

State of California
AIR RESOURCES BOARD

**Final Statement of Reasons for Rulemaking,
Including Summary of Comments and Agency Responses**

THE PROPOSED AMENDMENTS TO THE AIRBORNE TOXIC CONTROL MEASURE FOR DIESEL PARTICULATE MATTER FROM PORTABLE ENGINES RATED AT 50 HORSEPOWER AND GREATER - AND TO THE STATEWIDE PORTABLE EQUIPMENT REGISTRATION PROGRAM REGULATION.

Public Hearing Date: **November 16, 2017**
Agenda Item No.: **17-11-6**

I. GENERAL

A. BOARD ACTION AND UPDATE TO THE INITIAL STATEMENT OF REASONS

The Staff Report: Initial Statement of Reasons for Rulemaking (Staff Report), to Consider the Proposed Amendments to the Airborne Toxic Control Measure For Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater, and to the Statewide Portable Equipment Registration Program Regulation, released September 26, 2017 is incorporated by reference herein. The Staff Report contained a description of the rationale for the proposed amendments. On September 26, 2017 all references relied upon and identified in the Staff Report were made available to the public.

On November 16, 2017, following a 45-day comment period, the California Air Resources Board (CARB or Board) held a public hearing to consider the proposed amendments on the Airborne Toxic Control Measure (ATCM) and the Portable Equipment Registration Program (PERP) Regulation described in the Staff Report and associated Notice of Public Hearing (45-Day Notice). The ATCM amendments are in title 17, sections 93116-93116.5, and the PERP Regulation amendments are in title 13, chapter 9, article 5, sections 2450-2465 of the California Code of Regulations.

Written comments were received from 5 individuals or organizations during the 45-day comment period. Oral comments were presented by 11 individuals or organizations. Written comments were received from 3 of the 11 oral comment presenters. At the conclusion of the hearing, the Board adopted Resolution 17-44, which approved for adoption the proposed amendments.

Resolution 17-44 directed the Executive Officer to determine if additional conforming modifications to the regulations were appropriate. If so, the Executive officer was directed to make the modified regulations (with the modifications clearly identified) and any additional documents or information relied upon available for a

supplemental 15-day public comment period. The Executive Officer was directed to consider any comments on the modifications received during any supplemental 15-day public comment period. The Executive Officer was then authorized to: either (1) adopt the modified regulation as it was made available for public comment, with any appropriate additional modifications; or (2) make all additional modifications available for public comment for a period of at least 15 days and present the regulations to the Board for further consideration, if warranted.

After the November 16, 2017, public hearing, staff proposed modifications to the originally proposed amendments to the regulations in response to comments.

The text of the proposed modifications to the regulations was made available for a 15-day public comment period by issuance of a "Notice of Public Availability of Modified Text and Availability of Additional Documents," (15-Day Notice). The 15-day comment period started on February 21, 2018, and ended on March 8, 2018, at 5:00 p.m.

When the 15-Day Notice and all attachments were posted on the internet, they were also electronically distributed to all persons that subscribed to the CARB list-serve topic "Portable Equipment Registration Program." This topic includes all persons who testified at the public hearing, submitted comments at the hearing or during the comment period, or requested notification of any proposed changes, per section 44(a), title 1, California Code of Regulations, and Government Code section 11340.85.

The Final Statement of Reasons (FSOR) updates the Staff Report by identifying and providing the rationale for the modifications made to the originally proposed regulatory text. The FSOR also contains a summary of the comments received during the formal rulemaking process by CARB on the proposed amendments or the process by which they were adopted, and CARB's responses to those comments.

B. MANDATES AND FISCAL IMPACTS TO LOCAL GOVERNMENTS AND SCHOOL DISTRICTS

CARB has determined that this regulatory action will not result in a mandate to any local agency or school district the costs of which are reimbursable by the state pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code. (See Reso. 17-44, p. 3; Notice of Proposed Action, p. 11; Economic and Fiscal Impact Statement, Form 399, p. 4; Form 399 Attachment, p. 24.)

C. CONSIDERATION OF ALTERNATIVES

For the reasons set forth in the Staff Report, in staff's comments and responses at the hearing, and in this FSOR, the Board and Executive Officer determined that no alternative considered by the agency would be more effective in carrying out the purpose for which the regulatory action was proposed, or would be as effective and

less burdensome to affected private persons, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law than the action taken by the Board.

II. MODIFICATIONS MADE TO THE ORIGINAL PROPOSAL

A. MODIFICATIONS APPROVED AT THE BOARD HEARING OR MADE AVAILABLE FOR A 15-DAY COMMENT PERIOD

Pursuant to the Board direction provided in Resolution 17-44, on February 21, 2018, CARB released a 15-Day Notice to address concerns expressed by the portable engine industry representatives. The 15-Day Notice described each substantive modification to the original proposal. The reasons for the changes are to add or revise definitions for clarity, specify dates that certain emission requirements take effect, narrow the applicability of the notification requirement for large projects, and correct an erroneous date listed in a table.

B. NON-SUBSTANTIAL MODIFICATIONS

In addition to the substantive changes mentioned above, staff included additional non-substantive changes to the ATCM:

Section 93116.2(a)(2): Made the font of the term “Agricultural Operations” italic to be consistent with other definitions.

Section 93116.2(a)(19): Made the font of the term “Forest Operations” italic to be consistent with other definitions.

Section 93116.3(c)(2)(A): Changed the dates in this section from January 1, 2019 to June 30, 2019 to be consistent with the corresponding date in section 93116.3(c)(2)(B). Aligning the registration dates, to allow extra time, does not affect the expected emissions or the benefits of the regulations, and does not materially alter any requirements, rights, responsibilities, conditions, or prescriptions contained in the original text. As long as the engines are registered by the date listed in 93116.3(c)(2)(B), then the provision in 93116.3(c)(2) can be implemented.

Section 93116.3(c)(2)(B): Deleted an errant decimal point from the reference to section 93116.3(c)(2).

Section 93116.3(c)(8): Removed an errant “the” from the first sentence.

Staff also included additional non-substantive change to the PERP Regulation:

Section 2456(e): Deleted the sentence “In that event, the engine shall comply with the applicable daily and annual emission limits contained in section 2456 (f)(6) of this article.” Sub-section (f)(6) and the emission limits it set were deleted in the

proposed amendments. As such, this sentence should also have been shown as deleted. It was inadvertently retained due to a drafting error. Because this sentence references a section that has been deleted, omitting it clarifies the regulations and does not materially alter any rights, responsibilities, conditions, or prescriptions contained in the original text.

The above-described modifications constitute non-substantial changes to the regulatory text because they more accurately reflect the numbering of a section and correct spelling and grammatical errors, and do not materially alter the requirements or conditions of the proposed rulemaking action.

III. SUMMARY OF COMMENTS AND AGENCY RESPONSES

Written comments were received during the 45-day comment period on the proposed amendments, written and oral comments were presented at the Board Hearing, and written comments were received during the 15-day comment period on changes to the proposed amendments that were proposed following the public hearing. The organizations and individuals that provided comments at each stage of the public notice process are listed below, followed by a summary of each comment and the agency responses.

COMMENTS RECEIVED DURING THE 45-DAY COMMENT PERIOD	
Commenter	Affiliation
Fernandez, Jerry (November 7, 2017)	C&J Well Services (CJWS)
Graboski, Michael (November 10, 2017)	American Rental Association (ARA)
Lackey, Tom (November 13, 2017)	Assembly Member (AM)
Lewis, Michael (November 13, 2017)	Construction Industry Air Quality Coalition (CIAQC)
Geller, Michael (November 13, 2017)	Manufacturers of Emission Controls Association (MECA)

WRITTEN COMMENTS PRESENTED AT THE BOARD HEARING	
Commenter	Affiliation
Daijogo, Kendra	California Council for Environmental and Economic Balance (CCEEB)
Zaben, Jim	Kings Oil Tools, Inc. (KOT)
Rottman, Larry	Rottman Drilling Co. representing the California Groundwater Association (LRCGA)

ORAL COMMENTS PRESENTED AT THE BOARD HEARING	
Commenter	Affiliation
McLaughlin, Robert	Butte County Air Quality Management District (BCAQMD)
Fernandez, Jerry	C&J Well Services (CJWS)
Zaben, Jim	Kings Oil Tools, Inc. (KOT)
Caponi, Frank	Los Angeles County Sanitations District (LACSD)
Rottman, Larry	Rottman Drilling Co. representing the California Groundwater Association (LRCGA)
Lewis, Michael	Construction Industry Air Quality Coalition (CIAQC)
Dorsa, Tony	United Contractors (UC)
Daijogo, Kendra	California Council for Environmental and Economic Balance (CCEEB)
Meyer, Mike	California Groundwater Association (CGA)
Gale, Genevieve	Central Valley Air Quality Association (CVAQ)
Lewis, Michael	Construction Industry Air Quality Coalition (CIAQC)

1. Comment: Engines used by the petroleum industry cannot be resold once retired. Staff should recalculate the cost of the proposed amendments without factoring the resale value of the retired equipment. (CJWS, KOT)

Agency Response: The methodology used to estimate equipment replacement costs was presented for discussion at numerous workshops and workgroup meetings. The predominant view expressed by stakeholders in the discussion at the workshops and meetings was that determining equipment replacement costs by

subtracting the residual value of the retired equipment from the full cost of the newly purchased equipment was reasonable. CARB recognizes that the petroleum industry may have unique issues regarding equipment replacement costs. However, because the limited amount of data CARB received regarding the specialized equipment in petroleum industry, which does not allow a reasonable estimate of actual costs, CARB re-modeled the impact of equipment turnover without factoring in the residual value of retired equipment, as recommended by the commenters. By doing so, CARB arrived at a conservative estimate of the costs of the amendments that did not include a reduction from the resale of the equipment. This alternative equipment turnover model was accomplished by modifying the methodology of calculating fleets' direct costs, defined in the Staff Report Appendix L, Section C, by omitting the residual value of replaced equipment. For example, Appendix L, Section C, Equation 2 shows:

$$\text{Cost of Natural Turnover} = \sum_{i=1}^x \text{Value}_i - \text{Value}_i(\text{replaced})$$

This equation calculates the net sum of the costs of replacing engines by subtracting the residual value of each replaced engine from the value of each new engine, and summing the costs for all engines replaced. The model used to calculate costs without the residual value uses the equation below:

$$\text{Cost of Natural Turnover} = \sum_{i=1}^x \text{Value}_i$$

This equation can be applied to all registered PERP equipment, or subsets, such as those identified by engine category or owner. The new model only omits residual value for engines Tiered 1-3. Tier 4 interim and Tier 4 final engines are compliant with the final emission standards of the existing ATCM and the recently adopted amendments. Therefore, the new model assumes fleets will have no incentive to replace Tier 4 equipment unless the engine fails, the economy shifts, or other external factors occur, not directly related to the engine's age. The model assumes that in general, fleets will replace their Tier 1-3 equipment from oldest, lowest tier engines to newer, and as a result, will tend to maintain a consistent average engine age over time, while complying with the ATCM that compels fleets to gradually retire higher emitting engines. Once a fleet acquires a Tier 4 engine, the regulation does not require it to be retired, so that engine will no longer follow a replacement schedule based on average engine age or compliance. Tier 4 engine replacement schedule will be based on factors other than the regulation, such as the full useful life of the engine.

Results show costs could be approximately 31% higher than previously estimated between 2020 and 2027, for the tier phase-out dates of large fleets. We acknowledge that the cost savings from the proposed amendments may not be as significant for the petroleum industry as for other affected industries. However, the lower savings to this industry will not affect the proposed compliance dates. We do

not believe any further changes to the proposed fleet emission standards are necessary.

2. Comment: The cost curves used to determine the economic impact of the proposed amendments were based on sales data from only 230 pieces of portable equipment. This does not accurately represent all portable fleets. CARB should increase the total number of data points which should include sales data that represents the proportion of portable equipment currently registered in PERP. (CJWS)

Agency Response: The sales data for 230 pieces of portable equipment of the three most common equipment types: generators, pumps, and compressors, sufficiently represents portable fleets because it reflects 80% of the equipment types registered in PERP. CARB statistically analyzed this sales data to determine if any trends in dollar per horsepower exist among equipment type, size, and age. Staff found a high correlation between equipment age and dollar per horsepower, with higher average costs for those engines that are at greater than or equal to 175 horsepower. CARB then graphed all sales data on a scatter plot where two second-order polynomial trend line curves were applied: one for engines rated at greater than or equal to 175 horsepower, and one for engines rated at less than 175 horsepower. These trend lines allowed staff to calculate the average cost in dollar per horsepower based on engine size and age from the collected sales data, expressed as equations. Table 1 below shows the initial equations derived from the trend lines that were used to calculate costs for engines of various horsepower, where “x” equals age in years between zero and eighteen, and “y” equals dollar per horsepower:

Table 1: Original Cost Curve Trend Lines with Engine Age 0 - 18 Years

Original Two Trend Line Equations		
Name	<175 hp	≥175 hp
Original	$y = 0.3441x^2 - 23.643x + 412.22$	$y = 0.4437x^2 - 18.217x + 264.75$

In order to test whether the data were sufficient, CARB staff randomly sampled 70% of the data in each horsepower category and calculated 10 new cost curves. Table 2 below lists 10 new cost curve equations, each generated by randomly sampling 70% of the total data set and creating trend lines for each randomly-sampled data set. This is commonly referred to as a Monte Carlo statistical test or data analysis.

Table 2: 10 New Cost Curves from Randomly Sampled Data

10 New Cost Curve Equations		
Name	<175	>175
MC1	$y = 0.2226x^2 - 22.162x + 431.17$	$y = 0.5286x^2 - 21.436x + 286.57$
MC2	$y = 0.2364x^2 - 21.208x + 399.23$	$y = 0.3083x^2 - 13.609x + 225.77$
MC3	$y = 0.1957x^2 - 21.766x + 409.73$	$y = 0.7241x^2 - 25.634x + 298.42$

MC4	$y = -0.1059x^2 - 17.109x + 398.22$	$y = 0.3409x^2 - 14.676x + 242.98$
MC5	$y = 0.4925x^2 - 27.19x + 446.77$	$y = 0.7034x^2 - 24.537x + 287.71$
MC6	$y = 0.0028x^2 - 16.622x + 382.26$	$y = 0.5118x^2 - 19.749x + 268.66$
MC7	$y = 0.0886x^2 - 19.105x + 396.64$	$y = 0.0032x^2 - 10.444x + 238.68$
MC8	$y = 0.3126x^2 - 22.818x + 419.84$	$y = 0.2929x^2 - 14.533x + 247.48$
MC9	$y = 0.0163x^2 - 19.712x + 433.87$	$y = 0.3409x^2 - 14.676x + 242.98$
MC10	$y = -0.0619x^2 - 14.513x + 372.87$	$y = 0.4848x^2 - 18.001x + 257.37$

The resulting curves were similar to what would have been achieved with the full data set. Under the Monte Carlo test, this similarity or consistency indicates the full-data sample size was sufficient. Staff chose a sample five-engine fleet, shown in Table 3 below that represents an average PERP fleet to compare the 10 new cost curves with the full data set.

Table 3: Sample Fleet to Compare Cost Curves

Sample PERP Fleet					
Engine	HP	Engine Family Name	Model Year	AGE	Tier
1	86	3PKXL04.4RE1	2003	15	T1
2	81	2PKXL04.4RF1	2002	16	T1
3	125	6JDXL06.8078	2006	12	T2
4	130	GCEXL03.8AAA	2016	2	T4f
5	130	DCEXL04.5AAE	2013	5	iT4

When applying these cost curves to the sample fleet, the value of the fleet differed by less than 9% from the original cost curve created from the full data set, as shown in Table 4 below.

Table 4: Sample Fleet Value Using Original and 10 New Cost Curves

Engine	Total Fleet Value	% Change from Original
Original(y)	\$210,629	0.00%
MC1 (y)	\$213,033	1.14%
MC2 (y)	\$193,481	-8.14%
MC3 (y)	\$198,299	-5.85%
MC4 (y)	\$207,995	-1.25%
MC5 (y)	\$227,038	7.79%
MC6 (y)	\$205,277	-2.54%
MC7 (y)	\$207,886	-1.30%
MC8 (y)	\$219,314	4.12%
MC9 (y)	\$228,989	8.72%
MC10 (y)	\$205,810	-2.29%

3. Comment: In Appendix C of the Staff Report, staff stated that the proposed amendments would result in an estimated \$417 million enforcement cost savings from 2017-2030. We believe staff need the last 20 years enforcement activities to accurately evaluate the future enforcement cost savings. The unrealistically high enforcement fines are disingenuous. There is no evidence supporting enforcement penalty projections used in the economic analysis. (CJWS, KOT, CIAQC)

Agency Response: 20 years of enforcement data is not available because the fleet average standards in the ATCM did not take effect until 2013. Assessing the potential economic impact of the amendments does not necessarily require collecting two decades of historical data where the reasons for the amendments include practical infeasibility. Many fleets were able to comply with the ATCM's first fleet emission standards that became effective in 2013. The majority of non-compliance in 2013 was administrative, due to failure to report, not due to an exceedance of fleet average standards. Many of these same fleets are not expected to be able to comply with the next fleet average standards in the ATCM due to the high cost of equipment replacement necessary to achieve full compliance by 2020. This high cost is expected to lead to far greater non-compliance in exceeding of fleet average standards than previously seen. Because of the higher expected non-compliance and higher degree of non-compliance, past enforcement costs do not provide a reasonable estimate of future costs in this context. Staff did project expected enforcement activity frequency based on past experience because that is not expected to change.

CARB developed the penalty projections used to analyze the economic impacts based in part on two reasonable assumptions. First, we assumed maximum penalties in California law at the time Appendix C was written, which is a reasonable assumption and the starting point for any enforcement action, even if lesser penalties are accepted in the interests of settlement. (See CARB Enforcement Policy, Updated October 2017, p. 9, et seq., https://www.arb.ca.gov/enf/policy2017/final_enforcement_policy_october2017.pdf.) Second, we assumed no air district would assess a penalty in excess of the fleet's value of equipment. We consulted representatives from several local air districts regarding their penalty assessment procedures to determine potential enforcement fines. Given the complexity of setting these fines, it is difficult to predict actual monetary value a fleet may incur for non-compliance. We spoke with staff from various districts who unanimously agreed a district would set fines not to exceed either \$1,000 per day or the value of the fleet, whichever is lower.

4. Comment: The Staff Report lists the cost of a Tier 4 engine at twice as much as a Tier 3, but sometimes it's three and four times the cost and that's just for the engine. The equipment cost has never been factored into the cost methodology of the report. (CJWS, KOT)

Agency Response: CARB determined the economic impacts by factoring in the cost of the engine and the equipment. As discussed in the Staff Report on page 3 (Executive Summary) and on page 50 (Economic Impact Analysis), stakeholders, including engine manufacturers, equipment dealers, and rental companies, reported to CARB that the cost of equipment with a Tier 4 engine was on average twice as costly as equivalent equipment equipped with a Tier 3 engine. While there may be instances where the cost increase is greater, using an average is an appropriate analytical approach to assess the impacts of the amendments.

5. Comment: Staff discusses cost savings due to the reduced need for Diesel Exhaust Fluid (DEF) in the economic analysis. This is incorrect because fleets will start purchasing new equipment as soon as possible, which will force fleets to purchase DEF resulting in a cost increase before 2025. (CJWS)

Agency Response: As stated on pages 28 and 29 of Appendix C-2, the expected costs due to DEF usage increase in some years and decrease in others, but the overall DEF costs will actually increase between 2017 and 2030. Therefore, the economic analysis does correctly illustrate the increased DEF costs.

6. Comment: In Appendix K, staff discusses Tier 4 engines' assessment and that CARB is working with the engine manufacturers on the diesel particulate filter (DPF) issues. CARB should create a list of all the technologies and manufacturers that were part of the solution to DPF operational problems, and provide that list to all affected parties. (CJWS, KOT)

Agency Response: CARB remains committed to providing assistance to fleets with DPF issues whenever requested. We will consider making information available to the extent allowable by the Public Records Act.

7. Comment: Many California portable fleets with equipment subject to the ATCM also have trucks and off-road vehicles subject to the Truck and Bus Regulation and the Off-Road Regulation. All of these regulations require large investments in the equipment purchases and equipment repowering costs millions of dollars to achieve compliance. The Board should direct staff to work with the affected industry to develop a cumulative cost analysis to understand the total financial impact these regulations have made on these companies. (CJWS, CGA)

Agency Response: CARB has considered the economic impact of multiple rules during the amendments to the Truck and Bus Regulation, which were adopted on April 25, 2014 (comment 657 in FSOR). The amendments to the ATCM reduce costs to comply with the previous regulation. As required by the Administrative Procedure Act, CARB considered the economic impacts of this regulation as compared to current conditions. Additional analysis of cumulative costs is not required.

8. Comment: Appendix I of the Staff Report provides an emissions inventory update, which was used to provide environmental and cost justifications for the

amendments. The data provided in this appendix are totally inadequate to evaluate CARB's claim of environmental and cost benefits. The PERP website provides no easily accessible data regarding the PERP fleet makeup, activity, load, fuel consumption, and other data that could be used to make an independent analysis. The entire PERP database should be available in an easily understood format such as Excel. (ARA)

Agency Response: All emissions inventory data supporting Appendix I of the Staff Report were posted online at <https://www.arb.ca.gov/msei/ordiesel.htm> prior to the commencement of the comment period on the proposed amendments, as required by law. The inventory model, as well as the easy-to-use online web database ORION (<https://www.arb.ca.gov/orion/>), are available and may be used to generate output in Microsoft Excel format. All non-confidential information is available and CARB emissions inventory staff are available to assist in identifying relevant data and answering questions. Staff contact information is available on the inventory page listed above.

9. Comment: CARB's inventory projections found in Appendix I in the section "Growth in Equipment Population and Activity" should have included unique growth rates by industry and equipment type similar to the Energy Information Administration's (EIA) diesel fuel survey data. (ARA)

Agency Response: Staff considered the application of industry-specific growth rates provided by the EIA diesel fuel survey data and concluded that it was not possible to apply these growth rates to each company because PERP does not have sufficient information on companies and their equipment. Instead, staff assigned a 2% per year growth rate based on PERP registration trends. This growth rate compares well to the observed average growth rate in the EIA data¹ (between 2007 and 2016) for the industrial, electric power, oil company, off-highway, and commercial sectors, which is 1.7%. Because the growth rates are so similar, additional improvements to the emissions inventory to include industry-specific growth rates in the PERP category were not necessary.

10. Comment: We object to CARB's methodology calculating potential cancer risk in Appendix G of the Staff Report. We recommend including time integrated exposure, since risk is traditionally over a 70-year exposure while PERP equipment can only reside at a single location for no more than 12 months. (ARA)

Agency Response: While we recognize portable diesel-powered engines are transient in nature, we used a combination of ambient diesel PM data and CARB emission inventory data to estimate potential health impacts of each of the scenarios in Appendix G of the Staff Report. Using a 70-year exposure duration for assessing cancer risk from ambient data is consistent with the Air Toxics Hot Spots Program Risk Assessment Guidelines: The Guidance Manual for the Preparation of Health Risk Assessment, 2015, that the Office of Environmental Health Hazard Assessment

¹ EIA Diesel Fuel Survey Data: https://www.eia.gov/dnav/pet/pet_cons_821dst_dcu_SCA_a.htm

(OEHHA) is required to adopt under Health and Safety Code, section 44360. The Guidance Manual is founded on three public, peer-reviewed, risk assessment guidelines documents focused on non-cancer risk, cancer risk, and exposure assessment.² The commenter is proposing an alternate methodology that is not consistent with this guidance manual and has not undergone a rigorous development process like that for the Guidelines.

11. Comment: We recommend including language in the PERP Regulation to allow the immediate use of an engine upon delivery and submittal of a meritorious registration application, instead of after obtaining registration. (ARA)

Agency Response: In California, portable equipment may not be operated without either a Permit to Operate from a local air district or without a PERP Registration from CARB. We understand the difficulty of waiting for the issuance of a PERP registration, which can take several weeks. To help solve this problem, our regulatory amendments include a Temporary Registration provision that will allow the engine to operate while full registration is being processed. Temporary Registrations would be issued within a few business days after receipt of an application in PERP as long as the eligibility requirements are met and the information on the application appears complete and accurate.

12. Comment: We object to the temporary registration provision of the PERP Regulation being limited to Tier 4 final engines. We recommend temporary registrations be granted for all tiered engines to fleets following the fleet average schedule in 93116.3(2) since they can potentially register older-tiered engines while complying with the fleet average standards. (ARA)

Agency Response: For large fleets that will use the fleet average option, they may only obtain a new registration in PERP for older-tiered engines if the engines qualify as resident. A resident engine is one that has a current district permit. Any engine that has a current district permit may operate while the application for PERP registration is processed. Therefore, temporary registration is not necessary for these older engines. Moreover, as a general matter, temporary registration is appropriate for only the cleanest available engines.

13. Comment: Why do PERP registrations typically take between 60 to 90 days to process? (ARA)

Agency Response: This comment is not directed at the amendments or the process by which they were adopted. CARB accepts several different types of applications into PERP on a daily basis. While many are for certified engines, there are also those that contain complicated equipment units. Many applications are submitted with missing or incorrect information. We also receive many applications for actions to existing registrations such as corrections, reactivations, and change of ownerships. This is in addition to the numerous renewals that come in each month.

² FAQs Related to the OEHA Guidelines: <https://www.arb.ca.gov/toxics/rma/rma.htm>

Staff takes the time necessary to review the information to ensure the portable equipment will comply with all applicable requirements. All of these factors contribute to our processing time, which varies with volume and complexity of the applications. Nevertheless, CARB staff is continuously striving to improve. The proposed amendments were developed to shorten these times where feasible. By comparison, the processing time for a Permit to Operate from a local air district can take several months.

14. Comment: Section 2463(b) of the PERP Regulation refers to an agent, employee, licensee, or other authorized representative, however the PERP Regulation does not define “agent.” (ARA)

Agency Response: The terms agent, employee, licensee, and authorized representatives are defined legal terms and vary by context that often requires fact-specific inquiry. (See, e.g., Civil Code, § 2295 [defining agent]; Labor Code, § 2750, [defining employee].) A definition in this specific context is not necessary.

15. Comment: CARB should modify the PERP Regulation to hold equipment renters accountable for satisfying recordkeeping requirements of a PERP registration instead of holding rental companies accountable. Equipment rental companies have no authority to enforce state rules on customers. (ARA)

Agency Response: It is appropriate to require rental companies to bear primary responsibility for maintaining records where they are the owners of the equipment. The regulation does not require rental companies to enforce state law. The current regulation holds fleets accountable for compliance for the equipment that they own. Rental companies have the ability to require customers to maintain the records necessary to meet the requirements as a condition of their rental contracts. In contrast to private contracts, enforcement is the use of government authority to remedy and deter violations, which is done by local air districts.

16. Comment: Research performed by the Southwestern Research Institute (SWRI) has shown that the effectiveness of Tier 4 engines in groundwater drilling operations is severely reduced, making the use of these engines nearly impossible. The concerns raised by the California Groundwater Association should be addressed in the rulemaking. (AM, LRCGA)

Agency Response: In developing the proposed amendments, we carefully considered the concerns and recommendations made by the California Groundwater Association. We understand the issues with Tier 4 engines and have provided a more detailed response to comments #24 and #25. The research performed by the Southwestern Research Institute was conducted with on-highway trucks equipped with various experimental after-treatment configurations, not yet certified by CARB, for the purposes of developing ultra-low NOx emissions below the 2010 standards. The research was intended to analyze the durability and effectiveness of each configuration while reducing NOx. Therefore, the results of the SWRI study are not

applicable to the ATCM that is intended to reduce emissions of diesel particulate matter from portable engines, which have different duty cycles than on-highway engines. The SWRI study did not show that portable Tier 4 engines are not effective in groundwater drilling operations.

17. Comment: We object to staff's assumption in the economic analysis that 10,000 pieces of equipment will be replaced with less than \$10,000 each. (CIAQC)

Agency Response: It appears the commenter is referring to the difference in equipment replacement cost between the Business as Usual (BAU) scenario and the proposed amendments scenario. This is not the total cost per piece of equipment replaced, rather it is the difference in the total equipment replacement cost between the two scenarios. Staff did not assume that equipment would be replaced at a cost of less than \$10,000 per piece of equipment.

18. Comment: We recommend the prohibition of sale notice for equipment sellers in the proposed ATCM should only be included if it can be satisfied using language that can also satisfy similar requirements in the Truck and Bus Regulation and Off-Road Regulation. (CIAQC)

Agency Response: We believe the commenter is referring to the new Disclosure of Applicability requirement proposed in the ATCM. This would require the seller to provide specific written language to the purchaser as part of the sales transaction. This requirement is consistent with the Disclosure of Applicability requirements contained in the Truck and Bus Regulation and Off-Road Regulation. CARB staff are working to address this issue.

19. Comment: We recommend CARB closely scrutinize the new certifications of Tier 4 final engines built without a diesel particulate filter. (MECA)

Agency Response: This comment does not pertain to the proposed amendments or the process by which they were adopted. We intend to continue closely monitoring advances in emissions control technology.

20. Comment: We support the proposed regulatory amendments and extend thanks to CARB for welcoming all stakeholder input during amendment development. (CJWS, CIAQC, CCEEB, KOT, BCAQMD, LACSD, UC, CVAQ)

Agency Response: Thank you for your support.

21. Comment: We object to CARB's claim that no water well drilling company owns or operates Tier 4 engines as stated in Appendix K of the Staff Report. There are currently 40 such engines registered in PERP. (LRCA)

Agency Response: Your objection is noted. As of April 2018, there are approximately 190 Tier 4 engines registered in PERP that are owned by companies engaged in water or oil and gas drilling operations.

22. Comment: CARB has ignored the water well drillers 40-year exemption from using Tier 4 engines set forth in the Federal Register. (LRCGA)

Agency Response: The exemption referred to extend the permissible time to install a replacement engine from 25 years to 40 years. (40 CFR part 1068.240(a)(3), 78 Fed.Reg. 36,369, June 17, 2013.) Replacement engines are allowed to be installed under federal law when the original equipment engine has failed. This change in federal law for replacement engines does not supersede CARB's authority to adopt regulations that require replacement of in-use engines prior to failure.

23. Comment: Tier 4 engines do not work in drilling operations due to low-load duty cycles and low-rpm conditions. The DPFs get clogged with soot. You have no solution for our industry. (LRCGA)

Agency Response: Staff's analysis shows that while issues like those described in the comment can occur, they can also be avoided by properly sizing the engine to the application, and conducting regular preventive maintenance, especially as described by the manufacturer. If a stakeholder is particularly concerned with the use of a DPF, there are compliant models available that meet emissions controls without a DPF. Finally, if a stakeholder is using a Tier 4 engine and experiences an issue, they may work with manufacturers to address that issue. CARB remains committed to working with industry and the engine manufacturers to resolve any issues with Tier 4 engines when requested.

24. Comment: The operation of Tier 4 engines in drilling operations presents a safety hazard due to the higher potential for autoignition, especially during regeneration. (LRCGA)

Agency Response: We recognize the fact that many Tier 4 engines operate at higher temperatures and can pose a higher risk for autoignition if operated where combustible gasses are present. The proposed amendments allow Tier 3 engines designed specifically for use at hazardous locations to be operated in California indefinitely. These specialized engines can be registered in PERP until 2029, after which, the engines may be permitted locally.

25. Comment: We oppose the recommendations to minimize risk to worker safety in CARB's Appendix K as showing a complete lack of knowledge of real work operations, environments, and equipment construction. (LRCGA)

Agency Response: Staff's analysis in Appendix K describes voluntary actions fleets have taken to minimize risk with use of engines during drilling operations. These

measures may be used by fleets that choose to do so to minimize risks. Depending on the situation, fleets may take many different actions to minimize risks. If fleets do not want to incorporate these actions while drilling with Tier 4 engines, they have the option to use a Tier 3 engine that has been designed for use at hazardous locations. See Section 2456(f), (k).

26. Comment: The large project provisions in section 2455(a) should be limited to projects with more than 2,500 horsepower used *simultaneously* on the jobsite. (CIAQC)

Agency Response: CARB incorporated this suggestion into the regulations as ultimately adopted.

27. Comment: We are not sure about the proposal to remove eligibility for engines manufactured under the flexibility provisions. (CGA)

Agency Response: CARB is only removing eligibility for flexibility engines certified to Tier 1 for engines of all sizes and Tier 2 for engines rated at less than or equal to 750 horsepower. These engines have not been manufactured since 2010. We feel it is appropriate that any such engines should not be newly registered due to their higher emission rates. Engines recently manufactured under the flexibility provisions to meet Tier 2 standards for engines rated at greater than 750 horsepower, and Tier 3 standards for engines rated at less than or equal to 750 horsepower will still be eligible for an initial registration in PERP.

CARB also received written comments during the 15-day comment period in response to the February 21, 2018 public notice. Listed below are the commenters and the organizations they represent:

WRITTEN COMMENTS RECEIVED DURING THE 15-DAY COMMENT PERIOD	
Commenter	Affiliation
McManus, Michele (February 26, 2018)	Wilson Ag
Gerard Secundy	California Council for Environmental and Economic Balance (CCEEB2)

28. Comment: Staff should consider that some portable equipment reduces particulate matter emissions by reducing the amount of brush and trees that could be burned. (Wilson Ag)

Agency Response: The intent of the ATCM is to reduce the emissions of particulate matter from diesel combustion. Diesel particulate matter (PM) emitted by diesel engines has been identified as a toxic air contaminant, and is very different from the particulate matter created by burning wood waste. Diesel PM poses a significant health risk beyond that of soot. We understand that using portable equipment to grind wood waste produces less particulate emissions than burning that waste, and

we would like to encourage the grinding of wood waste over the burning of wood waste whenever possible.

29. Comment: We support the proposed regulatory amendments and extend thanks to CARB for incorporating suggested changes during the regulatory process. (CCEEB2)

Agency Response: Thank you for your support.

V. Peer Review

Health and Safety Code Section 57004 sets forth requirements for peer review of identified portions of rulemakings proposed by entities within the California Environmental Protection Agency, including CARB. Specifically, the scientific basis or scientific portion of a proposed rule may be subject to this peer review process. These amendments do not establish new requirements or present new scientific findings subject to peer review. The scientific studies and assessments on which these regulations are based, such as the findings that diesel particulate is a toxic air contaminant, were developed previously and subject to public review.