State of California
AIR RESOURCES BOARD

**Addendum to the Final Statement of Reasons for Rulemaking**

PUBLIC HEARING TO CONSIDER THE 2007 AMENDMENTS TO THE PHASE 3 CALIFORNIA REFORMULATED GASOLINE REGULATIONS

Public Hearing Date: June 14, 2007
Agenda Item No.: 07-6-3
Addendum Prepared: August 7, 2008

## I. BACKGROUND

On April 25, 2008, ARB staff submitted the Final Statement of Reasons (FSOR), a Final Regulation Order containing proposed amendments to the California Phase 3 reformulated gasoline regulations (CaRFG3), and the incorporated "California Procedures for Evaluating Alternative Specifications for Phase 3 Reformulated Gasoline Using the California Predictive Model" (Predictive Model Procedures) to the Office of Administrative Law (OAL) for review and approval. [1]

On June 10, 2008, OAL disapproved the proposed regulatory action based on failure to make changes to the regulations available to the public; failure to include a response to all public comments; and failure to include all required documents in the rulemaking file. ARB staff has addressed these concerns as described below. Each of the specific concerns is noted, along with the page number in this document where each issue is addressed.

A. Failure to make changes available to the public.

In its disapproval, OAL noted that the text of the regulations submitted to OAL for filing with the Secretary of State contained changes from the text that was made available to the public during the initial forty-five day and subsequent fifteen day comment periods. The specific changes that were inadvertently not made available to the public for comment are contained in Tables 1, 9, and 12 of the Predictive Model Procedures and are summarized as follows:

1 The affected sections include sections 2261, 2262, 2262.3, 2262.4, 2262.5, 2262.9, 2263, 2263.7, 2264.2, 2265 (and the incorporated "California Procedures for Evaluating Alternative Specifications for Phase 3 Reformulated Gasoline Using the California Predictive Model"), 2266, 2266.5, 2270, 2271, and 2273, and proposing new sections 2260(a)(0.5), (0.7), (7.5), (8.5), (10.5), (10.7), (19.7), (23.5), and (23.7), 2262.3(d), 2264.2(a)(3), (b)(5), and (d), 2265(c)(4), 2265.1, 2265.5, and 2266(b)(3), (4), and (5) of Title 13, California Code of Regulations (CCR).

- In Table 1, the following language was added to footnote #1: "The Reid vapor pressure (RVP) standards apply only during the warmer weather months identified in section 2262.4." (see this document, pg. 3, #1)
- In Table 9, the relative reactivity values for Diurnal/Resting HC, Hot Soak HC, and Running Loss HC were rounded off from three digits beyond the decimal point to just two digits. (pg. 3, #2)
- In Table 12, every mean and standard deviation figure for every fuel property listed in the table was changed. (pg. 3, #3)

B. Failure to include a response to all public comments.

OAL further noted that the FSOR does not appear to have a summary and response to comments made at the following locations of comment #1 in tab 12: page 9, VI, second to last paragraph (pg. 9, #130); page 10, VII A; pages 11-12 (pg. 10, #131), VIII 3 (pg. 8, #125) , 4 (pg. 8, #126) , and 5 (pg. 11, #132); page 13, VIII E (pg. 8, #127) , F (pg. 9, #128), and the first paragraph of G (pg. 9, #129); and pages 19 -21, XII (pg. 11, #133). Also, comment #71, which was received during the fifteen day comment period, stated that the references to section "(B)9" should be changed to "(B)10" in new subsection (b)(7)(D)1 of section 2261. The FSOR states that the staff agrees with the comment and will make the requested correction. However, the text of section 2261(b)(7)(D)1 was not revised to accommodate this comment. (pg. 6, #28)

C. Failure to include all required documents in the rulemaking file.

OAL also noted that the "Staff Report: Initial Statement of Reasons" for this regulatory action includes in "Chapter VII. References" a twenty-four page reference list. Tab 16 of the rulemaking file, entitled "References", includes a four page reference list and a compact disc with an extensive collection of documents. OAL was unable to locate and match up all of the documents listed as references in the "Staff Report: Initial Statement of Reasons" with those on the compact disc. The rulemaking file also failed to contain any copies, as required by subdivision (c) of Government Code section 11343 and section 20 of title 1 of the California Code of Regulations, of the final version of the Predictive Model Procedures which is incorporated by reference in this regulatory action. (pg. 7, #1)

D. Other OAL comments.

OAL also commented that: (1) the reference to section "(C)5" in new subsection (b)(7)(C) 4.e of section 2261 is inaccurate and that (2) authority and reference citations as required by subdivision (a)(2) of Government Code section 11346.2 are missing from the text of the regulation sections being amended by this rulemaking. (pg. 6, #36)

This Addendum to the FSOR for the 2007 Amendments to the Phase 3 California Reformulated Gasoline Regulations lists, describes, and provides reasoning for the changes that the Air Resources Board (ARB or the Board) made to the FSOR, the Final

Regulation Order, and the Predictive Model Procedures, which is incorporated by reference throughout the regulation. Many of these changes were made in response to concerns raised by the OAL, as well as additional typographical errors and oversights subsequently discovered. ARB is submitting this addendum to the FSOR for insertion in the OAL File Number 08-0425-03S.

## II. ADDITIONAL MODIFICATIONS

To address OAL's concerns and to resolve additional issues subsequently discovered, the Second Notice of Public Availability of Modified Text included the following modifications, and the Initial Statement of Reasons and Final Statement of Reasons are hereby amended as follows.

A. Predictive Model Procedures – The Predictive Model Procedures are modified as follows. For ease of reference, the page numbers associated with the version that was released during the second 15-day comment period are shown. The page numbers associated with the current version are shown in brackets.

1. Table 1. The following language was added to footnote #1 to clarify that the RVP Flat and Cap limits apply only for gasoline intended for the RVP regulatory control period: "The Reid vapor pressure (RVP) standards apply only during the warmer weather months identified in section 2262.4."

2. Table 9. The relative reactivity values for Diurnal/Resting HC, Hot Soak HC, and Running Loss HC were rounded off from three digits beyond the decimal point to just two digits. The relative reactivity value for CO was rounded off from four digits beyond the decimal point to just three digits.

3. Table 12. The mean and standard deviation figures were updated to reflect new emission data incorporated into the Predictive Model. This table was updated in response to a comment received during the first 15-day comment period.

4. On page 12 [see second 15-day document, page 15], reference to VMT was deleted.

5. On pages 22-23 [pages 27-28], the Vehicle Miles Traveled Weighting Factors (VMTWF) for each Tech class were changed to Toxics Weighting Factors (TWF) for the respective Tech class. ARB had previously made these changes in the Table of Contents and on pages 10 [13], 12 [15], 61 [70], and 62 [71], but inadvertently neglected to make these changes on pages 22 and 23 [27 and 28]. It is clear from the text that VMTWF was replaced with TWF. Therefore, these additional changes on pages 22 and 23 [pages 27 and 28] are typographical and non-substantive in nature.

6. On page 23 [page 28], VMT weighting factors were changed to toxics weighting factors. Again, it is clear from the text and previous changes that VMTWF was replaced with TWF.

B. Minor Amendments to the Regulations. For ease of reference, the page numbers associated with the version that was released during the second 15-day comment period are shown. The page numbers associated with the current version are shown in brackets.

1. On page 1 [page 10], the numbering in subsection (5)(E) "(E) Any producer or importer that produces gasoline…" was changed to "(C) Any producer or importer that produces gasoline…"

2. On page 2 [page 14], the numbering in "c. *Application Process*." was changed to "(C) *Application Process*."

3. On page 2 [page 15], the numbering in "(A) The identity of the applicant producer(s) or importer(s);" was changed to "a. The identity of the applicant producer(s) or importer(s);"

4. On page 2 [page 15], the numbering in "(B) The start and end dates for the 30-day comment period;" was changed to "b. The start and end dates for the 30-day comment period;"

5. On page 2 [page 15], the numbering and punctuation in "(C) The address of the EERP internet site where the application is posted; and." was changed to "c. The address of the EERP internet site where the application is posted; and,"

6. On page 2 [page 15], the numbering in "(D) Where and how to submit comments." was changed to "d. Where and how to submit comments."

7. On page 2 [page 15] in the third line of section 2261(b)(6)(C)7., "impoter" was changed to "importer."

8. On page 2 [page 16], the numbering in "d. *Revocation or Modification of an Approved EERP or third party EERP*." was changed to "(D) *Revocation or Modification of an Approved EERP or third party EERP*."

9. On page 2 [page 16], the numbering in the text of subsection (D)3. "Any violations incurred pursuant to subsection (e)…" was changed to "Any violations incurred pursuant to subsection (E)…"

10. On page 2 [page 17], the numbering in "e. *Additional prohibitions*." was changed to "(E) *Additional prohibitions*."

11. On page 3 [page 18], the numbering in "f. A cause of action against the producer or importer…" was changed to "(F) A cause of action against the producer or importer…"

12. On page 3 [page 18], the numbering in "g. *Transferability*." was changed to "(G) *Transferability*."

13. On page 3 [page 18], the numbering in "h. *Notification of final blends associated with an EERP or third party EERP*" was changed to "(H) *Notification of final blends associated with an EERP or third party EERP*."

14. On page 3 [page 19], the numbering in the text of subsection (I)2. "…subsection (h)(1)…" was changed to "…subsection (H)1. …"

15. On page 4 [page 22], the text in section d was changed from "…(B)3.." to "…(B)3.;"

16. On page 4 [page 22], the text in section e was changed from "…facilities." to "…facilities;"

17. On page 4 [page 23], an "and" was added at the end of the paragraph (f) that begins "***The opening balance at the beginning of the month***." In addition, the period was replaced with a semicolon.

18. On page 4 [page 24], the period was replaced with a semicolon at the end of section 10.a.iv.

19. On page 4 [page 24], an "and" was added to the end of paragraph 10.c.

20. On page 5 [page 26], the phrase "used in" was deleted from section c.ii.

21. On page 5 [page 26], the references in subsection c.iii. were changed to "…denatured ethanol volumes for section c.i. and c.ii. …"

22. On page 5 [page 26], the phrase "used in" was deleted from section c.v.

23. On page 5 [page 26], the text in section d was changed from "…c.iv.,. and…" to "…c.iv., and…"

24. On page 5 [page 27], the extra period after the last sentence of section (C)3. was deleted.

25. On page 6 [page 27], the period after the text of section 4.c. was changed to a semicolon.

26. On page 6 [page 27], the text in section 4.e. was changed to "e. The oxygenate blender shall provide…"

27. On page 6 [page 27], in the fourth line of section 2261(b)(7)(C)4.e., "…section (C)5…." was changed to "…section (C)4…" In addition, the last period was deleted.

28. On page 6 [page 27], in Section 2261(b)(7)(D)1, the references to paragraph (B)9. (denatured ethanol requirement) were changed to paragraph (B)10. (recordkeeping).

29. On page 6 [page 27], the extra period in the second to the last line in section (D)1. was deleted.

30. On page 6 [page 28], the extra periods in the fourth and seventh lines in section (D)2. were deleted.

31. On page 6 [page 28], the comma in the seventh line in section (D)2. after "sections (C)2.," was deleted.

32. On page 6 [page 28] in the title of section (D)3., "***producert***" was changed to "***producers***."

33. On page 7 [page 28] in the fourth line of the text of section 2261(b)(7)(D)3., the extra period after "…(B)3.." was deleted. In the second to the last line, "…sections (B)3.." was changed to "…section (B)3."

34. On page 7 [page 28] in the second to the last line of section 2261(b)(7)(D)4., "…sections (H)." was changed to "…section (H)."

35. On pages 7-8 [page 45], the periods after the text in sections (A)1. and 2. were changed to commas.

36. Authority and reference citations have been added to the text of the regulation sections being amended by this rulemaking. In the 45-day package, where staff added a new section, staff included all the appropriate authorities and references. However, where staff amended an existing section, staff did not show the authorities and references because they already existed. If staff intended to amend the authorities and references, staff would have shown those changes. However, staff did not intend to make this change to the pre-existing authorities and references, so the authorities and references (and all other provisions not changed)

were shown as "* * * * *." Therefore, inclusion of the pre-existing authority and reference citations to the text of the sections being amended is a non-substantive change.

C. Initial Statement of Reasons.

1. The following reference is hereby deleted from page 77 of the Initial Statement of Reasons (Staff Report). This reference was not relied upon in this rulemaking, was not discussed in the Staff Report, and was not questioned in conjunction with this rulemaking. Reference to be deleted:

   California Energy Commission, Printout Showing Monthly Refinery Operating Utilization Rates, 1997-1999, Facsimile Dated March 29, 2000.

   A complete list of references, as well as the references referred to in the list, have been submitted with this FSOR addendum, excluding the aforementioned reference.

2. The fourth bullet on page vi is hereby changed from “December 11, 2011” to “December 31, 2011.” This is a typographical error. It is clear from the text at pages viii, xii, xx, xxi, 15, 28, 31, 33, 41, 61, and 63, as well as the proposed regulatory language, that the correct date is December 31, 2011. See response to comment #130.

3. The table heading on page 20, Table 11 is hereby changed from “Weighting Factors for Reactivity-Weighted Hydrocarbons Statewide 2015 (GVW < 10,000 lbs)” to “Weighting Factors for Hydrocarbons Statewide 2015 (GVW < 10,000 lbs).” See response to comment #130.

4. On page 25, the last sentence of the first paragraph is hereby changed to “Table 17 presents the results of this analysis.” See response to comment #130.

5. On page 32, the denominator in the average OFP and average NOx equations is hereby changed from 5 to 6. Note that the results were calculated, correctly, by dividing by 6 and not by 5. See response to comment #130.

6. On page 41, in the last sentence, “start” is hereby changed to “staff.” See response to comment #130.

7. On page 44, in the last line of Table 25, “must” is hereby changed to “most.” See response to comment #130.

8. On page 58, next to the last line, “is” is hereby changed to “are.”

9. On page 59, first paragraph, “meaning” is hereby changed to “meaningful.”

D. Final Statement of Reasons. On page 76, Final Statement of Reasons, Section IV, SUMMARY OF COMMENTS AND AGENCY RESPONSES, the following is hereby added in its entirety and includes inadvertently omitted written comments and oral comments received at the Board meeting and comments received during the second 15-day public comment period.

D. Inadvertently omitted written comments.

125. Comment: In the ISOR, Table 14, the AAMA/AIAM Study (1997) actually included 2 ULEVs (one was a prototype, but it should be noted that the AAM/AIAM Study also included prototypes). The description “LEV 1 and older” is misleading since there was only one pre-LEV 1 vehicle tested (a TLEV), compared to 55 LEV 1s. WSPA cannot comment on the accuracy of the claim of 3 ULEVs in the AAM/AIAM Study (2001), since that information was always described as “unavailable” in response to the many requests for that information at workshops; ARB should disclose the source of this information. ARB’s characterization that the two earlier studies focused on early LEV technology while the two newer studies focused on “a much broader range” is inaccurate. The AAM/AIAM study did not examine a significantly different range of technologies than the two earlier studies – that observation is only valid for CRC E-60. Finally, as ARB itself has pointed out on several occasions, while the number of vehicles has an impact on the relative impact (“bias”) of data subsets, the number of observations does not. (GG)

Agency Response: ARB staff has made all information that we have on these studies available to the public. The AAM/AIAM (2001) had LEV and ULEV vehicles and the CRC E-60 study had LEV, ULEV, and SULEV vehicles. The older AAM/AIAM (1997) and the CRC SULFUR/LEV Program (1997) contained only LEV vehicles. Staff does not believe that the characterization of AAM/AIAM (2001) and the CRC E-60 study as having a broader ranger of vehicle emission control technologies is an inaccurate statement. Therefore, no further regulatory modifications are necessary.

126. Comment: ARB correctly points out that in 2015 “emissions in Tech 5 will be dominated by LEV I and newer technology vehicles”. However, it is not clear how this is relevant to their choice of studies since the resulting data from the inclusion of all four studies is also dominated by LEV I and newer vehicles (69 out of 70). While there is some discussion of numbers of vehicles and VMT, the environmentally significant issue is the relative contributions of various technology categories to the NOx inventory. Table 15 reveals that the majority (62.3%) of the 2015 NOx inventory for Tech 5 will still come from LEV I and older vehicles. By ARB’s choice of data, the majority of the available data on these LEV I and older vehicles (41 vehicles excluded,

14 included) have been excluded from the determination of the sulfur response. (GG)

Agency Response: See response to comment #27.

127. Comment: WSPA supports the inclusion of text in the “Procedures for Using the Predictive Model” that stipulates oxygen content ranges of 0.4 wt% or less should be evaluated only at the midpoint of the range. However, we urge staff to incorporate this provision into the spreadsheet in order to avoid confusion among the various stakeholders who seek to evaluate the new model. (GG)

Agency Response: The spreadsheet is merely a tool for assisting producers in implementing the Predictive Model and is not the regulation or a document incorporated by reference. Therefore, changes to the spreadsheet, like the one suggested by the commenter, are nonsubstantive in nature. Staff will work to incorporate the suggested provision into the spreadsheet. No regulatory modifications are necessary to accomplish this change.

128. Comment: Both the proposed regulatory text and the accompanying procedures include references to dates and specifications that are no longer in effect. WSPA recommends such items be removed at this time to avoid future regulatory cleanup. (GG)

Agency Response: Staff will consider this at a future rulemaking. This issue was not within the scope of the hearing notice to enable action on this item. See response to comment #63 in the FSOR.

129. Comment: ARB staff requested comments on specific issues raised during the Predictive Model development process and the resulting draft spreadsheet from Robert Harley and David Rocke. WSPA generally concurs with their observations. In particular, comments were made on the concept of bifurcating the data into "low emitters" and "not-so-low emitters", detailing several technical reasons why this technique is not appropriate. WSPA has expressed our agreement with this finding in the Statistics Expert Group. We also have concerns about the ability to properly characterize higher emitters. While broken vehicles are inherently highly variable (both vehicle-to-vehicle differences and observations on a given vehicle), there are relatively little data on them. Changing the definitions into "low emitters" and "not-so-low emitters" is not an appropriate means of acquiring additional data. There are also concerns that the way the data were divided might emphasize differences in the fuels on which the different vehicles were tested. Finally, we disagree on the proper treatment of high emitters even if sufficient data existed. These vehicles should be the target of other programs, not the fuels program. Therefore, it would be more appropriate to exclude these vehicles from the model. (GG)

Agency Response: See response to comment # 120 in the FSOR.

130. Comment: WSPA urges ARB to broaden the concept of emissions averaging for off-spec blends to include $T_{50}$ in addition to sulfur. While sulfur is a natural choice because its concentration is expected to change and because the measurement method has high variability, $T_{50}$ is important too, since it has a large impact on emissions. (GG)

Agency Response: See response to comment #34 in the FSOR.

131. Comment: ARB has adopted a very complex approach to model permeation emissions. This approach briefly described as the "Percentage Approach" uses data developed in a project jointly sponsored by ARB and the Coordinating Research Council, E-65. In this project, fuel systems were isolated from the rest of the vehicle, equilibrated on a test fuel, and then tested at two constant temperatures and under diurnal variable temperature conditions. ARB staff took these admittedly limited data and constructed a model which matches up with the EMFAC inventory model. Using this approach, they had to make a number of assumptions which resulted in overestimating of the impact of ethanol on permeation. The estimate rests on using ratios between MTBE-containing gasoline and ethanol-containing gasoline at different temperatures. ARB had to estimate the fraction of total evaporative emissions that comes from permeation, liquid leaks and canister breathing losses. They also had to estimate the temperature of the fuel in the fuel tank as ambient temperatures varied over the course of a day, and for different driving conditions. While their assumptions are not unreasonable, they introduce unnecessary uncertainty into the estimate.

WSPA's approach, described as the "Additive Approach", is simpler and more consistent with the level of detail in the data from the E-65 project. It is possible to calculate the additional emissions generated by gasoline containing ethanol directly from the experimental data if one uses an additive approach. Over the course of a diurnal cycle, or at specific temperatures, there is a difference between gasoline containing ethanol and gasoline that does not contain ethanol. Gasoline containing MTBE and non-oxygenated gasoline had equal permeation rates. WSPA calculated the absolute differences in emissions and applied those differences, adjusted for ambient temperatures to the existing and future fleets.

Another difference between the WSPA and ARB estimates is the treatment of the base case. In the inventory calculation, ARB compared permeation with gasoline containing ethanol to permeation with gasoline containing MTBE. WSPA averaged the two non-ethanol gasolines to use as the base case. The rationale for this was both the gasoline containing MTBE fuel and the

non-oxygenated gasoline had permeation rates that were indistinguishable. ARB recognizes this fact on page 17 of the ISOR when it states:

> "For non-oxygenated fuel, staff assumes the evaporative emissions are the same as the MTBE emissions. Therefore, the non-oxygenated regression models are identical to the MTBE models."

ARB should be consistent in applying this conclusion to the permeation portion of the evaporative emissions inventory as well.

Over the course of developing the regulations, ARB and WSPA had many fruitful discussions, both at the public workshops and in individual meetings. Both groups made changes to their calculation methodology, and at this time only a few differences remain. WSPA's estimates are 10-20% below those appearing in the ISOR and we urge ARB to continue the dialogue to resolve the differences. (GG)

Agency Response: ARB staff has worked diligently with WSPA and other stakeholders to understand differences in their respective calculation methodology for the Predictive Model. Much progress has been made, and as WSPA acknowledges, only a few differences remain. WSPA believes that permeation emissions were overestimated ten to 20 percent. Other stakeholders, based on different calculations, believe permeation emissions were underestimated. ARB staff believes the current calculation methodology used by staff is a reasonable, balanced, scientific approach which protects public health.

132. Comment: ARB's decision to exclude data sacrifices the accuracy of the model predictions for the bulk of the emissions inventory. As WSPA has pointed out and ARB has confirmed, the sulfur sensitivity is much greater using the data they have chosen than it would be if they had used all of the data. Unfortunately, ARB's decision has eliminated the bulk of the data for the vehicle technologies that ARB itself predicts will contribute the bulk of the NOx emissions in 2015. This error means that lower gasoline sulfur levels will be credited with a greater NOx reduction than will actually occur. Since compliance is predicated on emissions equivalence, overestimation of NOx emissions impacts due to sulfur reductions will result in real-world NOx increases. (GG)

Agency Response: Please see response to comments #27 and 28 in the FSOR.

133. Comment: Initial Statement Of Reasons

- Page vi: December 31 not December 11.
- Page x, last full paragraph: ARB's point is not clear the way the paragraph is written. The second and third sentences should be replaced with: "Like

other fuel properties governed by the CaRFG3 rules, increases in sulfur levels in individual batches result in an immediate but reversible impact on emissions. Increases in sulfur levels do not have long term effects; the effects are immediate and are reversed when sulfur levels decrease."

- Page 16 last full paragraph: Make clear that increase in permeation is due to inclusion of ethanol in the gasoline blends. Future reductions are not just due a general reduction in emission levels, they occur also because modern vehicles show a lower permeation response to ethanol.
- Page 20, Table 11: The table heading says “Reactivity-Weighted”, but it appears to represent mass weighting, based on Table 10 data.
- Page 22 last two paragraphs: Staff is essentially arguing that some Tech 5 vehicles respond differently than others. If this is true, then the basis for defining the Tech 5 group is flawed and the group should be split. A consistent approach should be used. If the group needs to be split for sulfur, then it should be split for other parameters too. The degree of extrapolation is exaggerated. It is only 1.5 or 2 times the sulfur level, not “many times” as the report states. Furthermore, the linearity assumption that concerns ARB was shown to be true. All test programs considered exhibited a linear response over their entire range.
- Page 23, last sentence: The report lists lean-burn engines as an example of new technology that is “about to be introduced”. We are not aware of any announced plans to introduce this technology in the U.S. or California.
- Page 25, first paragraph: Table 17, not Table 15.
- Page 26, first paragraph: We are not aware of this data and it was not discussed in the statistics expert group or in any of the public workshops.
- Page 32: The denominator in the average OFP and average NOx equations should be 6, not 5.
- Page 35, third paragraph: No details are given about how the lower sulfur cap will “increase enforceability”. This represents the main argument for a lower sulfur cap, and should be supported with a more complete analysis.
- Page 35, fourth paragraph: The report mentions the potential of lean-burn engines to improve efficiency and lower greenhouse gas emissions. It should also mention that there are significant emissions issues to overcome. Specifically, technology to meet California’s strict exhaust emission limits, especially NOx, has not been demonstrated commercially.
- Page 36, second paragraph: See comments on page x.
- Page 41: Replace “start” with “staff”.
- Page 44, Table 25: Replace “must” with “most”.
- Page 46, second paragraph: There is no mention of the debits associated with having to find alternative disposition of blending components that can no longer be blended into gasoline.
- Page 58, next to last line: Replace “is” with “are”.
- Page 59, first paragraph: Replace “meaning” with “meaningful”

Agency Response:

Page vi: Staff will correct the typographical error. It is clear from the text at pages viii, xii, xx, xxi, 15, 28, 31, 33, 41, 61, and 63, as well as the proposed regulatory language, that the correct date is December 31, 2011.

Page x: Staff feels that no changes to this paragraph are necessary. The degradation of catalyst performance with slightly higher sulfur fuel is gradual, and therefore there is no immediate impact on the catalyst's ability to control emissions of the pollutants governed by the Predictive Model: exhaust hydrocarbons, oxides of nitrogen, benzene, 1,3-butadiene, formaldehyde and acetaldehyde.

Page 16: It is clear that in preceding paragraphs to the aforementioned paragraph, as well as Appendix B to the Staff Report, that the increase in evaporative emissions due to permeation is due to several factors associated with the ethanol use in on-road motor vehicle fuels (see Appendix B for a more detailed discussion). Therefore, we do not feel a clarifying statement is necessary here.

Page 20: The table was mislabeled and for consistency "Reactivity-Weighted" was deleted from the title of Table 11. This is a nonsubstantive change.

Page 22: Staff is not arguing that some Tech 5 vehicles respond differently than others. Staff is stating that new study test results are more appropriate because the sulfur levels are within the range of ARB's proposed sulfur cap (new sulfur cap of 20 ppmw, compared to old study sulfur levels of 30 to 630 ppmw [CRC Sulfur/LEV Program (1997)] and 40 to 600 ppmw [AAMA/AIAM Study (1997)]) and the vehicle technology mix is more appropriate (see also response to FSOR comment 27). The degree of extrapolation is not exaggerated. At a sulfur level range of 30 to 630 ppmw [CRC Sulfur/LEV Program (1997)], the commenter is correct that the lower level is 1.5 times the new sulfur cap. However, the upper level of 630 ppmw is 31.5 times the new sulfur cap. At a sulfur level range of 40 to 600 ppmw [AAMA/AIAM Study (1997)], the commenter is correct that the lower level is 2 times the new sulfur cap. However, the upper level of 600 ppmw is 30 times the new sulfur cap. With an average of 16.5 [CRC Sulfur/LEV Program (1997)] and 16 [AAMA/AIAM Study (1997)] times the new sulfur cap, characterizing the degree of extrapolation as "many times" is not

an exaggeration. Therefore, no further regulatory modifications are necessary.

Page 23: Lower sulfur levels do enable lean-burn gasoline engines, and there is increased interest in lean-burn gasoline technology due to its greenhouse gas benefits. While not presently available in the U.S., lean burn gasoline technology does exist in Europe. There is no reason to believe that this technology will not further penetrate the market in Europe or that it will not be considered for introduction or introduced in the U.S. or California. Therefore, no further regulatory modifications are necessary. See also the response to comment #130 to page 35, fourth paragraph.

Page 25: Staff agrees with the comment that the reference to Table 16 in the first paragraph (not Table 15, as the commenter suggests) should be to Table 17.

Page 26: The U.S. EPA/Automobile Industry study of fuel effects in federal Tier 2 vehicles was released shortly before the ISOR was published. Because of the timing of that release, it was not discussed in the statistics expert group or in any of the public workshops. However, it was included in the ISOR for consideration, and the results are consistent with the two most recent sulfur studies. Therefore, no further regulatory modifications are necessary.

Page 32: Staff will correct the typographical errors and make this nonsubstantive change in the two equations. Note that the results were calculated, correctly, by dividing by 6 and not by 5. These two equations are examples of calculating the average emissions reductions for NOx and OFP for 6 vehicles. Therefore, by definition, separate and apart from the example with the typographical error, the denominator should be 6 here. Changing the numbers in these equations are non-substantive because it doesn't materially alter the requirements, rights, responsibilities, conditions, or prescriptions contained in the original text. This is because a producer using the accelerated vehicle retirement program as part of its AERP, would need to calculate the average OFP and NOx. The equation to calculate average would contain in the denominator the number of vehicles.

Page 35: (3rd ¶) Sulfur levels currently average about 10 ppmw, with 95 percent of production being below 18 ppmw. Lowering the sulfur cap

from 30 to 20 ppmw will enable enforcement of sulfur exceedances between 20 and 30 ppmw, thus increasing enforceability. See response to comment #19.

Page 35: ($4^{th}$ ¶) Staff agrees that lean burn-engines have the potential to improve efficiency and lower greenhouse gas emissions. Staff acknowledges that there are no lean-burn gasoline engines currently certified in California. Nevertheless, this technology has the potential to improve efficiency and lower greenhouse gas emissions. Because this regulation relates to fuels, we cannot state unequivocally that "there are significant emissions issues to overcome" as part of this rulemaking. The purpose of the limited discussion in the ISOR is to point out that the added advantage of lowering the sulfur limit is to facilitate the introduction of lean-burn engines. See also the response above to the bulleted comment about Page 23 of the ISOR and comments #15 and 17.

Page 36: See response to comment #130 to page x.

Page 41: Staff agrees with the comment that "start" should be replaced with "staff" on page 41.

Page 44: Staff agrees with the comment that "must" should be replaced with "most" in Table 25 on page 44.

Page 46: Stakeholders gave no indication of significant debits associated with having to find alternative disposition of blending components in the stakeholder meetings with staff. Staff estimated that debits associated with the disposition of blends components were an insignificant cost compared to capital costs.

Page 58: Staff agrees with the comment that "is" should be replaced with "are" next to the last line on page 58.

Page 59: Staff agrees with the comment that "meaning" should be replaced with "meaningful" in the first paragraph of page 59.

134. Comment: Appendix A - Proposed Regulations (Predictive Model Procedures, Appendix A-2 to the Staff Report)

- Page 4-5, Section 3: This section implies that there is a compliance option to use only the exhaust emission model. This is not the case for the current proposal and the write-up should be edited to reflect the new procedures.

- Page 5, Section 4: "Emissions equivalency" is not a relevant concept for the revised regulations. The candidate fuel must be better than the reference fuel, not equivalent to it.
- Page 22: The equations should use TWF (toxics weighting factor) not VMTWF (vehicle miles traveled weighting factor), as explained earlier on page 11, Table 5. This change should also be made on pages 23, 65, and 66.
- Page 27: The equation for linearizing the oxygen concentration is incorrect. The equation shown is valid for the previous version of the Predictive Model in which there was an ARO-OXY interaction term. Since it's no longer in the Predictive Model, the Oxygen variable should be a constant below the critical value. This comment is valid for most of the linearizations in this section. See also pages 29, 35, 37, 38, 43 and 44.

Agency Response:

Page 4-5: For clarification, the following modified text was made available for comment during the first 15-day comment period: "Either the first or second compliance options can be used during the RVP control season until December 31, 2009. Beginning December 31, 2009, only the first compliance option can be used during the RVP control season. Only the second compliance option can be used outside of the RVP control season." (California Procedures for Evaluating Alternative Specifications for Phase 3 Reformulated Gasoline Using the California Predictive Model, section I.B.3, page 6.)

Page 5: Emissions equivalency is still a relevant concept in the CaRFG3 regulations. The predictive model is used to predict the emissions for gasoline meeting the Phase 3 RFG specifications (reference fuel specifications) and the emissions for a candidate gasoline meeting alternative specifications (candidate fuel specifications). The predicted emissions are functions of the regulated fuel properties shown in Table 1. The candidate gasoline is accepted as equivalent to Phase 3 RFG if its predicted emissions for each pollutant is less than or equal (within roundoff) to the predicted emissions for a fuel meeting the Phase 3 RFG specifications. Specifically, if, for each pollutant (NOx, Ozone-forming Potential (OFP) or exhaust HC (EXHC), and Potency-Weighted Toxics (PWT)), the percent difference in emissions between the candidate fuel specifications and the reference Phase 3 RFG specifications is equal to or less than 0.04%, the candidate specifications are deemed acceptable as an alternative to Phase 3 RFG.

Page 22: Staff has made these changes as VMTWF has been replaced by the term TWF.

Page 27: Staff agrees. This change was made to the California Procedures for Evaluating Alterative Specifications for Phase 3 Reformulated Gasoline Using the California Predictive Model.

135. Comment: Appendix E – Reactivity Calculations

- Page E-15: Table 4 shows equal weightings of 0.5 for liquid and vapor contributions of running loss emissions. These weightings should be consistent with those of EMFAC2007, which assume the liquid fraction to be 0.10 and the vapor fraction to be 0.90.
- Page E-58, first full paragraph: The reference to Graskow et al. 1998 is incorrect. That paper did not show in any way that "aromatic compounds in gasoline contribute significantly to exhaust particulates."

Agency Response:

Page E-15: The CRC Project No. E-35-2 determined that the speciation analysis of the data indicated that approximately 50% of the emissions come from vapor sources and 50% come from liquid sources. This data supports staff's choice to use a 0.5 weighting for liquid and vapor contributions of running loss emissions.

Page E-58: The commenter suggests that reference to the Graskow et. al. 1998 paper was incorrect, in that reference should have been made to a different paper. However, the entire text, beginning at page E-49 and continuing through page E-64 was a document that was submitted to ARB staff as stakeholder correspondence. ARB staff did not author or alter this document in any way. By inclusion of this reference in Appendix E, ARB is merely communicating one stakeholder's opinion, whether correct or not.

E. Inadvertently Omitted Oral Comments Received During the Board Hearing.

136. Comment: Japan and the European Union have both already acted in that regard. California should not concede any leadership in that area.

We know that 10 ppm sulfur fuel can be produced at a very reasonable cost with no meaningful impact on gasoline production volumes. And perhaps most importantly there are NOx benefits. I think I had a slide that I had asked to be available so you can see.

But essentially, the NOx reductions that we would accrue from that reduction of sulfur would be 5.2 tons a day of sulfur - very significant for our air basin-

an additional 1.4 tons of direct reduction of the SOx emissions. Both pollutants are vitally important for PM 2.5 attainment as well as ozone.

And lastly on the sulfur point, that there's no reason gasoline sulfur should be any different in stringency – or any less stringent than the diesel specification. Very seriously, we want you to consider today to adopt a stricter 10 ppm sulfur spec." (PW)

Agency Response: See response to comment #13.

137. Comment: "We support the proposed approach to dealing with permeation from off-road engines and equipment. There's just not enough data to write regulations to deal with ethanol's impact.

We support the allowance for emissions averaging when sulfur specifications are inadvertently exceeded. Since the program allows no backsliding, there can be no possibility of a negative air quality impact.

We also support adding ethanol to the certification fuel. And we urge the Board to do it as soon as possible. Certification fuels should represent real-word conditions. And all the fuels out there contain ethanol." (AMH)

Agency Response: Regarding the off-road component of the comment, no response is required. However, see the response to comment #45. With regard to the certification fuel, see response to comment #20.

138. Comment: "And then I would just like to say that, you know, consistent with the carrot-stick theme, AERP is a pretty big stick. And we're hoping that some alternatives can be pursued here that are a little better mechanism to address ethanol permeation as a result of the State's desire to increase more ethanol in the fuel." (CR)

Agency Response: See response to comment #48.

139. Comment: "Earlier implementation of 10 percent blends via the dual model approach would provide increased dilution of gasoline properties such as sulfur and aromatic hydrocarbons. And also according to our preliminary calculations, that would improve off-road emissions as well." (GH)

Agency Response: See response to comments #42 and #43.

140. Comment: "I don't believe the gasoline sulfur levels would change significantly with the dual model. There's not a lot of room to reduce sulfur from the current level of ten parts per million, which just about matches the worldwide fuel charter specification of ten parts per million. I wouldn't expect sulfur levels to be increased beyond current levels, but even a small increase

could be partially offset by the dilution with 10 percent ethanol. The right way to keep sulfur levels low is by reducing the sulfur gap to the lowest feasible level." (GH)

Agency Response: In response to the dual model portion of this comment see response to comment #42. In response to the sulfur portion of this comment please see response to comment #13.

141. Comment: "So first of all, we have to find about 110 to 120,000 cars that would be scrapped. And then we would have to pay on top of the cost we already got to do in order to pay on top of the cost we already got to do in order to comply with the regulations another about $85 million. So there's a huge cost associated with the AERP.

And also I would direct you attention to CARB's staff report about what you have to do in order to take advantage of the AERP. The onus is on the refinery to put in place this program. If you look at page 28, it's quite an onerous effort for a refinery to identify the program that we need to use in order to take advantage of the AERP. And I mean there's like almost a page and a half of bullet points of everything that needs to go into an AERP plan that needs to be submitted to CARB that CARB approves and goes out for its 30-day public review and comment. So not only is the cost associated with the AERP what we believe to be punitive –" (DWS)

Agency Response: See response to comment #48.

F. Comments Received during the Second 15-day Comment Period.

During the supplemental second 15-day comment period, written comments were received from:

| | |
|---|---|
| Lynn D. Westfall (LDW) | Tesoro Companies Inc. (Tesoro) |
| Darren W. Stroud (DWS) | Valero Energy Corporation (Valero) |

142. Comment: This letter is submitted in response to the 15-day public comment period opened by the California Air Resource Board ("CARB") with respect to the June 9, 2008 disapproval by the State of California Office of Administrative Law ("OAL") of the adoption by CARB of the 2007 amendments to the Phase 3 California Reformulated Gasoline Regulations ("CaRFG3") regulations. OAL disapproved the 2007 CaRFG3 amendments because Tables 1, 9 and 12 of the "California Procedures for Evaluating Alternatives for Phase 3 Reformulated Gasoline using the California Predictive Model (the "Predictive Model"), incorporated by reference into the

2007 CaRFG3 amendments, contained changes that were not made available for public comment.

Under the 2007 CaRFG3 amendments, the Predictive Model is used to determine whether a fuel formulation is compliant with the CaRFG3 standards. The above-referenced changes to tables of the Predictive Model affect the results of the Predictive Model and, therefore, impact the determination of how a refiner can make gasoline compliant with the CaRFG3 standards by the December 31, 2009 deadline. As a result, these changes affect the entire scope of the 2007 CaRG3 amendments. (LDW)

Agency Response: At the June 14, 2007 hearing, the Board directed ARB staff in attachment B of resolution 07-21 to modify the proposed "California Procedures for Evaluating Alternative Specifications for Phase 3 Reformulated Gasoline Using the California Predictive Model" to be consistent with the modifications to the originally proposed amendments, to correct errors, increase consistency, and provide clarifications. The modifications made available in for this second 15-day comment period, such as the changes to Tables 1, 9, and 12, are changes consistent with the direction from the Board. The change in Table 1 was to provide clarification about the RVP regulatory control period. In Table 9, the values for Diurnal/Resting HC, Hot Soak HC, and Running Loss HC were rounded from four to two significant figures, and the value for CO was rounded down from four to three significant figures. This change was to make the significant figures consistent in Table 9 consistent with the number of significant figures used previously in the table prior to the amendments. Table 12 was updated to represent the values that were used to build the Predictive Model. The Predictive Model presented in the many public workshops, public consultation meetings, and at the board hearing was built with these numbers. Consistent with the Administrative Procedures Act, these changes to Tables 1, 9, and 12 (albeit not all changes being substantive in nature), were made available for public comment before resubmittal to OAL for final regulatory action approval.

143. Comment: Tesoro concurs with and hereby incorporates by reference comments previously submitted by WSPA. (LDW)

Agency Response: This comment does not pertain to the modifications presented in the second 15-day comment period. However, see response to WSPA's comments, i.e., # 2, 4, 8-10, 19, 23, 28, 29, 30, 37, 47, 49-53, 58-63, 65, 66, 68, 69, 71-75, 77-95, 97-101, 110-114, 125-131, and 134.

144. Comment: CARB stated in their Initial Statement of Reasons dated April 27, 2007 regarding the 2007 CaRFG3 amendments that the amendments would result in a decrease in greenhouse gas (GHG) emissions.

However, recent scientific information regarding potential negative GHG impacts from land use changes (LUC) due to first generation biofuels production has come to light and indicates that this conclusion is suspect. For example, a recent article by Timothy Serchinger and coworkers published in Science Express advises that use of U.S. Croplands for biofuels increases greenhouse gasses through emissions from land use changes. Also, Nobel Prize winning chemist Dr. Paul Crutzen has recently published an important paper suggesting that a higher percentage of GHG emissions than previously believed results from the use of fertilizer in the production of corn-based ethanol. In its May 23, 2008 response to WSPA on a petition to reconsider the CaRFG3 amendments, CARB stated that it "has now learned" of the significance of GHG emissions associated with crop based ethanol usage. We believe this information to be important enough for CARB to fully evaluate the impact of increased C02 emissions due to increased ethanol use in CaRFG3 gasoline that will be provided when these amendments become effective. We do not believe that such an evaluation has been made to this point. In fact, at the June 30, 2008 "Life Cycle Analysis Working Group Meeting" CARB staff admitted that there is "much work left before [CARB staff] will be able to quantify land use change effects for regulatory purposes." Nonetheless, the CaRFG3 amendments to the Predictive Model will require additional blending; however the GHG implications from ethanol use, particularly non-cellulosic based ethanol have been ignored in the CaRFG3 amendments. The additional ethanol blending required by the CaRFG3 amendments will result in additional ethanol production causing increased GHG emissions and CARB has indicated that the increased GHG emissions will cause irreparable harm to the environment. (LDW)

Agency Response: This comment does not pertain to the modifications presented in the second 15-day comment period.

It is important to note that the 2007 CaRFG3 amendments do not require ethanol use in gasoline. Producers have the option of putting from zero to ten percent by volume oxygen in gasoline. A fully compliant non-oxygenated gasoline blend is a viable option for producers. Staff is working to align the LCFS with the 2007 CaRFG3 amendments because staff believes that producers will choose to increase ethanol use in gasoline due to the economics of the situation. However, the 2007 CaRFG3 amendments do not require increased ethanol use, nor do they require ethanol use at all. See response to comment #105.

145. Comment: Tesoro appreciates that CARB has indicated a desire to address indirect land use during the development of the Low Carbon Fuel Standard (LCFS). However, when results of the land use studies previously mentioned are considered, additional ethanol blending may no longer provide a smooth path to lower GHG emissions, successful implementation of the LCFS. Tesoro believes CARB has an obligation to consider all environmental

impacts of their regulations and must harmonize the LCFS and the CaRFG3 amendments. (LDW)

Agency Response: This comment does not pertain to the modifications presented in the second 15-day comment period. ARB staff does recognize that the CaRFG3 regulations and the LCFS are somewhat related. The main purpose of the CaRFG3 amendments was to mitigate permeation from ethanol use in gasoline, pursuant to Health and Safety Code section 43013.1. ARB staff has determined that the likely, though not the only, compliance route for fuel producers to meet the requirements of the amendment is to go to 10 percent ethanol (E10). Staff believes that the transition to E10 is likely to be the most cost effective way for refiners to meet the new amendments. However, fuel producers are not limited to going to E10 to meet the amendments. Fuel producers may also make a non-oxygenated fuel or adjust other fuel properties to decrease hydrocarbon emissions.

However, fuel producers must also meet the Energy Independence and Security Act of 2007 (2007 Energy Act).[2] The 2007 Energy Act requires a rapid expansion of the use of renewable fuels. Based on the Act, the U.S. Environmental Protection Agency now requires that fuel producers must increase their use of renewable fuels, generally ethanol, from a required average content in gasoline of 4.0% to 7.76% by volume in calendar year 2008.[3] Current California gasoline contains about 5.7% ethanol. In addition, ARB staff estimates that the required renewable fuel volumes in the 2007 Energy Act will necessitate a nationwide average of 9% ethanol in gasoline in 2009, and 10% in 2010. Fuel producers now have a much greater obligation under federal law to use greater amounts of renewable fuels.

The LCFS will ensure that, over time, the fuel used in California will have lower carbon intensity. In developing the LCFS, ARB staff is very cognizant of the CaRFG3 and the 2007 Energy Act requirements. Staff will continue to work closely with stakeholders in the development of the LCFS to ensure GHG and air quality benefits, while harmonizing with other requirements. If there are any inconsistencies between the two programs, ARB will rectify them. See also response to comment #137.

146. Comment: As a result of OAL's disapproval action, the time for refiners to make the required refinery modifications to supply compliant CaRFG3 gasoline has been substantially shortened. Even if OAL were to approve the 2007 CaRFG3 by September 1, 2009, the time period between then and the December 31, 2009 would be approximately 16 months. CARB

2 PUBLIC LAW 110–140—DEC. 19, 2007, 121 STAT. 1493

3 United States Environmental Protection Agency, "Revised Renewable Fuel Standard for 2008, Issued Pursuant to Section 211(o) of the Clean Air Act as Amended by the Energy Independence and Security Act of 2007," [FRL-8528-9], Federal Register, Vol. 73, No. 31, February 14, 2008.

must evaluate the cost of making the required refinery improvements within this shortened period, or, extend the deadline to meet the compliant fuel deadline to accommodate for the delay resulting from OAL's disapproval action. Based upon a recognition of the time necessary to make refinery modifications, the implementation date should be at least four years from the finalization of the regulations, and should be subject to regularly scheduled formal reviews. Previous fuels regulations reflect this recognition. (LDW)

Agency Response: This comment does not pertain to the modifications presented in the second 15-day comment period. However, see response to comments #1, 2, 5, 6, and 12.

147. Comment: Under the 2007 CaRFG3 amendments a refiner that cannot meet the December 31, 2009 deadline to make gasoline compliant with the CaRFG3 standards may apply to CARB to use an alternative emissions reduction plan ("AERP"). An AERP allows a refiner to mitigate the excess emissions associated with permeation by obtaining offsetting emission reductions from combustion or other gasoline related sources. If the December 31, 2009 deadline to make gasoline compliant with the 2007 CaRFG3 amendments is maintained, given the shortened period between potential OAL approval of the 2007 CaRFG3 amendments and this deadline, it appears inevitable that a greater number of refiners will not be able to make the refinery improvements required to make compliant gasoline by this deadline. As a result, if this deadline is maintained, it appears that a greater number of refiners will need to apply for an AERP. There is no evidence that CARB has made the required determination that the AERP program will "[m]aintain or improve upon emissions and air quality benefits achieved by California Phase 2 Reformulated Gasoline in California as of January 1, 1999." Further, there is no evidence that CARB has made the required determination of the cost-effectiveness of the AERP program. Finally, under Health and Safety Code Section 43013.1 (b)(3), CARB was required to perform a multimedia analysis of the AERP component of the 2007 CaRFG3 amendments, but CARB has not performed this analysis. We believe that all of these analyses must be completed prior to the issuance of the final amendments to avoid irreparable harm to the refiners and to the environment. (LDW)

Agency Response: This comment does not pertain to the modifications presented in the second 15-day comment period. However, staff has "…ensure[d] that regulations for California Phase 3 Reformulated Gasoline (CaRFG3) adopted pursuant to Executive Order D-5-99 … [m]aintain or improve upon emissions and air quality benefits achieved by California Phase 2 Reformulated Gasoline in California as of January 1, 1999, including emission reductions for all pollutants, including precursors, identified in the State Implementation Plan for ozone, and emission reductions in potency-

weighted air toxics compounds." (Health and Safety Code section 43013.1(b).) Specifically:

- A producer or importer that elects to use an AERP, must "[d]emonstrat[e] that the emission reduction strategy(ies) in the AERP or third party AERP will result in equivalent or better emission benefits for NOx, total ozone forming potential, and potency-weighted toxics than would be achieved through elimination of emissions associated with permeation from the gasoline for the same affected region and for the period the AERP or third party AERP will be in effect, during and outside the RVP regulatory control periods in section 2262.4(b)(2)." (section 2265.5(b)(2)(H).)
- "Emission reduction calculations demonstrating equivalence between the AERP or third party AERP and elimination of the emissions associated with permeation from the gasoline shall only include NOx, total ozone forming potential, and potency-weighted toxics emissions from California gasoline sold or supplied in California." (section 2265.5(b)(3).)
- "Emission reductions included in an AERP or third party AERP shall not include reductions that are otherwise required by any local, State, or federal rule, regulation, or statute, or that are achieved or estimated from equipment not located within the region associated with the AERP or third party AERP, or that are claimed under section 2265.1, or that are claimed under another program, such as the Voluntary Accelerated Vehicle Retirement or Carl Moyer program, or the result of standard business practices that the producer or importer would have done without the AERP or third party AERP." (section 2265.5(b)(7).)
- The producer or importer must maintain records. (section 2265.5(b)(8).)
- The producer or importer must notify ARB of any blend subject to an AERP or third party AERP before the start of physical transfer of the gasoline from the production facility or import facility. (section 2265.5(h)(1).)
- The producer or importer must notify ARB of its permeation offsets. (section 2265.5(i).)

Therefore, "[t]he proposed amendments will result in the emissions reductions necessary to preserve the benefits associated with the use of CaRFG3 in on-road motor vehicles." (Staff Report, page 43)

In addition, staff did an economic analysis on the cost of the potential use of the AERP program (Staff Report, chapter IV). Staff believes that the AERP will not result in a significant increase in cost to producers compared to simple compliance with the proposed rule. (Staff Report, pages xiv and 46.) Staff estimates that the cost of an AERP will equate to about 0.5 cents per gallon, as stated in the Initial Statement of Reasons, Page 46. Refiners may also choose to apply for a variance. A variance would cost the refiner 15 cents per gallon. The other option is to make the compliant fuel at a loss of production capacity. Therefore, the AERP is cost-effective. Please also see response to comments #1, 2, and 48.

A multimedia analysis is unnecessary for the AERP component of the 2007 CaRFG3 amendments. The proposed amendments do not change specifications of CaRFG3 gasoline and will not require a gasoline ingredient to be added or removed beyond what is already used to produce gasoline for sale in California. Therefore, staff believes that the proposed amendments to the CaRFG3 regulations are not subject to the requirement for a multimedia evaluation. See response to comments #52 and 60.

148. Comment: The CaRFG3 Amendments significantly underestimate the time needed and the cost of complying with the proposed amendments. To reiterate what Valero has previously told the CARB Board, CARB staff, and the California Energy Commission ("CEC"), it is critical to provide refiners adequate time to install necessary equipment to meet the new standard (i.e., fuel blends). The proposed two-year compliance schedule, now only approximately 17 months, is very tight. Although Valero is taking steps to try and meet this extremely tight deadline, any project delays associated with permitting, CEQA analysis, design/engineering, materials/equipment procurement and delivery, labor and staffing, and construction and turnaround schedules, will jeopardize its ability to complete the necessary modifications to make compliant fuel blends mandated by the CaRFG3 Amendments. As Valero and others have hinted on numerous occasions, based on our collective experience, this process usually takes four to five years to accomplish. CARB has yet to justify its arbitrary selection of a compliance deadline that may not reasonably be achieved, particularly now with only 17 months left to meet the deadline. (DWS)

Agency Response: This comment does not pertain to the modifications presented in the second 15-day comment period. However, see response to comments #1, 2, 5, 6, and 12.

149. Comment: Regarding the proposed Alternative Emission Reduction Plan ("AERP") for refiners that cannot meet the new standard within the first two years (now only approximately 17 months) they are forced to use the AERP in order to stay in compliance. As a result, not only do refiners have to pay the costs and provide the resources associated with making the refining modifications to be in compliance, but they will also have to pay the AERP penalty and oversee the complex AERP program development, CARB approval, and execution for their facilities. Accordingly, the AERP has the potential to punitively impact refiners for fuel blend deficiencies (permeation) not of their making and beyond their control.(DWS)

Agency Response: This comment does not pertain to the modifications presented in the second 15-day comment period. However, see response to comments #48 and 96.

150. Comment: As emphasized to CARB staff, a large majority of the California fuel distribution is based on a common carrier fungible system, where all distributors blend to a common fuel blend specification. As such, differences between refiners and their abilities to modify operations to meet the new compliant fuel blends must be carefully studied, and adequate time and means provided to protect the fungible nature of the distribution system, CARB staff has not adequately addressed the issue of pipeline fungibility post 2009 in the proposed changes contained in the 15-day package. (DWS)

Agency Response: This comment does not pertain to the modifications presented in the second 15-day comment period. However, during the rulemaking process, ARB staff held meetings with producers, importers and other stakeholders, including Kinder Morgan, the common carrier pipeline owners and had extensive discussions about pipeline fungiblity issues post 2009. It is likely that the 2007 Energy Act will lead to 10 percent ethanol in gasoline after 2009. The current regulations allow for pipeline fungibility and provide enough flexibility to compensate for any foreseeable issues. Staff will carefully watch the pipeline fungibility issues as 2010 draws near and will make recommendations to the Board as necessary. See response to comment #108.

151. Comment: Valero would also respectfully request that CARB delay any final action on the CaRFG3 Amendments until the CEC fungibility study is completed. (DWS)

Agency Response: This comment does not pertain to the modifications presented in the second 15-day comment period. However, see response to comment #108.

152. Comment: Valero incorporates by reference all of its previous correspondences and comments to CARB, verbal and written, concerning the CaRFG3 Amendments and the rulemaking process. In addition, Valero supports and adopts as its own the written correspondences and comments submitted by WSPA to CARB. (DWS)

Agency Response: This comment does not pertain to the modifications presented in the second 15-day comment period. However, see response to WSPA's comments, i.e., # 2, 4, 8-10, 19, 23, 28, 29, 30, 37, 47, 49-53, 58-63, 65, 66, 68, 69, 71-75, 77-95, 97-101, 110-114, 125-131, and 134. See also, response to Valero's comments, i.e., #6, 48, 96, 107, and 108.

## III. CONCLUSION

The ARB staff believes that the regulatory text is sufficiently clarified, consistent with the Board's directives at the public hearing, and addresses the OAL's concerns

regarding the making changes to the regulations available to the public; including a response to all public comments; and including all required documents in the rulemaking file. The proposed 2007 amendments to the Phase 3 California Reformulated Gasoline Regulations are necessary, cost effective, and technologically feasible. The final modifications were adopted by the ARB through Executive Order R-08-011, dated August 7, 2008.