

**Summary of Existing and Upcoming Regulations Affecting
Emissions from Port of Oakland Seaport Operations
Sources of Particulate Matter, Sulfur Oxides and Nitrogen Oxides**

Document Purpose: This document is intended to summarize regulations and other measures currently adopted, pending, or under consideration, and the roles of the agencies and other parties in implementing and enforcing these measures.

Rule	Agency¹	Description	Enforcement entity	Compliance Dates	Status (Adoption date)
<i>Source Category: Ocean Going Vessels</i>					
Auxiliary engine low sulfur fuel rule	ARB	Requires low sulfur fuel for use with auxiliary engines. Effective 2007 within 24 nm of coast; marine fuel must be Marine Gas Oil or Marine Diesel Oil containing less than 0.5% sulfur (must be Marine Gas Oil containing less than 0.1 % sulfur starting in 2010)	ARB	January 1, 2007	In place – and currently enforced – under litigation 2007 and 2010 phase-in period (I)
Main engine and boiler low sulfur fuel rule	ARB	Requires low sulfur fuel use in main engines and boilers similar to auxiliary engine requirements.	ARB	Proposed effective date January 1, 2009	Proposed rule to be presented to Board in Spring 2008.
Cold ironing rule	ARB	Control hoteling emissions via one of several possible methods	ARB	January 1, 2010	In place. Phase in 2010-2020
Vessel Speed reduction (VSR)	ARB	Evaluating need for VSR measure at major ports and along coastline.	ARB	TBD	Under evaluation for mid 2008
Clean Ship program	ARB	Evaluating measure or incentive program to require cleaner or retrofitted vessels in CA ports	ARB	TBD	Under development for late 2008. Likely phase in from 2010-2020

¹ Unless otherwise noted, this is the agency or other party responsible for overseeing and enforcing the listed measure.

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Draft for Review by MAQIP Task Force on Jan 30, 2008

Rule	Agency ¹	Description	Enforcement entity	Compliance Dates	Status (Adoption date)
New marine compression-ignition (diesel) engine rule	EPA	National exhaust emission standards for new engines at or above 30 liters per cylinder ("category 3" marine diesel engines)	EPA	1. Voluntary in 2003, mandatory in 2004. 2. Tier 2 NOx could begin as early as 2011 and Tier 3 could begin as early as 2016. 3. See number 2.	1. Feb 28, 2003 (68FR9746) 2. December 7, 2007 (72FR9521), Advanced Notice of Proposed Rulemaking, comments due 2/29/08 3. Dec 5, 2007 (72FR68518), Final rule to change the deadline to Dec 17, 2009 setting more stringent standards for Category 3 engines.
MARPOL Annex VI Tier 2 and Tier 3 exhaust emission standards	International Maritime Organization (US Coast Guard lead)	Any engine > 130kW installed on a vessel constructed on or after 1/1/2000 and any engine that undergoes a major conversion on or after 1/1/2000.	US Coast Guard	Possible Tier 2 standards by 2011; possible Tier 3 standards by 2015/2016. Possible standards for Sox and PM.	Ongoing negotiations from a US delegation (including EPA) for amendments to MARPOL, Annex VI)
MARPOL Annex VI 2000 Tier 1 NOx standard	International Maritime Organization (US Coast Guard lead)	Any engine > 130kW installed on a vessel constructed on or after 1/1/2000 and any engine that undergoes a major conversion on or after 1/1/2000.	US Coast Guard	May 2005, (Voluntary in 2000)	Ship builders are complying; US has not yet ratified the treaty
MARPOL Annex VI SOx Emissions Control Area (SECA) for North America	US Designated (EPA/ARB lead)	US application for a SECA. Sulfur levels capped at 1.5% potentially out 200 nm from shore as defined by Exclusive Economic Area (EEA)	US Coast Guard		US preparing justification and other background materials
Source category: Harbor Craft					
Commercial Marine Diesel Engine emission standards: Tier 1 & 2	EPA	New engine standards for Category 1 & 2 marine diesel engines	EPA	Phase in 2004-2007	In place
Marine Diesel Engine Rule: Tier 3 & 4	EPA	Affects engines up to 30 liters per cylinder; relies on catalytic after-treatment technologies with less than 15 ppm sulfur fuel. (This rule is coupled with the locomotive Tier 3 & 4 exhaust standards.)	EPA	Possible Tier 3 beginning in 2008/2009; possible Tier 4 in 2015.	Final rule expected by Jan 2008

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ARB Harbor Craft low sulfur fuel rule	ARB	Requires Ultra-low Sulfur Diesel (ULSD) fuel use in harbor craft	ARB	January 1, 2006 for CCAQMD; January 1, 2007 for rest of state.	In place
ARB In-Use Harbor Craft rule	ARB	Reduce PM and NOx from in-use ferries, tugs, tows and new commercial harbor craft	ARB	December 31, 2009	Phase in 2009-2022
ARB Crew and Supply Vessel rule	ARB	Similar to In-Use harbor craft rule.	ARB	TBD	Proposed rule likely in Fall 2008
Source Category: Cargo Handling Equipment					
ARB Cargo Handling Equipment regulations	ARB	Retrofit or accelerated turnover to meet Best Available Control Technology (BACT) for newly purchased, leased or rented equipment (2007 or later on-road engine or Tier 4 off-road engine or cleanest verified PM/NOx retrofit)	ARB	January 1, 2007	In place.
EPA non-road and ARB off-road diesel engine standards	EPA ARB	Both EPA and ARB have adopted exhaust emission standards for Tier 1-Tier 4 engines. Two separate rules.	EPA: ARB:	Tier 1-3: 1999-2008; Tier 4: 2008-2015	In place Phase in 2008 – 2015
Ultra-low Sulfur fuel	ARB Separate rule for EPA	Require less than 15 ppm sulfur diesel fuel (EPA requires a cap of 15 ppm for nonroad, phasing in 2010-2014, currently at 500 ppm.)	ARB EPA	June 2006	In place

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Source category: On-road trucks: drayage trucks					
Port of Oakland Idling Trucks California Health and Safety Code Section 40720 (AB 2650 & AB 1971)	State of California	Existing law requires each marine terminal in the State to operate in a manner that does not cause the engines on trucks to idle or queue for more than 30 minutes while waiting to enter a terminal gate. Existing law specifies that if a marine terminal implements a scheduling or appointment system, the terminal shall only be subject to a fine for a truck that makes use of the appointment system and that idles for more than 30 minutes outside the terminal gate. http://www.baaqmd.gov/enf/idlingtruck/idlingtrucks.htm	BAAQMD	Ongoing	Added to the CA H&SC in 2002, amended 2004. Currently being enforced by the BAAQMD.
ARB Port Truck Rule	ARB	Replace/retrofit trucks to meet emission standards	ARB	Phase 1 – January 1, 2010 Phase 2 – January 1, 2014	In place
ARB Statewide Heavy-Duty (in-use) Truck Rule	ARB	Require private fleet operators to replace/retrofit diesel trucks greater than 14,000 GVWR to meet emission standards. Requirements applicable to port truck fleets would likely be superseded by the ARB Port Truck Rule	ARB		Potential rule Proposal scheduled for late 2008; full implementation by 2020 (2014 for PM emissions)
Source category: On-road trucks: all					
ARB on-road Heavy Duty Truck emission standards EPA has separate federal standards for new trucks and buses	ARB EPA	New MY 2007 and later on-road Heavy Duty Trucks	 EPA		In place 2007 – 2010 phase-in period
Ultra-Low Sulfur Fuel Rule EPA has separate rule	ARB EPA	Require less than 15 ppm sulfur diesel fuel Same for EPA	ARB EPA	Effective June 2006	In place

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Rule	Agency ¹	Description	Enforcement entity	Compliance Dates	Status (Adoption date)
Source category: Locomotives					
Tier 0 – Tier 2 exhaust emission standards for locomotives	EPA	Emission standards for new and remanufactured engines (50% combined emissions reduction for NOx+PM+HC)	EPA	Tier 0: 1973-2001; Tier 1: 2002-2004; Tier 2: 2005	In place
Tier 3 and 4 exhaust emission standards for locomotives	EPA	Additional emission standards for new and remanufactured engines (based on use of 15 ppm sulfur fuel) NOTE: Coupled with the marine Category 1 & 2 marine rulemaking.	EPA	Possible Tier 3 beginning in 2008; possible Tier 4 in 2015.	Final rule by Jan 2008.
ARB MOU Idle reduction	ARB (via Memorandum of Understanding [MOU] with Railroads)	Agreement to reduce idling at railroad yards and take other steps to reduce emissions			Agreement adopted 2005
ARB intrastate locomotive low sulfur fuel rule	ARB	Requires use of off-road low (less than 15 ppm) sulfur fuel for engines used 90% in-state (mostly switcher engines)			In place Effective 2006
Source category: All/Other Port - Related Sources					
Regulation 12, Rule 13: Port Inventories and Emission Reduction Plans (aka: Green Ports Initiative)	BAAQMD	Treat Bay Area seaports as indirect sources of air emissions (entities that attract sources of pollution). Would set a seaport emission reduction goal and require each seaport to submit an Action Plan that would detail how seaport-related emissions will be reduced to achieve the goal.			Potential rule Formal proposal expected by March 2008 http://www.baaqmd.gov/pln/ruledev/workshops.htm

[MAQIP Interagency Matrix rev4; 1/23/08]

Notes

ARB: California Air Resources Board

EPA: United States Environmental Protection Agency

BAAQMD: Bay Area Air Quality Management District

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County: Alameda County
City: City of Oakland
Port: Port of Oakland

SUMMARY OF MEASURES ASSUMED IN PROJECTED EMISSIONS REDUCTIONS FROM ALL SOURCE CATEGORIES

NOTE: A further refinement of the above chart is still under development. One of the anticipated uses of this chart is to provide information as to which measures are assumed and relied upon in projections of overall emission reductions. For instance, if a reduction of 81% in emissions is projected for 2020, the projection should be able to be readily cross-referenced to this list of measures at a level of detail allowing identification of which specific measures have been relied upon in those projections. One way of doing this would be to add a column in which annotation could be provided as to whether the measures had been presumed in a specific set of projections. There are other options and this issue should be considered by a wider set of stakeholders than have developed this initial chart.