Attachment 3

Corrections to the Initial Statement of Reasons for Rulemaking (Staff Report)

Fuel Sulfur and Other Operational Requirements for Ocean-going Vessels within California Waters and 24 Nautical Miles of the California Baseline

1. Corrections to Chapter VII list of references:

Note: The deleted references (*shown below in ~~strikeout~~)* were not cited in the text of Chapter VII, while the added references (shown below in *underline*) were cited in the text of Chapter VII, but were not listed as a reference at the end of the chapter. However, it should be noted that all references added to Chapter VII are already part of the administrative record because they were also listed as references to other chapters in the ISOR.

REFERENCES

~~(ARB, 2000) Air Resources Board. October 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. http://www.arb.ca.gov/diesel/documents/rrpapp.htm~~

(ARB, 2002) Air Resources Board. May 2002. Public Hearing to Consider Amendments to the Ambient Air Quality Standards for Particulate Matter and Sulfates, Staff Report. http://www.arb.ca.gov/research/aaqs/std-rs/pm-final/pm-final.htm

~~(ARB, 2004) Air Resources Board, *Report to the Legislature, Gas-Fired Power Plant NOx Emission Controls and Related Environmental Impacts;* May 2004.~~

(ARB, 2005) California Air Resources Board. "Air Resources Board Ocean-Going Vessel Survey, "January 2005.

(ARB, 2006) State of California, Air Resources Board, Emission Reduction Plan for Ports and Goods Movement in California, April, 2006.

(ARB, 2007) California Air Resources Board. "Air Resources Board Ocean-Going Vessel Survey." February 2007.

(ARB, 2008) California Air Resources Board. Methodology for estimating premature deaths associated with long-term exposures to fine airborne

particulate matter in California. Available at:
http://www.arb.ca.gov/research/health/pm-mort/pm-mort.htm.

(DaMassa, 2002) DaMassa, John. *Presentation: Air Quality Effects of Trap-Related Emissions (Updated)*, California Air Resources Board; February 6, 2002.

(EPA, 2000) United States Environmental Protection Agency. September 2000, *Guidelines for Preparing Economic Analyses.* EPA240-R-00-003 http://www.epa.gov/opei/pubsinfo.htm

(EPA, 2002) United States Environmental Protection Agency. Notice of Proposed Rulemaking (40 CFR Part 94) "Control of Emissions of Air Pollution from New Compression-Ignition Marine Diesel Engines at or Above 30 Liters per Cylinder." April 2002.

(EPA, 2003) United States Environmental Protection Agency. April 2003. United States Environmental Protection Agency, Assessment and Standards Division, Office of Transportation and Air Quality, Draft Regulatory Impact Analysis: Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel. EPA420-R-03-008. CD-ROM. Research Triangle Park, North Carolina. http://www.epa.gov/otaq/cleaner-nonroad/r03008.pdf.

(Wilson-Roberts, 2008) Guy Wilson-Roberts, Industry Rejects CO2 Arguments, (visited June 2, 2008). http://sustainableshipping.com/news/2007/09/69050.

(Hofman/Solseng, 2002) Hofman, V. and Solseng, E. *Biodiesel Fuel Use in an Unmodified Diesel Engine*, American Society of Agricultural Engineers Annual Meeting; September 27-28, 2002.

(Kendall, 2002) Kendall, Tom; Johnson Matthey. *Platinum 2002*; http://www.platinum.matthey.com/publications/1051543656.html; May 2002.

(Kendall, 2003) Kendall, Tom; Johnson Matthey. *Platinum 2003*; http://www.platinum.matthey.com/publications/1059138410.html; May 2003.

(Krewski et al., 2000) Krewski D.; Burnett R.; Goldberg M.; Hoover K.; Stemiatychi
J.; Jerrett M.; Abrahamovicz M.; White W. Reanalysis of the Harvard Six Cities Study and the American Cancer Society Study of Particulate Air Pollution and Mortality, Health Effects Institute, Cambridge, Massachusetts; 2000.
http://es.epa.gov/ncer/science/pm/hei/Rean-ExecSumm.pdf

(Lloyd and Cackette, 2001) Lloyd, A.C.; Cackette, T.A.; Diesel Engines: Environmental Impact and Control; J Air Waste Manage. Assoc. 2001, 51: 809-847.
http://www.arb.ca.gov/research/seminars/lloyd/AWMA2001/JAWMADieselCritical

~~Review.pdf~~

(Marintek, 2000) Marintek, et al. *Study of Greenhouse Gas Emissions from Ships*. Final Report to the International Maritime Organization. March 31, 2000.
(MEAB, 2003) Metallextraktion AB (MEAB). *http://www.meab-mx.se/en/index.htm*; August 2003.

~~(Pope et al, 1995) Pope, C.A.; Thun, M.J.; Namboodiri, M.M.; Dockery, D.W.; Evans, J.S.; Speizer, F.E.; Heath, C.W. Particulate Air Pollution as a Predictor of Mortality in Prospective Study of U.S. Adults, Am. J. Respir. Crit. Care Med 1995.~~

2. Corrections to the $PM_{2.5}$ emission factors in Appendix D of the ISOR, Tables II-6, II-7, and II-8:

Note: The new correct $PM_{2.5}$ emission factors are added below (shown in underline). The
erroneous $PM_{2.5}$ emission factors are deleted (*shown in ~~strikeout~~*).

Table II-6: Main Engine Emission Factors – Transit Mode (g/kW-hr)

Engine Speed	Fuel	Ch_4	CO	CO_2	NO_x	PM_{10}	$PM_{2.5}$	ROG	SOx
Slow	Marine Distillate (0.1% S)	0.07	1.10	588	17.0	0.25	0.23 ~~0.35~~	0.78	0.36
Slow	Marine Distillate (0.5% S)	0.07	1.10	588	17.0	0.38	0.35	0.78	1.90
Slow	Heavy Fuel Oil	0.08	1.38	620	18.1	1.50	1.46	0.69	10.5
Medium	Marine Distillate (0.1% S)	0.08	1.10	645	13.2	0.25	0.23 ~~0.35~~	0.65	0.40
Medium	Marine Distillate (0.5% S)	0.08	1.10	645	13.2	0.38	0.35	0.65	2.08
Medium	Heavy Fuel Oil	0.09	1.10	677	14.0	1.50	1.46	0.57	11.5
High	Marine Distillate (0.1% S)	0.08	1.10	645	12.1	0.25	0.23 ~~0.35~~	0.65	0.40
High	Marine Distillate (0.5% S)	0.08	1.10	645	12.1	0.38	0.35	0.65	2.08
High	Heavy Fuel Oil	0.09	1.10	645	12.7	1.50	1.46	0.23	11.5

Table II-7: Main Engine Emission Factors – Maneuvering Mode (g/kW-hr)

Engine Speed	Fuel	CH_4	CO	CO_2	NO_x	PM_{10}	$PM_{2.5}$	ROG	SOx
Slow	Marine Distillate (0.1% S)	0.07	1.10	588	17.0	0.25	0.23 ~~0.35~~	0.78	0.36
Slow	Marine Distillate (0.5% S)	0.07	1.10	588	17.0	0.38	0.35	0.78	1.90
Slow	Heavy Fuel Oil	0.08	1.38	620	18.1	1.50	1.46	0.69	10.5
Medium	Marine Distillate (0.1% S)	0.08	1.10	645	13.2	0.25	0.23 ~~0.35~~	0.65	0.40
Medium	Marine Distillate (0.5% S)	0.08	1.10	645	13.2	0.38	0.35	0.65	2.08
Medium	Heavy Fuel Oil	0.09	1.10	677	14.0	1.50	1.46	0.57	11.5
High	Marine Distillate (0.1% S)	0.08	1.10	645	12.1	0.25	0.23 ~~0.35~~	0.65	0.40
High	Marine Distillate (0.5% S)	0.08	1.10	645	12.1	0.38	0.35	0.65	2.08
High	Heavy Fuel Oil	0.09	1.10	645	12.7	1.50	1.46	0.23	11.5

Table II-8: Auxiliary Engine Emission Factors – Transit, Maneuvering, and Hotelling (g/kW-hr)

Engine Speed	Fuel	CH_4	CO	CO_2	NO_x	PM_{10}	$PM_{2.5}$	ROG	SOx
Medium	Marine Distillate (0.1% S)	0.09	1.10	690	13.9	0.25	0.23 ~~0.35~~	0.52	0.40
Medium	Marine Distillate (0.5% S)	0.09	1.10	690	13.9	0.38	0.35	0.52	2.10
Medium	Heavy Fuel Oil	0.09	1.10	722	14.7	1.50	1.46	0.46	11.1