

June 16, 2020

Ms. Rajinda Sahota
California Air Resources Board
1001 I ST
Sacramento, CA 95814

Subject: Public Comment Submission in Response to CARB's June 4, 2020 Webinar

Dear Rajinder:

CARB's "Single-Engine Certification Testing" proposal, based on our viewpoint, will not provide the basis to "...ensure the efficacy of NOx-mitigating additives ..." for a number of reasons. This public comment submission is intended to identify our reasoning, but more importantly to propose an alternate method whereby CARB can better achieve the desired outcome as it pertains to VESTA®.

Locating three (3) Cummins ISM370 engines at facilities with adequate experience, available for immediate access and subsequent testing (especially in light of the COVID-19 pandemic) will prove difficult and take considerable time, far longer than the proposed regulation implementation date. As CARB knows, some have struggled to obtain CARB ISM. All ADF data developed to date has been based on the Detroit Diesel Series 60 and before any engine change is required by CARB, there should be a better understanding as to the underlying science behind NOx emissions variations from facility to facility. It's important to do so for many reasons but one in particular that stands out is CARB's sound science requirement.

We are also troubled by the incongruity between CARB's overall mission and the proposed particulate matter (PM) triggers. Use of particulate matter (PM) emissions as a criteria to evaluate engine repeatability, "... within 2 percent of the PM emissions from their acceptability testing or the certification would not be considered valid", means that any favorable impact VESTA® has on PM may in fact work to its detriment but should be allowed. By way of example, when testing VESTA®, up to an additional 6% PM reduction was achieved versus an unadditized B20. CE-CERT's March 2020 Report supports this favorable PM impact wherein VESTA® improved unadditized B20 PM 2.3-3.3%. Oppositely, CARB's testing of DTBP indicated that DTBP provided 8% less PM benefit than unadditized B20 which should not be allowed.

California Fueling has EPA registration of VESTA® 2000, a DTBP based product. Our EPA approved treat is 2500 ppm, which has been capped by the EPA. While CARB has maintained its approval of DTBP, it is not a practical solution. 100% DTBP cannot be shipped in tank trucks, which at the CARB approved level of 1% in B20 or 5% in B100, would be required. Accordingly,

any reliance by CARB in its economic or industry impact analysis on DTBP as an alternative for compliance with the ADF is misplaced.

Lastly, the single engine proposal costs, in our estimation, exceed those of the two-facility approach, neither of which are attractive from a return on investment standpoint given the sunset provision.

As a means to accomplish what CARB desires, to “[r]einforce the certification testing requirements to ensure the efficacy of NOx-mitigating additives by implementing”, we propose CARB implement items 1-3 listed on slide 14, while leaving the testing requirements as currently in place. Those measures alone, in our view, will ensure CARB’s desired goal.

California Fueling followed all proposed chain of custody requirements for all VESTA® certification runs. In addition, during the VESTA® certification run at 3000 ppm (Executive Order G-714-ADF01), for many reasons, we set a daily objective for additized B20 NOx emissions to be less than that of the CARB reference fuel, which exceeds CARB’s equivalency requirements. That objective was met and VESTA® decreased NOx versus the unadditized B20 2.5-4.7% (not considering the statistical allowance), averaging 4% over the 7-day test period.

It’s clear from our analysis of the CE-CERT data that when testing VESTA® at 3000 ppm, the process went out of control. This combined with the (a) non-linear performance of VESTA® wherein 1000 ppm and 2200 ppm provided better NOx reduction than 3000 ppm; (b) considerable engine drift during the VESTA® 3000 ppm certification run; (c) extended test period (eight vs four days) with no explanation for such; (d) engine map procedure was not performed before each certification; (e) CARB “comments” associated with the 3000 ppm additization rate and (e) well documented repeatability issues with CE-CERT’s data all support CARB completely discounting and not considering the CE-CERT VESTA® 3000 ppm data.

We have previously reported that the fuels CARB chose for its CE-CERT program were too severe, in our view, most significantly the reference fuels low aromatics content. We note that CE-CERT reported the reference fuel contained 6.5% aromatics, however, we believe that is a typographical error and should have indicated 5.6%, which makes the that much less representative of a viable CARB reference fuel for certification testing. We note that CARB’s Low Emissions Diesel (LED) test program requires the use of a CARB reference fuel. In fairness to the comparative work done on NOx Mitigants at CE-CERT, it’s only appropriate that CARB use the same reference fuel and biodiesel for the LED program so that RHD/biodiesel blends are held to the same performance standard.

We recently provided additional information in support of VESTA®. To summarize such, our unadditized Candidate Fuel, used in all our certification testing, was dosed with 3000 ppm of VESTA® and tested against a post November 2017 specification CARB reference fuel, the physical properties for which were also submitted to CARB. The additized candidate fuel

produced lower emissions than the reference fuel which further cements VESTA®'s emission reductions capabilities.

We have gone above and beyond what's required to demonstrate VESTA®'s NOx Mitigation performance. As opposed to changing the ADF testing required for certification, we recommend CARB meet with NOx Mitigant stakeholders independently and develop a path forward that is fair and equitable to all while "ensuring NOx Mitigation is achieved." We are happy to meet with CARB at your convenience to discuss a mutually agreeable path forward.

Respectfully,



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cc: Richard Corey
Gwynne Hunter – California Department of Justice
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