CA 90801

Dear Ms. Tomley,

My name is John Schafer and I am the Business Manager/Financial Secretary of Pile Drivers Local 2375. Like many of our nearly nine hundred Brothers and Sisters I am a life-long local resident. We are affiliated with the 45,000 member strong Southwest Regional Council of Carpenters. PD-1

I am writing to you today in order to state our support for the Port of Long Beach Mitsubishi Cement Facility Modification Project Environmental Impact Report. The project is necessary not only because of the immediate jobs it will create but the long-term service its product will provide to the country.

For over one hundred years our members have dredged the harbor, built the breakwater, provided the shoring, built the docks, piers, and bridges, and dove to place the power and resource lines. Those who have studied the port will tell you that very few know it better than our current or former workers. We know that this project will benefit all of us.

MCC has proven to us that not only are these modifications are necessary to improve its efficiency but that they have also taken the time and expense to utilize the latest technological advances in order to provide a cleaner environment for its business and their workers. This will not only benefit our generation but the generations to come. They will plug in whenever and wherever possible. They will serve as a testing ground for the latest innovations. PD-2

The nation's infrastructure is dilapidated according to experts along the entire political spectrum, particularly in California. Most of the roads, bridges, water systems, and power sources have not been fully repaired for a half a century. Many alternative sources of energy have just begun to be installed. Finally, with the onset of global warming, structures will need to be reinforced to protect us from the predicted atmospheric and geologic swings.

MCC and its facility will provide a vital resource to address these needs. Together we all will be a big part of the solution. As citizens and seasoned craftspeople we ask you to do your part and approve this project.

Sincerely,

JOHN SCHAFER
Business Manager

Comment Letter: Pile Drivers, Bridge, Dock and Wharf Builders

Response to Comment PD-1

Thank you for your comment, and your support for the proposed Project is noted. The comment is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PD-2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

PORT TECH LOS ANGELES

Developing sustainable technologies for ports and beyond

November 10, 2014

Port of Long Beach
Environmental Division
4801 Airport Plaza Drive
Long Beach, CA 90815

Attn: Heather Tomley, Director of Environmental Planning

Re: Mitsubishi Cement Corporation Facility Modification Project

To Whom It May Concern:

PortTech Los Angeles supports the efforts of the Port of Long Beach and its tenant companies as they implement the goals of the Green Port Policy, a framework established to guide environmentally friendly Port operations which includes employing the best available technology to avoid or reduce environmental impacts. PTLA-1

Therefore, PortTech applauds Mitsubishi Cement Corporation on its effort to continued commitment to improving efficiency while meeting the highest standards of environmental protection through the implementation of: shore-to-ship power; emission control systems for ship auxiliary generators; and reduced idle/wait times for trucks and ships.

PortTech Los Angeles is a commercialization center and incubation program dedicated to creating sustainable technologies for ports and beyond. The organization brings together entrepreneurs, strategic partners and investors to accelerate innovation, advance clean technologies and create economic opportunities. PortTech promotes and facilitates the development of technologies that enable enterprises to meet their environmental, energy, safety / security and transportation goals. PTLA-2

PortTech is a 501(c)(3) non-profit organization and a cooperative effort of the City of Los Angeles, the Ports of Los Angeles and Long Beach, and Harbor Area business communities.

Best Regards,

Stan Tomsic
Executive Director

302 W. 5th Street, Suite 200 • San Pedro, CA 90731 • 310.519.1801 • www.porttechla.org

Comment Letter: Port Tech Los Angeles

Response to Comment PTLA-1

Thank you for your comment. The comment is noted and is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PTLA-2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Regional Hispanic Chamber of Commerce

3515 Linden Avenue Long Beach, CA 90807 – 562-212-2889 – www.RegionalHispanicCC.org

The Regional Hispanic Chamber of Commerce's purpose is to promote and facilitate the economic advancement of the Southern California Business Community, with a focus on empowerment and public advocacy to improve the quality of life in the State of California. RHCC-1

Many of our members are involved in the construction and building industries. They rely on a steady and certain supply of concrete to build their projects, whether they be buildings, roads and bridges.

In 2006, when the demand for cement outstripped its available supply, many of our member's projects were delayed as a result. As we emerge from the recent great recession, it will be vital that the supply of cement be available as to not delay construction projects.

The Mitsubishi Cement Corporation Pier F Terminal Modernization Project will enable the future demand to be fulfilled and will ensure that construction will not be delayed unnecessarily. RHCC-2

In addition is does so in a way that continue its leadership in environmental stewardship through the installation of new gravity fed truck loading facility, an emission control system for when ships cannot plug-in and five-year rolling standard for trucks serving the facility. RHCC-3

For these reasons, we support the Draft Environmental Impact Report, and urge the Board of Harbor Commissioners to adopt the findings of the Port Staff, and approve the project.

Sandy Cajas
Regional Hispanic Chamber of Commerce
President & CEO

Comment Letter: Regional Hispanic Chamber of Commerce

Response to Comment RHCC-1

Thank you for your comment. The comment is noted and is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment RHCC -2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment RHCC -3

The support for the proposed Project is noted. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

The Propeller Club of Los Angeles-Long Beach

P.O. Box 4250, Sunland, CA 91041
Phone: 818.951.2842 * Fax: 818.353.5976
Email: propellerclub.lalb@verizon.net * Website: www.propellerclublalb.org

November 4, 2014

Ms. Heather A. Tomley
Director of Environmental Planning
Port of Long Beach
PO Box 570
Long Beach, CA 90801

Re: Mitsubishi Cement Corp Facility Modification Project Proposal

Dear Ms. Tomley:

The mission of The Propeller Club of Los Angeles-Long Beach is to promote the interests of international commerce, shipping, terminals, transportation and supporting industries including the local government and communities. The Port of Long Beach has played an important role in helping our organization realize its mission. Our members, including key stakeholders and local citizens, rely on the success of the Port of Long Beach for their livelihoods. PC-1

We urge the Port of Long Beach and its Board of Harbor Commissioners to support the **Facility Modification Project** proposed for the Mitsubishi Cement Corporation import terminal at Pier F in Long Beach, California.

Our twin ports of Los Angeles-Long Beach are the driving economic force in Southern California and we need to help not only the ports of Los Angeles and Long Beach, but the businesses within the ports. The expansion of this operation will further maximize the assets of the Port of Long Beach, increasing direct jobs, and helping support other jobs by providing cement, one of the basic ingredients in both commercial and residential construction, to the local economy in a more cost effective and efficient manner. PC-2

We note that in its Draft Environmental Impact Report Mitsubishi Cement Corporation fully supports the Port of Long Beach's environmental programs by increasing cargo throughput while at the same time decreasing harmful emissions. PC-3

The Propeller Club of Los Angeles-Long Beach strongly supports this very important project and urges your support and approval.

Sincerely,

Laura Y. Kovary
President

Comment Letter: The Propeller Club of Los Angeles-Long Beach

Response to Comment PC-1

Thank you for your comment, and your support for the proposed Project is noted. The comment is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PC -2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PC -3

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

CALIFORNIA
RESOURCES CORPORATION

P.O. BOX 2900
111 W. OCEAN BOULEVARD, 8TH FLOOR
LONG BEACH, CALIFORNIA 90801-2900
TELEPHONE (562) 624-3400
FACSIMILE (562) 624-3299

December 2, 2014

Heather Tomley
Director of Environmental Planning

RE: Mitsubishi Cement facility EIR comments

Dear Heather:

We have completed our review and have two (2) comments as indicated below. We apologize for the late arrival of this input.

1) It is important to our operations to assure the existing East and West access points to the A-1-A drill site remain and are configured to allow the continued level of use. These access areas are indicated as 1 and 2 on the attached diagram. CRC-1

2) Existing access needs to be maintained at the East side of the facility indicated by 3 on the attached diagram. This access is needed to deliver and remove Drilling equipment and other large equipment to the adjacent Pier F Drill Site and to achieve secondary and emergency access and egress to the Pier F Drill Site during wellwork operations or during emergency situations that prevents the normal access and egress. Currently, the diagram shows an 'existing marked fire lane'/'alternate fire apparatus route' that approximates an access route to the site but there is not a designated spur that achieves access at 3. CRC-2

Thank you for your consideration of these issues. Matt Goldman of the Port Staff has also been made aware of the above concerns.

If you have any questions concerning the above comments, please contact Bill O'Toole (562 624-3331) or Rey Navarro (562) 624-3501).

Sincerely,

Bill O'Toole
HSE Manager
California Resources Corporation

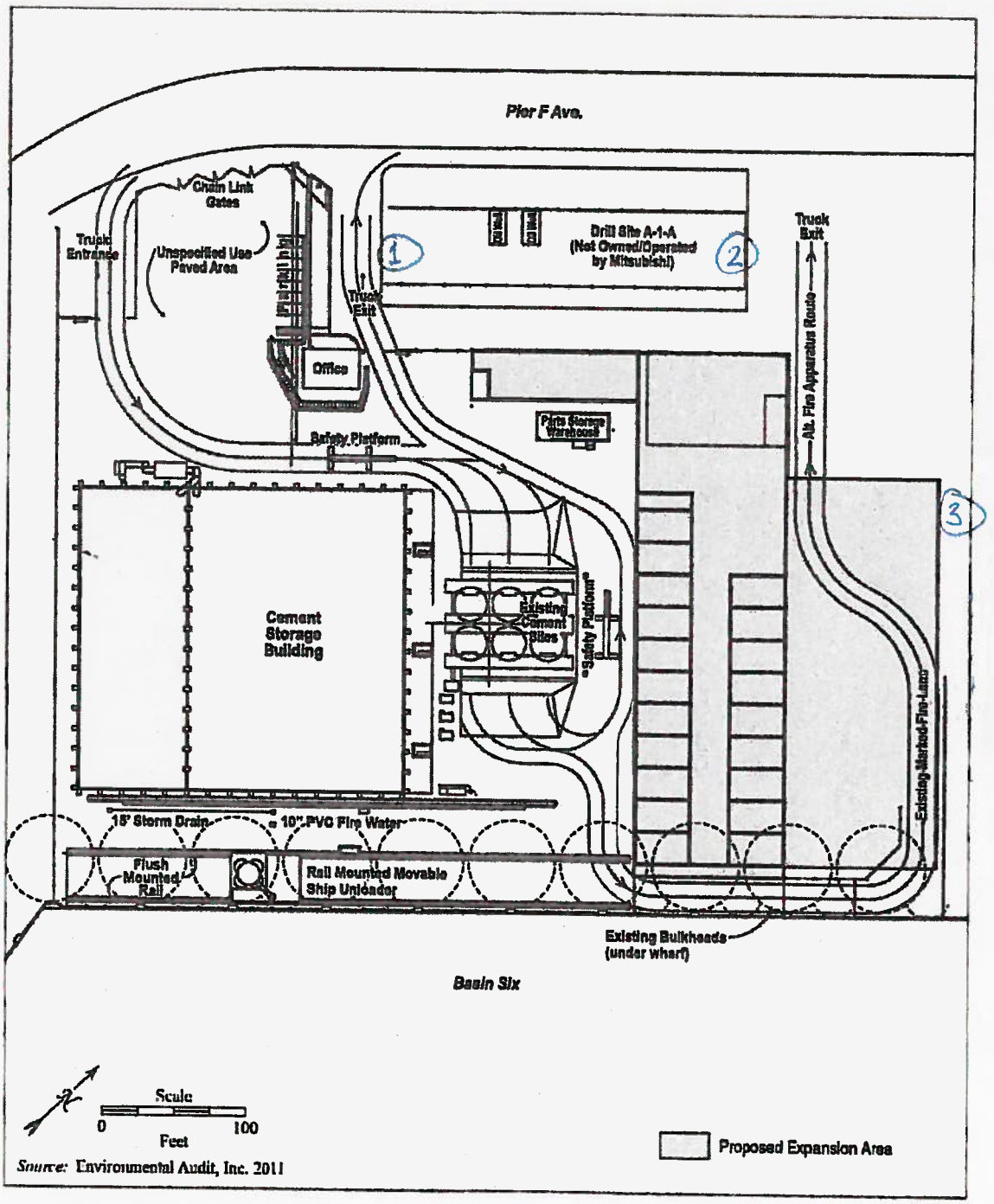

Figure 1.4-1. Existing Site Layout

1. & 2. Entrance and exit into the A-1A site.
3. Entrance to the active Pier F drill site (7 existing slots and potential 30 additional)

Comment Letter: California Resources Corporation

Response to Comment CRC-1

The proposed Project would not physically alter the existing driveways or east and west access points (Locations 1 and 2) adjacent to the A-1-A drill site, as identified in the figure provided by the Commenter. Therefore, there would be no physical impediment to the access points for the A-1-A drill site.

Response to Comment CRC-2

Existing access to the east side of the Pier F Drill Site (Location 3), as identified in the figure provided by the Commenter, is outside the proposed facility boundary. The proposed exit route for the proposed Project would be consistent with the prior traffic that exited the former Pacific Banana facility and should not impede access to Location 3.

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ENVIRONMENTAL AUDIT, INC. ®

1000-A Ortega Way, Placentia, CA 92870-7162
714/632-8521 FAX: 714/632-6754

35th ANNIVERSARY
email: mbaverman@envaudit.com

March 16, 2015

Project No. 2387

Ms. Janna Watanabe
Port of Long Beach
4801 Airport Plaza Drive
Long Beach, CA 90815

Re: MCC Cement Facility Modification Project
Draft EIR SCH No. 2011081098

Dear Ms. Watanabe:

On behalf of Mitsubishi Cement Corporation (MCC), Environmental Audit, Inc. has reviewed the subject document and has the following comment. One component of the air quality analysis for the above-referenced project is the estimate of road dust from trucks driving on the Project site. MCC requests that the Port reconsider the silt loading factor used in this estimate. MCC-1

Table A.1.2-52 shows that the Draft EIR used a silt loading factor of 0.41 g/m^2. We understand that this factor was developed by taking the baseline emissions escaping the dust collectors for the ship unloading/warehouse and the truck loading operations and assuming all of this material is deposited on the terminal site. As such, this factor should be used only in the pre-project emissions estimate because the project will change the quantity of particulate matter escaping the dust collectors ***and*** the size of the site.

Specifically, we understand that the Draft EIR started with the baseline daily cement dust emissions estimated to be 20.3 pounds per day, and assumed that this material settles evenly on the existing terminal area of 4.21 acres. This results in assumed cement dust coverage of 0.54 g/m^2. The Draft EIR then assumes that use of the vacuum would reduce the cement dust coverage by 25%. The literature would support use of a much higher control factor, but use of the 25% control assumption yields a silt loading factor of 0.41 g/m^2.

The Draft EIR applied the same silt loading factor to both pre-project and post-project settings.[1] MCC requests the Port recalculate a second silt loading factor using post-project parameters. Table 3.2-10 shows post-project emissions from Vessel Unloading would be 9.2 pounds per day, and emissions from Truck Loading would be 6.2, for a total of 15.4 pounds per day assumed to be deposited on the terminal site. Not only is this post-project mass less than the pre-project mass (15.4 versus 20.3 pounds per day), the emissions would occur on and be distributed across a larger

[1] See Table A.1.2-52 in Appendix A of the Draft EIR and Note 1 thereto.

MCC-1 site (5.92 acres versus 4.21 acres). Taking this altogether, using post-project information presented in the Draft EIR, Environmental Audit has calculated that the uncontrolled post-project silt loading factor would be 0.29 g/m^2 (15.4 lb/day *453.6 g/lb /(5.92 acres x 43,560 ft^2/acre x 0.093 m^2/ft^2). After applying the same 25% control assumption used in the Draft EIR for vacuuming, the silt loading factor would be 0.22 g/m^2. This is 47 % less than the silt loading factor assumed in the Draft EIR. The proposed recalculation would reduce estimated mass daily emissions, and thus would also reduce the ambient impacts downwind of the facility.[2]

MCC appreciates your consideration of this comment. If you require clarification or additional supporting information, please contact me at714-632-8521 ext. 237.

Sincerely,

Marcia Baverman, P.E.
Project Manager

MRB:ss

cc: Heather Tomley, POLB
Mike Jasberg, Mitsubishi Cement Corp.
Bud Biggs, Mitsubishi Cement Corp.
Eric Jen, Mitsubishi Cement Corp.
Jocelyn Thompson, Alston & Bird, LLP
Maya Grasse, Alston & Bird, LLP

[2] See Figures A-2-6 through A-2-8 in Appendix A; see also Draft EIR p. 3.2-28.

Comment Letter: Environmental Audit, Inc. (MCC)

Response to Comment MCC-1:

This comment was received after the comment period. Nonetheless, the following response is provided. The Commenter states that the on-site road dust silt loading factor for the post-project setting used in the Draft EIR may have overstated the PM10/PM2.5 emissions from that source for operations of the proposed Project and requested that the Port recalculate the silt loading factor used in the estimate. As requested in the comment, the Port recalculated the emissions and ambient PM10/PM2.5 impacts associated with Alternative 1 (proposed Project), with the suggested revised on-site road dust silt loading factor of 0.22 g/m^2 (compared to the value of 0.41 g/m^2 used in the Draft EIR analyses). The results of this recalculation are presented below in the same table format used in the Draft EIR to summarize these data.

The use of the lower on-site road dust silt loading factor would lower PM10/PM2.5 emissions and ambient impacts for Alternative 1 compared to those estimated in the Draft EIR. However, these new results would not change the impact significance determinations for PM10/PM2.5 that were identified in the Draft EIR: mitigated ambient PM10/PM2.5 impacts would exceed their applicable SCAQMD significance thresholds; however, the degree of significance would be less than that presented in the Draft EIR. Tables 3.2-8 through 3.2-13 in the Draft EIR are conservative and are therefore being left in place; however, alternative tables 1 through 6 have been included below for informational purposes. The alternative tables below incorporate changes proposed by MCC for silt loading, which only affect the PM10 and PM2.5 numbers, as well as changes to the calculations made in response to the SCAQMD comments.

Table 1. Peak Daily Emissions from Combined Proposed Project Construction and Operations with Revised On-Site Road Dust Silt Loading Factor

Scenario	Emissions (Pounds per Day)					
	VOC	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Peak Day Construction [a]	6.4	28.4	84.2	0.2	5.3	4.5
Peak Day Operations	81.4	281.0	1,407.7	30.1	167.3	114.5
Total Peak Daily Project Emissions	**87.8**	**309.3**	**1,491.9**	**30.3**	**172.6**	**119.0**
CEQA Baseline Peak Daily Emissions	**60.5**	**171.6**	**1,426.7**	**33.3**	**97.1**	**68.1**
Net Change - Project minus CEQA Baseline	**27.2**	**137.7**	**65.2**	**(3.0)**	**75.5**	**50.9**
SCAQMD Daily Emission Thresholds	**75**	**550**	**100**	**150**	**150**	**55**
Exceed Daily Emission Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: a. In association with project operations, peak daily construction emissions of all pollutants would occur during month 5 of Phase 1 construction.
b. Some totals differ slightly due to rounding errors.

Table 2. Average Daily Unmitigated Operational Emissions from Proposed Project with Revised On-Site Road Dust Silt Loading Factor – Year 2015

Activity	Emissions (Pounds per day)					
	VOC	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Ships – Outer Waters Transit	13.2	30.9	352.7	9.5	5.7	4.6
Ships - Precautionary Area Transit	1.8	4.3	48.4	1.3	0.8	0.6
Ships - Harbor Transit	0.9	1.7	12.4	0.4	0.3	0.2
Ships – Docking	0.8	1.0	6.9	0.2	0.2	0.1
Ships - Hoteling Aux. Sources	1.6	4.0	14.6	4.6	1.4	1.1
Tugboats - Cargo Vessel Assist	0.5	5.9	12.2	0.0	0.3	0.3
Vessel Unloading - Dust					10.8	7.3

Table 2. Average Daily Unmitigated Operational Emissions from Proposed Project with Revised On-Site Road Dust Silt Loading Factor □Year 2015

Activity	Emissions (Pounds per day)					
	VOC	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Payloaders	0.1	0.6	0.2	0.0	0.0	0.0
SCR Duct Burner	0.3	4.2	1.6	0.0	0.4	0.4
Truck Loading - Dust					5.2	3.5
On-road Trucks	31.7	129.2	403.4	0.8	95.7	64.2
Total Average Daily Emissions	**50.9**	**181.9**	**852.5**	**16.8**	**120.7**	**82.2**
CEQA Baseline Average Daily Emissions	**17.2**	**55.1**	**412.0**	**10.5**	**53.1**	**36.4**
Net Change - Proposed Project minus CEQA Baseline	**33.7**	**126.8**	**440.6**	**6.3**	**67.7**	**45.8**
SCAQMD Daily Emission Thresholds	**55**	**550**	**55**	**150**	**150**	**55**
Exceed Daily Emission Threshold?	**No**	**No**	**Yes**	**No**	**No**	**No**

Notes: Some totals differ slightly due to rounding errors.

Table 3. Peak Daily Unmitigated Operational Emissions from Proposed Project with Revised On-Site Road Dust Silt Loading Factor □Year 2015

Activity	Emissions (Pounds per day)					
	VOC	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Ships - Outer Waters Transit	24.3	57.0	649.9	17.5	10.5	8.4
Ships - Precautionary Area Transit	3.3	7.8	89.1	2.5	1.5	1.2
Ships - Harbor Transit	2.1	3.5	23.1	0.6	0.5	0.4
Ships – Docking	1.4	1.8	12.7	0.3	0.3	0.2
Ships - Hoteling Aux. Sources	3.9	10.4	26.9	7.7	2.9	2.3
Tugboats - Cargo Vessel Assist	1.6	14.0	35.3	0.4	0.8	0.7
Vessel Unloading - Dust					9.2	6.2
SCR Duct Burner	0.3	4.2	1.6	0.0	0.4	0.4
Truck Loading - Dust					6.2	4.2
On-road Trucks	44.7	182.3	569.0	1.1	135.0	90.5
Total Peak Daily Emissions	**81.4**	**281.0**	**1,407.7**	**30.1**	**167.3**	**114.5**
CEQA Baseline Peak Daily Emissions	**60.5**	**171.6**	**1,426.7**	**33.3**	**97.1**	**68.1**
Net Change - Proposed Project minus CEQA Baseline	**20.9**	**109.3**	**(19.0)**	**(3.2)**	**70.2**	**46.4**
SCAQMD Daily Emission Thresholds	**55**	**550**	**55**	**150**	**150**	**55**
Exceed Daily Emission Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: Some totals differ slightly due to rounding errors.

Table 4. Average Daily Mitigated Operational Emissions from Proposed Project with Revised On-Site Road Dust Silt Loading Factor □Year 2015

Activity	Emissions (Pounds per day)					
	VOC	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Ships – Outer Waters Transit	13.2	30.9	352.7	9.5	5.7	4.6
Ships - Precautionary Area Transit	1.8	4.3	48.4	1.3	0.8	0.6
Ships - Harbor Transit	0.9	1.7	12.4	0.4	0.3	0.2
Ships – Docking	0.8	1.0	6.9	0.2	0.2	0.1
Ships - Hoteling Aux. Sources	1.6	4.0	14.6	4.6	1.4	1.1
Tugboats - Cargo Vessel Assist	0.5	5.9	12.2	0.0	0.3	0.3
Vessel Unloading - Dust					10.8	7.3
Payloaders	0.1	0.6	0.2	0.0	0.0	0.0
SCR Duct Burner	0.3	4.2	1.6	0.0	0.4	0.4
Truck Loading – Dust					5.2	3.5
On-road Trucks	16.4	66.6	169.4	0.8	93.4	62.1
Total Average Daily Emissions	**35.6**	**119.2**	**618.6**	**16.8**	**118.5**	**80.1**
CEQA Baseline Average Daily Emissions	**17.2**	**55.1**	**412.0**	**10.5**	**53.1**	**36.4**
Net Change - Proposed Project minus CEQA Baseline	**18.4**	**64.1**	**206.6**	**6.3**	**65.4**	**43.7**
SCAQMD Daily Emission Thresholds	**55**	**550**	**55**	**150**	**150**	**55**
Exceed Daily Emission Threshold?	**No**	**No**	**Yes**	**No**	**No**	**No**

Table 5. Maximum Ambient Pollutant Impacts with Revised On-Site Road Dust Silt Loading Factor □ Unmitigated Operations from Proposed Project

Pollutant	Averaging Time	Maximum Impact from Unmitigated Project Emissions (µg/m³)	Background Pollutant Concentration (µg/m³) [a]	Total Maximum Unmitigated Project Impact (µg/m³) [b]	SCAQMD Significance Threshold (µg/m³)
NO_2	1-hour	**276**	58	**334**	188
	Annual	7	38	45	57
CO	1-hour	101	4,715	4,816	23,000
	8-hour	42	3,910	3,952	10,000
		Maximum Impact from Unmitigated Project Emissions (µg/m³)	**Maximum Impact from CEQA Baseline Emissions (µg/m³)**	**Maximum CEQA Increment (µg/m³) [b]**	**SCAQMD Significance Threshold (µg/m³)**
PM_{10}	24-hour	11.70	6.23	**5.47**	2.5
$PM_{2.5}$	24-hour	7.84	4.32	**3.52**	2.5
PM_{10}	Annual	4.08	1.28	**2.80**	1.0

Notes:

a. Background CO data obtained from the highest values recorded at either the POLB Superblock Inner Harbor or Gull Park Outer Harbor monitoring stations for the period of 2011 through 2013. The one-hour NO2 background value equates to value associated with maximum combined project impact plus background value identified in the Ozone Limiting Method (OLM) analysis associated with the 9/06 thru 8/07 period of record for the meteorological data used in the analysis. Background annual NO2 value obtained from the highest values recorded at the Gull Park monitoring station for the period of 2011 through 2013.

b. Exceedance of a threshold is **indicated in bold**. The thresholds for NO_2 and CO apply to the sum of Impacts from Project Emissions plus Background Pollutant Concentrations. The thresholds for PM_{10}/$PM_{2.5}$ are incremental and apply to Impacts from Project Emissions minus CEQA Baseline Emissions.

Table 6. Maximum Ambient Pollutant Impacts with Revised On-Site Road Dust Silt Loading Factor □ Mitigated Operations from Proposed Project

Pollutant	Averaging Time	Maximum Impact from Mitigated Project Emissions (µg/m³)	Background Pollutant Concentration (µg/m³) [a]	Total Maximum Mitigated Project Impact (µg/m³) [b]	SCAQMD Significance Threshold (µg/m³)
NO_2 [c]	1-hour	81	171	**252**	188
		Maximum Impact from Mitigated Project Emissions (µg/m³)	**Maximum Impact from CEQA Baseline Emissions (µg/m³)**	**Maximum CEQA Increment (µg/m³) [b]**	**SCAQMD Significance Threshold (µg/m³)**
PM_{10}	24-hour	11.62	6.23	**5.39**	2.5
$PM_{2.5}$	24-hour	7.79	4.32	**3.47**	2.5
PM_{10}	Annual	4.03	1.28	**2.75**	1.0

Notes:

a. Background air pollutant data were obtained from the highest values recorded at either the POLB Superblock Inner Harbor or Gull Park Outer Harbor monitoring stations for the period of 2011 through 2013.

b. Exceedance of a threshold is **indicated in bold**. The threshold for NO_2 applies to the sum of Impacts from Project Emissions plus Background Pollutant Concentrations. The threshold for PM_{10} is incremental and applies to Impacts from Project Emissions minus CEQA Baseline Emissions.

c. NO_2 concentrations based on emission source to maximum impact location distances of either 500 or 1000 m. The NO_x to NO_2 emission conversion rates for these distances are 25.8 and 46.7 percent (SCAQMD 2008b). This is a conservative approach, as the majority of emission sources that contribute to the maximum NO_2 impact are closer than 500 m from this location.

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Caroline Brady

3845 Myrtle Avenue
Long Beach, CA 90807
(5620 208-5407

Heather Tomley
Director of Enviromental Planning
The Port of Long Beach
PO Box 570
Long Beach, CA 90801

October 21, 2014

Dear Ms. Tomley,

As longtime resident of Long Beach, I would like to support Mitsubishi's plan to modernize and expand its cement-loading facilities at the Port of Long Beach. CB-1

This project will help Mitsubishi accommodate a new, larger vacuum uploader, which will make operations faster and more efficient.

The company also has committed to using dockside control systems to scrub emissions for ships that cannot plug in. It is my understanding that the South Coast Air Quality Management District has thoroughly reviewed this project and has issued permits. AQMD's approval satisfies me that Mitsubishi has done all it can to meet strict standards to improve the quality of life for those of us who live and work near the Port of Long Beach. I urge you to approve this project. CB-2

Sincerely,

Caroline D. Brady

Caroline Brady

Comment Letter: Caroline Brady

Response to Comment CB-1

Thank you for your comment, and your support for the proposed Project is noted. The comment is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment CB -2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Betsy Cheek

November 10, 2014

Ms. Heather Tomley, Director of Enviornmental Planning
Port of Long Beach
4801 Airport Plaza Drive
Long Beach, CA 90815

Re: Support for the Mitsubishi Cement Facility

Dear Ms. Tomley,

I am pleased to add my voice to the support for Mitsubishi's Cement Corporation's "Modifications Project" at the POLB Import Facility in Long Beach. As a resident of Long Beach, the decisions made by the Port have a direct impact on our household environmentally and financially. We live in a high-rise downtown and overlook the Port. BC-1

I have toured Mitsubishi's facility at Pier F and think that the Project they have presented and mitigation measures that they have agreed to will benefit the Port and all of the businesses that they serve throughout Southern California.

The modernization of their facility includes reducing the NOx emissions from the ships coming into the port and increasing storage capacity at the facility without increasing facility-wide permitted throughputs. MCC will participate in a demonstration project for diesel particulate filters on the DOCCS system. They will reduce indirect Greenhouse Gas Emissions through reduction of electricity use through conservation and by adopting state-of-the-art technology. BC-2

The Mitsubishi Modifications Project is good for the environment and the economy. Mitsubishi was founded in 1988 and they are a leader in the cement industry. The numerous awards that they have received underscore their ethics and concern for our community as they increase capacity, improving our air quality and providing jobs. BC-3

If you have any questions, please do not hesitate to contact me. I can be reached by email at either betsycheek@aol.com or bcheek@DNXEGINEERS.COM or by phone at 714.746.8518, Thank you for your consideration.

Sincerely,

Betsy Cheek

Betsy Cheek

400 West Ocean Blvd. #1503, Long Beach, CA 90802 • betsycheek@aol.com • 714.746.8518

Comment Letter: Betsy Cheek

Response to Comment BC-1

Thank you for your comment, and your support for the proposed Project is noted. The comment is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment BC -2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment BC -3

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

DNX ENGINEERS Ltd.

November 10, 2014

Heather Tomley
Director of Environmental Planning
Port of Long Beach
4801 Airport Plaza Drive
Long Beach, CA 90815

Dear Ms. Tomley:

As a resident of downtown Long Beach, I wish to express my support for the Mitsubishi Cement Facility Modification project. I have toured the Pier F facility and I have a good understanding of what the project entails. It improves the efficiency of the facility without increasing the permitted throughput which reduces the electricity that has to be generated somewhere. The Facility Modification Project employs a Dock-side emission control system to mitigate any emissions from the docked ships not replaced by shore power. RMC-1

Mitsubishi has also offered other mitigating measures such as the expanded Vessel Speed Reduction Program and the exclusive use of clean trucks to serve the facility. Mitsubishi has worked for several years to satisfy the requirements to improve the efficiency of their facility while causing no increase in emissions. It is time for this project to be approved. RMC-2

Thank you,

Ronald M. Cheek, PE
DNX ENGINEERS, Ltd.

Comment Letter: Ronald Cheek

Response to Comment RMC-1

Thank you for your comment, and your support for the proposed Project is noted. The comment is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment RMC -2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

George Cunningham

471 Medford Court #102 Long Beach CA 90803

Heather A. Tomley
Director of Environmental Planning
Port of Long Beach
PO Box 570
Long Beach CA 90801

November 16, 2014

Dear Ms. Tomley:

I strongly support Mitsubishi Cement Corporation's Plan to modify its cement import facility at the Port of Long Beach. The recovery of the economy and the anticipated need for concrete for both infrastructure and private development is indeed happy news. Preparing to meet that demand with an upgraded terminal, additional storage, and the use of environmental technology and practices is to be applauded. GC-1

Such a project will create jobs, both during development of the project and through the availability of product for the construction industry. The use of cold-ironing for ships so equipped and a scrubber to clean the emissions of ships not equipped to accept shore power are big steps forward. Ensuring alternative strategies for cleaning the air is a positive thing, especially in real-world situations in which all vessels are not equipped with the latest technology. GC-2

The company's commitment to reducing vessel speed within 40 nautical miles of the port and to the use of clean, late-model trucks to move the product from the port will also do much to ensure a sustainable operation. The expanded storage capability and the new and modified uploading equipment should minimize the time the vessel spends in port and the emissions resulting from that stay. GC-3

I think it's clear that the Mitsubishi project is a solid step forward, and I urge its approval. We need this project.

Sincerely,

George Cunningham

Comment Letter: George Cunningham

Response to Comment GC-1

Thank you for your comment, and your support for the proposed Project is noted. The comment is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment GC -2

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment GC -3

The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

From the Desk of:

Dennis C. Lord

November 10, 2014

Heather Tomley
Director of Environmental Planning
The Port of Long Beach
PO Box 570
Long Beach, CA 90801

Dear Ms. Tomley,

It is my understanding that the Mitsubishi Cement Corporation has an upcoming business item before your Commission that warrants a decision on going forward with their proposed emissions mitigation measures. DCL-1

As the former governmental affairs liaison to the Ports for So Cal Gas, I am familiar with Port initiatives and business needs. In reviewing the high level documents for this project and finding no large-scale opposition to improving air quality, I lend my support to the reduction of air emissions by ships and heavy duty vehicle idling at the Mitsubishi terminal.

Given this, I strongly urge the Board to move the air quality issues, as defined by the San Pedro Bay Clean Air Action Plan, forward by approving this project. Every project has the effect of producing tangible results towards your, and the community's, goal of clean air attainment. DCL-2

Respectfully,

Dennis C. Lord

Comment Letter: Dennis C. Lord

Response to Comment DCL-1

Thank you for your comment. The comment is noted and is hereby part of the Final EIR, and is therefore before the decision-makers for their consideration prior to taking any action on the proposed Project. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment DCL -2

The support for the proposed project is noted. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

STATE OF CALIFORNIA - COUNTY OF LOS ANGELES

PORT OF LONG BEACH - ENVIRONMENTAL PLANNING

DRAFT ENVIRONMENTAL IMPACT REPORT

PUBLIC HEARING

MCC CEMENT FACILITY MODIFICATION PROJECT

Wednesday, October 22, 2014
Long Beach City Council Chambers
333 West Ocean Boulevard
Long Beach, California

PRESENTER:

HEATHER TOMLEY, DIRECTOR OF ENVIRONMENTAL PLANNING

REPORTED BY: Katherine Henry-Sexton, CSR No. 13662

SPEAKERS: PAGE

WEDNESDAY, OCTOBER 22, 2014, LONG BEACH, CALIFORNIA

6:30 P.M.

* * *

MS. TOMLEY: Good evening, everyone. We'll go ahead and get started. It's 6:30. Welcome to the Mitsubishi Cement Company Facility Modification Project public hearing. My name is Heather Tomley, and I'm the director of environmental planning for the Port of Long Beach. We're here tonight to take public comments on the proposed MCC Facility Modification Project.

To make our presentation as accessible as possible, we have a sign language interpreter and a Spanish language translation service available. If there's anyone that would like to use either of these services, please let us know at this time. We'll begin by making a brief presentation summarizing the project, and then we'll call by name the folks that have signed up on public speaker cards. If you would like to make a comment and have not completed a card, please do so. They're available at the registration table.

Each speaker will be allowed three minutes at the podium, and we ask that you complete the cards

and provide those to us. We also have a court reporter here tonight to create a transcript of the hearing and capture all the comments that are received. So when you do provide public comment, we ask that you speak clearly.

The purpose of tonight's meeting is to present the proposed project and it's alternatives, to describe the impacts associated with the project and to receive your comments. The Port of Long Beach is the lead agency under the California Environmental Quality Act, or CEQA. CEQA regulations require that we prepare an environmental impact report or EIR for the proposed project.

In addition, the Port has been given the responsibility of implementing the Coastal Act within the Harbor District. Just as importantly, or even more so, the process is aimed at gathering public comments to make sure that we give the public an opportunity to express their questions and concerns and that we respond to those comments in the final EIR. The Port will also use comments received here along with any written comments to inform decision makers of any concerns that you may have.

The proposed project is located at MCC's existing cement import facility at 1150 Pier F Avenue

in the Southeast Harbor Planning District. The existing facility is bordered by Pier F Avenue and Long Beach Container Terminal to the north and northwest, Chemoil Marine Terminal to the east, the Southwest Basin to the south and Crescent Terminals to the west. Adjacent to the facility is the former Pacific Banana site. That site is vacant and is proposed to be leased to MCC for the proposed project.

At its existing Pier F facility, Mitsubishi Cement receives bulk cement by ship, stores the product in a warehouse and loading silos and loads the project onto customer trucks for delivery to local and regional concrete batch plants. The existing facility has South Coast Air Quality Management District permit limits for throughput: A ship unloading limit of 8.76 million metric tons per year or 9.66 million short tons per year and truck loading limit of 3.8 million short tons per year. The proposed project would not modify the permitted unloading and loading limits.

The existing AQMD permit for ship unloading includes a requirement that all vessels at berth use shore-side electric power instead of auxiliary engines onboard the ship while unloading. However, not all vessels that call at the facility are

able to use shore power the entire time while at berth.

In addition, there is a need at the facility for additional storage capacity to minimize inefficiencies due to irregular ship deliveries and fluctuations in cement demand. Since cement deliveries to the facility are ordered months in advance, changes in the demand for cement can occur after the order has been placed. There have been periods when the warehouse was full and ships calling at the facility could not unload upon arrival. The vessels had to wait at berth or anchor until sufficient warehouse capacity was available for the ship to offload the entire ship's load.

The key project purpose, needs and objectives are: To upgrade existing facilities to improve operational efficiency and provide 40,000 metric tons of additional storage capacity to meet future cement demand in the Los Angeles region; install an emission control system known as DoCCS to reduce at-berth nitrogen oxide or NOx emissions from ship auxiliary generator engines when vessels are not using shore power; and modify the AQMD permit for bulk cement ship unloading, which currently requires shore power for ships at berth, modify it to allow either shore power or venting on-vessel generators to the DoCCS emission

control equipment.

To accomplish these project objectives, MCC is proposing to modify its existing cement import facility. The proposed project involves several aspects: First, installing a dockside catalytic control system or DoCCS. This a moveable at-berth emission control system consisting of approximately a 65-foot crane arm and capture hood or bonnet. The system captures and reduces NOx emissions using a selective catalytic reduction system or SCR. The SCR system is designed to remove at least 90 percent of NOx emissions from vessels while at berth.

Second, constructing additional storage -- four 10,000 metric ton direct loading concrete cement silos and two new truck lanes beneath the silos will be constructed as a part of the proposed project. Silos will be approximately 60-foot in diameter and 160 feet in height. The silos will be built on the former Pacific Banana facility property, which is currently vacant and is proposed to be leased to Mitsubishi.

Third, upgrading ship cement unloading equipment and other landside structures -- the existing cement unloader will be upgraded and a new cement unloader will be installed. The dockside crane

rail for the unloader will be extended, and the wharf structure and the backlands will be reinforced. Wharf structure improvements do not involve any in-water work.

Based on the capacity study, the maximum throughput the facility could accommodate after the modifications is approximately 4.2 million metric tons of cement, 99 vessel calls per year and 166,400 annual truck trips.

Under CEQA we are required to examine a range of alternatives that meet all or some of the objectives for this project. In addition to the proposed project, Alternative 1, we have analyzed Alternative 2, which is a reduced throughput alternative. The reduced throughout alternative would be the same as the proposed project except that only two cement silos and one additional truck lane would be constructed. The benefit of the reduced project alternative is less product and construction emissions. However, additional storage capacity would be reduced.

We also analyzed a no project alternative. Under this alternative no construction and, consequently, no construction-related impacts would occur. There would be no installation of an at-berth emissions control system, construction of additional

storage and truck loading equipment or upgrades to ship unloading equipment and other landside structures.

Since this is an existing facility, the facility could operate without the modifications. However, this alternative the existing of AQMD permit for bulk cement ship unloading would not be modified. Therefore, all vessels would be required to use shore power while unloading in order to comply with existing AQMD permit conditions. Many vessels are unable to unload completely while using shore-to-ship power because the payloader used for final stages of unloading cannot be lowered into the hold without the vessel's auxiliary generators running to operate the ship's crane. Those vessels would need to be unloaded at another location.

No project alternative assumes that vessels would on average be unable to unload the final 20 percent of their cargo at the MCC facility and would have to move to another cement terminal either at the Port of Long Beach or another port to complete unloading.

Since other cement terminals are not subject to the same AQMD permit conditions, including the requirement to use shore power, additional emissions would occur from the extra vessel movements

and unloading operations. Also, truck trips associated with the cement that could not be unloaded at MCC's facility would still occur, but at a different location other than the Port of Long Beach -- other than the Port of Long Beach or the Los Angeles Basin.

The EIR evaluates the potential impacts related to geology, groundwater and soils, air quality and health risk, global climate change, hydrology and water quality, biological resources and habitats, vessel transportation, noise, hazards and hazardous materials, ground transportation and utilities and service systems. All other issue areas were determined to have either no impact or less than significant impacts at the NOP stage and were not further analyzed in the Draft EIR.

Impacts that were identified as significant and unavoidable are: Air quality -- operational air emissions on a project and cumulative impact level would exceed the regional AQMD daily emissions thresholds of significance for NOx and ambient thresholds for one-hour NO2, 24-hour PM10 and PM2.5 and annual PM10. Construction air emissions on a cumulative impact level would exceed AQMD thresholds. Mitigation measures such as the modernization of the

truck fleet, diesel particulate filter for the at-berth emission control system demonstration project and use of Tier 4 construction equipment will reduce project impacts, but they will remain significant and unavoidable.

Another area that's been identified is global climate change -- the total annualized greenhouse gas emissions generated from the proposed project construction and operation would be above the AQMD significance threshold of 10,000 metric tons carbon dioxide equivalent per year for industrial land uses. Mitigation measures such indirect greenhouse gas emission reduction avoidance measures, energy audit and contribution to the Port's greenhouse gas mitigation grant program will be required for the proposed project, but impacts will remain significant and unavoidable.

And another area that's been identified is biological resources -- disruption to biological communities on a cumulative impact level in regards to invasive species and offshore whale strikes. No feasible mitigation measures are available beyond compliance with existing Federal, State and Port rules and regulations. Therefore, the cumulative impact to biological resources will remain significant and

unavoidable.

On October 3rd the Port released the draft EIR for public review and comment. The public will have until November 18th to submit comments. At the end of the presentation tonight I'll put up a slide with our contact information for submitting comments. We will respond to all of the comments, publish them in a final EIR and notify all of the commenters that the final document is available.

The Port's governing body, the Long Beach Board of Harbor Commissioners, will then determine if the final EIR meets the requirements of CEQA; and if so, whether or not to approve the project. If the Board of Harbor Commissioners elects to approve a project, they would then approve a new lease for MCC and issue a permit pursuant to the Coastal Act.

Tonight you will have the opportunity to comment on the merits of the proposed project and the environmental document. You may speak tonight, hand in your written comments, or both. We strongly encourage you to submit your comments in writing. Written comments will be accepted until November 18th, 2014, at 4:30 p.m. Written comments should be sent to me, Heather Tomley, Director of Environmental Planning, at the Port of Long Beach at 4801 Airport Plaza Drive

in Long Beach, California 90815.

I thank you for your attention and your patience, and now we'll take your comments. Please note that we're hear to listen tonight and to gather comments and will not be responding to any of those comments tonight. If you'd like to speak, again, please fill out a speaker card. And if you need one, you can raise your hand, and we can bring one to you.

Now we'll begin, and I apologize if I can't get the pronunciations of these names exactly correct. So I appreciate your patience with that. The first speaker that we have is Mark Hirzel followed by Sandy Cajas.

MR. HIRZEL: Good evening. Mark Hirzel from the Los Angeles Customs Brokers & Freight Forwarders Association. We wanted to speak in favor of Alternative 1. We believe that the Board has been a leader in continuing to increase throughput and also with concern to the environment. This is going to only help our economy both regionally and nationally, and we believe that additional international trade and imports is going to be a jobs multiplier for the region which is still in need of recovery. PT-1

MS. TOMLEY: Thank you for your comments. Sandy Cajas followed by Randy Gordon.

PT-2

MS. CAJAS: Good evening. My name is Sandy Cajas. I am president of the Regional Hispanic Chamber of Commerce based here in the City of Long Beach, California. We support the modernization of the Mitsubishi Terminal and are impressed by the environmental standards that they have set. Many of the Regional Hispanic Chamber of Commerce members are construction companies that rely on the supply of cement to build roads, buildings and infrastructures.

In 2007 there was a world shortage of cement, and projects were delayed which meant jobs were lost. It is vital to our membership that we have an adequate supply of cement so that we can keep moving jobs forward. Thank you, very much.

MS. TOMLEY: Thank you very much for your comments. Randy Gordon followed by Mike Crehan.

PT-3

MR. GORDON: Hi, my name is Randy Gordon. I'm president and CEO of the Long Beach Area Chamber of Commerce. On behalf of the Chamber we strongly support Mitsubishi Cement Corporation's modernization project at the import facility site at Pier F. We understand that Mitsubishi Cement will increase the size of its current location onto the vacant of area, the former Pacific Banana Terminal while retrofitting the berth with new state of the art technologies.

This will include a larger, yet more efficient and more environmentally friendly vacuum unloader along with the construction of new storage facilities. As you know, Mitsubishi Cement also has plans to retrofit an existing vacuum unloader to current efficiency standards, again, being environmentally conscious. Many of the main points that revolve around the modernization project include the creation of jobs and while maintaining the highest in environmental standards in the industry. PT-3

In fact, the project calls for a first in the commercial installation of a dockside emission control system for ship emissions when ships cannot plug in. Mitsubishi Cement is investing over $40 million in private capital improvements in order to prepare for future cement demand in our state, which in turn will support the rebound of the construction industry. This additional storage coupled with the upgrading of the unloaders will reduce ship unloading times and improve terminal efficiencies, all the while reducing demerge and time and berth, further reducing greenhouse gas emissions. PT-4

This privately funded modernization project will create jobs, create efficiency within the terminal and prepare Mitsubishi Cement for future PT-5

PT-5 growth in a sustainable environmentally friendly manner. Thank you for the opportunity to address you tonight.

PT-6 MS. TOMLEY: Thank you for your comments. Mike Crehan followed by William Lyte.

MR. CREHAN: Good evening, Mike Crehan. I'm representing the Harbor Association of Industry and Commerce. We have about 100 companies in our group and organization representing about 400,000 employees throughout the ports communities. We're strongly in favor of the project going forward. It's exactly the kind of project we're always looking for. It's environmentally sensitive. It's keeping jobs in our PT-7 community. It's providing not only an expansion of PT-8 the facility, which is really more to keep up with the demand that's going to be required for our community and for our construction efforts in the next few years, but it also is doing it for efficiency so that environmentally we will have a lot of improvements for the processes that are going through. So thank you for your time.

MS. TOMLEY: Thank you very much. William Lyte followed by John Schafer.

PT-9 MR. LYTE: Good evening. My name is William Lyte. I'm here representing the Propeller Club as a

member of the board of directors. Propeller Club is a worldwide shipping organization. Most of the tenants of both ports are members of our organization. We've followed this project since it was presented to our board earlier this year. It was unanimously approved. PT-9

We felt it was a very well-thought out project. Mitsubishi Cement has won the Port's cleaner action award. As Mr. Gordon mentioned, every element of environmental sustainability is incorporated into this project. And as Ms. Cajas has stated, we do need the cement. And I'd like to emphasize we have some of the largest building projects in the world underway right here in Los Angeles County, whether it's transits or airports, even renewable energy projects right here in the ports, and none can be built without cement. We fully support this project. Thank you very much.

MS. TOMLEY: Thank you very much for your comments. John Schafer followed by Don Rodriguez. PT-10

MR. SCHAFER: Good evening. My name is John Schafer. I have written comments. I'll just read off of it. I'm the business manager, financial secretary of the power drivers, Local 2375. Like many of our nearly 900 brothers and sisters, I am a life-long local resident. We are affiliated with the 45,000

PT-10 member strong Southwest Regional Council of Carpenters.

I'm writing to you today in order to state our support for the Port of Long Beach Mitsubishi Cement Facility Modification Project's Environmental Impact Report. The project is necessary not only because of the immediate jobs it will create, but the long-term service its product will provide to the country.

PT-11 For over 100 years our members have dredged the harbor, built the breakwater, provided the shoring, built the docks, piers and bridges, and dove to place the power and resource lines. Those who have studied the Port will tell you that very few know it better than our current or former workers. We know that this project will benefit all of us.

PT-12 MCC has proven to us that not only are these modifications necessary to improve its efficiency, but they've also taken the time and expense to utilize the latest technological advances in order to provide a cleaner environment for its business and their workers. This will not only benefit our generation, but the generations to come. They will plug in wherever and wherever possible. They will serve as a testing ground for the latest innovations.

The nation's infrastructure is dilapidated, according to experts along the entire political spectrum, particularly in California. Most of the roads, bridges, water systems and power sources have not been fully repaired for half a century. Many alternative sources of energy have just begun to be installed. Finally, with the onset of global warming, structures will need to be reinforced to protect us from the predicted atmospheric and geologic swings. PT-13 PT-14

MCC and its facility will provide a vital resource to address these needs. Together we will all be a big part of the solution. As citizens and seasoned craftspeople, we ask you to do your part and approve this project. Thank you, very much.

MS. TOMLEY: Thank you, very much.

MR. RODRIGUEZ: Don Rodriguez, CEO of Boys and Girls Club of Long Beach. We're in support of the project. Mitsubishi Cement has been a strong supporter in the community, being by one of our sites on the west side. It will also help in bringing in jobs and also for a cleaner environment. We're in support of the project. PT-15

MS. TOMLEY: That was all of the speakers that I received cards for. Is there anyone else that would like to make a comment? With that, we thank

everyone for your participation tonight and for being involved with the process. If you do have written comments, we do encourage you to submit them before the November 18th deadline. And if you parked in the parking structure, we do have validation upfront at the registration table. So please get your parking cards validated. Thank you, very much.

(Proceedings concluded at 6:55 p.m.)

-o0o-

REPORTER'S CERTIFICATE

I, the undersigned Certified Shorthand Reporter, holding a valid and current license issued by the State of California, do hereby certify:

That said proceedings were taken down by me in shorthand at the time and place therein set forth and thereafter transcribed under my direction and supervision.

I further certify that I am neither counsel for nor related to any party to said action, nor in any way interested in the outcome thereof.

The dismantling, unsealing, or unbinding of the original transcript will render the Reporter's certificate null and void.

IN WITNESS WHEREOF, I have subscribed my name on this date: October 30, 2014.

_____

Certified Shorthand Reporter

Comment: Public Transcript

Response to Comment PT-1

Thank you for your comment, and your support for the proposed Project is noted. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-2

Thank you for your comment, and your support for the proposed Project is noted. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-3

Thank you for your comment, and your support for the proposed Project is noted. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-4

Thank you for your comment. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-5

Thank you for your comment. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-6

Thank you for your comment, and your support for the proposed Project is noted. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-7

Thank you for your comment. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-8

Thank you for your comment. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-9

Thank you for your comment, and your support for the proposed Project is noted. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-10

Thank you for your comment, and your support for the proposed Project is noted. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-11

Thank you for your comment. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-12

Thank you for your comment. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-13

Thank you for your comment. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-14

Thank you for your comment. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

Response to Comment PT-15

Thank you for your comment, and your support for the proposed Project is noted. The comment is general and does not reference any specific section of the Draft EIR, therefore no further response is required under CEQA (PRC Section 21091(d); CEQA Guidelines Section 15204(a)).

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Appendix A

Air Quality/Health Risk Assessment, Global Climate Change

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Appendix A-1

Criteria Pollutant Emission Estimates
Port of Long Beach MCC Cement Facility Modification Project

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APPENDIX A-1
AIR EMISSIONS ESTIMATED FOR THE MCC CEMENT FACILITY MODIFICATION PROJECT

1.0 INTRODUCTION

This appendix describes the methods used to estimate air pollutant emissions that would occur from construction and operation of the proposed MCC Cement Facility Modification Project. This documentation includes descriptions of the (1) construction and operational scenarios evaluated in the analysis and (2) assumptions and methodologies used to develop the emission calculations. This documentation separates emissions data into criteria pollutants and greenhouse gases (GHG). The following attachments to Appendix A-1 include emission calculations data in tabular form for each Project scenario and activity:

1. Attachment A.1.1 – Construction Emission Calculation Tables.
2. Attachment A.1.2 – Operations Emission Calculation Tables.

Each of these attachments includes a table of contents that lists the title of each table presented in the document.

1.1 EMISSION CALCULATION METHODOLOGIES

Air pollutant emissions from proposed construction and operational activities were calculated using the most comprehensive emission factors and methods, then compared to the thresholds identified in EIR Section 3.2.2.1 to determine their significance. For impacts that exceed a significance criterion, mitigation measures were applied to Project activities to determine their ability to reduce impacts to less than significant levels.

1.1.1 Criteria Pollutants

Construction Emissions

MCC proposes a multi-phased approach to construction of cement silos and associated truck lanes that would depend on economic conditions and demand for cement. The air quality analysis assumes that construction of the Full Expansion Project (Alternative 1) would occur according to the Scenario 1 construction approach. This scenario was chosen, as would produce the highest peak daily emissions of any construction scenario. This scenario would be developed according to the following schedule:

- Phase 0 – site and ground preparation consisting of removing the semi-permeable pavement temporarily installed when the Pacific Banana Building was demolished, initial grading, reinforcement of material behind the bulkheads, pile driving for silo foundations, and mat installation. Phase 0 would occur for about 6 months.
- Phase 1 – construction of the first two silos and the associated truck lane. Phase 1 would occur for about 12 months.
- Phase 2 – construction of the second two silos and the associated second truck lane. This phase also would occur for about 12 months.

Development of the Reduced Expansion Alternative (Alternative 2) would not construct Phase 2.

Proposed construction activities would require the use of diesel-powered off-road construction equipment and on-road trucks and worker commuter vehicles that would produce combustive emissions in the form of VOC, CO, NOx, SOx, and PM_{10} and $PM_{2.5}$. Equipment and trucks traveling over unpaved surfaces and performing grading and earthmoving activities also would generate fugitive dust emissions in the form of PM_{10} and $PM_{2.5}$.

Equipment usage and scheduling data needed to calculate emissions for proposed construction activities were obtained from MCC (MCC 2009). The following identifies emission factors and assumptions that the analysis used to estimate sources of construction emissions:

1. For off-road construction equipment, use of the cleanest EPA nonroad Tiers 2 and 3 standards and certified CO emission levels (EPA 2004).
2. For on-road haul trucks and worker commuter vehicles, use of emission factors developed from the ARB EMFAC2011 model for year 2015 (ARB 2011).
3. For fugitive dust emissions, factors obtained from the EPA AP-42 document (EPA 1995 and 2011a).

Attachment A.1.1 includes tabulated data and assumptions used to estimate emissions from proposed construction activities.

Operational Emissions

CEQA Baseline MCC Terminal Operations

The existing MCC cement terminal is currently inactive, although it was operational until 2010. Sources associated with these operations included the following:

1. Ocean going vessels (OGVs) that transit within South Coast Air Quality Management District (SCAQMD) waters through the fairway, precautionary area, within the harbor, and maneuvering and docking at berth. Ship emission sources include main propulsion engines, auxiliary engines, and boilers. OGVs that called at the MCC terminal during 2006 achieved a 62 percent compliance rate with the Vehicle Speed Reduction Program (VSRP) that extends out 20 nautical miles (nm) from Point Fermin.
2. Ships hoteling at berth. Sources of hoteling emissions include OGV auxiliary engines and boilers, as the main propulsion engines are not in operation. In 2006, OGVs used on-shore electric power to replace power produced by onboard diesel-powered auxiliary generators (cold-ironing) for 66 percent of the total annual vessel berthing durations. While in cold-ironing mode, the only source of emissions from OGVs is boilers.
3. Tugboats used to assist OGVs between the POLB breakwater and berth (two tugboat assists during an inbound and outbound portion of each ship visit). Tugboat emission sources include main propulsion and auxiliary engines.
4. Wheeled loaders used to payload and clean up residual cement in OGV holds.
5. On-road trucks that deliver cement. Truck emissions occurred from (a) on-terminal driving and idling and (b) off-terminal driving, based upon an average round trip distance of 60 miles between the terminal and facility locations within the South Coast Air Basin (SCAB).
6. Dust generated by trucks while traveling on- and off-terminal on paved roads.
7. Cement dust (particulate matter [PM]) from ship unloaders.
8. Cement dust from bag houses and fabric filters on the cement storage warehouse.
9. Cement dust from the truck loaders.

In 2006 the MCC facility received 1,509,929 short tons of cement from vessels and exported 1,481,824 short tons by truck. This cargo was transported by 35 ship visits and 53,067 truck trips.

The analysis of proposed air quality impacts is based on a comparison of effects from each project alternative to baseline existing conditions (CEQA baseline). The air quality analysis in this EIR uses a CEQA baseline that equates to activities generated by the project terminal in year 2006. However, to develop emissions for the CEQA baseline, the analysis applied emission factors to these activities that would equate to operating conditions in year 2015, as defined by currently adopted rules and regulations. This approach enables a more equitable comparison to impacts from the project alternatives, whose emissions also are defined by year 2015 emission factors. Use of this approach therefore eliminates emission reductions that would be realized by a project alternative solely due to its definition with newer and lower emission factors compared to older and higher ones for the CEQA baseline. The emissions for the CEQA baseline are fixed at 2015 levels for all future analysis years. However, to evaluate cancer risks, the analysis developed CEQA Baseline emissions based on the effects of vehicle fleet turnovers and adopted regulations for a future 70-year period, as discussed further in Appendix A.3 Section 2.0.

Activity data used to estimate emissions from existing operational sources were obtained from MCC, the Project traffic study conducted as part of this EIR (Appendix B), the POLB air emissions inventories (AEIs) for 2006 and 2012 (Starcrest Consulting Group, LLC 2008 and 2013), and air quality analyses associated with recent CEQA documents for proposed terminal development projects in the Port (POLB 2014). Emission factors and assumptions used to estimate existing operational emissions were obtained from:

- The POLB AEIs for vessel sources. The analysis evaluated CEQA baseline and project alternative OGVs with main

engines that comply with the MARPOL Annex VI Tier 1 NOx standard (17.0 g/kW-hr).

- ARB Harbor Craft Regulation, as estimated for the tugboat fleet at the San Pedro Bay Ports (Starcrest LLC 2007);
- Wheeled loaders would attain full EPA nonroad Tier 4 emission standards;
- The ARB EMFAC2011 emissions model for on-road trucks (ARB 2011), based on the average SCAB truck fleet for year 2015 (T7 tractor vehicle class). The Project traffic study provided the truck trips distribution patterns for roadways used by proposed trucks. Trucks speeds evaluated for these roadways were obtained from analyses conducted for the POLB Middle Harbor EIS/EIR (POLB 2009).
- Source tests for point sources of cement dust (MCC 2010).
- AP-42 Section 13.2.1 for dust generated by trucks on paved roads (EPA 2011a). Operations in 2006 used a vacuum sweeper to control road dust generated by trucks while travelling on-site. The analysis assumes that this measure conservatively reduced road dust emissions by 25 percent from uncontrolled levels. AP-42 Section 13.2.1 documents four tests of vacuum sweeping that resulted in an average PM emission control rate of about 33 percent. The SCAQMD identifies a PM emission reduction rate for street sweeping of 16 to 26 percent (SCAQMD 2007). Vacuum sweeping used by the MCC terminal has a higher PM collection and control rate compared to mechanical sweeping. Therefore, the analysis used a PM control rate near the upper value estimated for mechanical sweeping, but less than the value for vacuum sweeping as a conservative approach.

Proposed Future MCC Operations

Air emissions due to future operations proposed for project Alternatives 1 and 2 would occur from most of the emission sources identified for CEQA Baseline operations, but with the following improvements:

- Upgrades to the cement unloaders would increase their unloading rate and thereby would reduce the berthing time of OGVs and their associated hoteling emissions.
- Installation of an emission control system called a dockside catalytic control system (DoCCS) would reduce NOx emissions from ships at berth not in cold-ironing mode by an estimated 88.9 percent from uncontrolled levels (MCC 2010). Vessels would cold-iron at the same rate as the CEQA Baseline scenario, or 66 percent of the total annual vessel berthing durations.
- Upgrades to cement dust collection and air filter systems for the unloaders, cement storage warehouse, and truck loaders would reduce PM emissions from these sources.
- Addition of four cement storage silos.
- Use of wheeled loaders for payloading and clean up of residual cement in OGV holds that would attain EPA nonroad Tier 4 emission standards.

Operational emissions are based upon year 2015 conditions and the assumption that all project future scenarios would achieve full build-out and throughput at this time and that throughput levels would remain constant from this point forward.

Under Alternative 1, the facility would receive 4,576,000 short tons of cement per year from vessels and would export the same amount by truck. This cargo would be transported by 99 ship visits and 166,400 truck trips, respectively.

Under Alternative 2, the facility would receive 3,660,800 short tons of cement per year from vessels and would export the same amount by truck. This cargo would be transported by 79 ship visits and 133,120 truck trips, respectively.

Information on future operational emission sources was obtained from MCC, the Project traffic study conducted as part of this EIR (Section 3.5), the POLB 2012 AEI, and air quality analyses associated with recent CEQA documents for proposed terminal development projects in the Port (POLB 2012). Emission

factors used to estimate future operational emissions were obtained from:

- The POLB 2010 AEI for vessel sources.
- The ARB EMFAC2011 emissions model for on-road trucks, with inputs to simulate the Port clean truck fleet in year 2015 and beyond (Starcrest Consulting Group, LLC 2011).
- Source tests for point sources of cement dust (MCC 2010).
- AP-42 Section 13.2.1 for dust generated by trucks on paved roads (EPA 2011a). The analysis assumes that a vacuum sweeper would reduce road dust emissions by 25 percent from uncontrolled levels.

No Project Future MCC Operations

The No Project scenario (Alternative 3) would not include any new construction or development and therefore it would operate in manner comparable to the CEQA Baseline scenario. However, the scenario would experience future increases in cargo throughput, compared to existing levels. Future operations for the No Project scenario would occur with most of the emission sources associated with CEQA Baseline operations, but with the following changes:

- Use of delivery trucks that comply with the POLB clean truck program.
- Use of wheeled loaders for payloading and clean up of residual cement in OGV holds that would attain EPA nonroad Tier 4 emission standards.

Under Alternative 3, the MCC terminal would receive 2,471,150 short tons of cement per year from vessels and would export the same amount by truck. This cargo would be transported by 67 ship visits and 89,856 truck trips, respectively. Operational emissions for Alternative 3 are based upon year 2015 conditions and the assumption that this scenario would achieve full build-out and throughput at this time and that throughput levels would remain constant from this point forward.

1.1.2 Greenhouse Gases

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. Emissions of GHGs occur from natural processes and human activities.

The most common GHGs emitted from natural processes and human activities include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Examples of GHGs created and emitted primarily through human activities include fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6). These six GHG are considered for regulation in California Assembly Bill (AB) 32 and by the EPA.

Each GHG is assigned a global warming potential (GWP), which is the ability of a gas or aerosol to trap heat in the atmosphere. The GWP rating system is standardized to CO_2, which has a GWP value of one. For example, CH_4 has a GWP of 21, which means that it has a global warming effect 21 times greater than CO_2 on an equal-mass basis. Table A-1-1 shows the GWP values for various GHGs. Total GHG emissions from a source are often reported as a CO_2 equivalent (CO_2e). The CO_2e is calculated by multiplying the emission of each GHG by its GWP and adding the products together to produce a single, combined emission rate representing all GHGs.

Table A-1-1. Global Warming Potentials

GHG	GWP
CO_2	1
CH_4	21
N_2O	310
HFC-123	11,700
HFC-125	2,800
HFC-134a	1,300
HFC-143a	3,800
HFC-152a	140
HFC-227ea	2,900
HFC-236fa	6,300
HFC-43-10mee	1,300
CF_4	6,500
C_2F_6	9,200
C_3F_8	7,000
C_4F_{10}	7,000
C_5F_{12}	7,500
C_6F_{14}	7,400
SF_6	23,900

Source: (EPA 2011b).

The project air quality analysis includes estimates of GHG emissions that would result from existing operational activities and proposed construction and operational activities. Sources

considered in the analysis are identical to those evaluated for criteria pollutants.

GHG emissions associated with the Project scenarios generally were calculated with the methodologies presented in the above section 1.1.1 and the current version of *The Climate Registry – General Reporting Protocol, Version 2.0* and updates (TCR Protocol) (The Climate Registry [TCR] 2014). The TCR Protocol is the guidance document that TCR members use to prepare annual GHG inventories for the TCR. The TCR Protocol divides emissions into three categories:

- Scope 1: Direct emissions from sources owned or operated by a member;
- Scope 2: Indirect emissions from purchased and consumed electricity; and
- Scope 3: Indirect emissions from sources not owned or operated by a member.

TCR requires the reporting of Scope 1 and Scope 2 emissions but not Scope 3 emissions because they are considered to belong to another reporting entity (i.e., whomever owns, leases, or operates the sources) that would report these emissions as Scope 1 emissions in its own inventory. However, the Project air quality analysis modified the operational and geographical boundaries for sources recommended in the TCR Protocol to make the GHG analysis more consistent with CEQA and to avoid the omission of a significant amount of mobile source emissions. This modification affected the domain for the following sources:

1. For OGV transit operations, the analysis evaluated a shipping route distance between the Port and the State Water's three-mile jurisdictional boundary west of Point Conception. This equates to a round trip distance of 184 nm between this point and the San Pedro Bay Ports (SPBP) fairway. The analysis assumed that all Project ships would follow this "northern route." The northern route represents the longest distance that container ships would travel to and from the Port while in State Waters.

This approach is consistent with the goal of TCR to report all GHG emissions within the State of California (TCR 2013). Additionally, use of the California boundary to delineate the domain for the estimation of Project GHG emissions is adequate to provide an indicator of the magnitude of total proposed GHG emissions.

Construction

The following data and assumptions were used to estimate GHG emissions for proposed construction activities.

1. For off-road diesel construction equipment, CO_2 emission factors were obtained from the ARB OFFROAD2007 emissions program (ARB 2006).
2. For on-road trucks and worker commutes, CO_2 emission factors were obtained from the ARB EMFAC2011 on-road emissions program.

Since CO_2 emissions account for roughly 99 percent of the total CO_2e generated from the combustion of diesel and gasoline fuels, this was the only GHG estimated for project construction. Attachment A.1.1 Tables A-1.1-118 through -120 present the total monthly CO_2 emissions generated from proposed construction activities.

Operations

The following data and assumptions were used to estimate GHG emissions for proposed operational activities.

1. CO_2, CH_4, and N_2O emission factors for vessels were obtained from the POLB AEI for 2010.
2. The ARB EMFAC2011 emissions model for on-road trucks, with inputs to simulate the Port clean truck fleet (Starcrest Consulting Group, LLC 2011).

Attachment A.1.2 Tables A-1.2-59 through -68 present calculations of GHGs that would occur from the operation of sources within the California domain for each project scenario.

1.2 PROPOSED ENVIRONMENTAL CONTROLS FOR CONSTRUCTION AND OPERATIONS

This analysis assumes that each Project scenario would operate in compliance with approved and applicable regulations, as identified in EIR Section 3.2.1.3. The analysis also considered the following environmental controls as part of the unmitigated Project and its alternatives.

Operations

The unmitigated Project scenarios include implementation of Clean Air Action Plan (CAAP) measures that are Port-wide and would occur

regardless of terminal lease agreements (Ports of Long Beach and Los Angeles 2010). In addition, as part of the Port's commitment to promote the POLB Green Port Policy and implement the CAAP, the unmitigated operational activities associated with Alternative 1 and Alternative 2 include all applicable CAAP control measures and additional clean air technologies. Due to this high level of emission control, few feasible mitigation measures are available that would further reduce proposed emissions and air quality impacts.

Table A-1-2 identifies the regulations/CAAP measures assumed for each Project operational scenario. Summaries of the environmental control (EC) measures that the analysis considered as part of all unmitigated Project alternatives include the following:

- ***EC AQ-1: Expanded VSRP –*** All OGVs that call at the MCC terminal shall comply with the expanded VSRP of 12 knots within 40 nm of Point Fermin and the Precautionary Area (equal to CAAP measure OGV1).
- ***EC AQ-2: Shore-to-Ship Power/Cold Ironing –*** OGVs that call at the MCC facility shall use shore-to-ship power (i.e., cold iron) no less than 66 percent of the time at berth based on an annual average. The DoCCs shall be used for the portion of time at berth that OGVs are not using ship-to-shore power. MCC shall submit annual reports to the Port's Environmental Planning Division on or before January 31 of each year, demonstrating compliance with this environmental control measure for the previous calendar year. If an emergency event [as defined in CARB's At-Berth Regulation, Title 17, CCR Section 93118.3, subsection (c)(14)], prevents MCC from achieving the required annual average shore-to-ship power rate (equal to or greater than 66 percent), MCC may demonstrate compliance over a two-year period, so long as MCC submits documentation to the Port which describes the emergency event(s) and explains the basis for MCC's inability to demonstrate compliance using an annual average. The Port will review the documentation submitted by MCC, and if the Port determines that MCC made sufficient effort to comply with the environmental control, it will notify MCC in writing that use of the two-year average is acceptable.
- ***EC AQ-3: Payloaders –*** Wheeled loaders used for final unloading shall attain EPA nonroad Tier 4 emission standards for cargo-handling equipment (equal to CAAP measure CHE1).

2.0 DEVELOPMENT OF CONSTRUCTION EMISSION SCENARIOS

From the information described above in Sections 1.1 and 1.2, the air quality analysis estimated daily emissions for each construction activity for the duration of its proposed occurrence. The analysis then estimated peak daily emissions that would occur from overlapping construction activities during the entire construction calendar schedule. The impact analysis compared peak daily construction emissions to the SCAQMD (1) daily emission thresholds and (2) Localized Significance Thresholds (LSTs) to determine the significance of proposed construction emissions.

Construction Mitigation Measures

Use of the SCAQMD Localized Significance Threshold (LST) methodology in the air quality ambient impact analysis determined that unmitigated construction activities would exceed the SCAQMD ambient thresholds for PM_{10} and $PM_{2.5}$. The overwhelming majority of PM_{10} and $PM_{2.5}$ emissions from construction would occur in the form of fugitive dust and therefore this source is the focus for mitigation. The calculation of unmitigated fugitive dust emissions from Project earth-moving activities is based on Project compliance with SCAQMD Rule 403, which is assumed to produce a 61 percent reduction in fugitive dust emissions from uncontrolled levels. Implementation of the following would further reduce PM_{10} and $PM_{2.5}$ emissions from proposed construction activities.

Mitigation Measure AQ-1: Additional Fugitive Dust Controls. The Project construction contractor shall implement additional dust control measures that achieve a 90 percent reduction in $PM_{10}/PM_{2.5}$ emissions from uncontrolled levels. The contractor shall document these measures in a dust control plan that is approved by the SCAQMD under the requirements of Rule 403. The contractor shall designate personnel to monitor the dust control program and shall order increased watering, as necessary, to ensure a 90 percent control level. Their duties shall include holiday and weekend periods when work may not be in progress.

Additional measures to reduce fugitive dust shall include, but are not limited to the following:

- Apply water three times daily or as needed to areas where soil is disturbed.
- Apply approved non-toxic chemical soil stabilizers according to manufacturer specifications to all inactive construction areas or replace groundcover in disturbed areas;
- Provide temporary wind fencing around sites being graded or cleared;
- Cover truck loads that haul dirt, sand, or gravel or maintain at least two feet of freeboard in accordance with Section 23114 of the California Vehicle Code;
- Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off tires of vehicles and any equipment leaving the construction site;
- Suspend all soil disturbance activities when winds exceed 25 mph as instantaneous gusts or when visible dust plumes emanate from the site and stabilize all disturbed areas;
- Appoint a construction relations officer to act as a community liaison concerning onsite construction activity including resolution of issues related to PM_{10} generation;
- Sweep all streets at least once a day using SCAQMD Rule 1186.1-certified street sweepers or roadway washing trucks if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water);
- Apply water three times daily, or non-toxic soil stabilizers according to manufacturers' specifications, to all unpaved parking or staging areas or unpaved road surfaces;

Implementation of **Mitigation Measure AQ-1** would reduce emissions of PM_{10} and $PM_{2.5}$ from construction to less than significant levels.

Table A-1-2. Air Emission Controls Assumed for Project Operational Scenarios – POLB MCC Project

Source/Assumption	CAAP Measure	Project Scenario[1]					
		CEQA Baseline	Unmitigated			Mitigated	
			Alt 1	Alt 2	Alt 3	Alt 1	Alt 2
OGVs							
Vessel Speed Reduction Program (62% Rate)		X					
Expanded Vessel Speed Reduction Program	OGV1		X	X	X	X	X
OGV Main Engines Comply with MARPOL Annex VI Tier 1 NOx Standard (17.0 g/kW-hr)		X	X	X	X	X	X
Aux. Engines - Cold-ironed (66% Rate)		X	X	X	X	X	X
All Sources – 0.1% S Diesel in 2015[2]		X	X	X	X	X	X
Tugboats							
ARB Harbor Craft Regulation	HC1	X	X	X	X	X	X
Main/Aux. Engines – ULSD		X	X	X	X	X	X
Trucks							
Year 2015 Average SCAB Truck Fleet		X					
Clean Truck Program Fleet	HDV1		X	X	X	X	X
ULSD		X	X	X	X	X	X
Terminal Equipment							
Tier 4 Standards	CHE1	X	X	X	X	X	X
ULSD		X	X	X	X	X	X

Notes:
1. All project scenarios begin in 2015.
2. In compliance with the ARB Fuel Sulfur Regulation for OGVs.

Abbreviations: S – sulfur; ULSD - ultra low sulfur diesel; CHE - cargo handling equipment.

3.0 DEVELOPMENT OF OPERATIONAL EMISSION SCENARIOS

From the information described above in Sections 1.1 and 1.2, the air quality analysis estimated the following operational emission scenarios:

1. CEQA Baseline conditions - Annual emissions for year 2015, annual average daily emissions, and peak daily emissions.
2. Alternatives 1 through 3 - Annual emissions for year 2015, annual average daily emissions, and peak daily emissions.

Annual average daily emissions were estimated by dividing annual emissions for each scenario by 365 days. Review of operational activities determined that peak daily emissions for each scenario would occur from 1) the arrival of an OGV, 2) OGV hoteling and unloading for the remainder of the day (19 hours), and 3) terminal operations and associated truck loading and transporting for 24 hours per day.

The operational emissions analyses compared the net change in annual average daily emissions between each proposed scenario and the CEQA Baseline (proposed minus CEQA Baseline) to the SCAQMD daily emission thresholds to determine the significance of proposed emissions. For a conservative approach, the analysis also performed this evaluation for peak daily emissions. To estimate the significance of ambient pollutant impacts from future operations, this EIR also conducted air dispersion modeling and health risk assessments. Appendices A.2 and A.3 provide descriptions of these assessments.

Operational Mitigation Measures

The air quality analyses in this EIR determined that proposed unmitigated operations would exceed the SCAQMD daily emissions threshold for NOx. In addition, proposed unmitigated operations would exceed the SCAQMD ambient thresholds for 1-hour NO2, 24-hour PM10 and PM2.5, and annual PM10. Since the majority of NOx emissions from proposed Project operations would occur from on-road cement delivery trucks and OGVs transiting the SCAB outer waters, mitigation of Project NOx emissions focuses on these two source types.

Regarding OGVs, the Project air quality analysis assumes that unmitigated OGVs that call at the Project terminal in the future would have main engines that comply with the MARPOL Annex VI Tier 1 NOx standard. Conversion of main engines in OGVs that meet either MARPOL Annex VI Tier 2 or Tier 3 NOx emission limits would reduce NO_x emissions from the engines of Project OGVs by about 15 or 80 percent, respectively (Ports of Los Angeles and Long Beach 2010). The implementation years for these Tier 2/3 NOx standards are 2011/2016. The CAAP proposes measures that would reduce NOx emissions from OGV main engines by 1) encouraging the introduction of newer OGVs with cleaner Tier 2 and 3 engines at a rate that is faster than what would occur from natural fleet turnover (measure OGV5) or 2) retrofitting main engines of OGVs in the existing fleet (measure OGV6).

MCC does not own the OGVs that would call at the project terminal and they have no active charter party agreements or dedicated fleet. Due to this lack of control over the project OGV fleet, it would be difficult to facilitate implementation of CAAP measure OGV5 or OGV6 on these vessels. Retrofitting or replacing an existing OGV main engine to reduce NOx emissions also would not be feasible, as successful demonstration of these techniques are still in a process of development and evolution (Ports of Los Angeles and Long Beach 2012, 2013, and 2014). Due to the high cost of engine retrofits, the cost-effectiveness (dollar spent per mass of NOx reductions) of such a measure also would be very high. Therefore, implementation of measures to reduce NOx emissions from proposed OGV main engines is deemed infeasible.

It is expected that soon after initiation of Project operations, newer OGVs that comply with the MARPOL Annex VI Tier 2/3 NOx standards would enter the project OGV fleet. As a result, they would generate correspondingly lower NO_x emissions and impacts compared to those presented in the Project air quality analysis. In addition, the proposed Project includes use of an innovative technology (DoCCS) that potentially would reduce NO_x emissions from ships at berth that are not in cold-ironing mode by approximately 88.9 percent from uncontrolled levels. The DoCCS would help to reduce OGV NOx emissions.

Regarding cement delivery trucks, the air quality analysis uses average NOx emission rates that would occur from the POLB CTP truck fleet as a

whole beginning in year 2015 to define NOx emissions for the unmitigated Project truck fleet. This future POLB CTP truck fleet would include older vehicles whose NOx emissions have increased with time due to usage and performance deterioration compared to newer vehicles. Replacing these older vehicles with newer and lower emitting ones would mitigate NOx emissions from the truck fleet as a whole. Therefore, the following mitigation would modernize the Project truck fleet and thereby would minimize its NOx emissions.

Mitigation Measure AQ-2: Modernization of Delivery Truck Fleet. No less than 90 percent of the trucks loading cement or cementitious material at the MCC facility shall be equipped with an engine that meets one of the following requirements: 1) is no more than five years old, based on engine model year ("5-Year Engine"); 2) has been designed or retrofitted to comply with federal and state on-road heavy-duty engine emissions standards (e.g., EPA 2010 engine emission standards or successor rules or regulations for on-road heavy duty diesel engines) for a 5-Year Engine ("Emission Equivalent Engine"); or 3) uses alternative engine technology or fuels demonstrated to produce emissions no greater than a 5-Year Engine ("Alternative Equivalent Engine"). The remaining 10 percent of the trucks shall comply with all applicable federal and state heavy-duty on-road truck regulations. In addition, all trucks loading cement or cementitious materials at the MCC facility shall be registered in the Port of Long Beach and Los Angeles Clean Truck Program Drayage Truck Registry and the CARB Drayage Truck Registry. Compliance with this 90 percent requirement shall be determined on a calendar year basis. Documentation of compliance, showing the following information, shall be submitted to the Port's Environmental Planning Division on an annual basis by January 31 following each year of operation: 1) truck vehicle identification number (VIN), 2) engine model year, 3) annual truck trips, and 4) if non-diesel technology, manufacturer engine standards.

To reduce PM10 and PM2.5 emissions from proposed operations, MCC proposes to install an active diesel particulate filter (DPF) system that would integrate into the proposed DoCCS (Mitigation Measures AQ-3). Due to the uncertainties associated with the application of this DPF technology to unmodified existing marine engines, a specific level of DPM emissions control is not provided at this time. However, implementation of this technology would result in lower Project PM10 emissions and resulting public health impacts compared to those currently identified in this EIR. Implementation of **MM AQ-2** also would reduce combustive DPM emissions from the proposed cement delivery trucks.

Mitigation Measure AQ-3: Diesel Particulate Filter for the DoCCS. MCC shall participate in a demonstration project for integrating an active diesel particulate filter (DPF) system into the DoCCS. Within three (3) months after the start-up/initial use of the DoCCS to control emissions from a ship, MCC shall submit to the Port a proposed plan, budget, and schedule for the demonstration project that includes, but is not limited to, designing, procuring, permitting, installing, operating, and emissions testing of the DPF system. The Port would review and approve MCC's proposal and the demonstration project would commence within six (6) months of the Port's approval. As part of the demonstration project, MCC shall operate the combined DPF and DoCCS system for 1,000 hours and conduct emissions testing of the combined DPF and DoCCS system in a manner that is compliant with testing requirements for both the SCAQMD and California Air Resources Board. The demonstration project may be terminated after less than 1,000 hours of operation in the event that MCC determines, and the Port concurs, that the DPF is not compatible with MCC's equipment and operations, or the technology has not yet sufficiently advanced for this application.

No later than six (6) months after the completion of the demonstration project, MCC shall provide a final report to the Port that includes a summary of the demonstration project, technical specifications and costs of the DPF system, emissions testing results, and a discussion of any operational considerations of adding the DPF system to the DoCCS. If it is determined through mutual agreement by MCC and the Port that the DPF system is compatible with MCC's equipment and operations, MCC shall permanently install the DPF and use the DPF whenever ships are treated with the DoCCS.

Vessel hoteling hours associated with the testing of the DPF system shall be exempt from the requirements of project EC AQ-2 - Shore-to-Ship Power/Cold Ironing. This EC requires OGVs that call at the MCC facility to use shore-to-ship

power (cold-ironing) no less than 66 percent of the time (on an annual average) while at berth. The total number of OGV hoteling hours allowed by this exemption shall not exceed 1,000.

The following measure is proposed to further mitigate Project cumulative contributions to criteria pollutants levels.

Mitigation Measure AQ-4: Tier 4 Standards for Nonroad *Construction Equipment.* Starting January 1, 2015, construction contractors shall use construction equipment that achieves EPA Tier 4 nonroad equivalent standards at a minimum.

The following measures are proposed to further mitigate NOx and PM emissions from proposed sources. Due to the uncertainties associated with exactly when and at what levels these measures would be incorporated into proposed operations, a specific level of emissions control is not provided at this time. No other measures are feasible to reduce NOx or PM emissions from proposed operations.

Mitigation Measure AQ-5: Participation in AMECS Emission Testing. After construction of the proposed project has been completed and operations have resumed at the MCC facility, MCC shall use its best effort to participate in the SCAQMD's AMECS demonstration project at the Port of Long Beach (Port). MCC's participation specifically pertains to Task 10 Durability Testing as described in Exhibit A to the contract between the City of Long Beach and the SCAQMD, approved by the Port of Long Beach Board of Harbor Commissioners on February 10, 2014 (the "AMECS Demonstration Testing"), if at such time, AMECS technology is undergoing Task 10 Durability Testing at the Port.

If MCC participates in the testing of a vessel pursuant to the AMECS Demonstration Testing, the costs of testing will be borne as indicated in the contract, and no testing costs shall be borne by MCC (with the exception of in-kind staff time associated with coordinating the logistics of the testing). Additionally, if MCC participates in the AMECS Demonstration Testing, such vessel hoteling hours shall be exempt from the requirements of Project Environmental Control (EC AQ-2) – Shore to Ship Power/Cold Ironing, which requires OGVs that call at the MCC facility to use shore-to-ship power (cold-ironing) no less than 66 percent of the time (on an annual average) while at berth.

Mitigation Measure AQ-6: Periodic Technology Review. To promote new emission control technologies, MCC shall perform an investigation and submit a report to the POLB Chief Executive, every five (5) years following the effective date of the new lease on any POLB-identified or other new emissions-reduction technologies that may reduce emissions at the MCC facility, including the feasibility of zero emissions and near-zero emissions technologies for cement delivery trucks and cement handling equipment (e.g., payloader). If the Periodic Technology Review demonstrates the new technology will be effective in reducing emissions and is determined through mutual agreement between the Port and MCC to be feasible, including but not limited to from a financial, technical, legal and operational perspective, MCC shall work with the Port to implement such technology.

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Appendix A.1 Attachments
Emission Calculation Tables

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Attachment A.1.1
Construction Criteria Pollutant Emissions Tables

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Construction Emission Calculations Table of Contents

Construction Emission Calculations Table of Contents

Construction Emission Calculations Table of Contents

Table A.1.1-1. Construction Equipment Daily Activity Data - Scenario 1 Phase 0 - POLB MCC Modification Project

Scenario/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Scenario 1 - Phase 0							
Front End Loader	69	0.37	26	13	334		0
Front End Loader	69	0.37	26	10	257		0
Compactor	15	0.42	6	24	151		0
Track Hoe	369	0.42	155	10	1,551		0

Table A.1.1-2. Construction Equipment Emission Factors - POLB MCC Modification Project

Project Year/Source Type	*Fuel Type*	*Emission Factors (Grams/Horsepower-Hour)*							*References*
		VOC	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	
Tier 3 or less Standards									
Off-Road Equipment - 25-50 Hp	D	0.60	1.53	5.00	0.004	0.45	0.41	568	(1)
Off-Road Equipment - 51-120 Hp	D	0.20	2.37	3.30	0.004	0.30	0.28	568	(1)
Off-Road Equipment - 121-175 Hp	D	0.20	0.87	2.80	0.004	0.22	0.20	568	(1)
Off-Road Equipment - 176-250 Hp	D	0.20	0.75	2.80	0.004	0.15	0.14	568	(1)
Off-Road Equipment - 251-500 Hp	D	0.20	0.84	2.80	0.004	0.15	0.14	568	(1)
Off-Road Equipment - 501-750 Hp	D	0.20	1.33	2.80	0.004	0.15	0.14	568	(1)
Off-Road Equipment - >750 Hp	D	0.30	0.76	4.50	0.004	0.13	0.12	568	(1)
Light Duty Autos									
25 mph (Gms/Mi)	G	0.04	1.45	0.12	0.01	0.003	0.002	416	(2)
55 mph (Gms/Mi)	G	0.02	0.99	0.10	0.01	0.001	0.001	296	(2)
Light Duty Auto - Composite (Gms/Mi)	G	0.03	1.17	0.11	0.01	0.002	0.002	344	(3)
Medium Duty Trucks									
Idle (Gms/Hr)	D	13.36	71.84	86.73	0.46	5.35	4.92	5,966	(4)
5 mph (Gms/Mi)	D	2.49	3.94	12.32	0.04	0.39	0.36	2,587	(5)
25 mph (Gms/Mi)	D	0.26	0.89	4.47	0.04	0.13	0.12	1,291	(5)
55 mph (Gms/Mi)	D	0.13	0.66	3.45	0.04	0.15	0.14	1,018	(5)
T6 Truck - Composite (Gms/Mi)	D	0.28	0.88	4.14	0.04	0.16	0.14	1,165	(6)
Heavy-Heavy Duty Trucks									
Idle (Gms/Hr)	D	16.28	51.17	92.18	0.07	2.70	2.49	6,980	(7)
5 mph (Gms/Mi)	D	4.74	8.35	31.01	0.04	0.73	0.67	4,025	(8)
25 mph (Gms/Mi)	D	0.49	2.12	10.97	0.04	0.20	0.18	2,010	(8)
55 mph (Gms/Mi)	D	0.24	1.36	9.07	0.04	0.19	0.17	1,585	(8)
T7 Truck - Composite (Gms/Mi)	D	0.53	1.90	10.64	0.04	0.22	0.20	1,813	(6)
All Years									
Fugitive Dust (Lbs/acre-day)						21.45	2.19		(9)
T6 Truck Road Dust						0.51	0.34		(10)
T6 Truck Brake Wear						0.13	0.06		(11)
T6 Truck Tire Wear						0.03	0.01		(11)
T6 Truck Total Road Dust						**0.67**	**0.40**		
T7 Truck Road Dust						1.03	0.69		(10)
T7 Truck Brake Wear						0.06	0.03		(11)
T7 Truck Tire Wear						0.03	0.01		(11)
T7 Truck Total Road Dust						**1.12**	**0.72**		

Notes: (1) Equal to the cleanest of EPA Tier 2 or 3 nonroad emission standards. For example, since there are no Tier 3 standards for PM, data presented = Tier 2 standards. Additionally, since there are no Tier 2/3 standards for CO, data presented derived from nonroad certification data. Source: *Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling -- Compression-Ignition* (USEPA 2004).

(2) Generated with the use of the EMFAC2011 model, assuming annual average conditions for the SCAB, aggregated all light duty auto model years, and project year 2015. Units in grams/mile.

(3) Composite factors based on a round trip of 60% at 55 mph and 40% at 25 mph. Units in grams/mile.

(4) Average year 2015 idling emission factors developed from EMFAC2011 for T6 trucks. Units in grams/hour.

(5) Same as (2), except forT6 instate small construction truck.

(6) Composite factors for off-site round trips based upon 70% at 55 mph, 25% at 25 mph, and 5% at 5 mph. Units in grams/mile. Each round trip would include 15 minutes of idling.

(7) Average year 2015 idling emission factors developed from EMFAC2011 for T7 trucks. Units in grams/hour.

(8) Same as (2), except forT7 tractor construction truck.

(9) Units in lbs/acre-day from section 11.2.3 of AP-42 (EPA 1995). Emissions reduced by 61% from uncontrolled levels to represent compliance with SCAQMD Rule 403 - Fugitive Dust. PM2.5/PM10 portions of construction dust obtained from (ARB 2006).

(10) Emissions method for travel on paved roads (EPA AP-42 Section 13.2.1, January 2011):

$E = k(sL)^{0.91} \times (W)^{1.02} \times (1-(40/(4*365)$ = Grams/Mile

Where: k = 1.0 for PM10, sL = road silt loading (gms/m2), and W = weight of vehicles (10/20 tons for T6/T7 trucks).

sL for Off-Terminal driving = 0.037 (major/collector roads).

(11) From Table 9-7 (ARB 2011).

Table A.1.1-3. Construction Equipment Hourly Emission Rates - Scenario 1 Phase 0 - POLB MCC Modification Project

	Pounds per Hour						
Scenario/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Scenario 1 - Phase 0							
Front End Loader	0.01	0.13	0.19	0.00	0.02	0.02	32.16
Front End Loader	0.01	0.13	0.19	0.00	0.02	0.02	32.16
Compactor	0.01	0.02	0.07	0.00	0.01	0.01	7.89
Track Hoe	0.07	0.29	0.96	0.00	0.05	0.05	194.26

Table A.1.1-4. Construction Equipment Daily Activity Data by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Hours per Day	Month/Number of Equipment per Day											
		Remove	Backfill	3	4	5	6	7	8	9	10	11	12
Front End Loader	13	1											
Front End Loader	10		4										
Track Hoe	24	1											
Compactor	10		1										

Table A.1.1-5. Daily Construction Equipment VOC Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Pounds per Hour VOC	Month/Daily VOC Emissions (Pounds)											
		Remove	Backfill	3	4	5	6	7	8	9	10	11	12
Boom Truck	0.01	0.15	-	-	-	-	-	-	-	-	-	-	-
Crane	0.01	-	0.45	-	-	-	-	-	-	-	-	-	-
Excavators	0.01	0.20	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.07	-	0.68	-	-	-	-	-	-	-	-	-	-
Front End Loader	-	-	-	-	-	-	-	-	-	-	-	-	-
Pile Driver	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck (24hr)	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Welder	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		**0.35**	**1.14**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-6. Daily Construction Equipment CO Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Pounds per Hour CO	Month/Daily CO Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	0.13	1.74	-	-	-	-	-	-	-	-	-	-	-
Crane	0.13	-	5.37	-	-	-	-	-	-	-	-	-	-
Excavators	0.02	0.51	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.29	-	2.87	-	-	-	-	-	-	-	-	-	-
Front End Loader	-	-	-	-	-	-	-	-	-	-	-	-	-
Pile Driver	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck (24hr)	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Welder	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		**2.25**	**8.24**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-7. Daily Construction Equipment NOx Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Pounds per Hour NOx	Month/Daily NOx Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	0.19	2.43	-	-	-	-	-	-	-	-	-	-	-
Crane	0.19	-	7.47	-	-	-	-	-	-	-	-	-	-
Excavators	0.07	1.67	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.96	-	9.58	-	-	-	-	-	-	-	-	-	-
Front End Loader	-	-	-	-	-	-	-	-	-	-	-	-	-
Pile Driver	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck (24hr)	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Welder	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		**4.10**	**17.05**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-8. Daily Construction Equipment SO2 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Pounds per Hour SO2	Month/Daily SO2 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Crane	0.00	-	0.01	-	-	-	-	-	-	-	-	-	-
Excavators	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.00	-	0.02	-	-	-	-	-	-	-	-	-	-
Front End Loader	-	-	-	-	-	-	-	-	-	-	-	-	-
Pile Driver	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck (24hr)	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Welder	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		**0.00**	**0.03**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-9. Daily Construction Equipment PM10 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Pounds per Hour PM10	Month/Daily PM10 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	0.02	0.22	-	-	-	-	-	-	-	-	-	-	-
Crane	0.02	-	0.68	-	-	-	-	-	-	-	-	-	-
Excavators	0.01	0.15	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.05	-	0.51	-	-	-	-	-	-	-	-	-	-
Front End Loader	-	-	-	-	-	-	-	-	-	-	-	-	-
Pile Driver	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck (24hr)	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Welder	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		**0.37**	**1.19**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-10. Daily Construction Equipment PM2.5 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Pounds per Hour PM2.5	Month/Daily PM2.5 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	0.02	0.20	-	-	-	-	-	-	-	-	-	-	-
Crane	0.02	-	0.63	-	-	-	-	-	-	-	-	-	-
Excavators	0.01	0.14	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.05	-	0.47	-	-	-	-	-	-	-	-	-	-
Front End Loader	-	-	-	-	-	-	-	-	-	-	-	-	-
Pile Driver	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck (24hr)	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Welder	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		**0.34**	**1.10**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-11. Daily Construction Equipment C02 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Pounds per Hour CO2	Month/Daily CO2 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	32.16	418	-	-	-	-	-	-	-	-	-	-	-
Crane	32.16	-	1,287	-	-	-	-	-	-	-	-	-	-
Excavators	7.89	189	-	-	-	-	-	-	-	-	-	-	-
Forklift	194.26	-	1,943	-	-	-	-	-	-	-	-	-	-
Front End Loader	-	-	-	-	-	-	-	-	-	-	-	-	-
Pile Driver	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck (24hr)	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Truck	-	-	-	-	-	-	-	-	-	-	-	-	-
Welder	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		**607**	**3,229**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-12. Onsite Construction Trucks Daily Activity Data by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Miles per Day	Month/Number of Equipment per Day											
		Remove	Backfill	3	4	5	6	7	8	9	10	11	12
Commuters													
Pickup Trucks													
Total Light Vehicle Miles		0	0	0	0	0	0	0	0	0	0	0	0
Flatbed Truck													
Boom Truck													
Vac Truck													
Delivery Truck													
Dump Truck	0.5	26	40										
Fuel Truck													
Water Truck	0.5	1	1										
Total Medium Truck Miles		13.5	20.5	0	0	0	0	0	0	0	0	0	0
Semi Tractor													
Concrete Truck													
Total Heavy Truck Miles		0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.1-13. Daily Onsite Construction Trucks VOC Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile VOC	Month/Daily VOC Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.03	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	2.49	0.07	0.11	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle[(1)]	13.36	0.07	0.10	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	4.74	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle[(1)]	16.28	-	-	-	-	-	-	-	-	-	-	-	-
Total		**0.14**	**0.21**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-14. Daily Onsite Construction Trucks CO Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile CO	Month/Daily CO Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	1.17	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	3.94	0.12	0.18	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle(1)	71.84	0.35	0.54	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	8.35	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle(1)	51.17	-	-	-	-	-	-	-	-	-	-	-	-
Total		**0.47**	**0.72**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-15. Daily Onsite Construction Trucks NOx Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile NOx	Month/Daily NOx Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.11	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	12.32	0.37	0.56	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle(1)	86.73	0.43	0.65	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	31.01	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle(1)	92.18	-	-	-	-	-	-	-	-	-	-	-	-
Total		**0.79**	**1.21**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-16. Daily Onsite Construction Trucks SO2 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile SO2	Month/Daily SO2 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.01	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	0.04	0.00	0.00	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle[(1)]	0.46	0.00	0.00	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	0.04	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle[(1)]	0.07	-	-	-	-	-	-	-	-	-	-	-	-
Total		**0.00**	**0.01**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-17. Daily Onsite Construction Trucks PM10 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile PM10	Month/Daily PM10 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.00	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	0.39	0.01	0.02	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle[(1)]	5.35	0.03	0.04	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	0.73	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle[(1)]	2.70	-	-	-	-	-	-	-	-	-	-	-	-
Total		**0.04**	**0.06**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-18. Daily Onsite Construction Trucks PM2.5 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile PM2.5	Month/Daily PM2.5 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.00	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	0.36	0.01	0.02	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle(1)	4.92	0.02	0.04	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	0.67	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle(1)	2.49	-	-	-	-	-	-	-	-	-	-	-	-
Total		**0.04**	**0.05**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-19. Daily Onsite Construction Trucks CO2 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile CO2	Month/Daily CO2 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	344	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	2,587	76.92	116.81	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle(1)	5,966	29.45	44.72	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	4,025	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle(1)	6,980	-	-	-	-	-	-	-	-	-	-	-	-
Total		**106**	**162**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-20. Offsite Construction Trucks Daily Activity Data by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Miles per Day	Month											
		Remove	Backfill	3	4	5	6	7	8	9	10	11	12
Commuters													
Pickup Trucks													
Total Light Vehicle Miles		0	0	0	0	0	0	0	0	0	0	0	0
Flatbed Truck													
Boom Truck													
Vac Truck													
Delivery Truck													
Dump Truck	40	26	40										
Fuel Truck													
Water Truck													
Total Medium Truck Miles		1040	1600	0	0	0	0	0	0	0	0	0	0
Semi Tractor													
Concrete Truck													
Total Heavy Truck Miles		0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.1-21. Daily Offsite Construction Trucks VOC Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile VOC	Month/Daily VOC Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.03	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	0.28	0.63	0.98	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle[(1)]	13.36	0.19	0.29	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	0.53	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle[(1)]	16.28	-	-	-	-	-	-	-	-	-	-	-	-
Total		**0.83**	**1.27**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-22. Daily Offsite Construction Trucks CO Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile CO	Month/Daily CO Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	1.17	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	0.88	2.02	3.11	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle(1)	71.84	1.03	1.58	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	1.90	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle(1)	51.17	-	-	-	-	-	-	-	-	-	-	-	-
Total		**3.05**	**4.69**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-23. Daily Offsite Construction Trucks NOx Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile NOx	Month/Daily NOx Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.11	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	4.14	9.49	14.61	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle(1)	86.73	1.24	1.91	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	10.64	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle(1)	92.18	-	-	-	-	-	-	-	-	-	-	-	-
Total		**10.74**	**16.52**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-24. Daily Offsite Construction Trucks SO2 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile SO2	Month/Daily SO2 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.01	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	0.04	0.09	0.14	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle(1)	0.46	0.01	0.01	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	0.04	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle(1)	0.07	-	-	-	-	-	-	-	-	-	-	-	-
Total		**0.10**	**0.15**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-25. Daily Offsite Construction Trucks PM10 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile PM10	Month/Daily PM10 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.002	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	0.16	0.36	0.55	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle(1)	5.35	0.08	0.12	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	0.22	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle(1)	2.70	-	-	-	-	-	-	-	-	-	-	-	-
Medium Duty Road Dust	0.67	1.53	2.35	-	-	-	-	-	-	-	-	-	-
Heavy Duty Road Dust	1.12	-	-	-	-	-	-	-	-	-	-	-	-
Total		**1.97**	**3.02**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-26. Daily Offsite Construction Trucks PM2.5 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile PM2.5	Month/Daily PM2.5 Emissions (Pounds)											
		Remove	Backfill	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.002	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	0.14	0.33	0.51	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle(1)	4.92	0.07	0.11	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	0.20	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle(1)	2.49	-	-	-	-	-	-	-	-	-	-	-	-
Medium Duty Road Dust	0.40	0.93	1.42	-	-	-	-	-	-	-	-	-	-
Heavy Duty Road Dust	0.72	-	-	-	-	-	-	-	-	-	-	-	-
Total		**1.33**	**2.04**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-27. Daily Offsite Construction Trucks CO2 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Grams per Mile CO2	Month/Daily CO2 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	344	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	1,165	2,669	4,106	-	-	-	-	-	-	-	-	-	-
Medium Duty Idle(1)	5,966	85	131	-	-	-	-	-	-	-	-	-	-
Heavy Duty Running	1,813	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Duty Idle(1)	6,980	-	-	-	-	-	-	-	-	-	-	-	-
Total		**2,754**	**4,237**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-28. Daily Fugitive Dust Emissions during the First 3 Months of Construction - Scenario 1 Phase 0 - POLB MCC Modification Project

	Average Pieces of Equipment Operating	Peak Pieces of Equipment Operating	Hours of Operation	PM10 Emission Factor (lb/hour)	Water Control Factor[6]	Controlled Emissions: Average PM10 Emissions (lbs/day)	Controlled Emissions: Peak PM10 Emissions (lbs/day)	Uncontrolled Emissions: Average PM10 Emissions (lbs/day)	Uncontrolled Emissions: Peak PM10 Emissions (lbs/day)	SCAQMD Emission Factor Source
Construction Activities[1]	1	1	24	5.837	0.39	54.64	54.64	140.09	140.09	Table A9-9-F

Trenching Operations (Backhoe)	Average Tons of Materials Handled Per Day	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[6]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Construction Activities[2]	520	520	0.0035	0.39	0.71	0.71	1.82	1.82	Table A9-9-G

Wind Erosion Dis	Days of Construction	Average Acreage Disturbed Per Day	Peak Acreage Disturbed Per Day	PM10 Emission Factor (lb/day/acre)	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Tons/Year	Uncontrolled Emissions: Peak PM10 Emissions Tons/Year	SCAQMD Emission Factor Source
Construction Activities[3]	10	1	1	0.200	0.20	0.20	0.04	0.04	Table A9-9-E

	Estimated Materials Handled Per Day (tons)	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[6]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Truck Filling[4]	520	520	0.02205	0.39	4.47	4.47	11.47	11.47	Table A9-9
Truck Dumping[5]	520	520	0.009075	0.39	1.84	1.84	4.72	4.72	Table A9-9

(1) Emissions (lbs/hr) = [0.75 x ($G^{1.5}$)/($H^{1.4}$) x J

where G = silt content (7.5%), H = moisture content (2.0%) and J = hrs of operation (EPA AP-42 Table 11.9-1 for bulldozing overburden).

(2) Emissions (lbs/ton) = 0.00112 x [$(G/5)^{1.3}$/$(H/2)^{1.4}$] x I/J

where G=mean wind speed (12 mph), H=moisture content of surface material (2%); I=lbs of dirt handled per day; and J=2,000 lbs/ton. Assumes that 1 cubic yard of trench spoils weighs 1 ton.

(3) Emissions (lbs/day/acre) = 1.7 x [(G/1.5)*(365-H)/235] x I/15 x J

where G = silt content (7.5%); H = days with >0.01 inch of rain (34); I = % of time wind speed >12 mph (0.5%), and J= fraction of TSP (0.5). Wind speed data acquired from Lynwood 1981 SCAQMD meteorological file.

(4) Used SCAQMD Table 9-9 Default emission factors.

(5) Dumping will occur off-site, but still within SCAQMD jurisdiction.

(6) Controlled emissions assume that watering 3 times per day would reduce uncontrolled emissions by 61 percent (Uncontrolled Emissions x 0.39). www.AQMD.gov/CEQA/handbook/mitigation/fugitive/Table XI-A.doc

Table A.1.1-29. Daily Fugitive Dust PM10 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Pounds per Day PM10	Month/Daily PM10 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Construction Activities	55.5	55.5													
Truck Filling	4.5	4.5													
Truck Dumping	1.8	1.8													
Total		**61.9**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-30. Daily Fugitive Dust PM2.5 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Pounds per Day PM2.5	Month/Daily PM2.5 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Construction Activities	11.7	11.7													
Truck Filling	0.9	0.9													
Truck Dumping	0.4	0.4													
Total		**13.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-31. Daily Fugitive Dust Emissions during the First 3 Months of Construction - Scenario 1 Phase 0 - POLB MCC Modification Project

	Average Pieces of Equipment Operating	Peak Pieces of Equipment Operating	Hours of Operation	PM10 Emission Factor (lb/hour)	Water Control Factor[6]	Controlled Emissions: Average PM10 Emissions (lbs/day)	Controlled Emissions: Peak PM10 Emissions (lbs/day)	Uncontrolled Emissions: Average PM10 Emissions (lbs/day)	Uncontrolled Emissions: Peak PM10 Emissions (lbs/day)	SCAQMD Emission Factor Source
Construction Activities[1]	0	0	24	5.837	0.39	0.00	0.00	0.00	0.00	Table A9-9-F

Trenching Operations (Backhoe)	Average Tons of Materials Handled Per Day	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[6]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Construction Activities[2]	0	0	0.0035	0.39	0.00	0.00	0.00	0.00	Table A9-9-G

Wind Erosion Dis	Days of Construction	Average Acreage Disturbed Per Day	Peak Acreage Disturbed Per Day	PM10 Emission Factor (lb/day/acre)	Average PM10 Emissions Pounds/day	Peak PM10 Emissions Pounds/day	Average PM10 Emissions Tons/Year	Peak PM10 Emissions Tons/Year	SCAQMD Emission Factor Source
Construction Activities[3]	8	1	1	0.200	0.20	0.20	0.04	0.04	Table A9-9-E

	Estimated Materials Handled Per Day (tons)	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[6]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source
Truck Filling[4]	750	750	0.02205	0.39	6.45	6.45	16.54	16.54	Table A9-9
Truck Dumping[5]	750	750	0.009075	0.39	2.65	2.65	6.81	6.81	Table A9-9

(1) Emissions (lbs/hr) = [0.75 x ($G^{1.5}$)/($H^{1.4}$) x J

where G = silt content (7.5%), H = moisture content (2.0%) and J = hrs of operation (EPA AP-42 Table 11.9-1 for bulldozing overburden).

(2) Emissions (lbs/ton) = 0.00112 x [$(G/5)^{1.3}/(H/2)^{1.4}$] x I/J

where G=mean wind speed (12 mph), H=moisture content of surface material (2%); I=lbs of dirt handled per day; and J=2,000 lbs/ton. Assumes that 1 cubic yard of trench spoils weighs 1 ton.

(3) Emissions (lbs/day/acre) = 1.7 x [(G/1.5)*(365-H)/235] x I/15 x J

where G = silt content (7.5%); H = days with >0.01 inch of rain (34); I = % of time wind speed >12 mph (0.5%), and J= fraction of TSP (0.5). Wind speed data acquired from Lynwood 1981 SCAQMD meteorological file.

(4) Used SCAQMD Table 9-9 Default emission factors.

(5) Dumping will occur off-site, but still within SCAQMD jurisdiction.

(6) Controlled emissions assume that watering 3 times per day would reduce uncontrolled emissions by 61 percent (Uncontrolled Emissions x 0.39). www.AQMD.gov/CEQA/handbook/mitigation/fugitive/Table XI-A.doc

Table A.1.1-32. Daily Fugitive Dust PM10 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Pounds per Day PM10	Month/Daily PM10 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Construction Activities	0.2		0.2												
Truck Filling	6.4		6.4												
Truck Dumping	2.7		2.7												
Total		**-**	**9.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-33. Daily Fugitive Dust PM2.5 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

Equipment	Pounds per Day PM2.5	Month/Daily PM2.5 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Construction Activities	0.0		0.0												
Truck Filling	1.4		1.4												
Truck Dumping	0.6		0.6												
Total		**-**	**2.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-34. Daily Total VOC Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

	Month/Daily VOC Emissions (Pounds)											
Source	**Remove**	**Backfill**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	0.35	1.14	-	-	-	-	-	-	-	-	-	-
On-site Trucks	0.14	0.21	-	-	-	-	-	-	-	-	-	-
Off-site Trucks	0.83	1.27	-	-	-	-	-	-	-	-	-	-
Fugitive Dust												
Total	**1.31**	**2.62**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-35. Daily Total CO Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

	Month/Daily CO Emissions (Pounds)											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	2.25	8.24	-	-	-	-	-	-	-	-	-	-
On-site Trucks	0.47	0.72	-	-	-	-	-	-	-	-	-	-
Off-site Trucks	3.05	4.69	-	-	-	-	-	-	-	-	-	-
Fugitive Dust												
Total	**5.78**	**13.65**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-36. Daily Total NOx Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

	Month/Daily NOx Emissions (Pounds)											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	4.10	17.05	-	-	-	-	-	-	-	-	-	-
On-site Trucks	0.79	1.21	-	-	-	-	-	-	-	-	-	-
Off-site Trucks	10.74	16.52	-	-	-	-	-	-	-	-	-	-
Fugitive Dust												
Total	**15.63**	**34.77**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-37. Daily Total SO2 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

	Month/Daily SO2 Emissions (Pounds)											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	0.00	0.03										
On-site Trucks	0.00	0.01										
Off-site Trucks	0.10	0.15										
Fugitive Dust												
Total	**0.11**	**0.18**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-38. Daily Total PM10 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

	Month/Daily PM10 Emissions (Pounds)											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	0.37	1.19										
On-site Trucks	0.04	0.06										
Off-site Trucks	1.97	3.02										
Fugitive Dust	61.86	9.30										
Total	**64.23**	**13.58**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-39. Daily Total PM2.5 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

	Month/Daily PM2.5 Emissions (Pounds)											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	0.34	1.10										
On-site Trucks	0.04	0.05										
Off-site Trucks	1.33	2.04										
Fugitive Dust	12.99	1.95										
Total	**14.69**	**5.14**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-40. Daily Total CO2 Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

	Month/Daily CO2 Emissions (Pounds)											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	607	3,229	-	-	-	-	-	-	-	-	-	-
On-site Trucks	106	162	-	-	-	-	-	-	-	-	-	-
Off-site Trucks	2,754	4,237	-	-	-	-	-	-	-	-	-	-
Fugitive Dust												
Total	**3,468**	**7,628**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-41. Peak Daily Emissions - Scenario 1 Phase 0 - POLB MCC Modification Project

	Pounds per Day						
Scenario/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Scenario 1 - Phase 0							
Construction Equipment	1.14	8.24	17.05	0.03	0.37	0.34	3,229
On-site Trucks	0.21	0.72	1.21	0.01	0.04	0.04	162
Off-site Trucks	1.27	4.69	16.52	0.15	1.97	1.33	4,237
Fugitive Dust					61.86	12.99	
Total	**2.6**	**13.6**	**34.8**	**0.2**	**64.2**	**14.7**	**7,628**
LST Emissions - No Off-site Trucks	**1.3**	**9.0**	**18.3**	**0.0**	**62.3**	**13.4**	**3,391**

Table A.1.1-42. Total On-site DPM Emissions by Month - Scenario 1 Phase 0 - POLB MCC Modification Project

	Tons of DPM/Month											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	0.004	0.013										
On-site Trucks	0.000	0.001										
Total	**0.004**	**0.014**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table A.1.1-43. Construction Equipment Daily Activity Data - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Scenario/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Scenario 1 - Phase 1							
Boom Truck	107	0.31	33	6	199		0
Crane	311	0.29	90	6	542		0
Excavators	188	0.38	71	24	1,712		0
Forklift	171	0.20	34	6	205		0
Front End Loader	69	0.37	26	6	154		0
Pile Driver	210	0.42	88	6	530		0
Pump Truck	471	0.38	179	6	1,075		0
Pump Truck (24hr)	471	0.38	179	24	4,299		0
Water Truck	471	0.38	179	4	717		0
Welder	49	0.42	21	6	124		0

Table A.1.1-44. Construction Equipment Daily Emission Rates - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Project Year/Source Type	*Fuel Type*	*Emission Factors (Grams/Horsepower-Hour)*							*References*
		VOC	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	
Tier 3 or less Standards									
Off-Road Equipment - 25-50 Hp	D	0.60	1.53	5.00	0.004	0.45	0.41	568	(1)
Off-Road Equipment - 51-120 Hp	D	0.20	2.37	3.30	0.004	0.30	0.28	568	(1)
Off-Road Equipment - 121-175 Hp	D	0.20	0.87	2.80	0.004	0.22	0.20	568	(1)
Off-Road Equipment - 176-250 Hp	D	0.20	0.75	2.80	0.004	0.15	0.14	568	(1)
Off-Road Equipment - 251-500 Hp	D	0.20	0.84	2.80	0.004	0.15	0.14	568	(1)
Off-Road Equipment - 501-750 Hp	D	0.20	1.33	2.80	0.004	0.15	0.14	568	(1)
Off-Road Equipment - >750 Hp	D	0.30	0.76	4.50	0.004	0.13	0.12	568	(1)
Light Duty Autos									
25 mph (Gms/Mi)	G	0.04	1.45	0.12	0.005	0.003	0.002	416	(2)
55 mph (Gms/Mi)	G	0.02	0.99	0.10	0.005	0.001	0.001	296	(2)
Light Duty Auto - Composite (Gms/Mi)	G	0.03	1.17	0.11	0.005	0.002	0.002	344	(3)
Medium Duty Trucks									
Idle (Gms/Hr)	D	13.36	71.84	86.73	0.46	5.35	4.92	5,966	(4)
5 mph (Gms/Mi)	D	2.49	3.94	12.32	0.04	0.39	0.36	2,587	(5)
25 mph (Gms/Mi)	D	0.26	0.89	4.47	0.04	0.13	0.12	1,291	(5)
55 mph (Gms/Mi)	D	0.13	0.66	3.45	0.04	0.15	0.14	1,018	(5)
Medium Duty Truck - Composite (Gms/Mi)	D	0.28	0.88	4.14	0.04	0.16	0.14	1,165	(6)
Heavy-Heavy Duty Trucks									
Idle (Gms/Hr)	D	16.28	51.17	92.18	0.07	2.70	2.49	6,980	(7)
5 mph (Gms/Mi)	D	4.74	8.35	31.01	0.04	0.73	0.67	4,025	(8)
25 mph (Gms/Mi)	D	0.49	2.12	10.97	0.04	0.20	0.18	2,010	(8)
55 mph (Gms/Mi)	D	0.24	1.36	9.07	0.04	0.19	0.17	1,585	(8)
Heavy-Heavy Duty Truck - Composite (Gms/Mi)	D	0.53	1.90	10.64	0.04	0.22	0.20	1,813	(6)
All Years									
Fugitive Dust (Lbs/acre-day)						21.45	2.19		(9)
T6 Truck Road Dust						0.51	0.34		(10)
T6 Truck Brake Wear						0.13	0.06		(11)
T6 Truck Tire Wear						0.03	0.01		(11)
T6 Truck Total Road Dust						**0.67**	**0.40**		
T7 Truck Road Dust						1.03	0.69		(10)
T7 Truck Brake Wear						0.06	0.03		(11)
T7 Truck Tire Wear						0.03	0.01		(11)
T7 Truck Total Road Dust						**1.12**	**0.72**		

Notes: (1) Equal to the cleanest of EPA Tier 2 or 3 nonroad emission standards. For example, since there are no Tier 3 standards for PM, data presented = Tier 2 standards. Additionally, since there are no Tier 2/3 standards for CO, data presented derived from nonroad certification data. Source: *Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling -- Compression-Ignition* (USEPA 2004).

(2) Generated with the use of the EMFAC2011 model, assuming annual average conditions for the SCAB, aggregated all light duty auto model years, and project year 2015. Units in grams/mile.

(3) Composite factors based on a round trip of 60% at 55 mph and 40% at 25 mph. Units in grams/mile.

(4) Average year 2015 idling emission factors developed from EMFAC2011 for T6 trucks. Units in grams/hour.

Table A.1.1-45. Construction Equipment Hourly Emission Rates - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

	Pounds per Hour						
Scenario/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Scenario 1 - Phase 1							
Boom Truck	0.01	0.17	0.24	0.00	0.02	0.02	41.59
Crane	0.04	0.17	0.56	0.00	0.03	0.03	113.01
Excavators	0.03	0.12	0.44	0.00	0.02	0.02	89.35
Forklift	0.02	0.07	0.21	0.00	0.02	0.02	42.89
Front End Loader	0.01	0.13	0.19	0.00	0.02	0.02	32.16
Pile Driver	0.04	0.15	0.55	0.00	0.03	0.03	110.64
Pump Truck	0.08	0.33	1.11	0.00	0.06	0.05	224.32
Pump Truck (24hr)	0.08	0.33	1.11	0.00	0.06	0.05	224.32
Water Truck	0.08	0.33	1.11	0.00	0.06	0.05	224.32
Welder	0.03	0.07	0.23	0.00	0.02	0.02	25.94

Table A.1.1-46. Construction Equipment Daily Activity Data by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Hours per Day	Month/Number of Equipment per Day													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Boom Truck	6		1	3	2		1								
Crane	6	1	2	3	3	1	1	1	1	2	3	3	3	1	
Excavators	24	1	1												
Forklift	6	2	3	4	4	2	1	1	2	4	5	3	3	2	
Front End Loader	6				1									1	1
Pile Driver	6		1	1	1										
Pump Truck	6						1	2	2	1	1				
Pump Truck (24hr)	24				1	2	1								
Water Truck	4	1	2	2	2	2	1	1	2	2	2	2	2	1	1
Welder	6				1	1			2	6	4	4	4	2	

Table A.1.1-47. Daily Construction Equipment VOC Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour VOC	Month/Daily VOC Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Boom Truck	0.01	-	0.09	0.26	0.18	-	0.09	-	-	-	-	-	-	-	-
Crane	0.04	0.24	0.48	0.72	0.72	0.24	0.24	0.24	0.24	0.48	0.72	0.72	0.72	0.24	-
Excavators	0.03	0.76	0.76	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.02	0.18	0.27	0.36	0.36	0.18	0.09	0.09	0.18	0.36	0.45	0.27	0.27	0.18	-
Front End Loader	0.01	-	-	-	0.07	-	-	-	-	-	-	-	-	0.07	0.07
Pile Driver	0.04	-	0.23	0.23	0.23	-	-	-	-	-	-	-	-	-	-
Pump Truck	0.08	-	-	-	-	-	0.47	0.95	0.95	0.47	0.47	-	-	-	-
Pump Truck (24hr)	0.08	-	-	-	1.90	3.79	1.90	-	-	-	-	-	-	-	-
Water Truck	0.08	0.32	0.63	0.63	0.63	0.63	0.32	0.32	0.63	0.63	0.63	0.63	0.63	0.32	0.32
Welder	0.03	-	-	-	0.16	0.16	-	-	0.33	0.99	0.66	0.66	0.66	0.33	-
Total		**1.49**	**2.46**	**2.21**	**4.25**	**5.01**	**3.10**	**1.59**	**2.33**	**2.93**	**2.93**	**2.28**	**2.28**	**1.13**	**0.38**

Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling -- Compression-Ignition (USEPA 2004).

Table A.1.1-48. Daily Construction Equipment CO Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour CO	Month/Daily CO Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Boom Truck	0.17	-	1.04	3.12	2.08	-	1.04	-	-	-	-	-	-	-	-
Crane	0.17	1.00	2.01	3.01	3.01	1.00	1.00	1.00	1.00	2.01	3.01	3.01	3.01	1.00	-
Excavators	0.12	2.83	2.83	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.07	0.79	1.18	1.58	1.58	0.79	0.39	0.39	0.79	1.58	1.97	1.18	1.18	0.79	-
Front End Loader	0.13	-	-	-	0.81	-	-	-	-	-	-	-	-	0.81	0.81
Pile Driver	0.15	-	0.88	0.88	0.88	-	-	-	-	-	-	-	-	-	-
Pump Truck	0.33	-	-	-	-	-	1.99	3.98	3.98	1.99	1.99	-	-	-	-
Pump Truck (24hr)	0.33	-	-	-	7.96	15.92	7.96	-	-	-	-	-	-	-	-
Water Truck	0.33	1.33	2.65	2.65	2.65	2.65	1.33	1.33	2.65	2.65	2.65	2.65	2.65	1.33	1.33
Welder	0.07	-	-	-	0.42	0.42	-	-	0.84	2.52	1.68	1.68	1.68	0.84	-
Total		**5.95**	**10.59**	**11.24**	**19.38**	**20.79**	**13.72**	**6.70**	**9.26**	**10.74**	**11.30**	**8.52**	**8.52**	**4.76**	**2.13**

Table A.1.1-49. Daily Construction Equipment NOx Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour NOx	Month/Daily NOx Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Boom Truck	0.24	-	1.45	4.35	2.90	-	1.45	-	-	-	-	-	-	-	-
Crane	0.56	3.34	6.69	10.03	10.03	3.34	3.34	3.34	3.34	6.69	10.03	10.03	10.03	3.34	-
Excavators	0.44	10.57	10.57	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.21	2.54	3.81	5.07	5.07	2.54	1.27	1.27	2.54	5.07	6.34	3.81	3.81	2.54	-
Front End Loader	0.19	-	-	-	1.12	-	-	-	-	-	-	-	-	1.12	1.12
Pile Driver	0.55	-	3.27	3.27	3.27	-	-	-	-	-	-	-	-	-	-
Pump Truck	1.11	-	-	-	-	-	6.63	13.27	13.27	6.63	6.63	-	-	-	-
Pump Truck (24hr)	1.11	-	-	-	26.54	53.08	26.54	-	-	-	-	-	-	-	-
Water Truck	1.11	4.42	8.85	8.85	8.85	8.85	4.42	4.42	8.85	8.85	8.85	8.85	8.85	4.42	4.42
Welder	0.23	-	-	-	1.37	1.37	-	-	2.74	8.22	5.48	5.48	5.48	2.74	-
Total		**20.87**	**34.63**	**31.57**	**59.15**	**69.18**	**43.66**	**22.30**	**30.74**	**35.46**	**37.33**	**28.16**	**28.16**	**14.16**	**5.54**

Table A.1.1-50. Daily Construction Equipment SO2 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour SO2	Month/Daily SO2 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Boom Truck	0.00	-	0.00	0.01	0.00	-	0.00	-	-	-	-	-	-	-	-
Crane	0.00	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.01	-
Excavators	0.00	0.02	0.02	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	-
Front End Loader	0.00	-	-	-	0.00	-	-	-	-	-	-	-	-	0.00	0.00
Pile Driver	0.00	-	0.01	0.01	0.01	-	-	-	-	-	-	-	-	-	-
Pump Truck	0.00	-	-	-	-	-	0.01	0.02	0.02	0.01	0.01	-	-	-	-
Pump Truck (24hr)	0.00	-	-	-	0.04	0.08	0.04	-	-	-	-	-	-	-	-
Water Truck	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Welder	0.00	-	-	-	0.00	0.00	-	-	0.00	0.01	0.00	0.00	0.00	0.00	-
Total		**0.03**	**0.05**	**0.05**	**0.09**	**0.11**	**0.07**	**0.04**	**0.05**	**0.05**	**0.05**	**0.04**	**0.04**	**0.02**	**0.01**

Table A.1.1-51. Daily Construction Equipment PM10 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour PM10	Month/Daily PM10 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Boom Truck	0.02	-	0.13	0.40	0.26	-	0.13	-	-	-	-	-	-	-	-
Crane	0.03	0.18	0.36	0.54	0.54	0.18	0.18	0.18	0.18	0.36	0.54	0.54	0.54	0.18	-
Excavators	0.02	0.57	0.57	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.02	0.20	0.30	0.40	0.40	0.20	0.10	0.10	0.20	0.40	0.50	0.30	0.30	0.20	-
Front End Loader	0.02	-	-	-	0.10	-	-	-	-	-	-	-	-	0.10	0.10
Pile Driver	0.03	-	0.18	0.18	0.18	-	-	-	-	-	-	-	-	-	-
Pump Truck	0.06	-	-	-	-	-	0.36	0.71	0.71	0.36	0.36	-	-	-	-
Pump Truck (24hr)	0.06	-	-	-	1.42	2.84	1.42	-	-	-	-	-	-	-	-
Water Truck	0.06	0.24	0.47	0.47	0.47	0.47	0.24	0.24	0.47	0.47	0.47	0.47	0.47	0.24	0.24
Welder	0.02	-	-	-	0.12	0.12	-	-	0.25	0.74	0.49	0.49	0.49	0.25	-
Total		**1.18**	**2.00**	**1.98**	**3.50**	**3.82**	**2.42**	**1.23**	**1.81**	**2.33**	**2.36**	**1.80**	**1.80**	**0.96**	**0.34**

Table A.1.1-52. Daily Construction Equipment PM2.5 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour PM2.5	Month/Daily PM2.5 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Boom Truck	0.02	-	0.12	0.36	0.24	-	0.12	-	-	-	-	-	-	-	-
Crane	0.03	0.16	0.33	0.49	0.49	0.16	0.16	0.16	0.16	0.33	0.49	0.49	0.49	0.16	-
Excavators	0.02	0.52	0.52	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.02	0.18	0.28	0.37	0.37	0.18	0.09	0.09	0.18	0.37	0.46	0.28	0.28	0.18	-
Front End Loader	0.02	-	-	-	0.09	-	-	-	-	-	-	-	-	0.09	0.09
Pile Driver	0.03	-	0.16	0.16	0.16	-	-	-	-	-	-	-	-	-	-
Pump Truck	0.05	-	-	-	-	-	0.33	0.65	0.65	0.33	0.33	-	-	-	-
Pump Truck (24hr)	0.05	-	-	-	1.31	2.62	1.31	-	-	-	-	-	-	-	-
Water Truck	0.05	0.22	0.44	0.44	0.44	0.44	0.22	0.22	0.44	0.44	0.44	0.44	0.44	0.22	0.22
Welder	0.02	-	-	-	0.11	0.11	-	-	0.23	0.68	0.45	0.45	0.45	0.23	-
Total		**1.09**	**1.84**	**1.82**	**3.22**	**3.51**	**2.23**	**1.13**	**1.67**	**2.14**	**2.17**	**1.66**	**1.66**	**0.89**	**0.31**

Table A.1.1-53. Daily Construction Equipment C02 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour CO2	Month/Daily CO2 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Boom Truck	41.59	-	250	749	499	-	250	-	-	-	-	-	-	-	-
Crane	113.01	678	1,356	2,034	2,034	678	678	678	678	1,356	2,034	2,034	2,034	678	-
Excavators	89.35	2,144	2,144	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	42.89	515	772	1,029	1,029	515	257	257	515	1,029	1,287	772	772	515	-
Front End Loader	32.16	-	-	-	193	-	-	-	-	-	-	-	-	193	193
Pile Driver	110.64	-	664	664	664	-	-	-	-	-	-	-	-	-	-
Pump Truck	224.32	-	-	-	-	-	1,346	2,692	2,692	1,346	1,346	-	-	-	-
Pump Truck (24hr)	224.32	-	-	-	5,384	10,768	5,384	-	-	-	-	-	-	-	-
Water Truck	224.32	897	1,795	1,795	1,795	1,795	897	897	1,795	1,795	1,795	1,795	1,795	897	897
Welder	25.94	-	-	-	156	156	-	-	311	934	623	623	623	311	-
Total		**4,234**	**6,980**	**6,271**	**11,753**	**13,910**	**8,812**	**4,525**	**5,990**	**6,460**	**7,084**	**5,223**	**5,223**	**2,594**	**1,090**

Table A.1.1-54. Onsite Construction Trucks Daily Activity Data by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Miles per Day	Month/Number of Equipment per Day													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Commuters	2														
Pickup Trucks	2														
Total Light Vehicle Miles		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flatbed Truck	2		1	3	4	4	2		1	2	2	2	1		
Boom Truck	2		1	3	2		1								
Vac Truck	2														
Delivery Truck	2														
Dump Truck	2	4	4		2									2	2
Fuel Truck	2														
Water Truck	2														
Total Medium Truck Miles		8	12	12	16	8	6	0	2	4	4	4	2	4	4
Semi Tractor	2														
Concrete Truck	2				20	20	22	6	4	2	3	3	4	4	
Total Heavy Truck Miles		0	0	0	40	40	44	12	8	4	6	6	8	8	0

Table A.1.1-55. Daily Onsite Construction Trucks VOC Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile VOC	Month/Daily VOC Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle															
Medium Duty Running	2.49	0.04	0.07	0.07	0.09	0.04	0.03	-	0.01	0.02	0.02	0.02	0.01	0.02	0.02
Medium Duty Idle[(1)]	13.36	0.01	0.01	0.01	0.02	0.01	0.01	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Running	4.74	-	-	-	0.42	0.42	0.46	0.13	0.08	0.04	0.06	0.06	0.08	0.08	-
Heavy Duty Idle[(1)]	16.28	-	-	-	0.06	0.06	0.07	0.02	0.01	0.01	0.01	0.01	0.01	0.01	-
Total		**0.05**	**0.08**	**0.08**	**0.58**	**0.53**	**0.57**	**0.14**	**0.11**	**0.07**	**0.10**	**0.10**	**0.11**	**0.12**	**0.03**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-56. Daily Onsite Construction Trucks CO Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile CO	Month/Daily CO Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	1.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle															
Medium Duty Running	3.94	0.07	0.10	0.10	0.14	0.07	0.05	-	0.02	0.03	0.03	0.03	0.02	0.03	0.03
Medium Duty Idle(1)	71.84	0.05	0.08	0.08	0.11	0.05	0.04	-	0.01	0.03	0.03	0.03	0.01	0.03	0.03
Heavy Duty Running	8.35	-	-	-	0.74	0.74	0.81	0.22	0.15	0.07	0.11	0.11	0.15	0.15	-
Heavy Duty Idle(1)	51.17	-	-	-	0.19	0.19	0.21	0.06	0.04	0.02	0.03	0.03	0.04	0.04	-
Total		**0.12**	**0.18**	**0.18**	**1.17**	**1.04**	**1.11**	**0.28**	**0.21**	**0.15**	**0.20**	**0.20**	**0.21**	**0.25**	**0.06**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-57. Daily Onsite Construction Trucks NOx Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile NOx	Month/Daily NOx Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle															
Medium Duty Running	12.32	0.22	0.33	0.33	0.43	0.22	0.16	-	0.05	0.11	0.11	0.11	0.05	0.11	0.11
Medium Duty Idle(1)	86.73	0.06	0.10	0.10	0.13	0.06	0.05	-	0.02	0.03	0.03	0.03	0.02	0.03	0.03
Heavy Duty Running	31.01	-	-	-	2.73	2.73	3.01	0.82	0.55	0.27	0.41	0.41	0.55	0.55	-
Heavy Duty Idle(1)	92.18	-	-	-	0.34	0.34	0.37	0.10	0.07	0.03	0.05	0.05	0.07	0.07	-
Total		**0.28**	**0.42**	**0.42**	**3.63**	**3.35**	**3.59**	**0.92**	**0.68**	**0.45**	**0.60**	**0.60**	**0.68**	**0.75**	**0.14**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-58. Daily Onsite Construction Trucks SO2 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile SO2	Month/Daily SO2 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle															
Medium Duty Running	0.04	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Idle(1)	0.46	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Running	0.04	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Heavy Duty Idle(1)	0.07	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Total		**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-59. Daily Onsite Construction Trucks PM10 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile PM10	Month/Daily PM10 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle															
Medium Duty Running	0.39	0.01	0.01	0.01	0.01	0.01	0.01	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Idle(1)	5.35	0.00	0.01	0.01	0.01	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Running	0.73	-	-	-	0.06	0.06	0.07	0.02	0.01	0.01	0.01	0.01	0.01	0.01	-
Heavy Duty Idle(1)	2.70	-	-	-	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Total		**0.01**	**0.02**	**0.02**	**0.10**	**0.08**	**0.09**	**0.02**	**0.02**	**0.01**	**0.02**	**0.02**	**0.02**	**0.02**	**0.01**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-60. Daily Onsite Construction Trucks PM2.5 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile PM2.5	Month/Daily PM2.5 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle															
Medium Duty Running	0.36	0.01	0.01	0.01	0.01	0.01	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Idle(1)	4.92	0.00	0.01	0.01	0.01	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Running	0.67	-	-	-	0.06	0.06	0.07	0.02	0.01	0.01	0.01	0.01	0.01	0.01	-
Heavy Duty Idle(1)	2.49	-	-	-	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Total		**0.01**	**0.01**	**0.01**	**0.09**	**0.08**	**0.08**	**0.02**	**0.02**	**0.01**	**0.02**	**0.02**	**0.02**	**0.02**	**0.00**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-61. Daily Onsite Construction Trucks CO2 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile CO2	Month/Daily CO2 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	344	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle															
Medium Duty Running	2,587	45.58	68.37	68.37	91.17	45.58	34.19	-	11.40	22.79	22.79	22.79	11.40	22.79	22.79
Medium Duty Idle(1)	5,966	4.36	6.54	6.54	8.72	4.36	3.27	-	1.09	2.18	2.18	2.18	1.09	2.18	2.18
Heavy Duty Running	4,025	-	-	-	355	355	390	106	71	35	53	53	71	71	-
Heavy Duty Idle(1)	6,980	-	-	-	26	26	28	8	5	3	4	4	5	5	-
Total		**50**	**75**	**75**	**480**	**430**	**456**	**114**	**89**	**63**	**82**	**82**	**89**	**101**	**25**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-62. Offsite Construction Trucks Daily Activity Data by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Miles per Day	Month 1	2	3	4	5	6	7	8	9	10	11	12	13	14
Commuters	32.4	5	15	26	56	48	66	18	18	30	24	30	36	30	6
Pickup Trucks	20														
Total Light Vehicle Miles		162	486	842	1,814	1,555	2,138	583	583	972	778	972	1,166	972	194
Flatbed Truck	20		1	3	4	4	2		1	2	2	2	1		
Boom Truck	20		1	3	2		1								
Vac Truck	20														
Delivery Truck	20														
Dump Truck	20	4	4		2									2	2
Fuel Truck	20														
Water Truck	20														
Total Medium Truck Miles		80	120	120	160	80	60	0	20	40	40	40	20	40	40
Semi Tractor	20														
Concrete Truck	20				20	20	22	6	4	2	3	3	4	4	
Total Heavy Truck Miles		0	0	0	400	400	440	120	80	40	60	60	80	80	0

Table A.1.1-63. Daily Offsite Construction Trucks VOC Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile VOC	Month/Daily VOC Emissions (Pounds) 1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	0.03	0.01	0.03	0.06	0.12	0.10	0.14	0.04	0.04	0.07	0.05	0.07	0.08	0.07	0.01
Light Duty Idle															
Medium Duty Running	0.28	0.05	0.07	0.07	0.10	0.05	0.04	-	0.01	0.02	0.02	0.02	0.01	0.02	0.02
Medium Duty Idle[(1)]	13.36	0.03	0.04	0.04	0.06	0.03	0.02	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Heavy Duty Running	0.53	-	-	-	0.47	0.47	0.51	0.14	0.09	0.05	0.07	0.07	0.09	0.09	-
Heavy Duty Idle[(1)]	16.28	-	-	-	0.18	0.18	0.20	0.05	0.04	0.02	0.03	0.03	0.04	0.04	-
Total		**0.09**	**0.15**	**0.17**	**0.92**	**0.83**	**0.91**	**0.23**	**0.19**	**0.17**	**0.19**	**0.20**	**0.23**	**0.23**	**0.05**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-64. Daily Offsite Construction Trucks CO Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile CO	Month/Daily CO Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	1.17	0.42	1.25	2.17	4.68	4.01	5.52	1.50	1.50	2.51	2.01	2.51	3.01	2.51	0.50
Light Duty Idle															
Medium Duty Running	0.88	0.16	0.23	0.23	0.31	0.16	0.12	-	0.04	0.08	0.08	0.08	0.04	0.08	0.08
Medium Duty Idle(1)	71.84	0.16	0.24	0.24	0.32	0.16	0.12	-	0.04	0.08	0.08	0.08	0.04	0.08	0.08
Heavy Duty Running	1.90	-	-	-	1.67	1.67	1.84	0.50	0.33	0.17	0.25	0.25	0.33	0.33	-
Heavy Duty Idle(1)	51.17	-	-	-	0.56	0.56	0.62	0.17	0.11	0.06	0.08	0.08	0.11	0.11	-
Total		**0.73**	**1.72**	**2.64**	**7.54**	**6.56**	**8.21**	**2.18**	**2.03**	**2.89**	**2.50**	**3.00**	**3.53**	**3.11**	**0.66**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-65. Daily Offsite Construction Trucks NOx Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile NOx	Month/Daily NOx Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	0.11	0.04	0.12	0.20	0.43	0.37	0.51	0.14	0.14	0.23	0.18	0.23	0.28	0.23	0.05
Light Duty Idle															
Medium Duty Running	4.14	0.73	1.10	1.10	1.46	0.73	0.55	-	0.18	0.37	0.37	0.37	0.18	0.37	0.37
Medium Duty Idle(1)	86.73	0.19	0.29	0.29	0.38	0.19	0.14	-	0.05	0.10	0.10	0.10	0.05	0.10	0.10
Heavy Duty Running	10.64	-	-	-	9.38	9.38	10.32	2.81	1.88	0.94	1.41	1.41	1.88	1.88	-
Heavy Duty Idle(1)	92.18	-	-	-	1.02	1.02	1.12	0.30	0.20	0.10	0.15	0.15	0.20	0.20	-
Total		**0.96**	**1.50**	**1.58**	**12.67**	**11.68**	**12.63**	**3.26**	**2.45**	**1.73**	**2.20**	**2.25**	**2.59**	**2.77**	**0.51**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-66. Daily Offsite Construction Trucks SO2 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile SO2	Month/Daily SO2 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	0.01	0.00	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Light Duty Idle															
Medium Duty Running	0.04	0.01	0.01	0.01	0.01	0.01	0.01	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Medium Duty Idle[(1)]	0.46	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy Duty Running	0.04	-	-	-	0.04	0.04	0.04	0.01	0.01	0.00	0.01	0.01	0.01	0.01	-
Heavy Duty Idle[(1)]	0.07	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Total		**0.01**	**0.02**	**0.02**	**0.07**	**0.06**	**0.07**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.01**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-67. Daily Offsite Construction Trucks PM10 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile PM10	Month/Daily PM10 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Duty Idle															
Medium Duty Running	0.16	0.03	0.04	0.04	0.06	0.03	0.02	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Medium Duty Idle[(1)]	5.35	0.01	0.02	0.02	0.02	0.01	0.01	-	0.00	0.01	0.01	0.01	0.00	0.01	0.01
Heavy Duty Running	0.22	-	-	-	0.19	0.19	0.21	0.06	0.04	0.02	0.03	0.03	0.04	0.04	-
Heavy Duty Idle[(1)]	2.70	-	-	-	0.03	0.03	0.03	0.01	0.01	0.00	0.00	0.00	0.01	0.01	-
Medium Duty Road Dust	0.67	0.12	0.18	0.18	0.24	0.12	0.09	-	0.03	0.06	0.06	0.06	0.03	0.06	0.06
Heavy Duty Road Dust	1.12	-	-	-	0.99	0.99	1.08	0.30	0.20	0.10	0.15	0.15	0.20	0.20	-
Total		**0.16**	**0.24**	**0.24**	**1.53**	**1.37**	**1.45**	**0.36**	**0.28**	**0.20**	**0.26**	**0.26**	**0.29**	**0.32**	**0.08**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-68. Daily Offsite Construction Trucks PM2.5 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile PM2.5	Month/Daily PM2.5 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Light Duty Idle															
Medium Duty Running	0.14	0.03	0.04	0.04	0.05	0.03	0.02	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Medium Duty Idle(1)	4.92	0.01	0.02	0.02	0.02	0.01	0.01	-	0.00	0.01	0.01	0.01	0.00	0.01	0.01
Heavy Duty Running	0.20	-	-	-	0.18	0.18	0.19	0.05	0.04	0.02	0.03	0.03	0.04	0.04	-
Heavy Duty Idle(1)	2.49	-	-	-	0.03	0.03	0.03	0.01	0.01	0.00	0.00	0.00	0.01	0.01	-
Medium Duty Road Dust	0.40	0.07	0.11	0.11	0.14	0.07	0.05	-	0.02	0.04	0.04	0.04	0.02	0.04	0.04
Heavy Duty Road Dust	0.72	-	-	-	0.64	0.64	0.70	0.19	0.13	0.06	0.10	0.10	0.13	0.13	-
Total		**0.11**	**0.16**	**0.16**	**1.06**	**0.95**	**1.01**	**0.25**	**0.20**	**0.14**	**0.18**	**0.18**	**0.20**	**0.23**	**0.05**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-69. Daily Offsite Construction Trucks CO2 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Grams per Mile CO2	Month/Daily CO2 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Light Duty Running	344	123	368	638	1,374	1,178	1,619	442	442	736	589	736	883	736	147
Light Duty Idle															
Medium Duty Running	1,165	205	308	308	411	205	154	-	51	103	103	103	51	103	103
Medium Duty Idle(1)	5,966	13	20	20	26	13	10	-	3	7	7	7	3	7	7
Heavy Duty Running	1,813	-	-	-	1,597	1,597	1,757	479	319	160	240	240	319	319	-
Heavy Duty Idle(1)	6,980	-	-	-	77	77	85	23	15	8	12	12	15	15	-
Total		**341**	**696**	**966**	**3,485**	**3,070**	**3,625**	**944**	**831**	**1,013**	**949**	**1,096**	**1,273**	**1,180**	**256**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-70. Daily Fugitive Dust Emissions during the First 3 Months of Construction - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

	Average Pieces of Equipment Operating	Peak Pieces of Equipment Operating	Hours of Operation	PM10 Emission Factor (lb/hour)	Water Control Factor[6]	Controlled Emissions: Average PM10 Emissions (lbs/day)	Controlled Emissions: Peak PM10 Emissions (lbs/day)	Uncontrolled Emissions: Average PM10 Emissions (lbs/day)	Uncontrolled Emissions: Peak PM10 Emissions (lbs/day)	SCAQMD Emission Factor Source	Mitigated Emissions: Peak PM10 Emissions (lbs/day)
Grading Operations [1]	1	1	24	5.84	0.39	54.6	54.6	140.1	140.1	Table A9-9-F	14.01

	Average Tons of Materials Handled Per Day	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[6]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source	
Trenching Operations (Backhoe) - Temporary Stockplies [2]	500	2000	0.004	0.39	0.7	2.7	1.8	7.0	Table A9-9-G	0.70

	Days of Construction	Average Acreage Disturbed Per Day	Peak Acreage Disturbed Per Day	Emission Factor (lb/day/acre)	Average PM10 Emissions Pounds/day	Peak PM10 Emissions Pounds/day	Average PM10 Emissions Tons/Year	Peak PM10 Emissions Tons/Year	SCAQMD Emission Factor Source	
Wind Erosion Disturbed Area and Temporary Stockpiles [3]	22	2	2	0.20	0.40	0.40	0.004	0.004	Table A9-9-E	0.04

	Estimated Materials Handled Per Day (tons)	Peak Tons of Materials Handled Per Day	PM10 Emission Factor (lb/ton)	Water Control Factor[6]	Controlled Emissions: Average PM10 Emissions Pounds/day	Controlled Emissions: Peak PM10 Emissions Pounds/day	Uncontrolled Emissions: Average PM10 Emissions Pounds/day	Uncontrolled Emissions: Peak PM10 Emissions Pounds/day	SCAQMD Emission Factor Source	
Truck Filling[4]	500	2000	0.02	0.39	4.3	17.2	11.0	44.1	Table A9-9	4.41
Truck Dumping[5]	500	2000	0.01	0.39	1.8	7.1	4.5	18.2	Table A9-9	1.82

(1) Emissions (lbs/hr) = $[0.75 \times (G^{1.5})/(H^{1.4}) \times J$

where G = silt content (7.5%), H = moisture content (2.0%) and J = hrs of operation (EPA AP-42 Table 11.9-1 for bulldozing overburden).

(2) Emissions (lbs/ton) = $0.00112 \times [(G/5)^{1.3}/(H/2)^{1.4}] \times I/J$

where G=mean wind speed (12 mph), H=moisture content of surface material (2%); I=lbs of dirt handled per day; and J=2,000 lbs/ton. Assumes that 1 cubic yard of trench spoils weighs 1 ton.

(3) Emissions (lbs/day/acre) = $1.7 \times [(G/1.5)*(365-H)/235] \times I/15 \times J$

where G = silt content (7.5%); H = days with >0.01 inch of rain (34); I = % of time wind speed >12 mph (0.5%), and J= fraction of TSP (0.5). Wind speed data acquired from Lynwood 1981 SCAQMD meteorological file.

(4) Used SCAQMD Table 9-9 Default emission factors.

(5) Dumping will occur off-site, but still within SCAQMD jurisdiction.

(6) Controlled emissions assume that watering 3 times per day would reduce uncontrolled emissions by 61 percent (Uncontrolled Emissions x 0.39). www.AQMD.gov/CEQA/handbook/mitigation/fugitive/Table XI-A.doc

Table A.1.1-71. Daily Fugitive Dust PM10 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Pounds per Day PM10	Month/Daily PM10 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	Mitigated
Grading Operations	54.6	54.6	54.6	54.6											14.0
Trenching Operations	2.7	2.7	2.7	2.7											0.7
Wind Erosion	0.4	0.4	0.4	0.4											0.0
Truck Filling	17.2	17.2	17.2	17.2											4.4
Truck Dumping	7.1	7.1	7.1	7.1											1.8
Total		**82.0**	**82.0**	**82.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**20.97**

Table A.1.1-72. Daily Fugitive Dust PM2.5 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Equipment	Pounds per Day PM2.5	Month/Daily PM2.5 Emissions (Pounds)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	Mitigated
Grading Operations	11.5	11.5	11.5	11.5											2.9
Trenching Operations	0.6	0.6	0.6	0.6											0.1
Wind Erosion	0.1	0.1	0.1	0.1											0.0
Truck Filling	3.6	3.6	3.6	3.6											0.9
Truck Dumping	1.5	1.5	1.5	1.5											0.4
Total		**17.2**	**17.2**	**17.2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**8.81**

Table A.1.1-73. Daily Total VOC Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

	Month/Daily VOC Emissions (Pounds)													
Source	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
Construction Equipment	1.49	2.46	2.21	4.25	5.01	3.10	1.59	2.33	2.93	2.93	2.28	2.28	1.13	0.38
On-site Trucks	0.05	0.08	0.08	0.58	0.53	0.57	0.14	0.11	0.07	0.10	0.10	0.11	0.12	0.03
Off-site Trucks	0.09	0.15	0.17	0.92	0.83	0.91	0.23	0.19	0.17	0.19	0.20	0.23	0.23	0.05
Fugitive Dust														
Total	**1.63**	**2.69**	**2.46**	**5.76**	**6.37**	**4.58**	**1.97**	**2.63**	**3.18**	**3.22**	**2.58**	**2.61**	**1.49**	**0.46**

Table A.1.1-74. Daily Total CO Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

	Month/Daily CO Emissions (Pounds)													
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
Construction Equipment	5.95	10.59	11.24	19.38	20.79	13.72	6.70	9.26	10.74	11.30	8.52	8.52	4.76	2.13
On-site Trucks	0.12	0.18	0.18	1.17	1.04	1.11	0.28	0.21	0.15	0.20	0.20	0.21	0.25	0.06
Off-site Trucks	0.73	1.72	2.64	7.54	6.56	8.21	2.18	2.03	2.89	2.50	3.00	3.53	3.11	0.66
Fugitive Dust														
Total	**6.80**	**12.50**	**14.07**	**28.10**	**28.39**	**23.04**	**9.16**	**11.51**	**13.78**	**14.00**	**11.72**	**12.27**	**8.12**	**2.85**

Table A.1.1-75. Daily Total NOx Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

	Month/Daily NOx Emissions (Pounds)													
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	*Exhaust*	**9**	**10**	**11**	**12**	**13**	**14**
Construction Equipment	20.87	34.63	31.57	59.15	69.18	43.66	22.30	30.74	35.46	37.33	28.16	28.16	14.16	5.54
On-site Trucks	0.28	0.42	0.42	3.63	3.35	3.59	0.92	0.68	0.45	0.60	0.60	0.68	0.75	0.14
Off-site Trucks	0.96	1.50	1.58	12.67	11.68	12.63	3.26	2.45	1.73	2.20	2.25	2.59	2.77	0.51
Fugitive Dust														
Total	**22.11**	**36.55**	**33.57**	**75.45**	**84.21**	**59.88**	**26.48**	**33.87**	**37.64**	**40.14**	**31.01**	**31.43**	**17.69**	**6.19**

Table A.1.1-76. Daily Total SO2 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

	Month/Daily SO2 Emissions (Pounds)													
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
Construction Equipment	0.03	0.05	0.05	0.09	0.11	0.07	0.04	0.05	0.05	0.05	0.04	0.04	0.02	0.01
On-site Trucks	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site Trucks	0.01	0.02	0.02	0.07	0.06	0.07	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01
Fugitive Dust														
Total	**0.04**	**0.07**	**0.07**	**0.17**	**0.17**	**0.14**	**0.05**	**0.06**	**0.07**	**0.07**	**0.06**	**0.06**	**0.04**	**0.02**

Table A.1.1-77. Daily Total PM10 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

	Month/Daily PM10 Emissions (Pounds)													
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
Construction Equipment	1.18	2.00	1.98	3.50	3.82	2.42	1.23	1.81	2.33	2.36	1.80	1.80	0.96	0.34
On-site Trucks	0.01	0.02	0.02	0.10	0.08	0.09	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.01
Off-site Trucks	0.16	0.24	0.24	1.53	1.37	1.45	0.36	0.28	0.20	0.26	0.26	0.29	0.32	0.08
Fugitive Dust	82.04	82.04	82.04											
Total	**83.39**	**84.30**	**84.28**	**5.12**	**5.27**	**3.97**	**1.61**	**2.11**	**2.54**	**2.64**	**2.08**	**2.11**	**1.31**	**0.42**

Table A.1.1-78. Daily Total PM2.5 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

	Month/Daily PM2.5 Emissions (Pounds)													
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
Construction Equipment	1.09	1.84	1.82	3.22	3.51	2.23	1.13	1.67	2.14	2.17	1.66	1.66	0.89	0.31
On-site Trucks	0.01	0.01	0.01	0.09	0.08	0.08	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.00
Off-site Trucks	0.11	0.16	0.16	1.06	0.95	1.01	0.25	0.20	0.14	0.18	0.18	0.20	0.23	0.05
Fugitive Dust	17.23	17.23	17.23											
Total	**18.43**	**19.25**	**19.23**	**4.37**	**4.54**	**3.33**	**1.40**	**1.88**	**2.29**	**2.37**	**1.86**	**1.87**	**1.13**	**0.37**

Table A.1.1-79. Daily Total CO2 Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

	Month/Daily CO2 Emissions (Pounds)													
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
Construction Equipment	4,234	6,980	6,271	11,753	13,910	8,812	4,525	5,990	6,460	7,084	5,223	5,223	2,594	1,090
On-site Trucks	50	75	75	480	430	456	114	89	63	82	82	89	101	25
Off-site Trucks	341	696	966	3,485	3,070	3,625	944	831	1,013	949	1,096	1,273	1,180	256
Fugitive Dust														
Total	**4,625**	**7,751**	**7,311**	**15,718**	**17,411**	**12,892**	**5,582**	**6,910**	**7,535**	**8,115**	**6,402**	**6,585**	**3,875**	**1,372**

Table A.1.1-80. Peak Daily Emissions - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

	Pounds per Day						
Scenario/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Scenario 1 - Phase 1							
Construction Equipment	5.01	20.79	69.18	0.11	2.00	1.84	13,910
On-site Trucks	0.53	1.04	3.35	0.00	0.02	0.01	430
Off-site Trucks	0.83	6.56	11.68	0.06	0.24	0.16	3,070
Fugitive Dust	--	--	--	--	82.04	17.23	--
Total	**6.4**	**28.4**	**84.2**	**0.2**	**84.3**	**19.3**	**17,411**
LST Emissions - No Off-site Trucks	**5.5**	**21.8**	**72.5**	**0.1**	**84.1**	**19.1**	**14,341**
Scenario 1 - Phase 1 - Mitigated LST Analysis							
Construction Equipment	5.01	20.79	69.18	0.11	2.00	1.84	13,910
On-site Trucks	0.53	1.04	3.35	0.00	0.02	0.01	430
Fugitive Dust	--	--	--	--	20.97	8.81	--
Total Mitigated LST Emissions	**5.5**	**21.8**	**72.5**	**0.1**	**23.0**	**10.7**	**14,341**

Table A.1.1-81. Total On-site DPM Emissions by Month - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

	Tons of DPM/Month													
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
Construction Equipment	0.01	0.02	0.02	0.04	0.04	0.03	0.01	0.02	0.03	0.03	0.02	0.02	0.01	0.00
On-site Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.02**	**0.02**	**0.04**	**0.04**	**0.03**	**0.01**	**0.02**	**0.03**	**0.03**	**0.02**	**0.02**	**0.01**	**0.00**

Notes: (1) Assumes that each piece of equipment would operate 22 days per month.

Table A.1.1-82. Construction Equipment Daily Activity Data - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Scenario/Equipment Type	*Power Rating (Hp)*	*Load Factor*	*Hourly Hp-Hrs*	*Hours Per Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Scenario 1 - Phase 1							
Boom Truck	107	0.31	33	6	199		0
Crane	311	0.29	90	6	542		0
Excavators	188	0.38	71	24	1,712		0
Forklift	171	0.20	34	6	205		0
Front End Loader	69	0.37	26	6	154		0
Pile Driver	210	0.42	88	6	530		0
Pump Truck	471	0.38	179	6	1,075		0
Pump Truck (24hr)	471	0.38	179	24	4,299		0
Water Truck	471	0.38	179	0	0		0
Welder	49	0.42	21	6	124		0

Table A.1.1-83. Construction Equipment Daily Emission Rates - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

Project Year/Source Type	*Fuel Type*	*Emission Factors (Grams/Horsepower-Hour)*							*References*
		VOC	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	
Tier 3 or less Standards									
Off-Road Equipment - 25-50 Hp	D	0.60	1.53	5.00	0.004	0.45	0.41	568	(1)
Off-Road Equipment - 51-120 Hp	D	0.20	2.37	3.30	0.004	0.30	0.28	568	(1)
Off-Road Equipment - 121-175 Hp	D	0.20	0.87	2.80	0.004	0.22	0.20	568	(1)
Off-Road Equipment - 176-250 Hp	D	0.20	0.75	2.80	0.004	0.15	0.14	568	(1)
Off-Road Equipment - 251-500 Hp	D	0.20	0.84	2.80	0.004	0.15	0.14	568	(1)
Off-Road Equipment - 501-750 Hp	D	0.20	1.33	2.80	0.004	0.15	0.14	568	(1)
Off-Road Equipment - >750 Hp	D	0.30	0.76	4.50	0.004	0.13	0.12	568	(1)
Light Duty Autos									
25 mph (Gms/Mi)	G	0.04	1.45	0.12	0.005	0.003	0.002	416	(2)
55 mph (Gms/Mi)	G	0.02	0.99	0.10	0.005	0.001	0.001	296	(2)
Light Duty Auto - Composite (Gms/Mi)	G	0.03	1.17	0.11	0.005	0.002	0.002	344	(3)
Medium Duty Trucks									
Idle (Gms/Hr)	D	13.36	71.84	86.73	0.46	5.35	4.92	5,966	(4)
5 mph (Gms/Mi)	D	2.49	3.94	12.32	0.04	0.39	0.36	2,587	(5)
25 mph (Gms/Mi)	D	0.26	0.89	4.47	0.04	0.13	0.12	1,291	(5)
55 mph (Gms/Mi)	D	0.13	0.66	3.45	0.04	0.15	0.14	1,018	(5)
Medium Duty Truck - Composite (Gms/Mi)	D	0.28	0.88	4.14	0.04	0.16	0.14	1,165	(6)
Heavy-Heavy Duty Trucks									
Idle (Gms/Hr)	D	16.28	51.17	92.18	0.07	2.70	2.49	6,980	(7)
5 mph (Gms/Mi)	D	4.74	8.35	31.01	0.04	0.73	0.67	4,025	(8)
25 mph (Gms/Mi)	D	0.49	2.12	10.97	0.04	0.20	0.18	2,010	(8)
55 mph (Gms/Mi)	D	0.24	1.36	9.07	0.04	0.19	0.17	1,585	(8)
Heavy-Heavy Duty Truck - Composite (Gms/Mi)	D	0.53	1.90	10.64	0.04	0.22	0.20	1,813	(6)
All Years									
Fugitive Dust (Lbs/acre-day)						21.45	2.19		(9)
T6 Truck Road Dust						0.51	0.34		(10)
T6 Truck Brake Wear						0.13	0.06		(11)
T6 Truck Tire Wear						0.03	0.01		(11)
T6 Truck Total Road Dust						**0.67**	**0.40**		
T7 Truck Road Dust						1.03	0.69		(10)
T7 Truck Brake Wear						0.06	0.03		(11)
T7 Truck Tire Wear						0.03	0.01		(11)
T7 Truck Total Road Dust						**1.12**	**0.72**		

Notes: (1) Equal to the cleanest of EPA Tier 2 or 3 nonroad emission standards. For example, since there are no Tier 3 standards for PM, data presented = Tier 2 standards. Additionally, since there are no Tier 2/3 standards for CO, data presented derived from nonroad certification data. Source: *Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling -- Compression-Ignition* (USEPA 2004).

(2) Generated with the use of the EMFAC2011 model, assuming annual average conditions for the SCAB, aggregated all light duty auto model years, and project year 2015. Units in grams/mile.

(3) Composite factors based on a round trip of 60% at 55 mph and 40% at 25 mph. Units in grams/mile.

(4) Average year 2015 idling emission factors developed from EMFAC2011 for T6 trucks. Units in grams/hour.

(5) Same as (2), except forT6 instate small construction truck.

(6) Composite factors for off-site round trips based upon 70% at 55 mph, 25% at 25 mph, and 5% at 5 mph. Units in grams/mile. Each round trip would include 15 minutes of idling.

(7) Average year 2015 idling emission factors developed from EMFAC2011 for T7 trucks. Units in grams/hour.

(8) Same as (2), except forT7 tractor construction truck.

(9) Units in lbs/acre-day from section 11.2.3 of AP-42 (EPA 1995). Emissions reduced by 61% from uncontrolled levels to represent compliance with SCAQMD Rule 403 - Fugitive Dust. PM2.5/PM10 portions of construction dust obtained from (ARB 2006).

(10) Emissions method for travel on paved roads (EPA AP-42 Section 13.2.1, January 2011):

$E = k(sL)^{0.91} \times (W)^{1.02} \times (1-(40/(4*365)$ = Grams/Mile

Where: k = 1.0 for PM10, sL = road silt loading (gms/m2), and W = weight of vehicles (10/20 tons for T6/T7 trucks).

sL for Off-Terminal driving = 0.037 (major/collector roads).

(11) From Table 9-7 (ARB 2011).

Table A.1.1-84. Construction Equipment Hourly Emission Rates - Scenario 1 Phase 1 - POLB MCC Full Expansion Project

	Pounds per Hour						
Scenario/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Scenario 1 - Phase 1							
Boom Truck	0.01	0.17	0.24	0.00	0.02	0.02	41.59
Crane	0.04	0.17	0.56	0.00	0.03	0.03	113.01
Excavators	0.03	0.12	0.44	0.00	0.02	0.02	89.35
Forklift	0.02	0.07	0.21	0.00	0.02	0.02	42.89
Front End Loader	0.01	0.13	0.19	0.00	0.02	0.02	32.16
Pile Driver	0.04	0.15	0.55	0.00	0.03	0.03	110.64
Pump Truck	0.08	0.33	1.11	0.00	0.06	0.05	224.32
Pump Truck (24hr)	0.08	0.33	1.11	0.00	0.06	0.05	224.32
Water Truck	0.08	0.33	1.11	0.00	0.06	0.05	224.32
Welder	0.03	0.07	0.23	0.00	0.02	0.02	25.94

Table A.1.1-85. Construction Equipment Daily Activity Data by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Hours per Day	Month/Number of Equipment per Day											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	6	1	1	1	1	1							
Crane	6							1	1		1	2	2
Excavators	24												
Forklift	6	2	1	2	1		2	4	4	5	1	2	1
Front End Loader	6			1								1	1
Pile Driver	6												
Pump Truck	6					2	2	3	1	1			
Pump Truck (24hr)	24				2								
Water Truck													
Welder	6				1			4	4			2	

Table A.1.1-86. Daily Construction Equipment VOC Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour VOC	Month/Daily VOC Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	0.01	0.09	0.09	0.09	0.09	0.09	-	-	-	-	-	-	-
Crane	0.04	-	-	-	-	-	-	0.24	0.24	-	0.24	0.48	0.48
Excavators	0.03	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.02	0.18	0.09	0.18	0.09	-	0.18	0.36	0.36	0.45	0.09	0.18	0.09
Front End Loader	0.01	-	-	0.07	-	-	-	-	-	-	-	0.07	0.07
Pile Driver	0.04	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	0.08	-	-	-	-	0.95	0.95	1.42	0.47	0.47	-	-	-
Pump Truck (24hr)	0.08	-	-	-	3.79	-	-	-	-	-	-	-	-
Water Truck	0.08	-	-	-	-	-	-	-	-	-	-	-	-
Welder	0.03	-	-	-	0.16	-	-	0.66	0.66	-	-	0.33	-
Total		**0.27**	**0.18**	**0.34**	**4.13**	**1.04**	**1.13**	**2.68**	**1.73**	**0.93**	**0.33**	**1.06**	**0.64**

Table A.1.1-87. Daily Construction Equipment CO Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour CO	Month/Daily CO Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	0.17	1.04	1.04	1.04	1.04	1.04	-	-	-	-	-	-	-
Crane	0.17	-	-	-	-	-	-	1.00	1.00	-	1.00	2.01	2.01
Excavators	0.12	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.07	0.79	0.39	0.79	0.39	-	0.79	1.58	1.58	1.97	0.39	0.79	0.39
Front End Loader	0.13	-	-	0.81	-	-	-	-	-	-	-	0.81	0.81
Pile Driver	0.15	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	0.33	-	-	-	-	3.98	3.98	5.97	1.99	1.99	-	-	-
Pump Truck (24hr)	0.33	-	-	-	15.92	-	-	-	-	-	-	-	-
Water Truck	0.33	-	-	-	-	-	-	-	-	-	-	-	-
Welder	0.07	-	-	-	0.42	-	-	1.68	1.68	-	-	0.84	-
Total		**1.83**	**1.44**	**2.63**	**17.78**	**5.02**	**4.77**	**10.23**	**6.25**	**3.96**	**1.40**	**4.44**	**3.20**

Table A.1.1-88. Daily Construction Equipment NOx Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour NOx	Month/Daily NOx Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	0.24	1.45	1.45	1.45	1.45	1.45	-	-	-	-	-	-	-
Crane	0.56	-	-	-	-	-	-	3.34	3.34	-	3.34	6.69	6.69
Excavators	0.44	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.21	2.54	1.27	2.54	1.27	-	2.54	5.07	5.07	6.34	1.27	2.54	1.27
Front End Loader	0.19	-	-	1.12	-	-	-	-	-	-	-	1.12	1.12
Pile Driver	0.55	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	1.11	-	-	-	-	13.27	13.27	19.90	6.63	6.63	-	-	-
Pump Truck (24hr)	1.11	-	-	-	53.08	-	-	-	-	-	-	-	-
Water Truck	1.11	-	-	-	-	-	-	-	-	-	-	-	-
Welder	0.23	-	-	-	1.37	-	-	5.48	5.48	-	-	2.74	-
Total		**3.99**	**2.72**	**5.11**	**57.17**	**14.72**	**15.81**	**33.80**	**20.53**	**12.98**	**4.61**	**13.08**	**9.08**

Table A.1.1-89. Daily Construction Equipment SO2 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour SO2	Month/Daily SO2 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-
Crane	0.00	-	-	-	-	-	-	0.01	0.01	-	0.01	0.01	0.01
Excavators	0.00	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.00	0.00	0.00	0.00	0.00	-	0.00	0.01	0.01	0.01	0.00	0.00	0.00
Front End Loader	0.00	-	-	0.00	-	-	-	-	-	-	-	0.00	0.00
Pile Driver	0.00	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	0.00	-	-	-	-	0.02	0.02	0.03	0.01	0.01	-	-	-
Pump Truck (24hr)	0.00	-	-	-	0.08	-	-	-	-	-	-	-	-
Water Truck	0.00	-	-	-	-	-	-	-	-	-	-	-	-
Welder	0.00	-	-	-	0.00	-	-	0.00	0.00	-	-	0.00	-
Total		**0.01**	**0.00**	**0.01**	**0.09**	**0.02**	**0.02**	**0.05**	**0.03**	**0.02**	**0.01**	**0.02**	**0.01**

Table A.1.1-90. Daily Construction Equipment PM10 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour PM10	Month/Daily PM10 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	0.02	0.13	0.13	0.13	0.13	0.13	-	-	-	-	-	-	-
Crane	0.03	-	-	-	-	-	-	0.18	0.18	-	0.18	0.36	0.36
Excavators	0.02	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.02	0.20	0.10	0.20	0.10	-	0.20	0.40	0.40	0.50	0.10	0.20	0.10
Front End Loader	0.02	-	-	0.10	-	-	-	-	-	-	-	0.10	0.10
Pile Driver	0.03	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	0.06	-	-	-	-	0.71	0.71	1.07	0.36	0.36	-	-	-
Pump Truck (24hr)	0.06	-	-	-	2.84	-	-	-	-	-	-	-	-
Water Truck	0.06	-	-	-	-	-	-	-	-	-	-	-	-
Welder	0.02	-	-	-	0.12	-	-	0.49	0.49	-	-	0.25	-
Total		**0.33**	**0.23**	**0.43**	**3.20**	**0.84**	**0.91**	**2.14**	**1.43**	**0.85**	**0.28**	**0.91**	**0.56**

Table A.1.1-91. Daily Construction Equipment PM2.5 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour PM2.5	Month/Daily PM2.5 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	0.02	0.12	0.12	0.12	0.12	0.12	-	-	-	-	-	-	-
Crane	0.03	-	-	-	-	-	-	0.16	0.16	-	0.16	0.33	0.33
Excavators	0.02	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	0.02	0.18	0.09	0.18	0.09	-	0.18	0.37	0.37	0.46	0.09	0.18	0.09
Front End Loader	0.02	-	-	0.09	-	-	-	-	-	-	-	0.09	0.09
Pile Driver	0.03	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	0.05	-	-	-	-	0.65	0.65	0.98	0.33	0.33	-	-	-
Pump Truck (24hr)	0.05	-	-	-	2.62	-	-	-	-	-	-	-	-
Water Truck	0.05	-	-	-	-	-	-	-	-	-	-	-	-
Welder	0.02	-	-	-	0.11	-	-	0.45	0.45	-	-	0.23	-
Total		**0.30**	**0.21**	**0.40**	**2.94**	**0.78**	**0.84**	**1.97**	**1.31**	**0.79**	**0.26**	**0.83**	**0.51**

Table A.1.1-92. Daily Construction Equipment C02 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Pounds per Hour CO2	Month/Daily CO2 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Boom Truck	41.59	250	250	250	250	250	-	-	-	-	-	-	-
Crane	113.01	-	-	-	-	-	-	678	678	-	678	1,356	1,356
Excavators	89.35	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	42.89	515	257	515	257	-	515	1,029	1,029	1,287	257	515	257
Front End Loader	32.16	-	-	193	-	-	-	-	-	-	-	193	193
Pile Driver	110.64	-	-	-	-	-	-	-	-	-	-	-	-
Pump Truck	224.32	-	-	-	-	2,692	2,692	4,038	1,346	1,346	-	-	-
Pump Truck (24hr)	224.32	-	-	-	10,768	-	-	-	-	-	-	-	-
Water Truck	224.32	-	-	-	-	-	-	-	-	-	-	-	-
Welder	25.94	-	-	-	156	-	-	623	623	-	-	311	-
Total		**764**	**507**	**957**	**11,430**	**2,941**	**3,207**	**6,368**	**3,676**	**2,633**	**935**	**2,375**	**1,806**

Table A.1.1-93. Onsite Construction Trucks Daily Activity Data by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Miles per Day	Month/Number of Equipment per Day											
		1	2	3	4	5	6	7	8	9	10	11	12
Commuters	2												
Pickup Trucks	2												
Total Light Vehicle Miles		0	0	0	0	0	0	0	0	0	0	0	0
Flatbed Truck	2	1		2	4		2	2	2	2	1	1	
Boom Truck	2			2								2	
Vac Truck	2												
Delivery Truck	2												
Dump Truck	2												
Fuel Truck	2												
Water Truck	2												
Total Medium Truck Miles		2	0	8	8	0	4	4	4	4	2	6	0
Semi Tractor	2				20	8	8	10	2	4	2		
Concrete Truck	2												
Total Heavy Truck Miles		0	0	0	40	16	16	20	4	8	4	0	0

Table A.1.1-94. Daily Onsite Construction Trucks VOC Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile VOC	Month/Daily VOC Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.03	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	2.49	0.01	-	0.04	0.04	-	0.02	0.02	0.02	0.02	0.01	0.03	-
Medium Duty Idle[(1)]	13.36	0.00	-	0.01	0.01	-	0.00	0.00	0.00	0.00	0.00	0.01	-
Heavy Duty Running	4.74	-	-	-	0.42	0.17	0.17	0.21	0.04	0.08	0.04	-	-
Heavy Duty Idle[(1)]	16.28	-	-	-	0.06	0.02	0.02	0.03	0.01	0.01	0.01	-	-
Total		**0.01**	**-**	**0.05**	**0.53**	**0.19**	**0.22**	**0.27**	**0.07**	**0.12**	**0.06**	**0.04**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-95. Daily Onsite Construction Trucks CO Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile CO	Month/Daily CO Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	1.17	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	3.94	0.02	-	0.07	0.07	-	0.03	0.03	0.03	0.03	0.02	0.05	-
Medium Duty Idle(1)	71.84	0.01	-	0.05	0.05	-	0.03	0.03	0.03	0.03	0.01	0.04	-
Heavy Duty Running	8.35	-	-	-	0.74	0.29	0.29	0.37	0.07	0.15	0.07	-	-
Heavy Duty Idle(1)	51.17	-	-	-	0.19	0.07	0.07	0.09	0.02	0.04	0.02	-	-
Total		**0.03**	**-**	**0.12**	**1.04**	**0.37**	**0.43**	**0.52**	**0.15**	**0.25**	**0.12**	**0.09**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-96. Daily Onsite Construction Trucks NOx Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile NOx	Month/Daily NOx Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.11	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	12.32	0.05	-	0.22	0.22	-	0.11	0.11	0.11	0.11	0.05	0.16	-
Medium Duty Idle(1)	86.73	0.02	-	0.06	0.06	-	0.03	0.03	0.03	0.03	0.02	0.05	-
Heavy Duty Running	31.01	-	-	-	2.73	1.09	1.09	1.37	0.27	0.55	0.27	-	-
Heavy Duty Idle(1)	92.18	-	-	-	0.34	0.13	0.13	0.17	0.03	0.07	0.03	-	-
Total		**0.07**	**-**	**0.28**	**3.35**	**1.23**	**1.37**	**1.67**	**0.45**	**0.75**	**0.38**	**0.21**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-97. Daily Onsite Construction Trucks SO2 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile SO2	Month/Daily SO2 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.01	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	0.04	0.00	-	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
Medium Duty Idle[(1)]	0.46	0.00	-	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
Heavy Duty Running	0.04	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-
Heavy Duty Idle[(1)]	0.07	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-
Total		**0.00**	**-**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-98. Daily Onsite Construction Trucks PM10 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile PM10	Month/Daily PM10 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.00	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	0.39	0.00	-	0.01	0.01	-	0.00	0.00	0.00	0.00	0.00	0.01	-
Medium Duty Idle[(1)]	5.35	0.00	-	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
Heavy Duty Running	0.73	-	-	-	0.06	0.03	0.03	0.03	0.01	0.01	0.01	-	-
Heavy Duty Idle[(1)]	2.70	-	-	-	0.01	0.00	0.00	0.00	0.00	0.00	0.00	-	-
Total		**0.00**	**-**	**0.01**	**0.08**	**0.03**	**0.04**	**0.04**	**0.01**	**0.02**	**0.01**	**0.01**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-99. Daily Onsite Construction Trucks PM2.5 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile PM2.5	Month/Daily PM2.5 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.00	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	0.36	0.00	-	0.01	0.01	-	0.00	0.00	0.00	0.00	0.00	0.00	-
Medium Duty Idle(1)	4.92	0.00	-	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
Heavy Duty Running	0.67	-	-	-	0.06	0.02	0.02	0.03	0.01	0.01	0.01	-	-
Heavy Duty Idle(1)	2.49	-	-	-	0.01	0.00	0.00	0.00	0.00	0.00	0.00	-	-
Total		**0.00**	**-**	**0.01**	**0.08**	**0.03**	**0.03**	**0.04**	**0.01**	**0.02**	**0.01**	**0.01**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-100. Daily Onsite Construction Trucks CO2 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile CO2	Month/Daily CO2 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	344	-	-	-	-	-	-	-	-	-	-	-	-
Light Duty Idle													
Medium Duty Running	2,587	11.40	-	45.58	45.58	-	22.79	22.79	22.79	22.79	11.40	34.19	-
Medium Duty Idle(1)	5,966	1.09	-	4.36	4.36	-	2.18	2.18	2.18	2.18	1.09	3.27	-
Heavy Duty Running	4,025	-	-	-	354.65	141.86	141.86	177.32	35.46	70.93	35.46	-	-
Heavy Duty Idle(1)	6,980	-	-	-	25.52	10.21	10.21	12.76	2.55	5.10	2.55	-	-
Total		**12**	**-**	**50**	**430**	**152**	**177**	**215**	**63**	**101**	**51**	**37**	**-**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for one hour per day onsite.

Table A.1.1-101. Offsite Construction Trucks Daily Activity Data by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Miles per Day	Month											
		1	2	3	4	5	6	7	8	9	10	11	12
Commuters	32.4	16	14	24	76	30	34	46	26	39	21	23	14
Pickup Trucks	20												
Total Light Vehicle Miles		518.4	453.6	777.6	2462.4	972	1101.6	1490.4	842.4	1263.6	680.4	745.2	453.6
Flatbed Truck	20	1		2	4		2	2	2	2	1	1	
Boom Truck	20			2								2	
Vac Truck	20												
Delivery Truck	20												
Dump Truck	20												
Fuel Truck	20												
Water Truck	20												
Total Medium Truck Miles		20	0	80	80	0	40	40	40	40	20	60	0
Semi Tractor	20				20	8	8	10	2	4	2		
Concrete Truck	20												
Total Heavy Truck Miles		0	0	0	400	160	160	200	40	80	40	0	0

Table A.1.1-102. Daily Offsite Construction Trucks VOC Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile VOC	Month/Daily VOC Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.03	0.03	0.03	0.05	0.17	0.07	0.07	0.10	0.06	0.09	0.05	0.05	0.03
Light Duty Idle													
Medium Duty Running	0.28	0.01	-	0.05	0.05	-	0.02	0.02	0.02	0.02	0.01	0.04	-
Medium Duty Idle[(1)]	13.36	0.01	-	0.03	0.03	-	0.01	0.01	0.01	0.01	0.01	0.02	-
Heavy Duty Running	0.53	-	-	-	0.47	0.19	0.19	0.23	0.05	0.09	0.05	-	-
Heavy Duty Idle[(1)]	16.28	-	-	-	0.18	0.07	0.07	0.09	0.02	0.04	0.02	-	-
Total		**0.05**	**0.03**	**0.13**	**0.89**	**0.32**	**0.37**	**0.46**	**0.16**	**0.25**	**0.13**	**0.11**	**0.03**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-103. Daily Offsite Construction Trucks CO Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile CO	Month/Daily CO Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	1.17	1.34	1.17	2.01	6.35	2.51	2.84	3.85	2.17	3.26	1.76	1.92	1.17
Light Duty Idle													
Medium Duty Running	0.88	0.04	-	0.16	0.16	-	0.08	0.08	0.08	0.08	0.04	0.12	-
Medium Duty Idle[(1)]	71.84	0.04	-	0.16	0.16	-	0.08	0.08	0.08	0.08	0.04	0.12	-
Heavy Duty Running	1.90	-	-	-	1.67	0.67	0.67	0.84	0.17	0.33	0.17	-	-
Heavy Duty Idle[(1)]	51.17	-	-	-	0.56	0.23	0.23	0.28	0.06	0.11	0.06	-	-
Total		**1.42**	**1.17**	**2.32**	**8.90**	**3.40**	**3.89**	**5.12**	**2.55**	**3.86**	**2.06**	**2.16**	**1.17**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-104. Daily Offsite Construction Trucks NOx Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile NOx	Month/Daily NOx Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.11	0.12	0.11	0.18	0.58	0.23	0.26	0.35	0.20	0.30	0.16	0.18	0.11
Light Duty Idle													
Medium Duty Running	4.14	0.18	-	0.73	0.73	-	0.37	0.37	0.37	0.37	0.18	0.55	-
Medium Duty Idle[(1)]	86.73	0.05	-	0.19	0.19	-	0.10	0.10	0.10	0.10	0.05	0.14	-
Heavy Duty Running	10.64	-	-	-	9.38	3.75	3.75	4.69	0.94	1.88	0.94	-	-
Heavy Duty Idle[(1)]	92.18	-	-	-	1.02	0.41	0.41	0.51	0.10	0.20	0.10	-	-
Total		**0.35**	**0.11**	**1.11**	**11.90**	**4.39**	**4.88**	**6.01**	**1.70**	**2.84**	**1.43**	**0.87**	**0.11**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-105. Daily Offsite Construction Trucks SO2 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile SO2	Month/Daily SO2 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.01	0.01	0.00	0.01	0.03	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.00
Light Duty Idle													
Medium Duty Running	0.04	0.00	-	0.01	0.01	-	0.00	0.00	0.00	0.00	0.00	0.01	-
Medium Duty Idle(1)	0.46	0.00	-	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
Heavy Duty Running	0.04	-	-	-	0.04	0.01	0.01	0.02	0.00	0.01	0.00	-	-
Heavy Duty Idle(1)	0.07	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-
Total		**0.01**	**0.00**	**0.02**	**0.07**	**0.03**	**0.03**	**0.04**	**0.02**	**0.03**	**0.01**	**0.01**	**0.00**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-106. Daily Offsite Construction Trucks PM10 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile PM10	Month/Daily PM10 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Light Duty Idle													
Medium Duty Running	0.16	0.01	-	0.03	0.03	-	0.01	0.01	0.01	0.01	0.01	0.02	-
Medium Duty Idle(1)	5.35	0.00	-	0.01	0.01	-	0.01	0.01	0.01	0.01	0.00	0.01	-
Heavy Duty Running	0.22	-	-	-	0.19	0.08	0.08	0.10	0.02	0.04	0.02	-	-
Heavy Duty Idle(1)	2.70	-	-	-	0.03	0.01	0.01	0.01	0.00	0.01	0.00	-	-
Medium Duty Road Dust	0.67	0.03	-	0.12	0.12	-	0.06	0.06	0.06	0.06	0.03	0.09	-
Heavy Duty Road Dust	1.12	-	-	-	0.99	0.39	0.39	0.49	0.10	0.20	0.10	-	-
Total		**0.04**	**0.00**	**0.16**	**1.37**	**0.49**	**0.57**	**0.69**	**0.20**	**0.32**	**0.16**	**0.12**	**0.00**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-107. Daily Offsite Construction Trucks PM2.5 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile PM2.5	Month/Daily PM2.5 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Light Duty Idle													
Medium Duty Running	0.14	0.01	-	0.03	0.03	-	0.01	0.01	0.01	0.01	0.01	0.02	-
Medium Duty Idle[(1)]	4.92	0.00	-	0.01	0.01	-	0.01	0.01	0.01	0.01	0.00	0.01	-
Heavy Duty Running	0.20	-	-	-	0.18	0.07	0.07	0.09	0.02	0.04	0.02	-	-
Heavy Duty Idle[(1)]	2.49	-	-	-	0.03	0.01	0.01	0.01	0.00	0.01	0.00	-	-
Medium Duty Road Dust	0.40	0.02	-	0.07	0.07	-	0.04	0.04	0.04	0.04	0.02	0.05	-
Heavy Duty Road Dust	0.72	-	-	-	0.64	0.25	0.25	0.32	0.06	0.13	0.06	-	-
Total		**0.03**	**0.00**	**0.11**	**0.96**	**0.34**	**0.39**	**0.48**	**0.14**	**0.23**	**0.11**	**0.08**	**0.00**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-108. Daily Offsite Construction Trucks CO2 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

Equipment	Grams per Mile CO2	Month/Daily CO2 Emissions (Pounds)											
		1	2	3	4	5	6	7	8	9	10	11	12
Light Duty Running	343.79	393	343	589	1,865	736	834	1,129	638	957	515	564	343
Light Duty Idle													
Medium Duty Running	1,165.01	51	-	205	205	-	103	103	103	103	51	154	-
Medium Duty Idle[(1)]	5,965.57	3	-	13	13	-	7	7	7	7	3	10	-
Heavy Duty Running	1,812.84	-	-	-	1,597	639	639	799	160	319	160	-	-
Heavy Duty Idle[(1)]	6,980.43	-	-	-	77	31	31	38	8	15	8	-	-
Total		**447**	**343**	**807**	**3,757**	**1,406**	**1,613**	**2,075**	**915**	**1,401**	**737**	**728**	**343**

Notes: (1) Idle emission Rates are in Grams per Hour. Each vehicle is estimated to idle for 15 minuts per trip Offsite.

Table A.1.1-109. Daily Total VOC Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

	Month/Daily VOC Emissions (Pounds)											
Source	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	0.27	0.18	0.34	4.13	1.04	1.13	2.68	1.73	0.93	0.33	1.06	0.64
On-site Trucks	0.01	-	0.05	0.53	0.19	0.22	0.27	0.07	0.12	0.06	0.04	-
Off-site Trucks	0.05	0.03	0.13	0.89	0.32	0.37	0.46	0.16	0.25	0.13	0.11	0.03
Fugitive Dust												
Total	**0.34**	**0.21**	**0.52**	**5.55**	**1.55**	**1.72**	**3.41**	**1.97**	**1.30**	**0.52**	**1.20**	**0.67**

Table A.1.1-110. Daily Total CO Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

	Month/Daily CO Emissions (Pounds)											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	1.83	1.44	2.63	17.78	5.02	4.77	10.23	6.25	3.96	1.40	4.44	3.20
On-site Trucks	0.03	-	0.12	1.04	0.37	0.43	0.52	0.15	0.25	0.12	0.09	-
Off-site Trucks	1.42	1.17	2.32	8.90	3.40	3.89	5.12	2.55	3.86	2.06	2.16	1.17
Fugitive Dust												
Total	**3.28**	**2.61**	**5.08**	**27.73**	**8.79**	**9.09**	**15.87**	**8.95**	**8.07**	**3.58**	**6.69**	**4.38**

Table A.1.1-111. Daily Total NOx Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

	Month/Daily NOx Emissions (Pounds)											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	3.99	2.72	5.11	57.17	14.72	15.81	33.80	20.53	12.98	4.61	13.08	9.08
On-site Trucks	0.07	-	0.28	3.35	1.23	1.37	1.67	0.45	0.75	0.38	0.21	-
Off-site Trucks	0.35	0.11	1.11	11.90	4.39	4.88	6.01	1.70	2.84	1.43	0.87	0.11
Fugitive Dust												
Total	**4.41**	**2.83**	**6.49**	**72.42**	**20.34**	**22.05**	**41.49**	**22.68**	**16.57**	**6.42**	**14.16**	**9.18**

Table A.1.1-112. Daily Total SO2 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

	Month/Daily SO2 Emissions (Pounds)											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	0.01	0.00	0.01	0.09	0.02	0.02	0.05	0.03	0.02	0.01	0.02	0.01
On-site Trucks	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Off-site Trucks	0.01	0.00	0.02	0.07	0.03	0.03	0.04	0.02	0.03	0.01	0.01	0.00
Fugitive Dust												
Total	**0.01**	**0.01**	**0.03**	**0.16**	**0.05**	**0.06**	**0.09**	**0.05**	**0.05**	**0.02**	**0.03**	**0.02**

Table A.1.1-113. Daily Total PM10 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

	Month/Daily PM10 Emissions (Pounds)											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	0.33	0.23	0.43	3.20	0.84	0.91	2.14	1.43	0.85	0.28	0.91	0.56
On-site Trucks	0.00	-	0.01	0.08	0.03	0.04	0.04	0.01	0.02	0.01	0.01	-
Off-site Trucks	0.04	0.00	0.16	1.37	0.49	0.57	0.69	0.20	0.32	0.16	0.12	0.00
Fugitive Dust												
Total	**0.38**	**0.23**	**0.60**	**4.66**	**1.36**	**1.51**	**2.87**	**1.64**	**1.20**	**0.45**	**1.03**	**0.56**

Table A.1.1-114. Daily Total PM2.5 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

	Month/Daily PM2.5 Emissions (Pounds)											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	0.30	0.21	0.40	2.94	0.78	0.84	1.97	1.31	0.79	0.26	0.83	0.51
On-site Trucks	0.00	-	0.01	0.08	0.03	0.03	0.04	0.01	0.02	0.01	0.01	-
Off-site Trucks	0.03	0.00	0.11	0.96	0.34	0.39	0.48	0.14	0.23	0.11	0.08	0.00
Fugitive Dust												
Total	**0.34**	**0.21**	**0.52**	**3.98**	**1.14**	**1.26**	**2.48**	**1.46**	**1.03**	**0.38**	**0.92**	**0.52**

Table A.1.1-115. Daily Total CO2 Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

	Month/Daily CO2 Emissions (Pounds)											
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Construction Equipment	764	507	957	11,430	2,941	3,207	6,368	3,676	2,633	935	2,375	1,806
On-site Trucks	12	-	50	430	152	177	215	63	101	51	37	-
Off-site Trucks	447	343	807	3,757	1,406	1,613	2,075	915	1,401	737	728	343
Fugitive Dust												
Total	**1,224**	**850**	**1,814**	**15,617**	**4,499**	**4,997**	**8,658**	**4,653**	**4,134**	**1,723**	**3,141**	**2,150**

Table A.1.1-116. Peak Daily Emissions - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

	Pounds per Day						
Scenario/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Scenario 1 - Phase 2							
Construction Equipment	4.13	17.78	57.17	0.09	3.20	2.94	11,430
On-site Trucks	0.53	1.04	3.35	0.00	0.08	0.08	430
Off-site Trucks	0.89	8.90	11.90	0.07	1.37	0.96	3,757
Fugitive Dust							
Total	**5.6**	**27.7**	**72.4**	**0.2**	**4.7**	**4.0**	**15,617**
LST Emissions - No Off-site Trucks	**4.7**	**18.8**	**60.5**	**0.1**	**3.3**	**3.0**	**11,860**

Table A.1.1-117. Total On-site DPM Emissions by Month - Scenario 1 Phase 2 - POLB MCC Full Expansion Project

	Tons of DPM/Month														
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**Total Phase**
Construction Equipment	0.00	0.00	0.00	0.04	0.01	0.01	0.02	0.02	0.01	0.00	0.01	0.01			
On-site Trucks	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-			
Total - Scenario 1 Phase 2	**0.00**	**0.00**	**0.00**	**0.04**	**0.01**	**0.01**	**0.02**	**0.02**	**0.01**	**0.00**	**0.01**	**0.01**			**0.14**
Scenario 1 Phase 0	**0.00**	**0.01**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**			**0.02**
Scenario 1 Phase 1	**0.01**	**0.02**	**0.02**	**0.04**	**0.04**	**0.03**	**0.01**	**0.02**	**0.03**	**0.03**	**0.02**	**0.02**	**0.01**	**0.00**	**0.31**
Total - Scenario 1															**0.46**
70-Year Average															**0.01**

Table A.1.1-118. Monthly Total CO2 Emissions by Month - Full Expansion Project Scenario 1 - POLB MCC Modification Project

	Month/Monthly CO2 Emissions (Metric Tons)												
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
Phase 0	35	76	-	-	-	-	-	-	-	-	-	-	
Phase 1	46	78	73	157	174	129	56	69	75	81	64	66	
Phase 2	12	9	18	156	45	50	87	47	41	17	31	21	
Total	**93**	**162**	**91**	**313**	**219**	**179**	**142**	**116**	**117**	**98**	**95**	**87**	**1,714**
Ammoratized 30 Years													**57.13**

Table A.1.1-119. Monthly Total CO2 Emissions by Month - Full Expansion Project Scenario 2 - POLB MCC Modification Project

	Month/Monthly CO2 Emissions (Metric Tons)												
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
Phase 0	35	76	-	-	-	-	-	-	-	-	-	-	
Phase 1	21	75	67	167	76	72	83	86	58	65	46	-	
Phase 2	12	116	86	54	37	32	21	18	14	-	-	-	
Phase 3	12	9	16	154	45	49	86	46	40	17	30	21	
Total	**79**	**275**	**170**	**375**	**159**	**153**	**189**	**149**	**113**	**82**	**76**	**21**	**1,843**
Ammoratized 30 Years													**61.42**

Table A.1.1-120. Monthly Total CO2 Emissions by Month - Reduced Expansion Project Scenario 1 - POLB MCC Modification Project

	Month/Monthly CO2 Emissions (Metric Tons)												
Equipment	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
Phase 0	35	76	-	-	-	-	-	-	-	-	-	-	
Phase 1	46	78	73	157	174	129	56	69	75	81	64	66	
Total	**81**	**154**	**73**	**157**	**174**	**129**	**56**	**69**	**75**	**81**	**64**	**66**	**1,179**
Ammoratized 30 Years													**39.31**

Attachment A.1.2
Operations Air Emission Calculation Tables

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Appendix A.1.2 - Operational Emissions Calculations Tables

Appendix A.1.2 - Operational Emissions Calculations Tables

Table A.1.2-1. Ship Visit and Throughput Data - POLB MCC Project Scenarios

Project Scenario/Ship Type	*Annual Ship Visits*	*Annual Turns*	*Short Tons/ Ship Visit*	*Hoteling Time/ Visit (Hours) (1)*	*Annual Throughput (Short Tons)*
CEQA Baseline					
Bulk - General	35	4	44,184	229	1,546,428
Full Expansion Project					
Capacity Study	99		46,200	60	4,576,000
Reduced Expansion Alternative					
Capacity Study	79		46,200	60	3,660,800
No Project					
Bulk - General	67		36,883	70	2,471,150

Notes: (1) Baseline data derived from Cold Ironing Evaluation.pdf - provided by MCC on 11/11/11.

Table A.1.2-2. Cargo Vessel Propulsion Engine Usage per One-Way Trip within the SPBP Fairway Zone - POLB MCC Project Scenarios

	Fairway (1)								
Scenario/Vessel Type-Location	*Propulsion Max Hp (2)*	*Load Factor (3)*	*Modal Hp*	*Distance (NM)*	*Max Speed (kts) (2)*	*Speed (Kts) (4)*	*Hours Per Trip*	*Hp-Hrs/ Trip*	*kW-Hrs/ Trip (5)*
Non-Compliance with VSRP									
Bulk - General - Baseline	11,495	0.83	9,547	39.9	14.4	13.5	2.95	28,142	20,994
Bulk - General - Future	11,495	0.83	9,547	42.6	14.4	13.5	3.14	30,022	22,396
Compliance with VSRP - Baseline									
Bulk - General - Outside VSRPZ	11,495	0.83	9,547	17.8	14.4	13.5	1.32	12,569	9,376
Bulk - General - In VSRPZ (6)	11,495	0.58	6,652	22.1	14.4	12.0	1.84	12,240	9,131
Bulk - General - Total kW-Hrs									18,507
Compliance with VSRP - Future Scenarios									
Bulk - General - Outside VSRPZ	11,495	0.58	6,652	20.5	14.4	12.0	1.71	11,356	8,471
Bulk - General - In VSRPZ (6)	11,495	0.58	6,652	22.1	14.4	12.0	1.84	12,240	9,131
Bulk - General - Total kW-Hrs									17,602

Notes: (1) Vessel route between the boundary of the SCAQMD waters and the Precautionary Area. Based upon data from the Port of Long Beach Air Emissions Inventory - (PEI) (Starcrest 2008) Table 2.1 and 90/10% usage of north/west fairway routes defined by MCC for the Baseline Scenarios. For the Future Scenarios, based upo data in 2012 PEI Table B.3 and 100% usage of the north route.

(2) 2012 PEI Table B.3.

(3) Calculated by Propellar Law, where load factor = (actual speed/max. speed)^3 (PEI page 61).

(4) Represents service speed, which is 94% of maximum speed (2001 PEI).

(5) 1 kW-Hr = 0.746 Hp-Hr.

(6) Applies to route within 20 nm of Pt. Fermin. PEI data for Berth F208 show that 62% of the ship visits compiled with the VSRP within this area in 2006.

Table A.1.2-3. Cargo Vessel Propulsion Engine Usage per One-Way Trip within the SPBP Precautionary Area - POLB MCC Project Scenarios

	Precautionary Area (1)								
Vessel Type/Project Scenario	*Propulsion Max Hp*	*Load Factor (2)*	*Modal Hp*	*Distance (NM) (3)*	*Max Speed (kts)*	*Speed (Kts) (4)*	*Hours*	*Hp-Hrs/ Trip*	*kW-Hrs/ Trip*
Bulk - General - Baseline	11,495	0.24	2,806	10.1	14.4	9.0	1.12	3,134	2,338
Bulk - General - Future	11,495	0.24	2,806	9.8	14.4	9.0	1.09	3,045	2,271

Notes: (1) Portion of the trip between the fairway and POLB breakwater.

(2) Load factor derived from Propeller Law, where load factor = (actual speed/max. speed)^3 (PEI page 61).

(3) PEI Table 2.1.

(4) Average transit speeds obtained from PEI Table 2.4.

Table A.1.2-4. OGV Propulsion Engine Usage per Round Trip within the POLB Breakwater - POLB MCC Project Scenarios

Operational Mode/Vessel Type	*Propulsion Max Hp*	*Load Factor (2)*	*Modal Hp*	*Distance (NM)*	*Max Speed (kts)*	*Speed (Kts) (3)*	*Hours*	*Hp-Hrs/ Trip*	*kW-Hrs/ Trip*
Transit Baseline (1)									
Bulk - General - Inbound	11,495	0.04	481	2.4	14.4	5.0	0.48	231	172
Bulk - General - Outbound	11,495	0.09	1,057	2.4	14.4	6.5	0.37	390	291
Bulk - General - Total kW-Hrs									464
Transit Future (1)									
Bulk - General - Inbound	11,495	0.04	481	2.4	14.4	5.0	0.48	231	172
Bulk - General - Outbound	11,495	0.09	1,057	2.4	14.4	6.5	0.37	390	291
Bulk - General - Total kW-Hrs									464
Docking									
Bulk - Baseline	11,495	0.02	230				0.50	115	86
Bulk - Future	11,495	0.02	230				0.50	115	86

Notes: (1) Average one-way transit operations between the POLB breakwater and the MCC Terminal.

(2) Transit load factors derived from Propeller Law. Docking load factors and duration obtained from PEI page 65, although duration doubled to simulate maneuverin in a confinced area while departing Berth F208.

(3) PEI page 66 and 2012 PEI page 33 for Baseline/Future, expect outbound based upon 50/50% at 5/8 kts.

Table A.1.2-5. Cargo Vessel Propulsion Engine Usage for Vessel Turns at Berth F208 - POLB MCC Project Scenarios

Vessel Type/Project Scenario	*Propulsion Max Hp*	*Load Factor (1)*	*Modal Hp*	*Hours/ Mode (2)*	*Hp-Hrs/ Trip*	*kW-Hrs/ Trip*
Bulk - 2015 Baseline	11,495	0.020	230	1.50	345	257

Notes: (1) Equates to docking mode.

(2) From MCC.

Table A.1.2-6. Cargo Vessel Transit Distances within the SPBP Fairway and Precautionary Areas - POLB MCC Project Scenarios

Fairway	*1-way Route Length (1)/ Percent in Route (2)*			
Baseline Scenario	*North*	*West*	*South*	*Ave.*
	39.5	43.5	36.0	*Length*
	90.0	10.0	-	39.9
Future Scenarios	*North*	*West*	*South*	
	42.9	40.0	31.9	
	90.0	10.0	-	42.6
VSRP Zone	*1-way Route Length (1)/ Percent in Route (2)*			
Baseline Scenario	*North*	*West*	*South*	
	22.4	19.2	13.6	
	90.0	10.0	-	22.1
Precautionary Area	*1-way Route Length (1)/ Percent in Route (2)*			
Baseline Scenario	*North*	*West*	*South*	
	10.05	10.05	7.5	
	90.0	10.0	-	10.1
Baseline Scenario	*North*	*West*	*South*	
	9.75	9.90	7.5	
	90.0	10.0	-	9.8

Notes: (1) Route lengths in units of nautical miles (nm) from PEI Table 2.1 and 2012 PEI Table 2.2 for baseline/Future scenarios.

(2) Based upon transit distribution patterns predicted by MCC.

Table A.1.2-7. Cargo Vessel Auxiliary Generator Usage per One-Way Trip within the SPBP Fairway - POLB MCC Project Scenarios

Scenario/Vessel Type-Project Scenario	*Total Aux. Engine Power (kW) (1)*	*Load Factor (2)*	*Hours/ Transit*	*kW-Hrs/ Transit*
Non-Compliance with VSRP (3)				
Bulk - Baseline	1,575	0.20	2.95	920
Compliance with VSRP (3)				
Bulk - Baseline	1,575	0.20	3.16	985
Bulk - Future	1,575	0.20	3.55	1,107

Notes: (1) PEI Table 2.12 for baseline and 2012 PEI Table B.3 for Future Scenarios.
(2) Derived from data in PEI Table 2.12 for Baseline and 2012 PEI Tables 2.12 for Future scenarios.
(3) 62/100% of OGVs comply with the VSRP in 200/future project years.

Table A.1.2-8. Cargo Vessel Auxiliary Generator Usage per One-Way Trip within the SPBP Precautionary Area - POLB MCC Project Scenarios

Vessel Type-Project Scenario	*Total Aux. Engine Power (kW) (1)*	*Load Factor (2)*	*Hours/ Transit*	*kW-Hrs/ Transit*
Bulk - Baseline	1,575	0.20	1.12	348
Bulk - Future	1,575	0.20	1.09	339

Notes: (1) PEI Table 2.12 for baseline and 2012 PEI Table B.3 for Future Scenarios.
(2) Derived from data in PEI Table 2.12 for Baseline and 2012 PEI Tables 2.12 for Future scenarios.

Table A.1.2-9. OGV Auxiliary Generator Usage per Round Trip within the POLB Breakwater - POLB MCC Project Scenarios

Mode/Vessel Type-Project Scenario	*Total Aux. Engine Power (kW) (1)*	*Load Factor (2)*	*Hours/ Mode (2)*	*kW-Hrs/ Transit*
Transit (1)				
Bulk - Baseline	1,575	0.52	0.85	701
Bulk - Future	1,575	0.52	0.85	701
Docking				
Bulk - Baseline	1,575	0.52	0.50	413
Bulk - Future	1,575	0.52	0.50	413

Notes: (1) PEI Table 2.12 for baseline and 2012 PEI Table B.3 for Future Scenarios.
(2) Derived from data in PEI Table 2.12 for Baseline and 2012 PEI Tables 2.12 for Future scenarios.

Table A.1.2-10. OGV Auxiliary Generator Usage for Hoteling per Ship Visit - POLB MCC Project Scenarios

Vessel Type-Project Scenario	*Total Aux. Engine Power (kW) (1)*	*Load Factor (2)*	*Hours/ Visit*	*kW-Hrs/ Visit*
CEQA Baseline				
Bulk - General (3)	1,575	0.13	229.0	47,632
Annual				1,667,120
Full/Reduced Expansion (4)				
Bulk - Primary Engine	1,575	0.13	60	12,480
Bulk - Secondary Engine	1,575	0.13	3	624
Annual				1,297,920
No Project (4)				
Bulk - Primary Engine	1,575	0.13	70	14,560
Bulk - Secondary Engine	1,575	0.13	3	624

Notes: (1) PEI Table 2.12 for baseline and 2012 PEI Table B.3 for Future Scenarios.

(2) Derived from data in PEI Table 2.12 for Baseline and 2012 PEI Tables 2.12 for Future scenarios.

(3) Hours per visit derived from Cold Ironing Evaluation.pdf - provided by MCC on 11/11/11.

(4) Although not shown, each vessel arrival also includes 1 hour of uncontrolled hoteling at berth while customs clears the v

Table A.1.2-11. OGV Auxiliary Generator Usage per Vessel Turn at Berth F208 - POLB MCC Project Scenarios

Vessel Type-Project Scenario	*Total Aux. Engine Power (kW)*	*Load Factor (1)*	*Hours/ Visit (1)*	*kW-Hrs/ Transit*
Bulk - CEQA Baseline	1,575	0.52	1.5	1,238

Notes: (1) Same as docking load factor.

Table A.1.2-12. Cargo Vessel Auxiliary Boiler Usage per Ship Visit - POLB MCC Project Scenarios

Vessel Type-Project Scenario	*Energy Usage (kW) (1)*
Bulk - CEQA Baseline	132
Bulk - Future	132

Notes: (1) Usage only applies to maneuvering and hoteling modes, as the 2012 PEI assumes that boilers only used when main engines operate at <20% load factor. From PEI Table 2.15 (Baseline) and 2012 PEI Table 2.16 (Future).

Table A.1.2-13. Cargo Vessel Tugboat Assist Usage - POLB MCC Project Scenarios

Vessel Type/Scenario	*Main Engine Total Hp (1)*	*Load Factor (2)*	*Hours/ Assist (3)*	*Hp-Hr/ Assist*	*Annual # of Assists (4)*	*Annual Hp-Hrs*	*Annual kW-Hrs*
Bulk - CEQA Baseline Inbound/Outbound	4,112	0.31	1.75	2,236	70	156,510	116,757
Bulk - CEQA Baseline Turning	4,112	0.31	1.95	2,486	4	9,943	7,417
Bulk - Full Expansion Project	4,112	0.31	1.75	2,236	198	442,913	330,413
Bulk - Reduced Expansion Alternative	4,112	0.31	1.75	2,236	158	354,330	264,330
Bulk - No Project	4,112	0.31	1.75	2,236	134	299,605	223,505

Notes: (1) Average assist tug total main engine Hp rating from PEIs Table 3.1.

(2) PEI Table 3.8 for baseline and 2012 PEI Table 3.1 for Future scenarios.

(3) Duration of inbound/outbound OGV harbor transit and docking times 1.3 to account for tug assist time, travel to/from berth, and idle mode. Turning assist hours = 1.5 hou

(4) Based upon 2 tug assists for vessel arrival and departure and one tug assist per ship turn (MCC 2009).

Table A.1.2-14. Tugboat Auxiliary Generator Usage during Cargo Vessel Assists - POLB MCC Project Scenarios

Vessel Type/Scenario	*Aux. Engine Total Hp (1)*	*Load Factor (2)*	*Hours/ Assist (3)*	*Hp-Hr/ Assist*	*Annual # of Assists (4)*	*Annual Hp-Hrs*	*Annual kW-Hrs*
Bulk - CEQA Baseline Inbound/Outbound	374	0.43	2.28	367	70	25,669	19,149
Bulk - CEQA Baseline Turning	374	0.43	2.54	408	4	1,631	1,217
Bulk - Full Expansion Project	374	0.43	2.28	367	198	72,642	54,191
Bulk - Reduced Expansion Alternative	374	0.43	2.28	367	158	58,113	43,353
Bulk - No Project	374	0.43	2.28	367	134	49,138	36,657

Notes: (1) Average assist tug total auxiliary generator Hp rating from PEIs Table 3.2.

(2) PEI Table 3.8 for baseline and 2012 PEI Table 3.2 for Future scenarios.

(3) = hours/assist from above Table times 1.3 to account for usage when main engines are shut down in stand-by mode.

(4) Based upon 2 tug assists for vessel arrival and departure and one tug assist per ship turn (MCC 2009).

Table A.1.2-15. Emissions Factors for Vessels - All POLB MCC Project Scenarios

Operational Mode/Ship-Engine Type	*Emission Factors (Gm/kW-Hr)*									*Source*
	ROG	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*	
Cruise/OGV										
Slow Speed Diesel Main Engines - 2.7% S RFO	0.60	1.40	17.00	10.50	1.50	1.20	620	0.01	0.03	(1)
Factors to Convert Emission Factors for 2.7% S RFO to 0.1% S										
Convertions Factors	1.00	1.00	0.94	0.04	0.17	0.17	0.95	1.00	0.94	(2)
OGV 0.1% S Fuel Emission Factors										
OGVs - Slow Speed Diesel	0.60	1.40	15.98	0.42	0.26	0.20	589	0.01	0.03	(3)
OGV Main Engine Low Load Emission Adjustments										
2% Load Factor	21.18	9.70	4.63	1.00	7.29	7.29	1.00	21.18	4.63	(4)
3% Load Factor	11.68	6.49	2.92	1.00	4.33	4.33	1.00	11.68	2.92	(4)
4% Load Factor	7.71	4.86	2.21	1.00	3.09	3.09	1.00	7.71	2.21	(4)
5% Load Factor	5.61	3.90	1.83	1.00	2.44	2.44	1.00	5.61	1.83	(4)
6% Load Factor	4.35	3.26	1.60	1.00	2.04	2.04	1.00	4.35	1.60	(4)
7% Load Factor	3.52	2.80	1.45	1.00	1.79	1.79	1.00	3.52	1.45	(4)
8% Load Factor	2.95	2.45	1.35	1.00	1.61	1.61	1.00	2.95	1.35	(4)
9% Load Factor	2.52	2.18	1.27	1.00	1.48	1.48	1.00	2.52	1.27	(4)
10% Load Factor	2.18	1.97	1.22	1.00	1.38	1.38	1.00	2.18	1.22	(4)
11% Load Factor	1.96	1.79	1.17	1.00	1.30	1.30	1.00	1.96	1.17	(4)
12% Load Factor	1.76	1.64	1.14	1.00	1.24	1.24	1.00	1.76	1.14	(4)
13% Load Factor	1.60	1.52	1.11	1.00	1.19	1.19	1.00	1.60	1.11	(4)
15% Load Factor	1.36	1.32	1.06	1.00	1.11	1.11	1.00	1.36	1.06	(4)
16% Load Factor	1.26	1.24	1.05	1.00	1.08	1.08	1.00	1.26	1.05	(4)
17% Load Factor	1.18	1.17	1.03	1.00	1.06	1.06	1.00	1.18	1.03	(4)
18% Load Factor	1.11	1.11	1.02	1.00	1.04	1.04	1.00	1.11	1.02	(4)
19% Load Factor	1.05	1.05	1.01	1.00	1.02	1.02	1.00	1.05	1.01	(4)
OGV Main Engine Low Load Emission Factors										
2% Load Emission Factor	12.71	13.58	73.99	0.42	1.86	1.49	589	0.25	0.13	(5)
3% Load Emission Factor	7.01	9.09	46.66	0.42	1.10	0.88	589	0.14	0.09	(5)
4% Load Emission Factor	4.63	6.80	35.32	0.42	0.79	0.63	589	0.09	0.06	(5)
5% Load Emission Factor	3.37	5.46	29.24	0.42	0.62	0.50	589	0.07	0.05	(5)
6% Load Emission Factor	2.61	4.56	25.57	0.42	0.52	0.42	589	0.05	0.05	(5)
7% Load Emission Factor	2.11	3.92	23.17	0.42	0.46	0.37	589	0.04	0.04	(5)
8% Load Emission Factor	1.77	3.43	21.57	0.42	0.41	0.33	589	0.04	0.04	(5)
9% Load Emission Factor	1.51	3.05	20.29	0.42	0.38	0.30	589	0.03	0.04	(5)
10% Load Emission Factor	1.31	2.76	19.50	0.42	0.35	0.28	589	0.03	0.04	(5)
11% Load Emission Factor	1.18	2.51	18.70	0.42	0.33	0.27	589	0.02	0.03	(5)
12% Load Emission Factor	1.06	2.30	18.22	0.42	0.32	0.25	589	0.02	0.03	(5)
13% Load Emission Factor	0.96	2.13	17.74	0.42	0.30	0.24	589	0.02	0.03	(5)
15% Load Emission Factor	0.82	1.85	16.94	0.42	0.28	0.23	589	0.02	0.03	(5)
16% Load Emission Factor	0.76	1.74	16.78	0.42	0.28	0.22	589	0.02	0.03	(5)
17% Load Emission Factor	0.71	1.64	16.46	0.42	0.27	0.22	589	0.01	0.03	(5)
18% Load Emission Factor	0.67	1.55	16.30	0.42	0.27	0.21	589	0.01	0.03	(5)
19% Load Emission Factor	0.63	1.47	16.14	0.42	0.26	0.21	589	0.01	0.03	(5)
Assist Tugboats										
Diesel Main Engines Year 2015	0.24	2.48	5.06	0.01	0.12	0.11	645	0.06	0.01	(6)
Auxiliary Generators										
OGVs - Medium Speed Diesel - Marine Gas Oil @0.1% S	0.40	1.10	12.22	0.49	0.26	0.20	649	0.01	0.03	(7)
Tugboats - High Speed Diesel - Year 2015	0.19	2.79	6.51	0.01	0.19	0.18	690	0.07	0.01	(6)
Auxiliary Boilers										
Commercial Vessels - Residual Oil @ 0.1% S	0.10	0.20	1.97	0.66	0.14	0.11	922	0.00	0.08	(8)

Notes: (1) 2012 PEI Table 2.5 for post-year 1999 engines and 2.7% S RFO. Applies to OGV main engine operations of load factors = or > 20%..

(2) 2010 PEI Table 2.19.

(3) OGV main power plant emission factors for 0.1% S diesel fuel.

(4) Unitless adjustment factors from PEI Table 2.9 that are applied to OGV main power plant emission factors to obtain emission factors for engine loads <20%.

(5) Calculated OGV main power plant low load emission factors.

(6) Year 2015 Composite EFs for category 1/2 diesel engines (Starcrest 2007). Average S content = 15 ppm.

(7) From 2012 PEI Table 2.10, then converted to 0.1% S diesel fuel.

(8) From 2012 PEI Table 2.14, then converted to 0.1% S diesel fuel.

Table A.1.2-16. Annual Emissions from OGV Main Engines during Transit within the SPBP Fairway Zone - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type (1)	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - General	0.90	2.10	23.99	0.63	0.38	0.31	884.06	0.02	0.04
Subtotal	**0.90**	**2.10**	**23.99**	**0.63**	**0.38**	**0.31**	**884.06**	**0.02**	**0.04**
Full Expansion Project - Year 2015									
Bulk - General	2.31	5.38	61.42	1.61	0.98	0.78	2,263.85	0.05	0.11
Subtotal	**2.31**	**5.38**	**61.42**	**1.61**	**0.98**	**0.78**	**2,263.85**	**0.05**	**0.11**
Reduced Expansion Alt - Year 2015									
Bulk - General	1.84	4.30	49.14	1.29	0.78	0.63	1,811.08	0.04	0.09
Subtotal	**1.84**	**4.30**	**49.14**	**1.29**	**0.78**	**0.63**	**1,811.08**	**0.04**	**0.09**
No Project - Year 2015									
Bulk - General	1.56	3.64	41.55	1.09	0.66	0.53	1,531.37	0.03	0.08
Subtotal	**1.56**	**3.64**	**41.55**	**1.09**	**0.66**	**0.53**	**1,531.37**	**0.03**	**0.08**

Note: (1) VSRP compliance = 62% within the VSRPZ in 2006 and 100% within 40 nm of Pt. Fermin for post-2006 years.

Table A.1.2-17. Annual Emissions from OGV Main Engines during Transit within the SPBP Precautionary Area - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - General	0.11	0.25	2.88	0.08	0.05	0.04	106.24	0.00	0.01
Subtotal	**0.11**	**0.25**	**2.88**	**0.08**	**0.05**	**0.04**	**106.24**	**0.00**	**0.01**
Full Expansion Project - Year 2015									
Bulk - General	0.30	0.69	7.93	0.21	0.13	0.10	292.14	0.01	0.01
Subtotal	**0.30**	**0.69**	**7.93**	**0.21**	**0.13**	**0.10**	**292.14**	**0.01**	**0.01**
Reduced Expansion Alt - Year 2015									
Bulk - General	0.24	0.56	6.34	0.17	0.10	0.08	233.71	0.00	0.01
Subtotal	**0.24**	**0.56**	**6.34**	**0.17**	**0.10**	**0.08**	**233.71**	**0.00**	**0.01**
No Project - Year 2015									
Bulk - General	0.20	0.47	5.36	0.14	0.09	0.07	197.62	0.00	0.01
Subtotal	**0.20**	**0.47**	**5.36**	**0.14**	**0.09**	**0.07**	**197.62**	**0.00**	**0.01**

Table A.1.2-18. Annual Emissions from OGV Main Engines during Transit within the POLB Breakwater - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - General	0.05	0.08	0.46	0.01	0.01	0.01	10.53	0.00	0.00
Subtotal	**0.05**	**0.08**	**0.46**	**0.01**	**0.01**	**0.01**	**10.53**	**0.00**	**0.00**
Full Expansion Project - Year 2015									
Bulk - General	0.14	0.23	1.31	0.02	0.03	0.02	29.81	0.00	0.00
Subtotal	**0.14**	**0.23**	**1.31**	**0.02**	**0.03**	**0.02**	**29.81**	**0.00**	**0.00**
Reduced Expansion Alt - Year 2015									
Bulk - General	0.11	0.18	1.05	0.02	0.02	0.02	23.84	0.00	0.00
Subtotal	**0.11**	**0.18**	**1.05**	**0.02**	**0.02**	**0.02**	**23.84**	**0.00**	**0.00**
No Project - Year 2015									
Bulk - General	0.09	0.15	0.89	0.01	0.02	0.01	20.16	0.00	0.00
Subtotal	**0.09**	**0.15**	**0.89**	**0.01**	**0.02**	**0.01**	**20.16**	**0.00**	**0.00**

Note:

Table A.1.2-19. Annual Emissions from OGV Main Engines during Docking Activities - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - General	0.04	0.04	0.24	0.00	0.01	0.00	1.95	0.00	0.00
Subtotal	**0.04**	**0.04**	**0.24**	**0.00**	**0.01**	**0.00**	**1.95**	**0.00**	**0.00**
Full Expansion Project - Year 2015									
Bulk - General	0.12	0.13	0.69	0.00	0.02	0.01	5.51	0.00	0.00
Subtotal	**0.12**	**0.13**	**0.69**	**0.00**	**0.02**	**0.01**	**5.51**	**0.00**	**0.00**
Reduced Expansion Alt - Year 2015									
Bulk - General	0.10	0.10	0.55	0.00	0.01	0.01	4.41	0.00	0.00
Subtotal	**0.10**	**0.10**	**0.55**	**0.00**	**0.01**	**0.01**	**4.41**	**0.00**	**0.00**
No Project - Year 2015									
Bulk - General	0.08	0.09	0.47	0.00	0.01	0.01	3.73	0.00	0.00
Subtotal	**0.08**	**0.09**	**0.47**	**0.00**	**0.01**	**0.01**	**3.73**	**0.00**	**0.00**

Table A.1.2-20. Annual Emissions from OGV Main Engines during Vessel Turns at Berth F208 - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - General	0.01	0.02	0.08	0.00	0.00	0.00	0.67	0.00	0.00
Subtotal	**0.01**	**0.02**	**0.08**	**0.00**	**0.00**	**0.00**	**0.67**	**0.00**	**0.00**

Table A.1.2-21. Annual Emissions from OGV Auxiliary Generators during Transit within the SPBP Fairway Zone - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - General	0.03	0.08	0.91	0.04	0.02	0.02	48.07	0.00	0.00
Subtotal	**0.03**	**0.08**	**0.91**	**0.04**	**0.02**	**0.02**	**48.07**	**0.00**	**0.00**
Full Expansion Project - Year 2015									
Bulk - General	0.10	0.27	2.95	0.12	0.06	0.05	156.80	0.00	0.01
Subtotal	**0.10**	**0.27**	**2.95**	**0.12**	**0.06**	**0.05**	**156.80**	**0.00**	**0.01**
Reduced Expansion Alt - Year 2015									
Bulk - General	0.08	0.21	2.36	0.10	0.05	0.04	125.44	0.00	0.01
Subtotal	**0.08**	**0.21**	**2.36**	**0.10**	**0.05**	**0.04**	**125.44**	**0.00**	**0.01**
No Project - Year 2015									
Bulk - General	0.07	0.18	2.00	0.08	0.04	0.03	106.06	0.00	0.00
Subtotal	**0.07**	**0.18**	**2.00**	**0.08**	**0.04**	**0.03**	**106.06**	**0.00**	**0.00**

Note: (1) VSRP compliance = 62/100% in 2006/post-2006.

Table A.1.2-22. Annual Emissions from OGV Auxiliary Generators during Transit within the SPBP Precautionary Area - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - General	0.01	0.03	0.33	0.01	0.01	0.01	17.44	0.00	0.00
Subtotal	**0.01**	**0.03**	**0.33**	**0.01**	**0.01**	**0.01**	**17.44**	**0.00**	**0.00**
Full Expansion Project - Year 2015									
Bulk - General	0.03	0.08	0.90	0.04	0.02	0.02	47.96	0.00	0.00
Subtotal	**0.03**	**0.08**	**0.90**	**0.04**	**0.02**	**0.02**	**47.96**	**0.00**	**0.00**
Reduced Expansion Alt - Year 2015									
Bulk - General	0.02	0.07	0.72	0.03	0.02	0.01	38.37	0.00	0.00
Subtotal	**0.02**	**0.07**	**0.72**	**0.03**	**0.02**	**0.01**	**38.37**	**0.00**	**0.00**
No Project - Year 2015									
Bulk - General	0.02	0.06	0.61	0.02	0.01	0.01	32.44	0.00	0.00
Subtotal	**0.02**	**0.06**	**0.61**	**0.02**	**0.01**	**0.01**	**32.44**	**0.00**	**0.00**

Table A.1.2-23. Annual Emissions from OGV Auxiliary Generators during Transit within the POLB Breakwater - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - General	0.01	0.03	0.33	0.01	0.01	0.01	17.54	0.00	0.00
Subtotal	**0.01**	**0.03**	**0.33**	**0.01**	**0.01**	**0.01**	**17.54**	**0.00**	**0.00**
Full Expansion Project - Year 2015									
Bulk - General	0.03	0.08	0.93	0.04	0.02	0.02	49.63	0.00	0.00
Subtotal	**0.03**	**0.08**	**0.93**	**0.04**	**0.02**	**0.02**	**49.63**	**0.00**	**0.00**
Reduced Expansion Alt - Year 2015									
Bulk - General	0.02	0.07	0.75	0.03	0.02	0.01	39.71	0.00	0.00
Subtotal	**0.02**	**0.07**	**0.75**	**0.03**	**0.02**	**0.01**	**39.71**	**0.00**	**0.00**
No Project - Year 2015									
Bulk - General	0.02	0.06	0.63	0.03	0.01	0.01	33.57	0.00	0.00
Subtotal	**0.02**	**0.06**	**0.63**	**0.03**	**0.01**	**0.01**	**33.57**	**0.00**	**0.00**

Table A.1.2-24. Annual Emissions from OGV Auxiliary Generators during Docking Activities - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - General	0.01	0.02	0.19	0.01	0.00	0.00	10.33	0.00	0.00
Subtotal	**0.01**	**0.02**	**0.19**	**0.01**	**0.00**	**0.00**	**10.33**	**0.00**	**0.00**
Full Expansion Project - Year 2015									
Bulk - General	0.02	0.05	0.55	0.02	0.01	0.01	29.22	0.00	0.00
Subtotal	**0.02**	**0.05**	**0.55**	**0.02**	**0.01**	**0.01**	**29.22**	**0.00**	**0.00**
Reduced Expansion Alt - Year 2015									
Bulk - General	0.01	0.04	0.44	0.02	0.01	0.01	23.38	0.00	0.00
Subtotal	**0.01**	**0.04**	**0.44**	**0.02**	**0.01**	**0.01**	**23.38**	**0.00**	**0.00**
No Project - Year 2015									
Bulk - General	0.01	0.03	0.37	0.01	0.01	0.01	19.77	0.00	0.00
Subtotal	**0.01**	**0.03**	**0.37**	**0.01**	**0.01**	**0.01**	**19.77**	**0.00**	**0.00**

Table A.1.2-25. Annual Emissions from OGV Auxiliary Generators during Hoteling - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
All Uncontrolled (1)	0.74	2.02	22.46	0.90	0.47	0.37	1,192.36	0.01	0.05
66% Cold-Ironed (2) (Total Annual Emissions)	0.25	0.69	7.64	0.31	0.16	0.13	405.40	0.00	0.02
Full Expansion Project - Year 2015									
All Uncontrolled (1)	0.57	1.57	17.48	0.70	0.36	0.29	928.30	0.01	0.04
66% Cold-Ironed (2)	0.19	0.54	5.94	0.24	0.12	0.10	315.62	0.00	0.01
Reduction due to DoCCS (3)			(5.29)						
Uncontrolled during Customs Clearance	0.01	0.02	0.28	0.01	0.01	0.00	14.73	0.00	0.00
Subtotal - 66% CI + DoCCS + CC	**0.20**	**0.56**	**0.94**	**0.25**	**0.13**	**0.10**	**330.36**	**0.00**	**0.01**
Reduced Expansion Alt - Year 2015									
All Uncontrolled (1)	0.46	1.26	13.99	0.56	0.29	0.23	742.64	0.01	0.03
66% Cold-Ironed (2)	0.16	0.43	4.76	0.19	0.10	0.08	252.50	0.00	0.01
Reduction due to DoCCS (3)			(4.23)						
Uncontrolled during Customs Clearance	0.01	0.02	0.22	0.01	0.00	0.00	11.79	0.00	0.00
Subtotal - 66% CI + DoCCS + CC	**0.16**	**0.45**	**0.75**	**0.20**	**0.10**	**0.08**	**264.29**	**0.00**	**0.01**
No Project - Year 2015									
All Uncontrolled (1)	0.45	1.23	13.70	0.55	0.29	0.23	727.62	0.01	0.03
66% Cold-Ironed (2)	0.15	0.42	4.66	0.19	0.10	0.08	247.39	0.00	0.01
Uncontrolled during Customs Clearance	0.01	0.02	0.19	0.01	0.00	0.00	9.97	0.00	0.00
Subtotal - 66% CI + CC	**0.16**	**0.44**	**4.85**	**0.20**	**0.10**	**0.08**	**257.36**	**0.00**	**0.01**

Notes: (1) = 0% cold-ironing.

(2) Based upon cold-ironing factor derived from Cold Ironing Evaluation.pdf - provided by MCC on 11/11/11.

(3) 95% capture of stack gas and 93.6% NOx reduction of this effluent. Page 16 of Environmental Impact Evaluation (MCC Aug 3, 2010).

Table A.1.2-26. Annual Emissions from OGV Auxiliary Generators during Turning Activities at Berth F208 - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
2015 Baseline - Bulk	0.00	0.01	0.07	0.00	0.00	0.00	3.54	0.00	0.00
Subtotal	**0.00**	**0.01**	**0.07**	**0.00**	**0.00**	**0.00**	**3.54**	**0.00**	**0.00**

Table A.1.2-27. Annual Emissions from OGV Boilers during Transit within the POLB Breakwater - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - General	0.00	0.00	0.01	0.00	0.00	0.00	3.99	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**3.99**	**0.00**	**0.00**
Full Expansion Project - Year 2015									
Bulk - General	0.00	0.00	0.02	0.01	0.00	0.00	11.28	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**11.28**	**0.00**	**0.00**
Reduced Expansion Alt - Year 2015									
Bulk - General	0.00	0.00	0.02	0.01	0.00	0.00	9.02	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**9.02**	**0.00**	**0.00**
No Project - Year 2015									
Bulk - General	0.00	0.00	0.02	0.01	0.00	0.00	7.63	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**7.63**	**0.00**	**0.00**

Table A.1.2-28. Annual Emissions from OGV Boilers during Docking Activities - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - General	0.00	0.00	0.01	0.00	0.00	0.00	2.35	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**2.35**	**0.00**	**0.00**
Full Expansion Project - Year 2015									
Bulk - General	0.00	0.00	0.01	0.00	0.00	0.00	6.64	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**6.64**	**0.00**	**0.00**
Reduced Expansion Alt - Year 2015									
Bulk - General	0.00	0.00	0.01	0.00	0.00	0.00	5.31	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**5.31**	**0.00**	**0.00**
No Project - Year 2015									
Bulk - General	0.00	0.00	0.01	0.00	0.00	0.00	4.49	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**4.49**	**0.00**	**0.00**

Table A.1.2-29. Annual Emissions from OGV Boilers during Hoteling - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - General	0.12	0.23	2.30	0.77	0.16	0.13	1,074.66	0.00	0.09
Subtotal	**0.12**	**0.23**	**2.30**	**0.77**	**0.16**	**0.13**	**1,074.66**	**0.00**	**0.09**
Full Expansion Project - Year 2015									
Bulk - Hoteling	0.09	0.17	1.71	0.57	0.12	0.09	796.82	0.00	0.07
Hoteling during Customs Clearance	0.00	0.00	0.03	0.01	0.00	0.00	13.28	0.00	0.00
Subtotal	**0.09**	**0.18**	**1.74**	**0.58**	**0.12**	**0.10**	**810.10**	**0.00**	**0.07**
Reduced Expansion Alt - Year 2015									
Bulk - Hoteling	0.07	0.14	1.37	0.46	0.09	0.08	637.46	0.00	0.05
Hoteling during Customs Clearance	0.00	0.00	0.02	0.01	0.00	0.00	10.62	0.00	0.00
Subtotal	**0.07**	**0.14**	**1.39**	**0.46**	**0.10**	**0.08**	**648.08**	**0.00**	**0.05**
No Project - Year 2015									
Bulk - Hoteling	0.07	0.14	1.35	0.45	0.09	0.07	628.84	0.00	0.05
Hoteling during Customs Clearance	0.00	0.00	0.02	0.01	0.00	0.00	8.98	0.00	0.00
Subtotal	**0.07**	**0.14**	**1.37**	**0.46**	**0.09**	**0.08**	**637.82**	**0.00**	**0.05**

Table A.1.2-30. Annual Emissions from OGV Boilers during Turning Activities at Berth F208 - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
2015 Baseline - Bulk	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.80**	**0.00**	**0.00**

Table A.1.2-31. Annual Emissions from Tugboat Main Engines during OGV Assists - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline - Inbound/Outbound - Bulk	0.03	0.32	0.65	0.00	0.016	0.01	83.01	0.01	0.00
CEQA Baseline - Turning - Bulk	0.00	0.02	0.04	0.00	0.001	0.00	5.27	0.00	0.00
Full Expansion Project - Year 2015 - Bulk	0.09	0.90	1.84	0.00	0.044	0.04	234.92	0.02	0.00
Reduced Expansion Alt - Year 2015 - Bulk	0.07	0.72	1.47	0.00	0.036	0.03	187.93	0.02	0.00
No Project - Year 2015 - Bulk	0.06	0.61	1.25	0.00	0.030	0.03	158.91	0.02	0.00

Table A.1.2-32. Annual Emissions from Tugboat Auxiliary Generators during OGV Assists - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline - Inbound/Outbound - Bulk	0.00	0.06	0.14	0.00	0.004	0.00	14.56	0.00	0.00
CEQA Baseline - Turning - Bulk	0.00	0.00	0.01	0.00	0.000	0.00	0.93	0.00	0.00
Full Expansion Project - Year 2015 - Bulk	0.01	0.17	0.39	0.00	0.012	0.01	41.22	0.00	0.00
Reduced Expansion Alt - Year 2015 - Bulk	0.01	0.13	0.31	0.00	0.009	0.01	32.97	0.00	0.00
No Project - Year 2015 - Bulk	0.01	0.11	0.26	0.00	0.008	0.01	27.88	0.00	0.00

Table A.1.2-33. Annual Vessel Operational Emissions - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Emission Source	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Ships - Fairway Transit (1)	0.93	2.18	24.89	0.67	0.40	0.32	932	0.02	0.05
Ships - Precautionary Area Transit (1)	0.12	0.28	3.21	0.09	0.05	0.04	124	0.00	0.01
Ships - Harbor Transit (2)	0.06	0.11	0.80	0.02	0.02	0.01	32	0.00	0.00
Ships - Docking (2)	0.05	0.06	0.44	0.01	0.01	0.01	15	0.00	0.00
Ships - Hoteling Aux. Sources (2)(3)	0.37	0.92	9.94	1.08	0.32	0.25	1,480	0.01	0.11
Ships - Turning at Berth (2)	0.02	0.02	0.15	0.00	0.00	0.00	5	0.00	0.00
Tugboats - Cargo Vessel Assist (1)	0.04	0.40	0.84	0.00	0.02	0.02	104	0.01	0.00
Subtotal	**1.58**	**3.98**	**40.28**	**1.87**	**0.82**	**0.66**	**2,691**	**0.04**	**0.16**
Full Expansion Project									
Ships - Fairway Transit (1)	2.40	5.65	64.37	1.73	1.04	0.83	2,421	0.05	0.12
Ships - Precautionary Area Transit (1)	0.33	0.78	8.83	0.24	0.15	0.12	340	0.01	0.02
Ships - Harbor Transit (2)	0.17	0.31	2.27	0.07	0.05	0.04	91	0.00	0.01
Ships - Docking (2)	0.14	0.18	1.26	0.03	0.03	0.02	41	0.00	0.00
Ships - Hoteling Aux. Sources (2)(3)(4)	0.29	0.74	2.67	0.83	0.25	0.20	1,140	0.01	0.08
Tugboats - Cargo Vessel Assist (1)	0.10	1.07	2.23	0.00	0.06	0.05	276	0.03	0.00
Subtotal	**3.43**	**8.72**	**81.63**	**2.91**	**1.57**	**1.26**	**4,309**	**0.09**	**0.23**
Reduced Expansion Project									
Ships - Fairway Transit (1)	1.92	4.52	51.50	1.39	0.83	0.67	1,937	0.04	0.10
Ships - Precautionary Area Transit (1)	0.26	0.62	7.06	0.20	0.12	0.09	272	0.01	0.01
Ships - Harbor Transit (1)	0.13	0.25	1.81	0.05	0.04	0.03	73	0.00	0.00
Ships - Docking (1)	0.11	0.14	1.01	0.02	0.02	0.02	33	0.00	0.00
Ships - Hoteling Aux. Sources (2)(3)(4)	0.23	0.59	2.14	0.66	0.20	0.16	912	0.00	0.06
Tugboats - Cargo Vessel Assist (1)	0.08	0.86	1.79	0.00	0.04	0.04	221	0.02	0.00
Subtotal	**2.74**	**6.97**	**65.31**	**2.33**	**1.26**	**1.01**	**3,448**	**0.08**	**0.18**
No Project									
Ships - Fairway Transit (1)	1.63	3.82	43.54	1.17	0.70	0.56	1,637	0.03	0.08
Ships - Precautionary Area Transit (1)	0.22	0.52	5.97	0.17	0.10	0.08	230	0.00	0.01
Ships - Harbor Transit (1)	0.11	0.21	1.53	0.05	0.03	0.03	61	0.00	0.00
Ships - Docking (1)	0.09	0.12	0.85	0.02	0.02	0.02	28	0.00	0.00
Ships - Hoteling Aux. Sources (2)(3)	0.23	0.57	6.21	0.65	0.20	0.16	895	0.00	0.06
Tugboats - Cargo Vessel Assist (1)	0.07	0.72	1.51	0.00	0.04	0.04	187	0.02	0.00
Subtotal	**2.35**	**5.97**	**59.63**	**2.06**	**1.09**	**0.88**	**3,039**	**0.06**	**0.16**

Notes: (1) Includes auxiliary generator emissions.

(2) Includes auxiliary generator and boiler emissions.

(3) 66% of annual OGV berthing activities occurred in cold-ironing mode, as derived from Cold Ironing Evaluation.pdf (MCC Jan 11, 2011). This factor also applied to the future project scenarios.

(4) NOx emissions reduced 88.9% due to the use of DoCCS.

Table A.1.2-34. Unmitigated Annual Average Daily Vessel Operational Emissions - POLB MCC Project Scenarios

	Pounds per Day								
Project Scenario/Emission Source	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Ships - Fairway Transit (1)	5.1	12.0	136.4	3.7	2.2	1.8	5,108	0.1	0.3
Ships - Precautionary Area Transit (1)	0.7	1.5	17.6	0.5	0.3	0.2	678	0.0	0.0
Ships - Harbor Transit (2)	0.3	0.6	4.4	0.1	0.1	0.1	176	0.0	0.0
Ships - Docking (2)	0.3	0.3	2.4	0.1	0.1	0.0	80	0.0	0.0
Ships - Hoteling Aux. Sources (2)(3)	2.0	5.0	54.5	5.9	1.7	1.4	8,110	0.0	0.6
Ships - Turning at Berth (2)	0.1	0.1	0.8	0.0	0.0	0.0	27	0.0	0.0
Tugboats - Cargo Vessel Assist (1)	0.2	2.2	4.6	0.0	0.1	0.1	569	0.1	0.0
Subtotal	**8.6**	**21.8**	**220.7**	**10.3**	**4.5**	**3.6**	**14,747**	**0.2**	**0.9**
Full Expansion Project									
Ships - Fairway Transit (1)	13.2	30.9	352.7	9.5	5.7	4.6	13,264	0.3	0.7
Ships - Precautionary Area Transit (1)	1.8	4.3	48.4	1.3	0.8	0.6	1,864	0.0	0.1
Ships - Harbor Transit (2)	0.9	1.7	12.4	0.4	0.3	0.2	497	0.0	0.0
Ships - Docking (2)	0.8	1.0	6.9	0.2	0.2	0.1	227	0.0	0.0
Ships - Hoteling Aux. Sources (2)(3)(4)	1.6	4.0	14.6	4.6	1.4	1.1	6,249	0.0	0.4
Tugboats - Cargo Vessel Assist (1)	0.5	5.9	12.2	0.0	0.3	0.3	1,513	0.2	0.0
Subtotal	**18.8**	**47.8**	**447.3**	**15.9**	**8.6**	**6.9**	**23,613**	**0.5**	**1.2**
Reduced Expansion Project									
Ships - Fairway Transit (1)	10.5	24.8	282.2	7.6	4.6	3.7	10,611	0.2	0.5
Ships - Precautionary Area Transit (1)	1.4	3.4	38.7	1.1	0.6	0.5	1,491	0.0	0.1
Ships - Harbor Transit (1)	0.7	1.4	9.9	0.3	0.2	0.2	398	0.0	0.0
Ships - Docking (1)	0.6	0.8	5.5	0.1	0.1	0.1	181	0.0	0.0
Ships - Hoteling Aux. Sources (2)(3)(4)	1.3	3.2	11.7	3.6	1.1	0.9	4,999	0.0	0.4
Tugboats - Cargo Vessel Assist (1)	0.4	4.7	9.8	0.0	0.2	0.2	1,210	0.1	0.0
Subtotal	**15.0**	**38.2**	**357.8**	**12.8**	**6.9**	**5.5**	**18,891**	**0.4**	**1.0**
No Project									
Ships - Fairway Transit (1)	8.9	20.9	238.6	6.4	3.9	3.1	8,972	0.2	0.4
Ships - Precautionary Area Transit (1)	1.2	2.9	32.7	0.9	0.5	0.4	1,261	0.0	0.1
Ships - Harbor Transit (1)	0.6	1.2	8.4	0.2	0.2	0.1	336	0.0	0.0
Ships - Docking (1)	0.5	0.7	4.7	0.1	0.1	0.1	153	0.0	0.0
Ships - Hoteling Aux. Sources (2)(3)	1.2	3.1	34.0	3.6	1.1	0.9	4,905	0.0	0.3
Tugboats - Cargo Vessel Assist (1)	0.4	4.0	8.3	0.0	0.2	0.2	1,023	0.1	0.0
Subtotal	**12.9**	**32.7**	**326.7**	**11.3**	**6.0**	**4.8**	**16,651**	**0.4**	**0.9**

Notes: (1) Includes auxiliary generator emissions.

(2) Includes auxiliary generator and boiler emissions.

(3) 66% of annual OGV berthing activities occurred in cold-ironing mode, as derived from Cold Ironing Evaluation.pdf (MCC Jan 11, 2011). This factor also applied to the future project scenarios.

(4) NOx emissions reduced 88.9% due to the use of DoCCS.

Table A.1.2-35. Unmitigated Peak Daily Vessel Operational Emissions - POLB MCC Project Scenarios

	Pounds per Day								
Project Scenario/Emission Source	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Ships - Fairway Transit (1)	28.6	67.0	764.4	20.4	12.3	9.9	28,577	0.6	1.4
Ships - Precautionary Area Transit (1)	3.4	8.1	91.7	2.5	1.5	1.2	3,534	0.1	0.2
Ships - Harbor Transit (2)	2.1	3.5	23.1	0.6	0.5	0.4	854	0.0	0.1
Ships - Docking (2)	1.4	1.8	12.7	0.3	0.3	0.2	418	0.0	0.0
Ships - Hoteling Aux. Sources (2)(3)	4.0	10.7	117.1	7.9	3.0	2.4	10,720	0.1	0.7
Ships - Turning at Berth (4)	4.3	5.5	39.1	1.0	0.9	0.7	1,285	0.1	0.1
Tugboats - Cargo Vessel Assist (1)	1.4	15.1	31.4	0.0	0.8	0.7	3,910	0.4	0.0
Subtotal	**45.2**	**111.7**	**1,079.5**	**32.8**	**19.3**	**15.6**	**49,297**	**1.3**	**2.5**
Full Expansion Project									
Ships - Fairway Transit (1)	24.3	57.0	649.9	17.5	10.5	8.4	24,439	0.5	1.2
Ships - Precautionary Area Transit (1)	3.3	7.8	89.1	2.5	1.5	1.2	3,434	0.1	0.2
Ships - Harbor Transit (2)	2.1	3.5	23.1	0.6	0.5	0.4	854	0.0	0.1
Ships - Docking (2)	1.4	1.8	12.7	0.3	0.3	0.2	418	0.0	0.0
Ships - Hoteling Aux. Sources (2)(3)(5)	3.9	10.4	26.9	7.7	2.9	2.3	10,414	0.1	0.6
Tugboats - Cargo Vessel Assist (1)	1.6	14.0	35.3	0.4	0.8	0.7	3,883	0.3	0.1
Subtotal	**36.5**	**94.4**	**837.1**	**29.0**	**16.5**	**13.3**	**43,441**	**1.0**	**2.2**
Reduced Expansion Project									
Ships - Fairway Transit (1)	24.3	57.0	649.9	17.5	10.5	8.4	24,439	0.5	1.2
Ships - Precautionary Area Transit (1)	3.3	7.8	89.1	2.5	1.5	1.2	3,434	0.1	0.2
Ships - Harbor Transit (1)	2.1	3.5	23.1	0.6	0.5	0.4	854	0.0	0.1
Ships - Docking (1)	1.4	1.8	12.7	0.3	0.3	0.2	418	0.0	0.0
Ships - Hoteling Aux. Sources (2)(3)(5)	3.9	10.4	26.9	7.7	2.9	2.3	10,414	0.1	0.6
Tugboats - Cargo Vessel Assist (1)	1.6	14.0	35.3	0.4	0.8	0.7	3,883	0.3	0.1
Subtotal	**36.5**	**94.4**	**837.1**	**29.0**	**16.5**	**13.3**	**43,441**	**1.0**	**2.2**
No Project									
Ships - Fairway Transit (1)	24.3	57.0	649.9	17.5	10.5	8.4	24,439	0.5	1.2
Ships - Precautionary Area Transit (1)	3.3	7.8	89.1	2.5	1.5	1.2	3,434	0.1	0.2
Ships - Harbor Transit (1)	2.1	3.5	23.1	0.6	0.5	0.4	854	0.0	0.1
Ships - Docking (1)	1.4	1.8	12.7	0.3	0.3	0.2	418	0.0	0.0
Ships - Hoteling Aux. Sources (2)(3)	3.9	10.4	113.7	7.7	2.9	2.3	10,414	0.1	0.6
Tugboats - Cargo Vessel Assist (1)	1.6	14.0	35.3	0.4	0.8	0.7	3,883	0.3	0.1
Subtotal	**36.5**	**94.4**	**923.9**	**29.0**	**16.5**	**13.3**	**43,441**	**1.0**	**2.2**

Notes: (1) Includes auxiliary generator emissions.

(2) Includes auxiliary generator and boiler emissions.

(3) No cold-ironing would occur during the unmitigated peak emissions day.

(4) Vessel turning would not occur during the peak emissions day.

(5) The DoCCS would operate during the FE and REP scenarios to reduce NOx emissions by 88.9%.

Table A.1.2-36. Unmitigated Vessel Short-Term Hourly Emission Rates - POLB MCC Project Scenarios

	Pounds per Hour								
Project Scenario/Emission Source	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Ships - Fairway Transit (1)	9.7	22.7	259.3	6.9	4.2	3.3	9,694.6	0.2	0.5
Ships - Precautionary Area Transit (1)	3.0	7.2	82.2	2.3	1.4	1.1	3,164.7	0.1	0.2
Ships - Harbor Transit (2)	2.1	3.5	23.1	0.6	0.5	0.4	853.6	0.0	0.1
Ships - Docking (2)	1.4	1.8	12.7	0.3	0.3	0.2	417.7	0.0	0.0
Ships - Hoteling Aux. Sources (2)(3)	0.2	0.6	6.2	0.4	0.2	0.1	565.7	0.0	0.0
Ships - Turning at Berth (4)									
Tugboats - Cargo Vessel Assist (1)	1.1	11.9	24.7	0.0	0.6	0.6	3,069.4	0.3	0.0
Subtotal	**17.5**	**47.6**	**408.1**	**10.6**	**7.1**	**5.8**	**17,766**	**0.6**	**0.8**
Full Expansion Project									
Ships - Fairway Transit (1)	6.8	16.1	183.2	4.9	3.0	2.4	6,890.0	0.1	0.3
Ships - Precautionary Area Transit (1)	3.0	7.2	82.2	2.3	1.4	1.1	3,164.7	0.1	0.2
Ships - Harbor Transit (2)	2.1	3.5	23.1	0.6	0.5	0.4	853.6	0.0	0.1
Ships - Docking (2)	1.4	1.8	12.7	0.3	0.3	0.2	417.7	0.0	0.0
Ships - Hoteling Aux. Sources (2)(3)	0.2	0.6	1.5	0.4	0.2	0.1	565.7	0.0	0.0
Tugboats - Cargo Vessel Assist (1)	1.2	11.0	27.7	0.3	0.6	0.6	3,047.6	0.3	0.0
Subtotal	**14.8**	**40.1**	**330.4**	**8.9**	**5.9**	**4.8**	**14,939**	**0.5**	**0.7**
Reduced Expansion Project									
Ships - Fairway Transit (1)	6.8	16.1	183.2	4.9	3.0	2.4	6,890.0	0.1	0.3
Ships - Precautionary Area Transit (1)	3.0	7.2	82.2	2.3	1.4	1.1	3,164.7	0.1	0.2
Ships - Harbor Transit (1)	2.1	3.5	23.1	0.6	0.5	0.4	853.6	0.0	0.1
Ships - Docking (1)	1.4	1.8	12.7	0.3	0.3	0.2	417.7	0.0	0.0
Ships - Hoteling Aux. Sources (2)(3)	0.2	0.6	1.5	0.4	0.2	0.1	565.7	0.0	0.0
Tugboats - Cargo Vessel Assist (1)	1.2	11.0	27.7	0.3	0.6	0.6	3,047.6	0.3	0.0
Subtotal	**14.8**	**40.1**	**330.4**	**8.9**	**5.9**	**4.8**	**14,939**	**0.5**	**0.7**
No Project									
Ships - Fairway Transit (1)	6.8	16.1	183.2	4.9	3.0	2.4	6,890.0	0.1	0.3
Ships - Precautionary Area Transit (1)	3.0	7.2	82.2	2.3	1.4	1.1	3,164.7	0.1	0.2
Ships - Harbor Transit (1)	2.1	3.5	23.1	0.6	0.5	0.4	853.6	0.0	0.1
Ships - Docking (1)	1.4	1.8	12.7	0.3	0.3	0.2	417.7	0.0	0.0
Ships - Hoteling Aux. Sources (2)(3)	0.2	0.6	6.2	0.4	0.2	0.1	565.7	0.0	0.0
Tugboats - Cargo Vessel Assist (1)	1.2	11.0	27.7	0.3	0.6	0.6	3,047.6	0.3	0.0
Subtotal	**14.8**	**40.1**	**335.1**	**8.9**	**5.9**	**4.8**	**14,939.3**	**0.5**	**0.7**

Notes: (1) Includes auxiliary generator emissions.

(2) Includes auxiliary generator and boiler emissions.

(3) No cold-ironing would occur during the unmitigated peak emissions day. However, the DoCCS would operate during the future scenarios to reduce NOx emissior

(4) Vessel turning would not occur during the peak emissions day.

Table A.1.2-37. Unmitigated Vessel Annualized Hourly Emission Rates - POLB MCC Project Scenarios

	Pounds per Hour								
Project Scenario/Emission Source	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Ships - Fairway Transit (1)					0.092		213		
Ships - Precautionary Area Transit (1)					0.012		28		
Ships - Harbor Transit (2)					0.004		7		
Ships - Docking (2)					0.002		3		
Ships - Hoteling Aux. Sources (2)(3)					0.073		338		
Ships - Turning at Berth (4)					0.001		1		
Tugboats - Cargo Vessel Assist (1)					0.005		24		
Subtotal					**0.188**		**614**		
Full Expansion Project									
Ships - Fairway Transit (1)			14.70		0.24		553		
Ships - Precautionary Area Transit (1)			2.02		0.03		78		
Ships - Harbor Transit (2)			0.52		0.01		21		
Ships - Docking (2)			0.29		0.01		9		
Ships - Hoteling Aux. Sources (2)(3)			0.61		0.06		260		
Tugboats - Cargo Vessel Assist (1)			0.51		0.01		63		
Subtotal			**18.6**		**0.4**		**984**		
Reduced Expansion Project									
Ships - Fairway Transit (1)			11.76		0.19		442		
Ships - Precautionary Area Transit (1)			1.61		0.03		62		
Ships - Harbor Transit (1)			0.41		0.01		17		
Ships - Docking (1)			0.23		0.01		8		
Ships - Hoteling Aux. Sources (2)(3)			0.49		0.05		208		
Tugboats - Cargo Vessel Assist (1)			0.41		0.01		50		
Subtotal			**14.9**		**0.29**		**787**		
No Project									
Ships - Fairway Transit (1)			9.94		0.16		374		
Ships - Precautionary Area Transit (1)			1.36		0.02		53		
Ships - Harbor Transit (1)			0.35		0.01		14		
Ships - Docking (1)			0.19		0.00		6		
Ships - Hoteling Aux. Sources (2)(3)			1.42		0.04		204		
Tugboats - Cargo Vessel Assist (1)			0.34		0.01		43		
Subtotal			**13.6**		**0.25**		**694**		

Notes: (1) Includes auxiliary generator emissions.

(2) Includes auxiliary generator and boiler emissions.

(3) No cold-ironing would occur during the unmitigated peak emissions day. However, the DoCCS would operate during the future scenarios to reduce NOx emissior

(4) Vessel turning would not occur during the peak emissions day.

Table A.1.2-37a. 70-Year Annual Average DPM Emission Factors for Assist Tugs

Project Year	*Calendar Year*	*Source Type/DPM Emission Factors (Gm/kW-Hr)*	
		Main Engine	*Aux Gen*
1	2015	0.12	0.19
2	2016	0.12	0.17
3	2017	0.11	0.15
4	2018	0.11	0.14
5	2019	0.10	0.12
6	2020	0.10	0.10
7	2021	0.10	0.10
8	2022	0.10	0.10
9	2023	0.10	0.10
10	2024	0.10	0.10
11	2025	0.10	0.10
12	2026	0.10	0.10
13	2027	0.10	0.10
14	2028	0.10	0.10
15	2029	0.10	0.10
16	2030	0.10	0.10
17	2031	0.10	0.10
18	2032	0.10	0.10
19	2033	0.10	0.10
20	2034	0.10	0.10
21	2035	0.10	0.10
22	2036	0.10	0.10
23	2037	0.10	0.10
24	2038	0.10	0.10
25	2039	0.10	0.10
26	2040	0.10	0.10
27	2041	0.10	0.10
28	2042	0.10	0.10
29	2043	0.10	0.10
30	2044	0.10	0.10
31	2045	0.10	0.10
32	2046	0.10	0.10
33	2047	0.10	0.10
34	2048	0.10	0.10
35	2049	0.10	0.10
36	2050	0.10	0.10
37	2051	0.10	0.10
38	2052	0.10	0.10
39	2053	0.10	0.10
40	2054	0.10	0.10
41	2055	0.10	0.10
42	2056	0.10	0.10
43	2057	0.10	0.10
44	2058	0.10	0.10
45	2059	0.10	0.10

Table A.1.2-37a. 70-Year Annual Average DPM Emission Factors for Assist Tugs

Project Year	*Calendar Year*	*Source Type/DPM Emission Factors (Gm/kW-Hr)*	
		Main Engine	*Aux Gen*
46	2060	0.10	0.10
47	2061	0.10	0.10
48	2062	0.10	0.10
49	2063	0.10	0.10
50	2064	0.10	0.10
51	2065	0.10	0.10
52	2066	0.10	0.10
53	2067	0.10	0.10
54	2068	0.10	0.10
55	2069	0.10	0.10
56	2070	0.10	0.10
57	2071	0.10	0.10
58	2072	0.10	0.10
59	2073	0.10	0.10
60	2074	0.10	0.10
61	2075	0.10	0.10
62	2076	0.10	0.10
63	2077	0.10	0.10
64	2078	0.10	0.10
65	2079	0.10	0.10
66	2080	0.10	0.10
67	2081	0.10	0.10
68	2082	0.10	0.10
69	2083	0.10	0.10
70	2084	0.10	0.10
70-Yr Average		**0.101**	**0.104**

Table A.1.2-37b. 70-Year Annual Average DPM Emissions from Tugboat Main Engines during OGV Assists - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline - Inbound/Outbound - Bulk					0.013				
CEQA Baseline - Turning - Bulk					0.001				
Full Expansion Project - Year 2015 - Bulk					0.037				
Reduced Expansion Alt - Year 2015 - Bulk					0.029				
No Project - Year 2015 - Bulk					0.025				

Table A.1.2-37c. 70-Year Annual Average DPM Emissions from Tugboat Auxiliary Generators during OGV Assists - POLB MCC Project Scenarios

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline - Inbound/Outbound - Bulk					0.002				
CEQA Baseline - Turning - Bulk					0.000				
Full Expansion Project - Year 2015 - Bulk					0.006				
Reduced Expansion Alt - Year 2015 - Bulk					0.005				
No Project - Year 2015 - Bulk					0.004				

Table A.1.2-37d. Total 70-Year Annual Average DPM Emissions from Tugboat OGV Assists - POLB MCC Project Scenarios

					TPY	*PPY*			
Project Scenario/Vessel Type					*DPM*	*DPM*			
CEQA Baseline - Inbound/Outbound - Bulk					0.016	32.3			
Full Expansion Project - Year 2015 - Bulk					0.043	85.9			
Reduced Expansion Alt - Year 2015 - Bulk					0.034	68.7			
No Project - Year 2015 - Bulk					0.029	58.1			

Table A.1.2-38. Unloader and Baghouse PM Emissions - POLB MCC Project Scenarios

Project Scenario/Equipment	*Annual Throughput (Tons)*	*Annual Unloading Time (Hours)*	*PM10 Emission Factor (Lb/Hr) (1)*	*PM10 Emissions (Lb/Yr)*	*PM2.5 Emissions (Lb/Yr) (2)*	*PM10 Emissions Peak Day (Lb) (3)*	*PM2.5 Emissions Peak Day (Lb) (3)*
CEQA Baseline							
Kovaco Cement Unloader	1,125,882	3,407	0.28	954.0	639.2	5.2	3.5
vanAalst Cement Unloader	384,047	3,398	0.01	29.2	19.6	0.1	0.1
Storage Warehouse Dust Collector DC-01 (4)	1,509,929		0.38	3,328.8	2,230.3	9.1	6.1
Total Emissions			**0.7**	**4,312.0**	**2,889.0**	**14.4**	**9.7**
Full Expansion Project - Year 2015							
Kovaco 1 Cement Unloader (5)	2,288,000	8,586	0.04	360.6	241.6	1.0	0.7
Kovaco 2 Cement Unloader (5)	2,288,000	8,586	0.04	360.6	241.6	1.0	0.7
Storage Warehouse Dust Collector DC-01 (6)	Combined		0.18	1,541.8	1,033.0	4.2	2.8
Direct Load Silo Dust Collector (7)	4,576,000		0.19	1,690.7	1,132.8	4.6	3.1
Total Emissions			**0.4**	**3,953.7**	**2,649.0**	**10.9**	**7.3**
Reduced Expansion Project - Year 2015							
Kovaco 1 Cement Unloader (5)	1,830,400	8,586	0.04	360.6	241.6	1.0	0.7
Kovaco 2 Cement Unloader (5)	1,830,400	8,586	0.04	360.6	241.6	1.0	0.7
Storage Warehouse Dust Collector DC-01 (6)	Combined		0.18	1,541.8	1,033.0	4.2	2.8
Direct Load Silo Dust Collector (7)	3,660,800		0.19	1,352.5	725.0	4.6	3.1
Total Emissions			**0.4**	**3,615.5**	**2,241.2**	**10.9**	**7.3**
No Project - Year 2015							
Kovaco Cement Unloader	1,842,619	4,690	0.28	1,313.2	879.8	5.2	3.5
vanAalst Cement Unloader	628,531	4,690	0.01	40.3	27.0	0.1	0.1
Storage Warehouse Dust Collector DC-01 (4)	2,471,150		0.38	3,328.8	2,230.3	9.1	6.1
Total Emissions			**0.7**	**4,682.3**	**3,137.2**	**14.4**	**9.7**

(1) From Source Test Report February 27, 1997, Parson Engineering Science.

(2) ARB CEIDARS PM database profile 343 - cement production/concrete batching.

(3) On the baseline peak day, the Kovaco operated 18.5 hours, the vanAalst operated 14 hours, and the DC-01 operated 24 hours. Project peak day emissions based upon 24 hours of operation.

(4) Storage Warehouse Dust Collector DC-01 operates 24 hours per day, 365 days per year for 8760 hours per year.

(5) Upgraded with high efficency air filters.

(6) Upgraded with high efficency pleated bag filters. Operating 8760 hours per year.

(7) 45,000 cfm blower and high efficency pleated bag filters. Operating 8760 hours per year.

Table A.1.2-39. Activity Data for Stationary Sources of Combustive Emissions during Unloading Operations - POLB MCC Project Scenarios

Project Scenario/Source	*Number Active*	*Power Rating (Hp)*	*Load Factor*	*Hourly Hp-Hrs*	*Hours per Ship Visit*	*Hp-Hrs per Ship Visit*	*Ship Visits per Year*	*Annual Hp-Hrs*
CEQA Baseline Year 2015								
Payloader - 924G	1	112	0.37	41	16	663	36	23,869
Payloader - 928G	1	125	0.37	46	16	740	36	26,640
Full Expansion Project - Year 2015								
Payloader - 924G	1	112	0.37	41	14	580	99	57,463
Payloader - 928G	1	125	0.37	46	14	648	99	64,133
SCR Duct Burner (1)	1					0.05		18.40
Reduced Expansion Project - Year 2015								
Payloader - 924G	1	112	0.37	41	14	580	79	45,971
Payloader - 928G	1	125	0.37	46	14	648	79	51,307
SCR Duct Burner (1)	1					0.05		18.40
No Project - Year 2015								
Payloader - 924G	1	112	0.37	41	16	663	67	44,424
Payloader - 928G	1	125	0.37	46	16	740	67	49,580

Notes: (1) Data = MSCF of natural gas per day and annual MSCF.

Table A.1.2-40. Emission Factors for Other Sources of Combustive Emissions during Unloading Operations - POLB MCC Project Scenarios

Project Scenario/Equipment	*Emission Factors (1)*							*References*
	VOC	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	
CEQA Baseline								
Payloader - Diesel	0.20	0.87	0.30	0.004	0.01	0.01	568	(3)
Future Project Scenarios - Year 2015								
Payloader - Diesel	0.20	0.87	0.30	0.004	0.01	0.01	568	(3)
SCR Duct Burner - Natural Gas	5.5	84.0	32.0	0.6	7.6	7.6	120,000	(4)

Notes: (1) Gm/Hp for the Payloader and Lb/MSCF for the SCR Duct Burner. Neither are subject to any CAAP measure.

(3) Tier 4

(4) AP-42 Section 1.4, Tables 1.4-1 Small boilers (<100 MBTU/Hr with low-NOx burners) and 1.4-2. Units in lb/MSCF.

Table A.1.2-41. Daily Emissions per Ship Visit for Other Sources during Unloading Operations - POLB MCC Project Scenarios

	Emissions Per Day (Pounds)						
Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
CEQA Baseline							
Payloader - 924G	0.3	1.3	0.4	0.0	0.0	0.0	825
Payloader - 928G	0.3	1.4	0.5	0.0	0.0	0.0	921
Subtotal	**0.6**	**2.7**	**0.9**	**0.0**	**0.0**	**0.0**	**1,746**
Full Expansion Project - Year 2015							
Payloader - 924G	0.3	1.1	0.4	0.0	0.0	0.0	722
Payloader - 928G	0.3	1.2	0.4	0.0	0.0	0.0	806
SCR Duct Burner	0.3	4.2	1.6	0.0	0.4	0.4	6,049
Subtotal	**0.8**	**6.6**	**2.4**	**0.0**	**0.4**	**0.4**	**7,578**
Reduced Expansion Project - Year 2015							
Payloader - 924G	0.3	1.1	0.4	0.0	0.0	0.0	722
Payloader - 928G	0.3	1.2	0.4	0.0	0.0	0.0	806
SCR Duct Burner	0.3	4.2	1.6	0.0	0.4	0.4	6,049
Subtotal	**0.8**	**6.6**	**2.4**	**0.0**	**0.4**	**0.4**	**7,578**
No Project - Year 2015							
Payloader - 924G	0.3	1.1	0.4	0.0	0.0	0.0	722
Payloader - 928G	0.3	1.2	0.4	0.0	0.0	0.0	806
Subtotal	**0.5**	**2.3**	**0.8**	**0.0**	**0.0**	**0.0**	**1,528**

Table A.1.2-42. Annual Emissions for Stationary Sources of Combustive Emissions during Unloading Operations

	Annual Emissions (Tons)						
Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
CEQA Baseline							
Payloader - 924G	0.01	0.02	0.01	0.00	0.00	0.00	15
Payloader - 928G	0.01	0.03	0.01	0.00	0.00	0.00	17
Subtotal	**0.01**	**0.05**	**0.02**	**0.00**	**0.00**	**0.00**	**31**
Full Expansion Project - Year 2015							
Payloader - 924G	0.01	0.05	0.02	0.00	0.00	0.00	36
Payloader - 928G	0.01	0.06	0.02	0.00	0.00	0.00	40
SCR Duct Burner	0.05	0.77	0.29	0.01	0.07	0.07	1,104
Subtotal	**0.08**	**0.89**	**0.33**	**0.01**	**0.07**	**0.07**	**1,180**
Reduced Expansion Project - Year 2015							
Payloader - 924G	0.01	0.04	0.02	0.00	0.00	0.00	29
Payloader - 928G	0.01	0.05	0.02	0.00	0.00	0.00	32
SCR Duct Burner	0.05	0.77	0.29	0.01	0.07	0.07	1,104
Subtotal	**0.07**	**0.87**	**0.33**	**0.01**	**0.07**	**0.07**	**1,165**
No Project - Year 2015							
Payloader - 924G	0.01	0.04	0.01	0.00	0.00	0.00	28
Payloader - 928G	0.01	0.05	0.02	0.00	0.00	0.00	31
Subtotal	**0.02**	**0.09**	**0.03**	**0.00**	**0.00**	**0.00**	**59**

Table A.1.2-43. Hourly Emission Rates for Other Unloading Sources - POLB MCC Project Scenarios

	Pounds per Hour						
Project Scenario/Equipment	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
CEQA Baseline Year 2015 - Payloaders	0.0	0.2	0.1	0.0	0.0	0.0	109.2
Year 2015 - Payloaders	0.0	0.2	0.1	0.0	0.0	0.0	109.2
Year 2015 - SCR Burner	0.0	0.2	0.1	0.0	0.0	0.0	252.1

Table A.1.2-44. Truck Loader and Baghouse PM Emissions - POLB MCC Project Scenarios

Project Scenario/Equipment	*Annual Throughput (Tons)*	*Annual Unloading Time (Hours)*	*PM10 Emission Factor (Lb/Hr) (1)*	*PM10 Emissions (Lb/Yr)*	*PM2.5 Emissions (Lb/Yr) (2)*	*PM10 Emissions Peak Day (Lb) (3)*	*PM2.5 Emissions Peak Day (Lb) (3)*
CEQA Baseline							
Truck Loading Dust Collector DC-02 (4)			0.06	525.6	352.2	1.4	1.0
Truck Loading Dust Collector DC-03 (4)			0.06	525.6	352.2	1.4	1.0
Truck Loading Dust Collector DC-21 (4)			0.06	525.6	352.2	1.4	1.0
Truck Loading (5)	1,481,824			276.9	185.5	1.4	0.9
Total Emissions			**0.18**	**1,853.7**	**1,242.0**	**5.7**	**3.8**
Full Expansion Project - Year 2015							
Truck Loading Dust Collector DC-02 (4)			0.04	350.4	234.8	1.0	0.6
Truck Loading Dust Collector DC-03 (4)			0.04	350.4	234.8	1.0	0.6
Truck Loading Dust Collector DC-21 (4)			0.04	350.4	234.8	1.0	0.6
Truck Loading (5)	4,576,000			855.1	572.9	3.4	2.3
Total Emissions			**0.12**	**1,906.3**	**1,277.2**	**6.2**	**4.2**
Reduced Expansion Alternative - Year 2015							
Truck Loading Dust Collector DC-02 (4)			0.04	350.4	234.8	1.0	0.6
Truck Loading Dust Collector DC-03 (4)			0.04	350.4	234.8	1.0	0.6
Truck Loading Dust Collector DC-21 (4)			0.04	350.4	234.8	1.0	0.6
Truck Loading (5)	3,660,800			684.1	458.3	2.7	1.8
Total Emissions			**0.12**	**1,735.3**	**1,162.6**	**5.6**	**3.7**
No Project - Year 2015							
Truck Loading Dust Collector DC-02 (4)			0.06	525.6	352.2	1.4	1.0
Truck Loading Dust Collector DC-03 (4)			0.06	525.6	352.2	1.4	1.0
Truck Loading Dust Collector DC-21 (4)			0.06	525.6	352.2	1.4	1.0
Truck Loading (5)	2,471,150			461.8	309.4	2.3	1.5
Total Emissions			**0.18**	**2,038.6**	**1,365.8**	**6.6**	**4.4**

(1) Baseline Scenario (Source Test Report February 27, 1997, Parson Engineering Science) and project scenario (Source Test Report August 31, 2006, Delta Air Quality Services for the addition of pleated bags).

(2) ARB CEIDARS PM database profile 371.

(3) Peak day based upon 24 hours of operation.

(4) Assumes loading is equally distributed to all loading racks and dust collectors operate 24 hours per day and 365 days per year for 8760 hours per year.

(5) Truck loading performed through a loading spout that completely encompases the truck porthole and employs negative pressure updraft of displaced truck container air, which is routed to a dust collection system (DC-02, DC-03, or DC21). However, these cement emissions occur from the top of the truck.

Emission factor for truck loading based on AP-42 and SCAQMD Rule 1158 truck loading equation:

Loading Emission Rate (lbs/year) = (LF x Trans x Thru x Days) x (1-Eff.), where

LF = Load in/out Factor (lb/metric ton) = $kL \times 0.0032 \times 1.1 \times (WS/5)^{1.3} \times (M/2)^{-1.4}$ and

kL= Particle Size Multiplier = 0.35 (PM10) and 0.74 (PM30)

WS = Mean Wind Speed (mph) = 6 mph

M = Moisture Content (%) = 1 % from source test data

LF for uncontrolled PM10 (lb/metric ton) = $0.35 \times 0.0032 \times 1.1 \times (6/5)^{1.3} \times (1/2)^{-1.4} = 0.00412$

Trans = Number of Transfers (trucks/day)

Thru = Capacity per truck (metric tons/truck)

Eff = Efficiency of Fugitive Dust Controls

Efficiency = 95%, as loading is controlled by updraft to a baghouse.

Table A.1.2-45. On-Road Truck Operational Data - POLB MCC Project Scenarios

Activity/Project Scenario	*Idling Time/ Trip (Hrs) (1)*	*Miles/ Trip (2)*	*Annual Truck Trips*	*Peak Daily Trips*	*ADT (3)*	*Annual Idling (Hrs)*	*Annual Miles*	*Peak Day Idling (Hrs)*	*Peak Day Miles*	*Ave. Day Idling (Hrs)*	*Ave. Day Miles*
On-Terminal											
CEQA Baseline	0.17	0.25	53,067	264	170	8,845	13,267	44	66	28	42
Year 2015 - Full Expansion Project	0.15	0.350	166,400	643	533	24,960	58,240	96	225	80	187
Year 2015 - Reduced Project	0.15	0.350	133,120	515	427	19,968	46,592	77	180	64	149
Year 2015 - No Project	0.15	0.25	89,856	432	288	13,478	22,464	65	108	43	72
Off-Terminal											
CEQA Baseline	0.08	60	53,067	264	170	4,422	3,184,020	22	15,840	14	10,177
Capacity Study Project - Year 2015	0.08	60	166,400	643	533	13,867	9,984,000	54	38,580	44	31,980
Year 2015 - Reduced Project	0.08	60	133,120	515	427	11,093	7,987,200	43	30,907	36	25,620
Year 2015 - No Project	0.08	60	89,856	432	288	7,488	5,391,360	36	25,920	24	17,280

Notes: (1) On-terminal durations from

(2) On-terminal mileage/trip based upon current/proposed terminal designs. Off-terminal miles/trip based on 2006 truck activity log (MCC 2011).

(3) ADT = annual trips / (365 days * (6/7 days per week)) = values in Final Capacity Study, except baseline scenario calculated from MCC data.

Table A.1.2-46. On-Road Truck Emission Factors - POLB MCC Project Scenarios

Project Year/Mode	*Emission Factors (Grams/Mile)*											*References*
	ROG	*CO*	*NOx*	*SOx*	*DPM $_{10}$*	*DPM $_{2.5}$*	*On-Terminal*		*Off-Terminal*		*CO2*	
							Dust $_{10}$	*Dust $_{2.5}$*	*Dust $_{10}$*	*Dust $_{2.5}$*		
CEQA Baseline												
On-road Truck - Idle	16.28	51.17	92.18	0.07	2.70	2.49					6,680	(1)
On-road Truck - 10 mph	2.21	4.59	20.23	0.02	0.34	0.31	12.06	8.06	1.43	0.93	3,326	(2)
On-road Truck - 25 mph	0.39	1.61	10.13	0.01	0.13	0.12			1.43	0.93	2,010	(2)
On-road Truck - 55 mph	0.19	1.15	8.19	0.01	0.14	0.13			1.43	0.93	1,585	(2)
On-road Trucks - Composite Off-Terminal (2)	0.36	1.48	9.47	0.01	0.15	0.14			1.43	0.93	1,821	(3)
Project Year 2015												
On-road Truck - Idle	4.30	16.60	27.90	0.04	0.06	0.06					4,934	(4)
On-road Truck - 10 mph	2.86	6.10	15.02	0.02	0.10	0.09	12.06	8.06	1.43	0.93	3,274	(4)
On-road Truck - 25 mph	0.55	1.81	7.66	0.01	0.08	0.07			1.43	0.93	1,979	(4)
On-road Truck - 55 mph	0.26	1.84	5.10	0.01	0.13	0.12			1.43	0.93	1,560	(4)
On-road Trucks - Composite Off-Terminal (2)	0.49	2.04	6.49	0.01	0.11	0.10			1.43	0.93	1,792	(3)
All Scenarios												
On-site Road Dust												(5)
70-Year Average - Future Project Scenarios												
On-road Truck - 10 mph					0.087							
Peak DPM Factor- Year 2020												
On-road Truck - 10 mph					0.103							

Notes: (1) Average of all model years present in SCAB HHDT fleet of year 2015. From EMFAC2011 (ARB 2012). Units in grams/hour.

(2) From EMFAC2011 for average SCAB T7 tractor fleet in year 2015, annual average (ARB 2011). Units in grams/mile.

(3) Based on 5% at 10 miles per hour (mph), 35% at 25 mph, and 60% at 55 mph.

(4) Maximum annual values for years post 2014, as developed for the Ports clean truck fleets with EMFAC2011 (Starcrest LLC 2011). Units in grams/mile, except idle factors :

(5) Calculations presented in Table A.1.2-53.

Table A.1.2-47. Annual Truck Emissions - POLB MCC Project Scenarios

Location/Project Scenario - Mode	Tons per Year										
	ROG	CO	NOx	SOx	DPM_{10}	$DPM_{2.5}$	$Dust_{10}$	$Dust_{2.5}$	$All\ PM_{10}$	$All\ PM_{2.5}$	CO2
On-Terminal (1)											
CEQA Baseline - Idling	0.16	0.50	0.90	0.00	0.03	0.02			0.03	0.02	65
CEQA Baseline - Driving	0.03	0.07	0.30	0.00	0.00	0.00	0.18	0.12	0.18	0.12	49
Subtotal - Baseline Year 2015	**0.19**	**0.57**	**1.19**	**0.00**	**0.03**	**0.03**	**0.18**	**0.12**	**0.21**	**0.15**	**114**
Full Expansion Project - Year 2015 - Idling	0.12	0.46	0.77	0.00	0.002	0.00			0.00	0.00	136
Full Expansion Project - Year 2015 - Driving	0.18	0.39	0.96	0.00	0.006	0.01	0.77	0.52	0.78	0.52	210
Subtotal - Full Expansion Project Year 2015	**0.30**	**0.85**	**1.73**	**0.00**	**0.01**	**0.01**	**0.77**	**0.52**	**0.78**	**0.52**	**346**
Reduced Project - Year 2015 - Idling	0.09	0.37	0.61	0.00	0.00	0.00			0.00	0.00	109
Reduced Project - Year 2015 - Driving	0.15	0.31	0.77	0.00	0.01	0.00	0.62	0.41	0.62	0.42	168
Subtotal - Reduced Project Year 2015	**0.24**	**0.68**	**1.39**	**0.00**	**0.01**	**0.01**	**0.62**	**0.41**	**0.63**	**0.42**	**277**
No Project - Year 2015 - Idling	0.06	0.25	0.41	0.00	0.00	0.00			0.00	0.00	73
No Project - Year 2015 - Driving	0.07	0.15	0.37	0.00	0.00	0.00	0.30	0.20	0.30	0.20	81
Subtotal - No Project Year 2015	**0.13**	**0.40**	**0.79**	**0.00**	**0.00**	**0.00**	**0.30**	**0.20**	**0.30**	**0.20**	**154**
Off-Terminal											
CEQA Baseline - Idling	0.08	0.25	0.45	0.00	0.01	0.01			0.01	0.01	33
CEQA Baseline - Driving	1.28	5.21	33.25	0.05	0.52	0.48	5.04	3.28	5.55	3.76	6,392
Subtotal - Baseline Year 2015	**1.35**	**5.46**	**33.70**	**0.05**	**0.53**	**0.49**	**5.04**	**3.28**	**5.57**	**3.77**	**6,424**
Full Expansion Project - Year 2015 - Idling	0.07	0.25	0.43	0.00	0.00	0.00			0.00	0.00	75
Full Expansion Project - Year 2015 - Driving	5.41	22.48	71.46	0.14	1.22	1.12	15.79	10.28	17.01	11.41	19,730
Subtotal - Full Expansion Project Year 2015	**5.48**	**22.74**	**71.89**	**0.15**	**1.22**	**1.12**	**15.79**	**10.28**	**17.01**	**11.41**	**19,805**
Reduced Project - Year 2015 - Idling	0.05	0.20	0.34	0.00	0.00	0.00			0.00	0.00	60
Reduced Project - Year 2015 - Driving	4.33	17.99	57.17	0.12	0.98	0.90	12.63	8.23	13.61	9.13	15,784
Subtotal - Reduced Project Year 2015	**4.38**	**18.19**	**57.51**	**0.12**	**0.98**	**0.90**	**12.63**	**8.23**	**13.61**	**9.13**	**15,844**
No Project - Year 2015 - Idling	0.04	0.14	0.23	0.00	0.00	0.00			0.00	0.00	41
No Project - Year 2015 - Driving	2.92	12.14	38.59	0.08	0.66	0.61	8.53	5.55	9.19	6.16	10,654
Subtotal - No Project Year 2015	**2.96**	**12.28**	**38.82**	**0.08**	**0.66**	**0.61**	**8.53**	**5.55**	**9.19**	**6.16**	**10,695**
Total Annual Truck Emissions by Project Scenario											
Total - CEQA Baseline	**1.55**	**6.02**	**34.89**	**0.05**	**0.56**	**0.52**	**5.21**	**3.40**	**5.77**	**3.91**	**6,538**
Total - Full Expansion Project - Year 2015	**5.78**	**23.59**	**73.62**	**0.15**	**1.23**	**1.13**	**16.57**	**10.80**	**17.80**	**11.93**	**20,151**
Total - Reduced Project - Year 2015	**4.62**	**18.87**	**58.90**	**0.12**	**0.98**	**0.91**	**13.25**	**8.64**	**14.24**	**9.55**	**16,121**
Total - No Project - Year 2015	**3.09**	**12.68**	**39.61**	**0.08**	**0.66**	**0.61**	**8.83**	**5.75**	**9.49**	**6.36**	**10,849**

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table A.1.2-48. Peak Daily Truck Emissions - POLB MCC Project Scenarios

Location/Project Scenario - Mode	*Pounds per Peak Day*										
	ROG	*CO*	*NOx*	*SOx*	*DPM $_{10}$*	*DPM $_{2.5}$*	*Dust $_{10}$*	*Dust $_{2.5}$*	*All PM $_{10}$*	*All PM $_{2.5}$*	*CO2*
On-Terminal (1)											
CEQA Baseline - Idling	1.58	4.96	8.94	0.01	0.26	0.24			0.26	0.24	648
CEQA Baseline - Driving	0.32	0.67	2.94	0.00	0.05	0.04	1.75	1.17	1.80	1.22	484
Subtotal - Baseline Year 2015	**1.90**	**5.63**	**11.89**	**0.01**	**0.31**	**0.29**	**1.75**	**1.17**	**2.07**	**1.46**	**1,132**
Full Expansion Project - Year 2015 - Idling	0.91	3.53	5.93	0.01	0.01	0.01			0.01	0.01	1,049
Full Expansion Project - Year 2015 - Driving	1.42	3.03	7.45	0.01	0.05	0.05	5.98	4.00	6.03	4.05	1,625
Subtotal - Full Expansion Project Year 2015	**2.33**	**6.56**	**13.39**	**0.02**	**0.06**	**0.06**	**5.98**	**4.00**	**6.05**	**4.06**	**2,674**
Reduced Project - Year 2015 - Idling	0.73	2.83	4.75	0.01	0.01	0.01			0.01	0.01	841
Reduced Project - Year 2015 - Driving	1.14	2.43	5.97	0.01	0.04	0.04	4.79	3.20	4.83	3.24	1,302
Subtotal - Reduced Project Year 2015	**1.87**	**5.25**	**10.73**	**0.02**	**0.05**	**0.05**	**4.79**	**3.20**	**4.84**	**3.25**	**2,142**
No Project - Year 2015 - Idling	0.61	2.37	3.99	0.01	0.01	0.01			0.01	0.01	705
No Project - Year 2015 - Driving	0.68	1.45	3.58	0.01	0.02	0.02	2.87	1.92	2.90	1.94	780
Subtotal - No Project Year 2015	**1.30**	**3.82**	**7.56**	**0.01**	**0.03**	**0.03**	**2.87**	**1.92**	**2.90**	**1.95**	**1,485**
Off-Terminal											
CEQA Baseline - Idling	0.79	2.48	4.47	0.00	0.13	0.12			0.13	0.12	324
CEQA Baseline - Driving	12.69	51.83	330.82	0.46	5.14	4.73	50.11	32.63	55.25	37.36	63,595
Subtotal - Baseline Year 2015	**13.48**	**54.31**	**335.30**	**0.46**	**5.27**	**4.85**	**50.11**	**32.63**	**55.38**	**37.49**	**63,919**
Full Expansion Project - Year 2015 - Idling	0.51	1.96	3.30	0.00	0.01	0.01			0.01	0.01	583
Full Expansion Project - Year 2015 - Driving	41.81	173.76	552.29	1.12	9.44	8.69	122.04	79.48	131.49	88.17	152,478
Subtotal - Full Expansion Project Year 2015	**42.32**	**175.72**	**555.58**	**1.12**	**9.45**	**8.69**	**122.04**	**79.48**	**131.49**	**88.18**	**153,061**
Reduced Project - Year 2015 - Idling	0.41	1.57	2.64	0.00	0.01	0.01			0.01	0.01	467
Reduced Project - Year 2015 - Driving	33.50	139.20	442.45	0.90	7.56	6.96	97.77	63.68	105.34	70.64	122,154
Subtotal - Reduced Project Year 2015	**33.90**	**140.77**	**445.09**	**0.90**	**7.57**	**6.97**	**97.77**	**63.68**	**105.34**	**70.64**	**122,621**
No Project - Year 2015 - Idling	0.34	1.32	2.21	0.00	0.00	0.00			0.00	0.00	392
No Project - Year 2015 - Driving	28.09	116.74	371.05	0.75	6.34	5.84	82.00	53.40	88.34	59.24	102,443
Subtotal - No Project Year 2015	**28.43**	**118.06**	**373.27**	**0.75**	**6.35**	**5.84**	**82.00**	**53.40**	**88.34**	**59.24**	**102,834**
Total Peak Day Truck Emissions by Project Scenario											
Total - CEQA Baseline	**15.38**	**59.94**	**347.18**	**0.47**	**5.58**	**5.14**	**51.86**	**33.81**	**57.45**	**38.95**	**65,051**
Total - Full Expansion Project - Year 2015	**44.65**	**182.28**	**568.97**	**1.14**	**9.51**	**8.75**	**128.03**	**83.48**	**137.54**	**92.23**	**155,735**
Total - Reduced Project - Year 2015	**35.77**	**146.03**	**455.82**	**0.92**	**7.62**	**7.01**	**102.57**	**66.88**	**110.19**	**73.89**	**124,764**
Total - No Project - Year 2015	**29.73**	**121.88**	**380.83**	**0.77**	**6.38**	**5.87**	**84.87**	**55.32**	**91.25**	**61.19**	**104,319**

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table A.1.2-49. Average Daily Truck Emissions - POLB MCC Project Scenarios

Location/Project Scenario - Mode	*Pounds per Average Day*										
	ROG	*CO*	*NOx*	*SOx*	*DPM $_{10}$*	*DPM $_{2.5}$*	*Dust $_{10}$*	*Dust $_{2.5}$*	*All PM $_{10}$*	*All PM $_{2.5}$*	*CO2*
On-Terminal (1)											
CEQA Baseline - Idling	1.01	3.19	5.75	0.00	0.17	0.16			0.17	0.16	416
CEQA Baseline - Driving	0.21	0.43	1.89	0.00	0.03	0.03	1.13	0.75	1.16	0.78	401
Subtotal - Baseline Year 2015	**1.22**	**3.62**	**7.64**	**0.01**	**0.20**	**0.18**	**1.13**	**0.75**	**1.33**	**0.94**	**818**
Full Expansion Project - Year 2015 - Idling	0.76	2.93	4.92	0.01	0.01	0.01			0.01	0.01	870
Full Expansion Project - Year 2015 - Driving	1.18	2.51	6.18	0.01	0.04	0.04	4.96	3.32	5.00	3.35	1,347
Subtotal - Full Expansion Project Year 2015	**1.93**	**5.44**	**11.10**	**0.02**	**0.05**	**0.05**	**4.96**	**3.32**	**5.01**	**3.36**	**2,217**
Reduced Project - Year 2015 - Idling	0.61	2.34	3.94	0.01	0.01	0.01			0.01	0.01	697
Reduced Project - Year 2015 - Driving	0.94	2.01	4.95	0.01	0.03	0.03	3.97	2.66	4.01	2.69	1,079
Subtotal - Reduced Project Year 2015	**1.55**	**4.35**	**8.89**	**0.01**	**0.04**	**0.04**	**3.97**	**2.66**	**4.02**	**2.69**	**1,776**
No Project - Year 2015 - Idling	0.41	1.58	2.66	0.00	0.01	0.01			0.01	0.01	470
No Project - Year 2015 - Driving	0.45	0.97	2.38	0.00	0.02	0.01	1.91	1.28	1.93	1.29	520
Subtotal - No Project Year 2015	**0.86**	**2.55**	**5.04**	**0.01**	**0.02**	**0.02**	**1.91**	**1.28**	**1.94**	**1.30**	**990**
Off-Terminal											
CEQA Baseline - Idling	0.51	1.59	2.87	0.00	0.08	0.08			0.08	0.08	208
CEQA Baseline - Driving	8.15	33.30	212.56	0.30	3.30	3.04	32.19	20.97	35.50	24.01	40,860
Subtotal - Baseline Year 2015	**8.66**	**34.89**	**215.43**	**0.30**	**3.39**	**3.12**	**32.19**	**20.97**	**35.58**	**24.08**	**41,068**
Full Expansion Project - Year 2015 - Idling	0.42	1.63	2.73	0.00	0.01	0.01			0.01	0.01	483
Full Expansion Project - Year 2015 - Driving	34.66	144.03	457.80	0.93	7.83	7.20	101.17	65.89	108.99	73.09	126,393
Subtotal - Full Expansion Project Year 2015	**35.08**	**145.66**	**460.54**	**0.93**	**7.83**	**7.21**	**101.17**	**65.89**	**109.00**	**73.09**	**126,877**
Reduced Project - Year 2015 - Idling	0.34	1.30	2.19	0.00	0.00	0.00			0.00	0.00	387
Reduced Project - Year 2015 - Driving	27.77	115.39	366.76	0.74	6.27	5.77	81.05	52.78	87.32	58.55	101,257
Subtotal - Reduced Project Year 2015	**28.10**	**116.69**	**368.95**	**0.75**	**6.28**	**5.77**	**81.05**	**52.78**	**87.32**	**58.56**	**101,644**
No Project - Year 2015 - Idling	0.23	0.88	1.48	0.00	0.00	0.00			0.00	0.00	261.12
No Project - Year 2015 - Driving	18.73	77.83	247.37	0.50	4.23	3.89	54.66	35.60	58.89	39.49	68,295
Subtotal - No Project Year 2015	**18.96**	**78.71**	**248.85**	**0.50**	**4.23**	**3.89**	**54.66**	**35.60**	**58.90**	**39.49**	**68,556**
Total Average Daily Emissions by Project Scenario											
Total - CEQA Baseline	**9.88**	**38.51**	**223.07**	**0.30**	**3.59**	**3.30**	**33.32**	**21.72**	**36.91**	**25.02**	**41,886**
Total - Full Expansion Project - Year 2015	**37.02**	**151.10**	**471.63**	**0.95**	**7.89**	**7.25**	**106.13**	**69.20**	**114.01**	**76.46**	**129,093**
Total - Reduced Project - Year 2015	**29.65**	**121.05**	**377.84**	**0.76**	**6.32**	**5.81**	**85.02**	**55.44**	**91.34**	**61.25**	**103,420**
Total - No Project - Year 2015	**19.82**	**81.25**	**253.89**	**0.51**	**4.25**	**3.91**	**56.58**	**36.88**	**60.83**	**40.79**	**69,546**

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table A.1.2-50. On-Terminal Truck Hourly Emission Rates - Peak Short-Term Impacts - POLB MCC Project Scenarios

Location/Project Scenario - Mode	Pounds per Hour (1)										
	ROG	CO	NOx	SOx	DPM_{10}	$DPM_{2.5}$	$Dust_{10}$	$Dust_{2.5}$	$All\ PM_{10}$	$All\ PM_{2.5}$	CO2
CEQA Baseline											
Idling (2)	0.07	0.21	0.37	0.00	0.01	0.01			0.01	0.01	27.00
Driving (3)	0.01	0.03	0.12	0.00	0.00	0.00	0.07	0.05	0.08	0.05	20.17
Full Expansion Project - Year 2015											
Idling (2)	0.04	0.15	0.25	0.00	0.001	0.00			0.00	0.00	43.72
Driving (3)	0.06	0.13	0.31	0.00	0.002	0.00	0.25	0.17	0.251	0.17	67.70
Reduced Project - Year 2015											
Idling (2)	0.03	0.12	0.20	0.00	0.0004	0.00			0.00	0.00	35.03
Driving (3)	0.05	0.10	0.25	0.00	0.002	0.00	0.20	0.13	0.20	0.14	54.23
No Project - Year 2015											
Idling (2)	0.03	0.10	0.17	0.00	0.0004	0.00			0.00	0.00	29.38
Driving (3)	0.03	0.06	0.15	0.00	0.0010	0.00	0.12	0.08	0.12	0.08	32.49

Notes: (1) Peak daily emissions / 24 hours.

(2) Apportioned to truck loading source only.

Table A.1.2-51. On-Terminal Truck Hourly Emission Rates - Annual Impacts - POLB MCC Project Scenarios

Location/Project Scenario - Mode	Pounds per Hour (1)										
	ROG	CO	NOx	SOx	DPM_{10}	$DPM_{2.5}$	$Dust_{10}$	$Dust_{2.5}$	$All\ PM_{10}$	$All\ PM_{2.5}$	CO2
CEQA Baseline											
Idling (2)	0.04	0.11	0.21	0.00	0.0060	0.006			0.006	0.006	14.87
Driving (3)	0.01	0.02	0.07	0.00	0.00	0.00	0.04	0.03	0.04	0.03	11.11
Full Expansion Project - Year 2015											
Idling (2)	0.03	0.10	0.18	0.00	0.0004	0.000			0.0004	0.000	31.00
Driving (3)	0.04	0.09	0.22	0.00	0.00147	0.0013	0.18	0.12	0.18	0.12	48.00
Reduced Project - Year 2015											
Idling (2)	0.02	0.08	0.14	0.00	0.0003	0.000			0.000	0.000	24.80
Driving (3)	0.03	0.07	0.18	0.00	0.00117	0.00	0.14	0.09	0.14	0.10	38.40
No Project - Year 2015											
Idling (2)	0.01	0.06	0.09	0.00	0.00020	0.000			0.000	0.000	16.74
Driving (3)	0.02	0.03	0.08	0.00	0.00057	0.00	0.07	0.05	0.07	0.05	18.51
Full Expansion Project - 70-Year Average											
On-Terminal Driving (3)					0.0013						
Reduced Project - 70-Year Average											
On-Terminal Driving (3)					0.0010						
No Project - 70-Year Average											
On-Terminal Driving (3)					0.0005						
Full Expansion Project - Peak Year 2020											
On-Terminal Driving (3)					0.00151						
Reduced Project - Peak Year 2020											
On-Terminal Driving (3)					0.00121						
No Project - Peak Year 2020											
On-Terminal Driving (3)					0.00058						

Notes: (1) Average daily emissions / 24 hours.

Year 2020 is the peak DPM Truck EF year.

Table A.1.2-52. Delivery Truck On-Terminal Road Dust Emissions - POLB MCC Project Scenarios

Location/Source	*Emission Rate (Grams/Mile)*		Annualized PM Pounds/Hour (3)			Peak Day PM Pounds/Hour (3)		
	PM10	*PM2.5*						
On-Terminal - CEQA Baseline								
Road Dust (1)	11.99	8.03						
Brake Wear (2)	0.05	0.02	0.00016			0.0003		
Tire Wear (2)	0.02	0.01	0.00007			0.0001		
Subtotal - On-Terminal	**12.06**	**8.06**						
On-Terminal - Proposed Scenarios			*FE*	*REA*	*NP*	*FE*	*REA*	*NP*
Road Dust (1)	11.99	8.03						
Brake Wear (2)	0.05	0.02	0.0007	0.0006	0.0003	0.001	0.001	0.0005
Tire Wear (2)	0.02	0.01	0.0003	0.0002	0.0001	0.0004	0.0003	0.0002
Subtotal - On-Terminal	**12.06**	**8.06**						
Off-Terminal								
Road Dust (1)	1.34	0.90						
Brake Wear (2)	0.06	0.03						
Tire Wear (2)	0.03	0.01						
Subtotal - Off-Terminal	**1.43**	**0.93**						

Notes: (1) Emissions method for travel on paved roads (EPA AP-42 Section 13.2.1, January 2011):

$E = k(sL)^{0.91} \times (W)^{1.02} \times (1-(40/(4*365)$ = Grams/Mile

Where: k = 1.0 for PM10, sL = road silt loading (gms/m2), and W = weight of vehicles (26 tons).

sL for On-Terminal driving = 0.41. sL for Off-Terminal driving = 0.037 (major/collector roads) (ARB ????) . For CEQA Baseline/Proposed Scenarios, emissions reduced by 25% due to the use of a vacuum sweeper.

(2) From Table 9-7 (ARB 2011). On-terminal driving emission factors reduced 25% due to the use of a vacuum sweeper. PM10/PM2.5 ratios from CEDARIS (ARB ????)

(3) Tire/Brake wear PM = 100/98% PM10.

Table A.1.2-53. Mitigated On-Road Truck Emission Factors - POLB MCC Project Scenarios

Project Year/Mode	Emission Factors (Grams/Mile)											References
							On-Terminal		Off-Terminal			
	ROG	CO	NOx	SOx	DPM_{10}	$DPM_{2.5}$	$Dust_{10}$	$Dust_{2.5}$	$Dust_{10}$	$Dust_{2.5}$	CO2	
CEQA Baseline												
On-road Truck - Idle	16.28	51.17	92.18	0.07	2.70	2.49					6,680	(1)
On-road Truck - 10 mph	2.21	4.59	20.23	0.02	0.34	0.31	12.06	8.06	1.43	0.93	3,326	(2)
On-road Truck - 25 mph	0.39	1.61	10.13	0.01	0.13	0.12			1.43	0.93	2,010	(2)
On-road Truck - 55 mph	0.19	1.15	8.19	0.01	0.14	0.13			1.43	0.93	1,585	(2)
On-road Trucks - Composite Off-Terminal (2)	0.36	1.48	9.47	0.01	0.15	0.14			1.43	0.93	1,821	(3)
Project Year 2015 - Mitigated												
On-road Truck - Idle	4.30	16.60	27.90	0.04	0.06	0.06					4,934	(4)
On-road Truck - 10 mph	1.44	3.06	6.00	0.02	0.09	0.08	12.06	8.06	1.43	0.93	3,278	(4)
On-road Truck - 25 mph	0.27	0.93	3.04	0.01	0.06	0.05			1.43	0.93	1,981	(4)
On-road Truck - 55 mph	0.13	0.90	2.17	0.01	0.08	0.07			1.43	0.93	1,562	(4)
On-road Trucks - Composite Off-Terminal (2)	0.25	1.02	2.67	0.01	0.07	0.07			1.43	0.93	1,794	(3)
All Scenarios												
On-site Road Dust												(5)
70-Year Average - Future Project Scenarios												
On-road Truck - 10 mph					0.087							
Peak DPM Factor- Year 2020												
On-road Truck - 10 mph					0.103							

Notes: (1) Average of all model years present in SCAB HHDT fleet of year 2015. From EMFAC2011 (ARB 2012). Units in grams/hour.

(2) From EMFAC2011 for average SCAB T7 tractor fleet in year 2015, annual average (ARB 2011). Units in grams/mile.

(3) Based on 5% at 10 miles per hour (mph), 35% at 25 mph, and 60% at 55 mph.

(4) Composite emission factors for a T7 tractor diesel truck fleet for year 2015, model years 2010-2016 based in EMFAC populations for project year 2015 + 10% of fleet = ave truck fleet of 2015. Units in grams/mile.

(5) Calculations presented in Table A.1.2-53.

Table A.1.2-54. Mitigated Annual Truck Emissions - POLB MCC Project Scenarios

Location/Project Scenario - Mode	Tons per Year										
	ROG	*CO*	*NOx*	*SOx*	*DPM $_{10}$*	*DPM $_{2.5}$*	*Dust $_{10}$*	*Dust $_{2.5}$*	*All PM $_{10}$*	*All PM $_{2.5}$*	*CO2*
On-Terminal (1)											
CEQA Baseline - Idling	0.16	0.50	0.90	0.00	0.03	0.02			0.03	0.02	65
CEQA Baseline - Driving	0.03	0.07	0.30	0.00	0.00	0.00	0.18	0.12	0.18	0.12	49
Subtotal - Baseline Year 2015	**0.19**	**0.57**	**1.19**	**0.00**	**0.03**	**0.03**	**0.18**	**0.12**	**0.21**	**0.15**	**114**
Full Expansion Project - Year 2015 - Idling	0.12	0.46	0.77	0.00	0.002	0.00			0.00	0.00	136
Full Expansion Project - Year 2015 - Driving	0.09	0.20	0.39	0.00	0.006	0.01	0.77	0.52	0.78	0.52	210
Subtotal - Full Expansion Project Year 2015	**0.21**	**0.65**	**1.15**	**0.00**	**0.01**	**0.01**	**0.77**	**0.52**	**0.78**	**0.52**	**346**
Reduced Project - Year 2015 - Idling	0.09	0.37	0.61	0.00	0.00	0.00			0.00	0.00	109
Reduced Project - Year 2015 - Driving	0.07	0.16	0.31	0.00	0.00	0.00	0.62	0.41	0.62	0.42	168
Subtotal - Reduced Project Year 2015	**0.17**	**0.52**	**0.92**	**0.00**	**0.01**	**0.01**	**0.62**	**0.41**	**0.63**	**0.42**	**277**
Off-Terminal											
CEQA Baseline - Idling	0.08	0.25	0.45	0.00	0.01	0.01			0.01	0.01	33
CEQA Baseline - Driving	1.28	5.21	33.25	0.05	0.52	0.48	5.04	3.28	5.55	3.76	6,392
Subtotal - Baseline Year 2015	**1.35**	**5.46**	**33.70**	**0.05**	**0.53**	**0.49**	**5.04**	**3.28**	**5.57**	**3.77**	**6,424**
Full Expansion Project - Year 2015 - Idling	0.07	0.25	0.43	0.00	0.00	0.00			0.00	0.00	75
Full Expansion Project - Year 2015 - Driving	2.71	11.24	29.34	0.14	0.80	0.74	15.79	10.28	16.60	11.02	19,751
Subtotal - Full Expansion Project Year 2015	**2.78**	**11.50**	**29.77**	**0.15**	**0.81**	**0.74**	**15.79**	**10.28**	**16.60**	**11.03**	**19,826**
Reduced Project - Year 2015 - Idling	0.05	0.20	0.34	0.00	0.00	0.00			0.00	0.00	60
Reduced Project - Year 2015 - Driving	2.17	9.00	23.47	0.12	0.64	0.59	12.63	8.23	13.28	8.82	15,801
Subtotal - Reduced Project Year 2015	**2.22**	**9.20**	**23.81**	**0.12**	**0.64**	**0.59**	**12.63**	**8.23**	**13.28**	**8.82**	**15,861**
Total Annual Truck Emissions by Project Scenario											
Total - CEQA Baseline	**1.55**	**6.02**	**34.89**	**0.05**	**0.56**	**0.52**	**5.21**	**3.40**	**5.77**	**3.91**	**6,538**
Total - Full Expansion Project - Year 2015	**2.99**	**12.15**	**30.92**	**0.15**	**0.81**	**0.75**	**16.57**	**10.80**	**17.38**	**11.55**	**20,173**
Total - Reduced Project - Year 2015	**2.39**	**9.72**	**24.74**	**0.12**	**0.65**	**0.60**	**13.25**	**8.64**	**13.90**	**9.24**	**16,138**

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table A.1.2-55. Mitigated Peak Daily Truck Emissions - POLB MCC Project Scenarios

Location/Project Scenario - Mode	*Pounds per Peak Day*										
	ROG	*CO*	*NOx*	*SOx*	*DPM $_{10}$*	*DPM $_{2.5}$*	*Dust $_{10}$*	*Dust $_{2.5}$*	*All PM $_{10}$*	*All PM $_{2.5}$*	*CO2*
On-Terminal (1)											
CEQA Baseline - Idling	1.58	4.96	8.94	0.01	0.26	0.24			0.26	0.24	648
CEQA Baseline - Driving	0.32	0.67	2.94	0.00	0.05	0.04	1.75	1.17	1.80	1.22	484
Subtotal - Baseline Year 2015	**1.90**	**5.63**	**11.89**	**0.01**	**0.31**	**0.29**	**1.75**	**1.17**	**2.07**	**1.46**	**1,132**
Full Expansion Project - Year 2015 - Idling	0.91	3.53	5.93	0.01	0.01	0.01			0.01	0.01	1,049
Full Expansion Project - Year 2015 - Driving	0.72	1.52	2.98	0.01	0.04	0.04	5.98	4.00	6.03	4.04	1,626
Subtotal - Full Expansion Project Year 2015	**1.63**	**5.05**	**8.91**	**0.02**	**0.06**	**0.05**	**5.98**	**4.00**	**6.04**	**4.05**	**2,676**
Reduced Project - Year 2015 - Idling	0.73	2.83	4.75	0.01	0.01	0.01			0.01	0.01	841
Reduced Project - Year 2015 - Driving	0.57	1.22	2.39	0.01	0.04	0.03	4.79	3.20	4.83	3.24	1,303
Subtotal - Reduced Project Year 2015	**1.31**	**4.05**	**7.14**	**0.02**	**0.05**	**0.04**	**4.79**	**3.20**	**4.84**	**3.25**	**2,144**
Off-Terminal											
CEQA Baseline - Idling	0.79	2.48	4.47	0.00	0.13	0.12			0.13	0.12	324
CEQA Baseline - Driving	12.69	51.83	330.82	0.46	5.14	4.73	50.11	32.63	55.25	37.36	63,595
Subtotal - Baseline Year 2015	**13.48**	**54.31**	**335.30**	**0.46**	**5.27**	**4.85**	**50.11**	**32.63**	**55.38**	**37.49**	**63,919**
Full Expansion Project - Year 2015 - Idling	0.51	1.96	3.30	0.00	0.01	0.01			0.01	0.01	583
Full Expansion Project - Year 2015 - Driving	20.95	86.90	226.76	1.12	6.22	5.72	122.04	79.48	128.26	85.20	152,642
Subtotal - Full Expansion Project Year 2015	**21.46**	**88.87**	**230.06**	**1.12**	**6.22**	**5.72**	**122.04**	**79.48**	**128.27**	**85.21**	**153,225**
Reduced Project - Year 2015 - Idling	0.41	1.57	2.64	0.00	0.01	0.01			0.01	0.01	467
Reduced Project - Year 2015 - Driving	16.78	69.62	181.66	0.90	4.98	4.58	97.77	63.68	102.75	68.26	122,286
Subtotal - Reduced Project Year 2015	**17.19**	**71.19**	**184.30**	**0.90**	**4.99**	**4.59**	**97.77**	**63.68**	**102.76**	**68.26**	**122,753**
Total Peak Day Truck Emissions by Project Scenario											
Total - CEQA Baseline	**15.38**	**59.94**	**347.18**	**0.47**	**5.58**	**5.14**	**51.86**	**33.81**	**57.45**	**38.95**	**65,051**
Total - Full Expansion Project - Year 2015	**23.09**	**93.92**	**238.97**	**1.14**	**6.28**	**5.78**	**128.03**	**83.48**	**134.31**	**89.26**	**155,901**
Total - Reduced Project - Year 2015	**18.50**	**75.24**	**191.44**	**0.92**	**5.03**	**4.63**	**102.57**	**66.88**	**107.60**	**71.51**	**124,896**

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table A.1.2-56. Mitiagted Average Daily Truck Emissions - POLB MCC Project Scenarios

Location/Project Scenario - Mode	*Pounds per Average Day*										
	ROG	*CO*	*NOx*	*SOx*	*DPM $_{10}$*	*DPM $_{2.5}$*	*Dust $_{10}$*	*Dust $_{2.5}$*	*All PM $_{10}$*	*All PM $_{2.5}$*	*CO2*
On-Terminal (1)											
CEQA Baseline - Idling	1.01	3.19	5.75	0.00	0.17	0.16			0.17	0.16	416
CEQA Baseline - Driving	0.21	0.43	1.89	0.00	0.03	0.03	1.13	0.75	1.16	0.78	401
Subtotal - Baseline Year 2015	**1.22**	**3.62**	**7.64**	**0.01**	**0.20**	**0.18**	**1.13**	**0.75**	**1.33**	**0.94**	**818**
Full Expansion Project - Year 2015 - Idling	0.76	2.93	4.92	0.01	0.01	0.01			0.01	0.01	870
Full Expansion Project - Year 2015 - Driving	0.59	1.26	2.47	0.01	0.04	0.03	4.96	3.32	5.00	3.35	1,348
Subtotal - Full Expansion Project Year 2015	**1.35**	**4.19**	**7.39**	**0.02**	**0.05**	**0.04**	**4.96**	**3.32**	**5.01**	**3.36**	**2,218**
Reduced Project - Year 2015 - Idling	0.61	2.34	3.94	0.01	0.01	0.01			0.01	0.01	697
Reduced Project - Year 2015 - Driving	0.48	1.01	1.98	0.01	0.03	0.03	3.97	2.66	4.00	2.68	1,080
Subtotal - Reduced Project Year 2015	**1.08**	**3.35**	**5.92**	**0.01**	**0.04**	**0.03**	**3.97**	**2.66**	**4.01**	**2.69**	**1,777**
Off-Terminal											
CEQA Baseline - Idling	0.51	1.59	2.87	0.00	0.08	0.08			0.08	0.08	208
CEQA Baseline - Driving	8.15	33.30	212.56	0.30	3.30	3.04	32.19	20.97	35.50	24.01	40,860
Subtotal - Baseline Year 2015	**8.66**	**34.89**	**215.43**	**0.30**	**3.39**	**3.12**	**32.19**	**20.97**	**35.58**	**24.08**	**41,068**
Full Expansion Project - Year 2015 - Idling	0.42	1.63	2.73	0.00	0.01	0.01			0.01	0.01	483
Full Expansion Project - Year 2015 - Driving	17.36	72.04	187.97	0.93	5.15	4.74	101.17	65.89	106.32	70.63	126,529
Subtotal - Full Expansion Project Year 2015	**17.79**	**73.66**	**190.70**	**0.93**	**5.16**	**4.75**	**101.17**	**65.89**	**106.32**	**70.63**	**127,013**
Reduced Project - Year 2015 - Idling	0.34	1.30	2.19	0.00	0.00	0.00			0.00	0.00	387
Reduced Project - Year 2015 - Driving	13.91	57.71	150.58	0.74	4.13	3.80	81.05	52.78	85.17	56.58	101,366
Subtotal - Reduced Project Year 2015	**14.25**	**59.01**	**152.77**	**0.75**	**4.13**	**3.80**	**81.05**	**52.78**	**85.18**	**56.58**	**101,753**
Total Average Daily Emissions by Project Scenario											
Total - CEQA Baseline	**9.88**	**38.51**	**223.07**	**0.30**	**3.59**	**3.30**	**33.32**	**21.72**	**36.91**	**25.02**	**41,886**
Total - Full Expansion Project - Year 2015	**19.14**	**77.85**	**198.09**	**0.95**	**5.21**	**4.79**	**106.13**	**69.20**	**111.33**	**73.99**	**129,231**
Total - Reduced Project - Year 2015	**15.33**	**62.37**	**158.69**	**0.76**	**4.17**	**3.84**	**85.02**	**55.44**	**89.19**	**59.27**	**103,530**

Notes: (1) On-terminal driving emissions calculated with 10 mph emission factors.

Table A.1.2-57. Mitigated On-Terminal Truck Hourly Emission Rates - Peak Short-Term Impacts - POLB MCC Project Scenarios

Location/Project Scenario - Mode	*Pounds per Hour (1)*										
	ROG	*CO*	*NOx*	*SOx*	*DPM $_{10}$*	*DPM $_{2.5}$*	*Dust $_{10}$*	*Dust $_{2.5}$*	*All PM $_{10}$*	*All PM $_{2.5}$*	*CO2*
CEQA Baseline											
Idling (2)	0.07	0.21	0.37	0.00	0.01	0.01			0.01	0.01	27.00
Driving (3)	0.01	0.03	0.12	0.00	0.00	0.00	0.07	0.05	0.08	0.05	20.17
Full Expansion Project - Year 2015											
Idling (2)	0.04	0.15	0.25	0.00	0.001	0.00			0.00	0.00	43.72
Driving (3)	0.03	0.06	0.12	0.00	0.002	0.00	0.25	0.17	0.251	0.17	67.77
Reduced Project - Year 2015											
Idling (2)	0.03	0.12	0.20	0.00	0.0004	0.00			0.00	0.00	35.03
Driving (3)	0.02	0.05	0.10	0.00	0.001	0.00	0.20	0.13	0.20	0.13	54.29

Notes: (1) Peak daily emissions / 24 hours.

(2) Apportioned to truck loading source only.

Table A.1.2-58. On-Terminal Truck Hourly Emission Rates - Annual Impacts - POLB MCC Project Scenarios

Location/Project Scenario - Mode	*Pounds per Hour (1)*										
	ROG	*CO*	*NOx*	*SOx*	*DPM $_{10}$*	*DPM $_{2.5}$*	*Dust $_{10}$*	*Dust $_{2.5}$*	*All PM $_{10}$*	*All PM $_{2.5}$*	*CO2*
CEQA Baseline											
Idling (2)	0.04	0.11	0.21	0.00	0.0060	0.006			0.006	0.006	14.87
Driving (3)	0.01	0.02	0.07	0.00	0.00	0.00	0.04	0.03	0.04	0.03	11.11
Full Expansion Project - Year 2015											
Idling (2)	0.03	0.10	0.18	0.00	0.0004	0.000			0.0004	0.000	31.00
Driving (3)	0.02	0.04	0.09	0.00	0.00130	0.0012	0.18	0.12	0.18	0.12	48.05
Reduced Project - Year 2015											
Idling (2)	0.02	0.08	0.14	0.00	0.0003	0.000			0.000	0.000	24.80
Driving (3)	0.02	0.04	0.07	0.00	0.00104	0.00	0.14	0.09	0.14	0.10	38.44

Notes: (1) Average daily emissions / 24 hours.

Year 2020 is the peak DPM Truck EF year.

Table A.1.2-59. Unmitigated Annual Operational Emissions - POLB MCC Project Scenarios

	Tons Per Year						
Project Scenario/Source Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
CEQA Baseline							
Ships - Fairway Transit (1)	0.93	2.18	24.89	0.67	0.40	0.32	932
Ships - Precautionary Area Transit (1)	0.12	0.282	3.21	0.09	0.05	0.04	124
Ships - Harbor Transit (2)	0.06	0.110	0.80	0.02	0.02	0.01	32
Ships - Docking (2)	0.05	0.06	0.44	0.01	0.01	0.01	15
Ships - Hoteling Aux. Sources (2)(3)	0.37	0.92	9.94	1.08	0.32	0.25	1,480
Ships - Turning at Berth (2)	0.02	0.02	0.15	0.00	0.00	0.00	5.01
Tugboats - Cargo Vessel Assist (1)	0.04	0.40	0.84	0.00	0.02	0.02	104
Vessel Unloading - Dust					2.16	1.44	
Payloaders	0.01	0.05	0.02	0.00	0.00	0.00	31
Truck Loading - Dust					0.93	0.62	
On-road Trucks	1.55	6.02	34.89	0.05	5.77	3.91	6,538
Total - CEQA Baseline	**3.13**	**10.05**	**75.19**	**1.92**	**9.68**	**6.64**	**9,261**
Full Expansion Project							
Ships - Fairway Transit (1)	2.40	5.65	64.37	1.73	1.04	0.83	2,421
Ships - Precautionary Area Transit (1)	0.33	0.78	8.83	0.24	0.15	0.12	340
Ships - Harbor Transit (2)	0.17	0.31	2.27	0.07	0.05	0.04	91
Ships - Docking (2)	0.14	0.18	1.26	0.03	0.03	0.02	41
Ships - Hoteling Aux. Sources (2)(3)(4)	0.29	0.74	2.67	0.83	0.25	0.20	1,140
Tugboats - Cargo Vessel Assist (1)	0.10	1.07	2.23	0.00	0.06	0.05	276
Vessel Unloading - Dust					1.98	1.32	
Payloaders and SCR Duct Burner	0.08	0.89	0.33	0.01	0.07	0.07	1,180
Truck Loading - Dust					0.95	0.64	
On-road Trucks	5.78	23.59	73.62	0.15	17.80	11.93	20,151
Total - Full Expansion Project	**9.28**	**33.19**	**155.59**	**3.06**	**22.37**	**15.23**	**25,640**
Reduced Expansion Alternative							
Ships - Fairway Transit (1)	1.92	4.52	51.50	1.39	0.83	0.67	1,937
Ships - Precautionary Area Transit (1)	0.26	0.62	7.06	0.20	0.12	0.09	272
Ships - Harbor Transit (2)	0.13	0.25	1.81	0.05	0.04	0.03	73
Ships - Docking (2)	0.11	0.14	1.01	0.02	0.02	0.02	33
Ships - Hoteling Aux. Sources (2)(3)(4)	0.23	0.59	2.14	0.66	0.20	0.16	912
Tugboats - Cargo Vessel Assist (1)	0.08	0.86	1.79	0.00	0.04	0.04	221
Vessel Unloading - Dust					1.81	1.12	
Payloaders and SCR Duct Burner	0.07	0.87	0.33	0.01	0.07	0.07	1,165
Truck Loading - Dust					0.87	0.58	
On-road Trucks	4.62	18.87	58.90	0.12	14.24	9.55	16,121
Total - Reduced Expansion Alternative	**7.43**	**26.71**	**124.53**	**2.45**	**18.24**	**12.33**	**20,733**
No Project							
Ships - Fairway Transit (1)	1.63	3.82	43.54	1.17	0.70	0.56	1,637
Ships - Precautionary Area Transit (1)	0.22	0.52	5.97	0.17	0.10	0.08	230
Ships - Harbor Transit (2)	0.11	0.21	1.53	0.05	0.03	0.03	61
Ships - Docking (2)	0.09	0.12	0.85	0.02	0.02	0.02	28
Ships - Hoteling Aux. Sources (2)(3)	0.23	0.57	6.21	0.65	0.20	0.16	895
Tugboats - Cargo Vessel Assist (1)	0.07	0.72	1.51	0.00	0.04	0.04	187
Vessel Unloading - Dust					2.34	1.57	
Payloaders	0.02	0.09	0.03	0.00	0.00	0.00	59
Truck Loading - Dust					1.02	0.68	
On-road Trucks	3.09	12.68	39.61	0.08	9.49	6.36	10,849
Total - No Project	**5.46**	**18.74**	**99.26**	**2.14**	**13.94**	**9.49**	**13,946**

Notes: (1) Includes auxiliary generator emissions.

(2) Includes auxiliary generator and boiler emissions.

(3) 66% cold-ironing as a percent of total annual berthing durations.

(4) NOx emissions from non-cold-ironed mode reduced by 88.9% with the use of the DOCCS.

Table A.1.2-60. Unmitigated Peak Daily Emissions - POLB MCC Project Scenarios

	Pounds per Peak Day (1)						
Project Scenario/Source Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
CEQA Baseline							
Ships - Fairway Transit	28.6	67.0	764.4	20.4	12.3	9.9	28,577
Ships - Precautionary Area Transit	3.4	8.1	91.7	2.5	1.5	1.2	3,534
Ships - Harbor Transit	2.1	3.5	23.1	0.6	0.5	0.4	854
Ships - Docking	1.4	1.8	12.7	0.3	0.3	0.2	418
Ships - Hoteling Aux. Sources (2)	4.0	10.7	117.1	7.9	3.0	2.4	10,720
Ships - Turning at Berth	4.3	5.5	39.1	1.0	0.9	0.7	1,285
Tugboats - Cargo Vessel Assist	1.4	15.1	31.4	0.0	0.8	0.7	3,910
Vessel Unloading - Dust					14.6	9.8	
Payloaders (3)							
Truck Loading - Dust					5.7	3.8	
On-road Trucks	15.4	59.9	347.2	0.5	57.4	38.9	65,051
Total - CEQA Baseline	**60.5**	**171.6**	**1,426.7**	**33.3**	**97.1**	**68.1**	**114,349**
Full Expansion Project							
Ships - Fairway Transit	24.3	57.0	649.9	17.5	10.5	8.4	24,439
Ships - Precautionary Area Transit	3.3	7.8	89.1	2.5	1.5	1.2	3,434
Ships - Harbor Transit	2.1	3.5	23.1	0.6	0.5	0.4	854
Ships - Docking	1.4	1.8	12.7	0.3	0.3	0.2	418
Ships - Hoteling Aux. Sources (4)	3.9	10.4	26.9	7.7	2.9	2.3	10,414
Tugboats - Cargo Vessel Assist	1.6	14.0	35.3	0.4	0.8	0.7	3,883
Vessel Unloading - Dust					9.2	6.2	
Payloaders (3)							
SCR Duct Burner	0.3	4.2	1.6	0.0	0.4	0.4	6,049
Truck Loading - Dust					6.2	4.2	
On-road Trucks	44.7	182.3	569.0	1.1	137.5	92.2	155,735
Total - Full Expansion Project	**81.4**	**281.0**	**1,407.7**	**30.1**	**169.9**	**116.3**	**205,226**
Net Change - FE Project minus CEQA Baseline	**20.9**	**109.3**	**(19.0)**	**(3.2)**	**72.8**	**48.2**	**90,877**
Reduced Expansion Alternative							
Ships - Fairway Transit	24.3	57.0	649.9	17.5	10.5	8.4	24,439
Ships - Precautionary Area Transit	3.3	7.8	89.1	2.5	1.5	1.2	3,434
Ships - Harbor Transit	2.1	3.5	23.1	0.6	0.5	0.4	854
Ships - Docking	1.4	1.8	12.7	0.3	0.3	0.2	418
Ships - Hoteling Aux. Sources (4)	3.9	10.4	26.9	7.7	2.9	2.3	10,414
Tugboats - Cargo Vessel Assist	1.6	14.0	35.3	0.4	0.8	0.7	3,883
Vessel Unloading - Dust					9.2	6.2	
Payloaders (3)							
SCR Duct Burner	0.3	4.2	1.6	0.0	0.4	0.4	6,049
Truck Loading - Dust					5.6	3.7	
On-road Trucks	35.8	146.0	455.8	0.9	110.2	73.9	124,764
Total - Reduced Expansion Alternative	**72.6**	**244.7**	**1,294.5**	**29.9**	**141.9**	**97.5**	**174,254**
Net Change - REA minus CEQA Baseline	**12.0**	**73.1**	**(132.2)**	**(3.4)**	**44.8**	**29.4**	**59,905**
No Project							
Ships - Fairway Transit	24.3	57.0	649.9	17.5	10.5	8.4	24,439
Ships - Precautionary Area Transit	3.3	7.8	89.1	2.5	1.5	1.2	3,434
Ships - Harbor Transit	2.1	3.5	23.1	0.6	0.5	0.4	854
Ships - Docking	1.4	1.8	12.7	0.3	0.3	0.2	418
Ships - Hoteling Aux. Sources (2)	3.9	10.4	113.7	7.7	2.9	2.3	10,414
Tugboats - Cargo Vessel Assist	1.6	14.0	35.3	0.4	0.8	0.7	3,883
Vessel Unloading - Dust					14.3	9.6	
Payloaders (3)							
Truck Loading - Dust					6.6	4.4	
On-road Trucks	29.7	121.9	380.8	0.8	91.2	61.2	104,319
Total - No Project	**66.2**	**216.3**	**1,304.7**	**29.7**	**128.7**	**88.5**	**147,760**
Net Change - NP minus CEQA Baseline	**5.7**	**44.7**	**(122.0)**	**(3.6)**	**31.6**	**20.4**	**33,411**

Notes: (1) The peak day emissions scenario assumes the arrival of a vessel and then hoteling and unloading for the remainder of the day, or ~17-18 hou depending on the project scenario. Under this scenario, the terminal and associated truck loading would operate 24 hours per day.

(2) 0% cold-ironing.

(3) No payloading would occur during the peak emissions day.

(4) 0% cold-ironing, but 88.9% reduction in NOx emissions due to use of DOCCS.

Table A.1.2-61. Unmitigated Annual Average Daily Emissions - POLB MCC Project Scenarios

	Pounds per Average Day (1)						
Project Scenario/Source Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
CEQA Baseline							
Ships - Fairway Transit	5.1	12.0	136.4	3.7	2.2	1.8	5,107.5
Ships - Precautionary Area Transit	0.7	1.5	17.6	0.5	0.3	0.2	677.7
Ships - Harbor Transit	0.3	0.6	4.4	0.1	0.1	0.1	175.7
Ships - Docking	0.3	0.3	2.4	0.1	0.1	0.0	80.1
Ships - Hoteling Aux. Sources (2)	2.0	5.0	54.5	5.9	1.7	1.4	8,109.9
Ships - Turning at Berth	0.1	0.1	0.8	0.0	0.0	0.0	27.5
Tugboats - Cargo Vessel Assist	0.2	2.2	4.6	0.0	0.1	0.1	568.6
Vessel Unloading - Dust	-	-	-	-	11.8	7.9	-
Payloaders (3)	0.1	0.3	0.1	0.0	0.0	0.0	172.3
Truck Loading - Dust	-	-	-	-	5.1	3.4	-
On-road Trucks	8.5	33.0	191.2	0.3	31.6	21.4	35,824.8
Total - CEQA Baseline	**17.2**	**55.1**	**412.0**	**10.5**	**53.1**	**36.4**	**50,744**
Full Expansion Project							
Ships - Fairway Transit	13.2	30.9	352.7	9.5	5.7	4.6	13,263.8
Ships - Precautionary Area Transit	1.8	4.3	48.4	1.3	0.8	0.6	1,863.6
Ships - Harbor Transit	0.9	1.7	12.4	0.4	0.3	0.2	497.1
Ships - Docking	0.8	1.0	6.9	0.2	0.2	0.1	226.7
Ships - Hoteling Aux. Sources (4)	1.6	4.0	14.6	4.6	1.4	1.1	6,249.1
Tugboats - Cargo Vessel Assist	0.5	5.9	12.2	0.0	0.3	0.3	1,513.1
Vessel Unloading - Dust	-	-	-	-	10.8	7.3	-
Payloaders (3)	0.1	0.6	0.2	0.0	0.0	0.0	414.7
SCR Duct Burner	0.3	4.2	1.6	0.0	0.4	0.4	6,049.3
Truck Loading - Dust	-	-	-	-	5.2	3.5	-
On-road Trucks	31.7	129.2	403.4	0.8	97.5	65.4	########
Total - Full Expansion Project	**50.9**	**181.9**	**852.5**	**16.8**	**122.6**	**83.5**	**140,494**
Net Change - FE Project minus CEQA Baseline	**33.7**	**126.8**	**440.6**	**6.3**	**69.5**	**47.1**	**89,750.4**
Reduced Expansion Alternative							
Ships - Fairway Transit	10.5	24.8	282.2	7.6	4.6	3.7	10,611.1
Ships - Precautionary Area Transit	1.4	3.4	38.7	1.1	0.6	0.5	1,490.9
Ships - Harbor Transit	0.7	1.4	9.9	0.3	0.2	0.2	397.7
Ships - Docking	0.6	0.8	5.5	0.1	0.1	0.1	181.4
Ships - Hoteling Aux. Sources (4)	1.3	3.2	11.7	3.6	1.1	0.9	4,999.3
Tugboats - Cargo Vessel Assist	0.4	4.7	9.8	0.0	0.2	0.2	1,210.4
Vessel Unloading - Dust	-	-	-	-	9.9	6.1	-
Payloaders (3)	0.1	0.5	0.2	0.0	0.0	0.0	331.8
SCR Duct Burner	0.3	4.2	1.6	0.0	0.4	0.4	6,049.3
Truck Loading - Dust	-	-	-	-	4.8	3.2	-
On-road Trucks	25.3	103.4	322.7	0.6	78.0	52.3	88,333.7
Total - Reduced Expansion Alternative	**40.7**	**146.3**	**682.3**	**13.4**	**99.9**	**67.6**	**113,605**
Net Change - REA minus CEQA Baseline	**23.6**	**91.3**	**270.4**	**2.9**	**46.9**	**31.2**	**62,861.3**
No Project							
Ships - Fairway Transit	8.9	20.9	238.6	6.4	3.9	3.1	8,972.2
Ships - Precautionary Area Transit	1.2	2.9	32.7	0.9	0.5	0.4	1,260.6
Ships - Harbor Transit	0.6	1.2	8.4	0.2	0.2	0.1	336.2
Ships - Docking	0.5	0.7	4.7	0.1	0.1	0.1	153.4
Ships - Hoteling Aux. Sources (2)	1.2	3.1	34.0	3.6	1.1	0.9	4,905.1
Tugboats - Cargo Vessel Assist	0.4	4.0	8.3	0.0	0.2	0.2	1,023.5
Vessel Unloading - Dust	-	-	-	-	12.8	8.6	-
Payloaders (3)	0.1	0.5	0.2	0.0	0.0	0.0	320.6
Truck Loading - Dust	-	-	-	-	5.6	3.7	-
On-road Trucks	16.9	69.5	217.0	0.4	52.0	34.9	59,447.5
Total - No Project	**29.9**	**102.7**	**543.9**	**11.7**	**76.4**	**52.0**	**76,419**
Net Change - NP minus CEQA Baseline	**12.7**	**47.6**	**131.9**	**1.2**	**23.3**	**15.6**	**25,675.0**

Notes: (1) The peak day emissions scenario assumes the arrival of a vessel and then hoteling and unloading for the remainder of the day, or ~18-19 hou depending on the project scenario. Under this scenario, the terminal and associated truck loading would operate 24 hours per day.

(2) 0% cold-ironing.

(3) No payloading would occur during the peak emissions day.

(4) 0% cold-ironing, but 88.9% reduction in NOx emissions due to use of DOCCS.

Table A.1.2-62. Mitigated Annual Operational Emissions - POLB MCC Project Scenarios

	Tons Per Year						
Project Scenario/Source Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
CEQA Baseline							
Total - CEQA Baseline	**3.13**	**10.05**	**75.19**	**1.92**	**9.68**	**6.64**	**9,261**
Full Expansion Project							
Ships - Fairway Transit (1)	2.40	5.65	64.37	1.73	1.04	0.83	2,421
Ships - Precautionary Area Transit (1)	0.33	0.78	8.83	0.24	0.15	0.12	340
Ships - Harbor Transit (2)	0.17	0.31	2.27	0.07	0.05	0.04	91
Ships - Docking (2)	0.14	0.18	1.26	0.03	0.03	0.02	41
Ships - Hoteling Aux. Sources (2)(3)(4)	0.29	0.74	2.67	0.83	0.25	0.20	1,140
Tugboats - Cargo Vessel Assist (1)	0.10	1.07	2.23	0.00	0.06	0.05	276
Vessel Unloading - Dust					1.98	1.32	
Payloaders and SCR Duct Burner	0.08	0.89	0.33	0.01	0.07	0.07	1,180
Truck Loading - Dust					0.95	0.64	
On-road Trucks	2.99	12.15	30.92	0.15	17.38	11.55	20,173
Total - Full Expansion Project	**6.49**	**21.76**	**112.89**	**3.06**	**21.95**	**14.85**	**25,662**
Reduced Expansion Alternative							
Ships - Fairway Transit (1)	1.92	4.52	51.50	1.39	0.83	0.67	1,937
Ships - Precautionary Area Transit (1)	0.26	0.62	7.06	0.20	0.12	0.09	272
Ships - Harbor Transit (2)	0.13	0.25	1.81	0.05	0.04	0.03	73
Ships - Docking (2)	0.11	0.14	1.01	0.02	0.02	0.02	33
Ships - Hoteling Aux. Sources (2)(3)(4)	0.23	0.59	2.14	0.66	0.20	0.16	912
Tugboats - Cargo Vessel Assist (1)	0.08	0.86	1.79	0.00	0.04	0.04	221
Vessel Unloading - Dust	-	-	-	-	1.81	1.12	-
Payloaders and SCR Duct Burner	0.07	0.87	0.33	0.01	0.07	0.07	1,165
Truck Loading - Dust	-	-	-	-	0.87	0.58	-
On-road Trucks	2.39	9.72	24.74	0.12	13.90	9.24	16,138
Total - Reduced Expansion Alternative	**5.20**	**17.56**	**90.37**	**2.45**	**17.91**	**12.02**	**20,750**

Notes: (1) Includes auxiliary generator emissions.

(2) Includes auxiliary generator and boiler emissions.

(3) 66% cold-ironing as a percent of total annual berthing durations.

(4) NOx emissions from non-cold-ironed mode reduced by 88.9% with the use of the DOCCS.

Table A.1.2-63. Mitigated Annual Average Daily Emissions - POLB MCC Project Scenarios

	Pounds per Average Day (1)						
Project Scenario/Source Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
CEQA Baseline							
Total - CEQA Baseline	**17.2**	**55.1**	**412.0**	**10.5**	**53.1**	**36.4**	**50,744**
Full Expansion Project							
Ships - Fairway Transit	13.2	30.9	352.7	9.5	5.7	4.6	13,264
Ships - Precautionary Area Transit	1.8	4.3	48.4	1.3	0.8	0.6	1,864
Ships - Harbor Transit	0.9	1.7	12.4	0.4	0.3	0.2	497
Ships - Docking	0.8	1.0	6.9	0.2	0.2	0.1	227
Ships - Hoteling Aux. Sources (4)	1.6	4.0	14.6	4.6	1.4	1.1	6,249
Tugboats - Cargo Vessel Assist	0.5	5.9	12.2	0.0	0.3	0.3	1,513
Vessel Unloading - Dust					10.8	7.3	
Payloaders (3)	0.1	0.6	0.2	0.0	0.0	0.0	414.7
SCR Duct Burner	0.3	4.2	1.6	0.0	0.4	0.4	6,049.3
Truck Loading - Dust					5.2	3.5	
On-road Trucks	16.4	66.6	169.4	0.8	95.2	63.3	#######
Total - Full Expansion Project	**35.6**	**119.2**	**618.6**	**16.8**	**120.3**	**81.4**	**140,612**
Net Change - FE Project minus CEQA Baseline	**18.4**	**64.1**	**206.6**	**6.3**	**67.2**	**45.0**	**89,868**
Reduced Expansion Alternative							
Ships - Fairway Transit	10.5	24.8	282.2	7.6	4.6	3.7	10,611
Ships - Precautionary Area Transit	1.4	3.4	38.7	1.1	0.6	0.5	1,491
Ships - Harbor Transit	0.7	1.4	9.9	0.3	0.2	0.2	398
Ships - Docking	0.6	0.8	5.5	0.1	0.1	0.1	181
Ships - Hoteling Aux. Sources (4)	1.3	3.2	11.7	3.6	1.1	0.9	4,999
Tugboats - Cargo Vessel Assist	0.4	4.7	9.8	0.0	0.2	0.2	1,210
Vessel Unloading - Dust	-	-	-	-	9.9	6.1	-
Payloaders (3)	0.1	0.5	0.2	0.0	0.0	0.0	332
SCR Duct Burner	0.3	4.2	1.6	0.0	0.4	0.4	6,049
Truck Loading - Dust	-	-	-	-	4.8	3.2	-
On-road Trucks	13.1	53.3	135.5	0.6	76.2	50.6	88,428
Total - Reduced Expansion Alternative	**28.5**	**96.2**	**495.2**	**13.4**	**98.1**	**65.9**	**113,700**
Net Change - REA minus CEQA Baseline	**11.3**	**41.1**	**83.2**	**2.9**	**45.1**	**29.5**	**62,955**

Notes: (1) The peak day emissions scenario assumes the arrival of a vessel and then hoteling and unloading for the remainder of the day, or ~18-19 hou depending on the project scenario. Under this scenario, the terminal and associated truck loading would operate 24 hours per day.

(2) 0% cold-ironing.

(3) No payloading would occur during the peak emissions day.

(4) 0% cold-ironing, but 88.9% reduction in NOx emissions due to use of DOCCS.

Table A.1.2-64. Hourly Unmitigated Operational Emission Rates for 1-24 Hour Modeling Scenarios - POLB MCC Project Scenarios - Page 1 of 2

	Pounds per Hour							
Project Scenario/Source Type	*VOC*	*TOG*	*CO*	*NOx*	*NO2*	*SOx*	*PM10*	*PM2.5*
CEQA Baseline								
Ships - Fairway Transit (1)	9.70	11.05	22.74	259.32	121.10	6.93	4.18	3.34
Ships - Precautionary Area Transit (1)	3.04	3.47	7.22	82.16	38.37	2.28	1.35	1.08
Ships - Harbor Transit (2)	2.08	2.37	3.46	23.13	5.97	0.63	0.52	0.41
Ships - Docking + Turning (2)	1.39	1.58	1.80	12.69	3.27	0.31	0.30	0.24
Ships - Hoteling Aux. Sources (2)(3)	0.21	0.24	0.56	6.18	1.59	0.42	0.16	0.13
Tugboats - Cargo Vessel Assist during Transit (1)	0.83	0.95	8.90	18.50	4.77	0.03	0.46	0.43
Tugboats - Cargo Vessel Assist during Docking (1)	0.28	0.32	2.97	6.17	1.59	0.01	0.15	0.14
Kovaco Cement Unloader							0.28	0.19
vanAalst Cement Unloader							0.01	0.01
Payloaders	0.04	0.04	0.17	0.06	0.01	0.00	0.00	0.00
Storage Warehouse Dust Collector DC-01							0.38	0.25
Truck Loading Dust Collector DC-02							0.06	0.04
Truck Loading Dust Collector DC-03							0.06	0.04
Truck Loading Dust Collector DC-21							0.06	0.04
Truck Loading - Dust							0.06	0.04
Trucks - On -Terminal Idling	0.07	0.07	0.21	0.37	0.10	0.00	0.01	0.01
Trucks - On -Terminal Driving	0.01	0.02	0.03	0.12	0.03	0.00	0.08	0.05
Trucks - Off -Terminal								
Total - CEQA Baseline	**17.7**	**20.1**	**48.0**	**408.7**	**176.8**	**10.6**	**8.1**	**6.4**
Full Expansion Project								
Ships - Fairway Transit (1)	6.84	9.92	16.07	183.23	85.57	4.93	2.97	2.37
Ships - Precautionary Area Transit (1)	3.04	4.41	7.22	82.16	38.37	2.28	1.35	1.08
Ships - Harbor Transit (2)	2.08	3.02	3.46	23.13	5.97	0.63	0.52	0.41
Ships - Docking (2)	1.39	2.02	1.80	12.69	3.27	0.31	0.30	0.24
Ships - Hoteling Aux. Sources (2)(4)	0.21	0.31	0.56	1.46	0.38	0.42	0.16	0.13
Tugboats - Cargo Vessel Assist during Transit (1)	0.92	1.04	8.23	20.77	5.36	0.22	0.48	0.44
Tugboats - Cargo Vessel Assist during Docking (1)	0.31	0.35	2.74	6.92	1.79	0.07	0.16	0.15
Kovaco 1 Cement Unloader							0.04	0.03
Kovaco 2 Cement Unloader							0.04	0.03
Payloaders	0.04	0.04	0.17	0.06	0.01	0.00	0.00	0.00
SCR Duct Burner - DOCCS	0.01	0.02	0.18	0.07	0.02	0.00	0.02	0.02
Storage Warehouse Dust Collector DC-01							0.18	0.12
New Storage Silos Dust Collector							0.19	0.13
Truck Loading Dust Collector DC-02							0.04	0.03
Truck Loading Dust Collector DC-03							0.04	0.03
Truck Loading Dust Collector DC-21							0.04	0.03
Truck Loading - Dust							0.14	0.09
Trucks - On -Terminal Idling	0.04	0.04	0.15	0.25	0.06	0.00	0.00	0.00
Trucks - On -Terminal Driving	0.06	0.07	0.13	0.31	0.08	0.00	0.25	0.17
Trucks - Off -Terminal								
Total - FE	**14.9**	**21.2**	**40.7**	**331.0**	**140.9**	**8.9**	**6.9**	**5.5**
Reduced Expansion Alternative								
Ships - Fairway Transit (1)	6.84	9.92	16.07	183.23	85.57	4.93	2.97	2.37
Ships - Precautionary Area Transit (1)	3.04	4.41	7.22	82.16	38.37	2.28	1.35	1.08
Ships - Harbor Transit (2)	2.08	3.02	3.46	23.13	5.97	0.63	0.52	0.41
Ships - Docking (2)	1.39	2.02	1.80	12.69	3.27	0.31	0.30	0.24
Ships - Hoteling Aux. Sources (2)(4)	0.21	0.31	0.56	1.46	0.38	0.42	0.16	0.13
Tugboats - Cargo Vessel Assist during Transit (1)	0.92	1.04	8.23	20.77	5.36	0.22	0.48	0.44
Tugboats - Cargo Vessel Assist during Docking (1)	0.31	0.35	2.74	6.92	1.79	0.07	0.16	0.15
Kovaco 1 Cement Unloader							0.04	0.03
Kovaco 2 Cement Unloader							0.04	0.03
Payloaders	0.04	0.04	0.17	0.06	0.01	0.00	0.00	0.00
SCR Duct Burner - DOCCS	0.01	0.02	0.18	0.07	0.02	0.00	0.02	0.02
Storage Warehouse Dust Collector DC-01							0.18	0.12
New Storage Silos Dust Collector							0.19	0.13
Truck Loading Dust Collector DC-02							0.04	0.03
Truck Loading Dust Collector DC-03							0.04	0.03
Truck Loading Dust Collector DC-21							0.04	0.03
Truck Loading - Dust							0.11	0.08
Trucks - On -Terminal Idling	0.03	0.03	0.12	0.20	0.05	0.00	0.00	0.00
Trucks - On -Terminal Driving	0.05	0.05	0.10	0.25	0.06	0.00	0.20	0.14
Trucks - Off -Terminal								
Total - REA	**14.91**	**21.21**	**40.65**	**330.93**	**140.84**	**8.87**	**6.84**	**5.43**

Table A.1.2-64. Hourly Unmitigated Operational Emission Rates for 1-24 Hour Modeling Scenarios - POLB MCC Project Scenarios - Page 2 of 2

	Pounds per Hour							
Project Scenario/Source Type	*VOC*	*TOG*	*CO*	*NOx*	*NO2*	*SOx*	*PM10*	*PM2.5*
No Project								
Ships - Fairway Transit (1)	6.84	9.92	16.07	183.23	85.57	4.93	2.97	2.37
Ships - Precautionary Area Transit (1)	3.04	4.41	7.22	82.16	38.37	2.28	1.35	1.08
Ships - Harbor Transit (2)	2.08	3.02	3.46	23.13	5.97	0.63	0.52	0.41
Ships - Docking (2)	1.39	2.02	1.80	12.69	3.27	0.31	0.30	0.24
Ships - Hoteling Aux. Sources (2)(4)	0.21	0.31	0.56	6.18	1.59	0.42	0.16	0.13
Tugboats - Cargo Vessel Assist during Transit (1)	0.92	1.04	8.23	20.77	5.36	0.22	0.48	0.44
Tugboats - Cargo Vessel Assist during Docking (1)	0.31	0.35	2.74	6.92	1.79	0.07	0.16	0.15
Kovaco Cement Unloader							0.28	0.19
vanAalst Cement Unloader							0.01	0.01
Payloaders	0.04	0.04	0.17	0.06	0.01	0.0008	0.002	0.002
Storage Warehouse Dust Collector DC-01							0.38	0.25
Truck Loading Dust Collector DC-02							0.06	0.04
Truck Loading Dust Collector DC-03							0.06	0.04
Truck Loading Dust Collector DC-21							0.06	0.04
Truck Loading - Dust							0.09	0.06
Trucks - On -Terminal Idling	0.03	0.03	0.10	0.17	0.04	0.0002	0.0004	0.0003
Trucks - On -Terminal Driving	0.03	0.03	0.06	0.15	0.04	0.0002	0.12	0.08
Trucks - Off -Terminal								
Total - NP	**14.9**	**21.2**	**40.4**	**335.4**	**142.0**	**8.9**	**7.0**	**5.5**

Notes: (1) Includes auxiliary generator emissions.

(2) Includes auxiliary generator and boiler emissions.

(3) 0% cold-ironing.

(4) 0% cold-ironing, but 88.9% reduction in NOx emissions due to the use of DOCCS.

Table A.1.2-65. Hourly Unmitigated Operational Emission Rates for Annual Modeling Scenario - POLB MCC Project Scenarios - Page 1 of 2

	Pounds per Hour							
Project Scenario/Source Type	*VOC*	*TOG*	*CO*	*NOx*	*NO2*	*SOx*	*PM10*	*PM2.5*
CEQA Baseline								
Ships - Fairway Transit (1)							0.092	
Ships - Precautionary Area Transit (1)							0.012	
Ships - Harbor Transit (2)							0.004	
Ships - Docking + Turning (2)							0.003	
Ships - Hoteling Aux. Sources (2)(3)							0.073	
Tugboats - Cargo Vessel Assist during Transit (1)							0.004	
Tugboats - Cargo Vessel Assist during Docking (1)							0.001	
Kovaco Cement Unloader							0.109	
vanAalst Cement Unloader							0.003	
Payloaders							0.000	
Storage Warehouse Dust Collector DC-01							0.380	
Truck Loading Dust Collector DC-02							0.06	
Truck Loading Dust Collector DC-03							0.06	
Truck Loading Dust Collector DC-21							0.06	
Truck Loading - Dust							0.03	
Trucks - On -Terminal Idling							0.006	
Trucks - On -Terminal Driving							0.04	
Trucks - Off -Terminal								
Total - CEQA Baseline							**0.94**	
Full Expansion Project								
Ships - Fairway Transit (1)				14.70	14.70		0.24	
Ships - Precautionary Area Transit (1)				2.02	2.02		0.03	
Ships - Harbor Transit (2)				0.52	0.24		0.01	
Ships - Docking (2)				0.29	0.13		0.01	
Ships - Hoteling Aux. Sources (2)(4)				0.61	0.16		0.06	
Tugboats - Cargo Vessel Assist during Transit (1)				0.38	0.18		0.01	
Tugboats - Cargo Vessel Assist during Docking (1)				0.13	0.06		0.003	
Kovaco 1 Cement Unloader							0.041	
Kovaco 2 Cement Unloader							0.041	
Payloaders				0.01	0.00		0.0003	
SCR Duct Burner - DOCCS				0.07	0.02		0.016	
Storage Warehouse Dust Collector DC-01							0.18	
New Storage Silos Dust Collector							0.19	
Truck Loading Dust Collector DC-02							0.04	
Truck Loading Dust Collector DC-03							0.04	
Truck Loading Dust Collector DC-21							0.04	
Truck Loading - Dust							0.10	
Trucks - On -Terminal Idling				0.18	0.05		0.0004	
Trucks - On -Terminal Driving				0.22	0.06		0.18	
Trucks - Off -Terminal								
Total - FE				**19.1**	**17.61**		**1.22**	
Reduced Expansion Alternative								
Ships - Fairway Transit (1)				11.76	11.76		0.19	
Ships - Precautionary Area Transit (1)				1.61	1.61		0.03	
Ships - Harbor Transit (2)				0.41	0.19		0.01	
Ships - Docking (2)				0.23	0.11		0.01	
Ships - Hoteling Aux. Sources (2)(4)				0.49	0.13		0.05	
Tugboats - Cargo Vessel Assist during Transit (1)				0.31	0.14		0.01	
Tugboats - Cargo Vessel Assist during Docking (1)				0.10	0.05		0.00	
Kovaco 1 Cement Unloader							0.041	
Kovaco 2 Cement Unloader							0.041	
Payloaders				0.007	0.002		0.0002	
SCR Duct Burner - DOCCS				0.07	0.02		0.016	
Storage Warehouse Dust Collector DC-01							0.18	
New Storage Silos Dust Collector							0.19	
Truck Loading Dust Collector DC-02							0.04	
Truck Loading Dust Collector DC-03							0.04	
Truck Loading Dust Collector DC-21							0.04	
Truck Loading - Dust							0.08	
Trucks - On -Terminal Idling				0.14	0.04		0.0003	
Trucks - On -Terminal Driving				0.18	0.05		0.14	
Trucks - Off -Terminal								
Total - REA				**15.30**	**14.09**		**1.10**	
No Project								
Ships - Fairway Transit (1)				9.94	9.94		0.16	
Ships - Precautionary Area Transit (1)				1.36	1.36		0.02	
Ships - Harbor Transit (2)				0.35	0.16		0.01	
Ships - Docking (2)				0.19	0.09		0.00	
Ships - Hoteling Aux. Sources (2)(4)				1.42	0.37		0.04	
Tugboats - Cargo Vessel Assist during Transit (1)				0.26	0.12		0.01	

Table A.1.2-65. Hourly Unmitigated Operational Emission Rates for Annual Modeling Scenario - POLB MCC Project Scenarios - Page 2 of 2

	Pounds per Hour							
Project Scenario/Source Type	*VOC*	*TOG*	*CO*	*NOx*	*NO2*	*SOx*	*PM10*	*PM2.5*
Tugboats - Cargo Vessel Assist during Docking (1)				0.09	0.04		0.002	
Kovaco Cement Unloader							0.15	
vanAalst Cement Unloader							0.005	
Payloaders				0.007	0.00		0.0002	
Storage Warehouse Dust Collector DC-01							0.38	
Truck Loading Dust Collector DC-02							0.06	
Truck Loading Dust Collector DC-03							0.06	
Truck Loading Dust Collector DC-21							0.06	
Truck Loading - Dust							0.05	
Trucks - On -Terminal Idling				0.09	0.02		0.0002	
Trucks - On -Terminal Driving				0.08	0.02		0.07	
Trucks - Off -Terminal								
Total - NP				**13.8**	**12.1**		**1.09**	

Notes: (1) Includes auxiliary generator emissions.

(2) Includes auxiliary generator and boiler emissions.

(3) 0% cold-ironing.

(4) 0% cold-ironing, but 88.9% reduction in NOx emissions due to the use of DOCCS.

Table A.1.2-66. Cargo Vessel Propulsion Engine Usage per One-Way Ship Trip within California - GHG Emissions

Scenario/Vessel Type-Location	Propulsion Max Hp (2)	Fairway (1) Load Factor (3)	Modal Hp	Distance (NM)	Max Speed (kts) (2)	Speed (Kts) (4)	Hours Per Trip	Hp-Hrs/ Trip	kW-Hrs/ Trip (5)
Non-Compliance with VSRP									
Bulk - General - Baseline	11,495	0.83	9,547	39.9	14.4	13.5	2.95	28,142	20,994
Bulk - General - Future	11,495	0.83	9,547	42.6	14.4	13.5	3.14	30,022	22,396
Compliance with VSRP - Baseline									
Bulk - General - Outside VSRPZ	11,495	0.83	9,547	17.8	14.4	13.5	1.32	12,569	9,376
Bulk - General - In VSRPZ (6)	11,495	0.58	6,652	22.1	14.4	12.0	1.84	12,240	9,131
Bulk - General - Total kW-Hrs									18,507
Compliance with VSRP - Future Scenarios									
Bulk - General - Outside VSRPZ	11,495	0.58	6,652	20.5	14.4	12.0	1.71	11,356	8,471
Bulk - General - In VSRPZ (6)	11,495	0.58	6,652	22.1	14.4	12.0	1.84	12,240	9,131
Bulk - General - Total kW-Hrs									17,602
Transit from Cal Border to Fairway (7)									
Bulk - General - Baseline	11,495	0.83	9,547	92.0	14.4	13.5	6.80	64,890	48,408
Bulk - General - Future	11,495	0.83	9,547	92.0	14.4	13.5	6.80	64,890	48,408

Notes: (1) Vessel route between the boundary of the SCAQMD waters and the Precautionary Area. Based upon data from the Port of Long Beach Air Emissions Inventory (PEI) (Starcrest 2008) Table 2.1 and 90/10% usage of north/west fairway routes defined by MCC for the Baseline Scenarios. For the Future Scenarios, based u data in 2010 PEI Table 2.2 and 100% usage of the north route.

(2) PEI Table 2.24 for baseline and 2010 PEI Table B.3 for Future scenarios.

(3) Calculated by Propellar Law, where load factor = (actual speed/max. speed)^3 (PEI page 61).

(4) Represents service speed, which is 94% of maximum speed (2001 PEI).

(5) 1 kW-Hr = 0.746 Hp-Hr.

(6) Applies to route within 20 nm of Pt. Fermin. PEI data for Berth F208 show that 62% of the ship visits compiled with the VSRP within this area in 2006.

(7) Applies to route from the outer end of the fairway to the California overwater boundary west of Point Concetption.

Table A.1.2-67. Annual Emissions from OGV Main Engines during Transit between California Border and Precautionary Area - GHG Emissio

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - From Cal border to Fairway	2.24	5.23	59.69	1.57	0.95	0.76	2,200.01	0.04	0.11
Bulk - From Fairway to PA	0.90	2.10	23.99	0.63	0.38	0.31	884.06	0.02	0.04
Subtotal	**3.14**	**7.33**	**83.67**	**2.20**	**1.34**	**1.07**	**3,084.07**	**0.06**	**0.15**
Full Expansion Project - Year 2015									
Bulk - From Cal border to Fairway	6.34	14.80	168.91	4.44	2.70	2.16	6,225.89	0.13	0.31
Bulk - From Fairway to PA	2.31	5.38	61.42	1.61	0.98	0.78	2,263.85	0.05	0.11
Subtotal	**8.65**	**20.18**	**230.33**	**6.05**	**3.68**	**2.94**	**8,489.74**	**0.17**	**0.42**
Reduced Expansion Alt - Year 2015									
Bulk - From Cal border to Fairway	5.07	11.84	135.13	3.55	2.16	1.73	4,980.71	0.10	0.25
Bulk - From Fairway to PA	1.84	4.30	49.14	1.29	0.78	0.63	1,811.08	0.04	0.09
Subtotal	**6.92**	**16.14**	**184.27**	**4.84**	**2.94**	**2.35**	**6,791.79**	**0.14**	**0.34**
No Project - Year 2015									
Bulk - From Cal border to Fairway	4.29	10.01	114.26	3.00	1.82	1.46	4,211.46	0.09	0.21
Bulk - From Fairway to PA	1.56	3.64	41.55	1.09	0.66	0.53	1,531.37	0.03	0.08
Subtotal	**5.85**	**13.65**	**155.81**	**4.10**	**2.49**	**1.99**	**5,742.82**	**0.12**	**0.28**

Note: (1) VSRP compliance = 62% within the VSRPZ in 2006 and 100% within 40 nm of Pt. Fermin for post-2006 years.

Table A.1.2-68. Annual Emissions from OGV Auxiliary Generators during Transit within California

	Tons Per Year								
Project Scenario/Vessel Type	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Bulk - From Cal border to Fairway	0.07	0.18	2.00	0.08	0.04	0.03	106.17	0.00	0.00
Bulk - From Fairway to PA	0.03	0.08	0.91	0.04	0.02	0.02	48.07	0.00	0.00
Subtotal	**0.10**	**0.26**	**2.90**	**0.12**	**0.06**	**0.05**	**154.23**	**0.00**	**0.01**
Full Expansion Project - Year 2015									
Bulk - From Cal border to Fairway	0.19	0.51	5.66	0.23	0.12	0.09	300.45	0.00	0.01
Bulk - From Fairway to PA	0.10	0.27	2.95	0.12	0.06	0.05	156.80	0.00	0.01
Subtotal	**0.28**	**0.78**	**8.61**	**0.35**	**0.18**	**0.14**	**457.24**	**0.01**	**0.02**
Reduced Expansion Alt - Year 2015									
Bulk - From Cal border to Fairway	0.15	0.41	4.53	0.18	0.09	0.08	240.36	0.00	0.01
Bulk - From Fairway to PA	0.08	0.21	2.36	0.10	0.05	0.04	125.44	0.00	0.01
Subtotal	**0.23**	**0.62**	**6.89**	**0.28**	**0.14**	**0.12**	**365.80**	**0.00**	**0.02**
No Project - Year 2015									
Bulk - From Cal border to Fairway	0.13	0.34	3.83	0.15	0.08	0.06	203.23	0.00	0.01
Bulk - From Fairway to PA	0.07	0.18	2.00	0.08	0.04	0.03	106.06	0.00	0.00
Subtotal	**0.19**	**0.52**	**5.83**	**0.23**	**0.12**	**0.10**	**309.30**	**0.00**	**0.01**

Note: (1) VSRP compliance = 62/100% in 2006/post-2006.

Table A.1.2-69. Annual Vessel Operational Emissions within California - POLB MCC Expansion Project - GHG Emissions

	Tons Per Year								
Project Scenario/Emission Source	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CH4*	*N2O*
CEQA Baseline									
Ships - Fairway Transit (1)	3.24	7.59	86.58	2.32	1.40	1.12	3,238	0.06	0.16
Ships - Precautionary Area Transit (1)	0.12	0.28	3.21	0.09	0.05	0.04	124	0.00	0.01
Ships - Harbor Transit (2)	0.06	0.11	0.80	0.02	0.02	0.01	32	0.00	0.00
Ships - Docking (2)	0.05	0.06	0.44	0.01	0.01	0.01	15	0.00	0.00
Ships - Hoteling Aux. Sources (2)(3)	0.37	0.92	9.94	1.08	0.32	0.25	1,480	0.01	0.11
Ships - Turning at Berth (2)	0.02	0.02	0.15	0.00	0.00	0.00	5	0.00	0.00
Tugboats - Cargo Vessel Assist (1)	0.04	0.40	0.84	0.00	0.02	0.02	104	0.01	0.00
Subtotal	**3.88**	**9.39**	**101.96**	**3.52**	**1.82**	**1.46**	**4,998**	**0.09**	**0.28**
Full Expansion Project									
Ships - Fairway Transit (1)	8.93	20.95	238.94	6.40	3.86	3.08	8,947	0.18	0.44
Ships - Precautionary Area Transit (1)	0.33	0.78	8.83	0.24	0.15	0.12	340	0.01	0.02
Ships - Harbor Transit (2)	0.17	0.31	2.27	0.07	0.05	0.04	91	0.00	0.01
Ships - Docking (2)	0.14	0.18	1.26	0.03	0.03	0.02	41	0.00	0.00
Ships - Hoteling Aux. Sources (2)(3)(4)	0.29	0.74	2.67	0.83	0.25	0.20	1,140	0.01	0.08
Tugboats - Cargo Vessel Assist (1)	0.10	1.07	2.23	0.00	0.06	0.05	276	0.03	0.00
Subtotal	**9.95**	**24.03**	**256.20**	**7.58**	**4.38**	**3.51**	**10,836**	**0.22**	**0.55**
Reduced Expansion Project									
Ships - Fairway Transit (1)	7.14	16.76	191.16	5.12	3.08	2.47	7,158	0.14	0.35
Ships - Precautionary Area Transit (1)	0.26	0.62	7.06	0.20	0.12	0.09	272	0.01	0.01
Ships - Harbor Transit (1)	0.13	0.25	1.81	0.05	0.04	0.03	73	0.00	0.00
Ships - Docking (1)	0.11	0.14	1.01	0.02	0.02	0.02	33	0.00	0.00
Ships - Hoteling Aux. Sources (2)(3)(4)	0.23	0.59	2.14	0.66	0.20	0.16	912	0.00	0.06
Tugboats - Cargo Vessel Assist (1)	0.08	0.86	1.79	0.00	0.04	0.04	221	0.02	0.00
Subtotal	**7.96**	**19.22**	**204.96**	**6.06**	**3.51**	**2.81**	**8,669**	**0.18**	**0.44**
No Project									
Ships - Fairway Transit (1)	6.04	14.17	161.63	4.33	2.61	2.09	6,052	0.12	0.30
Ships - Precautionary Area Transit (1)	0.22	0.52	5.97	0.17	0.10	0.08	230	0.00	0.01
Ships - Harbor Transit (1)	0.11	0.21	1.53	0.05	0.03	0.03	61	0.00	0.00
Ships - Docking (1)	0.09	0.12	0.85	0.02	0.02	0.02	28	0.00	0.00
Ships - Hoteling Aux. Sources (2)(3)	0.23	0.57	6.21	0.65	0.20	0.16	895	0.00	0.06
Tugboats - Cargo Vessel Assist (1)	0.07	0.72	1.51	0.00	0.04	0.04	187	0.02	0.00
Subtotal	**6.76**	**16.33**	**177.71**	**5.22**	**2.99**	**2.40**	**7,454**	**0.15**	**0.38**

Notes: (1) Includes auxiliary generator emissions.

(2) Includes auxiliary generator and boiler emissions.

(3) 66% of annual OGV berthing activities occurred in cold-ironing mode, as derived from Cold Ironing Evaluation.pdf (MCC Jan 11, 2011). This factor also applied to the future project scenarios.

(4) NOx emissions reduced 88.9% due to the use of DoCCS.

Table A.1.2-70. Annual Electrical Demand and Resulting GHGs - POLB MCC Project Scenarios

Project Scenario	*Annual MWh (1)*	*Lb CO2e/ MWh (2)*	*Annual CO2e (Metric Tons)*	*Future Scenario minus Baseline Annual CO2e*
CEQA Baseline	13,115	695	4,134	---
Full Expansion Project - Year 2015	24,109	695	7,599	3,465
Reduced Expansion Alt. - Year 2015	19,432	695	6,125	1,991
No Project - Year 2015	22,526	695	7,100	2,966

Notes: (1) Provided by Mitsubishi on 4/11/13. The full project would require 706 MW for cold-ironing.

(2) Data for California as a whole expected in year 2015 and takes into consideration past and current GHG re

Table A.1.2-71. Unmitigated Annual GHG Emissions - POLB MCC Project Scenarios

Project Scenario/Source Type	*MTY CO2*	*TPY CO2*
CEQA Baseline		
Ships - Cal State Waters to PA Transit (1)	2,944	3,238
Ships - Precautionary Area Transit (1)	112	124
Ships - Harbor Transit (2)	29	32
Ships - Docking (2)	13	15
Ships - Hoteling Aux. Sources (2)(3)	1,346	1,480
Ships - Turning at Berth (2)	5	5
Tugboats - Cargo Vessel Assist (1)	94	104
Vessel Unloading - Dust		
Payloaders	29	31
Truck Loading - Dust		
On-road Trucks	5,944	6,538
Indirect Electricity Usage	4,134	4,547
Total - CEQA Baseline	**14,649**	**16,114**
Full Expansion Project		
Amortized Construction Emissions (30-year life)	-	-
Ships - Cal State Waters to PA Transit (1)	8,134	8,947
Ships - Precautionary Area Transit (1)	309	340
Ships - Harbor Transit (2)	82	91
Ships - Docking (2)	38	41
Ships - Hoteling Aux. Sources (2)(3)	1,037	1,140
Tugboats - Cargo Vessel Assist (1)	251	276
Vessel Unloading - Dust		
Payloaders and SCR Duct Burner	1,072	1,180
Truck Loading - Dust		
On-road Trucks	18,319	20,151
Indirect Electricity Usage	7,599	8,359
Total - Full Expansion Project	**36,841**	**40,525**
Net Change - FE Project minus CEQA Baseline	**22,192**	**24,411**
Reduced Expansion Alternative		
Amortized Construction Emissions (30-year life)	-	-
Ships - Cal State Waters to PA Transit (1)	6,507	7,158
Ships - Precautionary Area Transit (1)	247	272
Ships - Harbor Transit (2)	66	73
Ships - Docking (2)	30	33
Ships - Hoteling Aux. Sources (2)(3)	829	912
Tugboats - Cargo Vessel Assist (1)	201	221
Vessel Unloading - Dust		
Payloaders and SCR Duct Burner	1,059	1,165
Truck Loading - Dust		
On-road Trucks	14,655	16,121
Indirect Electricity Usage	6,125	6,737
Total - Reduced Expansion Alternative	**29,719**	**32,691**
Net Change - RE Alternative minus CEQA Baseline	**15,070**	**16,577**
No Project		
Ships - Cal State Waters to PA Transit (1)	5,502	6,052
Ships - Precautionary Area Transit (1)	209	230
Ships - Harbor Transit (2)	56	61
Ships - Docking (2)	25	28
Ships - Hoteling Aux. Sources (2)(3)	814	895
Tugboats - Cargo Vessel Assist (1)	170	187
Vessel Unloading - Dust		
Payloaders	53	59
Truck Loading - Dust		
On-road Trucks	9,863	10,849
Indirect Electricity Usage	7,100	7,810
Total - No Project	**23,792**	**26,171**
Net Change - No Project minus CEQA Baseline	**9,143**	**10,057**

Notes: (1) Includes auxiliary generator emissions.

(2) Includes auxiliary generator and boiler emissions.

(3) 66% cold-ironing as a percent of total annual berthing durations.

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