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12 UNITED STATES DISTRICT COURT  
13 NORTHERN DISTRICT OF CALIFORNIA  
14 SAN FRANCISCO DIVISION

15 \_\_\_\_\_ ) MDL No. 2672 CRB (JSC)  
16 IN RE: VOLKSWAGEN “CLEAN DIESEL” )  
17 MARKETING, SALES PRACTICES, AND ) **UNITED STATES’ NOTICE OF NON-**  
18 PRODUCTS LIABILITY LITIGATION ) **MATERIAL MODIFICATIONS TO**  
19 ) **PARTIAL AND SECOND PARTIAL**  
20 ) **CONSENT DECREES**  
21 )  
22 ) Hon. Charles R. Breyer  
23 )  
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NOTICE OF NON-MATERIAL  
MODIFICATIONS TO PARTIAL  
AND SECOND PARTIAL CONSENT DECREES  
MDL No. 2672 CRB (JSC)

1 Pursuant to Paragraphs 91 and 92 of the Partial Consent Decree, which was entered by the Court  
2 on October 25, 2016, Dkt. No. 2103-1 at 50<sup>1</sup>, and Paragraphs 90 and 91 of the Second Partial Consent  
3 Decree, which was entered by the Court on May 17, 2017, Dkt. No. 3228-1 at 50, the United States  
4 notifies the Court that the attached non-material modifications to the Partial and Second Partial Consent  
5 Decrees have been agreed to in writing by all the Parties and do not need further approval by the Court.  
6 As required by Paragraph 92 of the Partial Consent Decree, and Paragraph 91 of the Second Partial  
7 Consent Decree, the United States is hereby filing the modifications with the Court as Exhibit A and  
8 Exhibit B to this Notice.

9 Dated: October 31, 2018

Respectfully submitted,

For the United States of America

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DEPUTY ASSISTANT ATTORNEY GENERAL

By: /s/ Bethany Engel  
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27 <sup>1</sup> In this Notice, all page references to a Court document are to those pages in the header of the  
28 Court document (e.g., "Page 50 of 225").

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EXHIBIT A

Modifications to Partial Consent Decree

## APPENDIX B

### VEHICLE RECALL AND EMISSIONS MODIFICATION PROGRAM

#### I. PURPOSE

This Appendix B establishes how Settling Defendants shall submit Proposed Emissions Modifications, and how the United States Environmental Protection Agency (“EPA”) and the California Air Resources Board (“CARB”) (collectively, “EPA and CARB” or “EPA/CARB”) will approve or disapprove any such proposal, should Settling Defendants choose, at their election, to submit a Proposed Emissions Modification. Settling Defendants must comply with the requirements of this Appendix B. No Emissions Modification may be performed by, or on behalf of, Settling Defendants unless and until EPA/CARB approve the applicable Proposed Emissions Modification. Following approval, any Emissions Modification performed by, or on behalf of, Settling Defendants must conform to the applicable Approved Emissions Modification and the requirements set forth herein.

If Settling Defendants submit a Proposed Emissions Modification according to the terms of this Appendix B, and EPA/CARB determine the proposal satisfies the requirements set forth herein, then EPA/CARB will approve that Proposed Emissions Modification. EPA/CARB will issue decisions, including decisions concerning the approval or disapproval of Proposed Emissions Modifications, in accordance with the definitions and decision-making authorities set forth in Section V of the Consent Decree (Approval of Submissions and EPA/CARB Decisions). EPA/CARB will review any proposal according to this Appendix B, rather than according to the regulatory processes for reviewing applications for Certificates of Conformity, Executive Orders, or administrative recalls; provided, however, except as otherwise expressly stated herein, the applicable regulatory calculation methods, test procedures, protocols, processes, or procedures shall apply unless an alternative approach is approved by the agencies.

#### II. DEFINITIONS

2.1 Terms used in this Appendix B shall have the meanings set forth below. Terms that are not defined below but are defined in Section IV (Definitions) of the Consent Decree shall have the meaning set forth therein.

2.2 “20° F FTP” means the FTP conducted at 20° Fahrenheit, as specified in 40 C.F.R. Part 1066 Subpart H.

2.3 “2014 Reflash” means the modification of Generation 1 and Generation 2 2.0 Liter Subject Vehicles in 2014 and 2015.

2.3.2.4 “AEM Correction” means the technical modifications to the Approved Emissions Modification implemented by Settling Defendants in accordance with the requirements of Appendix B, Paragraph 7.7, to correct or repair technical issues that constitute noncompliance with Appendix B or the regulations, or that interfere with the emission control system, the OBD system, durability, performance, or drivability of a Modified Vehicle during ordinary vehicle operation and use (“Technical Issue(s)”).

1 This process is not available to correct Approved Emissions Modifications that EPA and CARB  
2 determine (1) exceed emissions in use under Appendix B, Section VI or (2) contain defeat devices.

3 2.42.5 “Approved Emissions Modification” means an Emissions Modification submitted by  
4 Settling Defendants and approved by EPA/CARB.

5 2.52.6 “Auxiliary Emission Control Device” or “AECD” has the meaning set forth in 40 C.F.R.  
6 § 86.1803-01.

7 2.62.7 “AT” means automatic transmission.

8 2.72.8 “Calibration” means a specific parameterization of the ECU software that determines  
9 how various processes in engine and exhaust aftertreatment are controlled under many different  
10 operating conditions. A common example of a process is fuel injection (timing and quantity) under  
11 different engine loads and ambient conditions. The term “Calibration” can also be used synonymously  
12 for the act of setting the parameters of the ECU software.

13 2.82.9 “Critical OBD Demonstration” means the minimum set of OBD emission demonstration  
14 tests, pursuant to Cal. Code. Regs. tit. 13, § 1968.2(h) (2013), that must be completed and included in  
15 Part B of the Proposed Emissions Modification. For Generation 1, the minimum set of tests includes:  
16 PM filter efficiency, NOx trap, EGR low flow, and injection quantity minimum for automatic  
17 transmission vehicles only. For Generation 2, the minimum set of tests includes: PM filter efficiency,  
18 SCR catalyst efficiency, EGR low flow, and injection quantity minimum for automatic transmission  
19 vehicles only. For Generation 3, the minimum set of tests includes: PM filter efficiency, SCR efficiency,  
20 EGR low flow, injection quantity minimum, injection quantity maximum, and DOC for automatic  
21 transmission vehicles only.

22 2.92.10 “Combined Uphill/Downhill and Highway Route” means the driving route shown  
23 and described in Appendix B-3 to this Consent Decree.

24 2.102.11 “DEF System” means the combination of vehicle components used to store, filter,  
25 measure the level and quality of, thaw, and inject the DEF into the exhaust.

26 2.112.12 “Defeat Device” has the meaning provided under 42 U.S.C. § 7522(a)(3)(B) and  
27 40 C.F.R. § 86.1803-01.

28 2.122.13 “DeNOx Strategies” means an AECD that acts to convert NOx that accumulates  
on the NOx trap to N<sub>2</sub>.

2.132.14 “DeSOx Strategy” means an AECD that acts to remove sulfur that accumulates on  
the NOx trap.

2.142.15 “DeSOx Escalation Strategies” means an AECD that acts in stages to improve the  
removal of sulfur that accumulates on the NOx trap.

2.152.16 “Deterioration Factor” or “DF” means the number, determined pursuant to 40  
C.F.R. § 86.1823-08, that represents the change in emissions performance during a vehicle’s Full Useful  
Life. The DF is applied to emission results from the required test cycles, as provided in 40 C.F.R. §

1 86.1841-01. DFs are used to estimate increases in emissions caused by deterioration of the emission  
2 control system as a vehicle ages over its Full Useful Life.

3 2.162.17 “Diesel Exhaust Fluid” or “DEF” means a liquid reducing agent (other than  
4 engine fuel) used in conjunction with selective catalytic reduction to reduce NO<sub>x</sub> emissions. DEF is  
5 generally understood to be an aqueous solution of urea conforming to the specification of ISO 22241.  
DEF is used in Generation 2 and Generation 3 vehicles and is sometimes referred to by the trademarked  
6 name, “AdBlue.”

7 2.172.18 “Drivability” means the smooth delivery of power, as demanded by the driver or  
8 operator. Typical elements of Drivability degradation are rough idling, misfiring, surging, hesitation, or  
9 insufficient power. Conversion from conventional fuels to alternative fuels may entail losses of  
10 volumetric efficiency, resulting in some power loss. Such power loss is not considered to be Drivability  
11 degradation.

12 2.182.19 “Durability Demonstration Vehicle” or “DDV” means a vehicle with the final  
13 emission calibration that is run on the Standard Road Cycle (“SRC”) to Full Useful Life. Periodically (at  
14 approximately 4,000 miles, 30,000 miles, and every 30,000 miles thereafter) emission testing in the  
15 FTP75 is performed and the Deterioration Factor is calculated. After completion of emission testing at  
16 Full Useful Life, the vehicle is reflashed with the final engine Calibration, which includes the final  
17 emission Calibration (used during mileage accumulation to Full Useful Life) and final OBD Calibration,  
18 and the reflashed vehicle is used for Full Useful Life emission compliance and OBD testing required to  
19 be reported post-submission according to subparagraph 4.3.4 in this Appendix B. Subject to EPA/CARB  
20 approval, a representative Generation 3 vehicle may be used as the DDV for purposes of complying with  
21 subparagraph 4.3.4.

22 2.192.20 “ECU” or “Engine Control Unit” means the computer, including associated  
23 software, which controls various engine functions, including emission control system functions.

24 2.202.21 “EGR” or “Exhaust Gas Recirculation” means a device that directs a portion of  
25 the exhaust gas into the intake air stream for the purpose of controlling emissions.

26 2.212.22 “Eligible Vehicle” has the meaning provided in Appendix A of the Consent  
27 Decree.

28 2.222.23 “Eligible Lessee” has the meaning provided in Appendix A of the Consent  
Decree.

2.232.24 “Eligible Owner” has the meaning provided in Appendix A of the Consent  
Decree.

2.242.25 “Emission Control System” means a unique group of emission control devices,  
auxiliary emission control devices, engine modifications and strategies, and other elements of design  
designated by EPA/CARB and used to control exhaust emissions of a vehicle.

2.252.26 “Emission Control System Data Parameters” means the data parameters that  
Settling Defendants must record while conducting the Required Emissions Test Procedures, including  
the preconditioning cycles, as set forth in Appendix B-2 to this Consent Decree.

1 2.262.27 “Emissions Increasing Auxiliary Emissions Control Device” or “EI-AECD”  
2 means any AECD, as defined in Cal. Code. Regs. tit. 13, § 1968.2(c), that reduces the effectiveness of  
3 the emission control system under conditions which may reasonably be expected to be encountered in  
4 normal vehicle operation and use, provided that the need for such AECD is justified by the protection it  
5 provides against vehicle damage or accident. EI-AECDs do not include AECDs that do not sense,  
6 measure, or calculate any parameter or command or trigger any action, algorithm, or alternate strategy;  
7 or AECDs that are activated solely due to any of the following conditions: (1) operation of the vehicle  
8 above 8,000 feet in elevation; (2) ambient temperature; (3) when the engine is warming up and is not  
9 reactivated once the engine has warmed up in the same driving cycle; (4) failure detection (storage of a  
10 fault code) by the OBD system; (5) execution of an OBD monitor; or (6) execution of an infrequent  
11 regeneration event.

12 2.272.28 “Emissions Levels” means the emissions levels that represent the best achievable  
13 emissions performance, as specified in Appendix B-1 to this Consent Decree (Prior Test Results).

14 2.282.29 “Emissions Modification” means the alterations to 2.0 Liter Subject Vehicles  
15 including software recalibration and replacement of parts related to the Emissions Control System, that  
16 are designed to reduce emissions, remove all Defeat Devices and bring the vehicles into compliance  
17 with the Maximum Emissions Modification Limits and the other requirements specified in this  
18 Appendix B.

19 2.292.30 “Emissions Modification Database” means a searchable database that Settling  
20 Defendants make available online, by which users, including Eligible Owners, Eligible Lessees, and  
21 potential purchasers, may conduct a free-of-charge search by vehicle VIN to determine whether the  
22 Emissions Modification is available for, or has been applied to, a specific vehicle.

23 2.302.31 “Emissions Modification Proposal” means the required materials Settling  
24 Defendants provide in a Submission or multiple Submissions for EPA/CARB review and approval or  
25 disapproval of any Proposed Emissions Modification, if Settling Defendants elect to submit such a  
26 proposal.

27 2.312.32 “Engine Bench-aged” means aging that is conducted on an internal combustion  
28 engine test bench using a procedure that is subject to EPA/CARB approval and using a fuel type (diesel  
or gasoline) as provided herein.

2.322.33 “Engineering Durability Data” means data which is used to estimate the Official  
Durability Data. It may be based on a preliminary design of the Emission Modification. It may also be  
determined from an extrapolation of incomplete Official Durability Data or by simulating the mileage  
accumulation required under 40 C.F.R. § 86.1823-08.

2.332.34 “Engineering Durability Testing” means testing to obtain Engineering Durability  
Data.

2.342.35 “EPA/CARB” means EPA and CARB when the agencies evaluate Settling  
Defendants’ Submissions and issue decisions, including decisions concerning the approval or  
disapproval of Proposed Emissions Modifications, in accordance with the definitions and decision-  
making authorities set forth in Section V of this Consent Decree (Approval of Submissions and  
EPA/CARB Decisions).



1 2.352.36 “Federal Test Procedure” or “FTP” means the driving schedule in 40 C.F.R. Part  
2 86, Appendix I, Section (a) (EPA Urban Dynamometer Driving Schedule for Light-Duty Vehicles and  
Light-Duty Trucks).

3 2.362.37 “Final OBD Demonstration” means:

4 2.36.12.37.1 For automatic transmission vehicles: all OBD emission demonstration  
5 testing required under Cal. Code. Regs. tit.13, § 1968.2(h) (2013), except, if Settling Defendants  
6 assert that only a functional check is required because no failure or deterioration of the specific  
7 tested system could result in an engine’s emissions exceeding the emission malfunction criteria,  
8 Settling Defendants must still complete the OBD demonstration and submit with the proposal all  
emission and fault detection data from vehicles equipped with the Proposed Emissions  
Modification used to determine that only a functional test of the system(s) is required.

9 2.36.22.37.2 For manual transmission vehicles: all OBD emission demonstration testing  
10 required under Cal. Code. Regs. tit. 13, § 1968.2(h) (2013), including the requirements  
concerning functional check data noted above, except limited to the following monitors:

- 11 i. For Gen 1: PM filter efficiency, NOx Trap efficiency, EGR low flow, injection  
12 quantity minimum, charge air undercooling, EGR slow response, oxygen sensor  
13 upstream LNT slow response, oxygen sensor upstream of NOx Trap positive  
14 amplification, oxygen sensor upstream of NOx Trap negative amplification,  
misfire detection, underboost, and DOC efficiency.
- 15 ii. For Gen 2: PM filter efficiency, SCR efficiency, EGR low flow, injection quantity  
16 minimum, SCR delivery performance, misfire detection, EGR slow response,  
underboost, overboost, boost system slow response, charge air undercooling, DEF  
17 delivery performance, and DOC efficiency.
- 18 iii. For Gen 3: PM filter efficiency, SCR efficiency, EGR low flow, injection quantity  
19 minimum, injection quantity maximum, DEF delivery performance, and DOC  
efficiency.

20 2.372.38 “FTP@1620m” means FTP testing at high-altitude conditions, i.e., a test altitude  
21 of 1,620 meters (5,315 feet), plus or minus 100 meters (328 feet), or equivalent observed barometric test  
conditions of 83.3±1 kilopascals.

22 2.382.39 “Full Useful Life” or “FUL” means the regulatory period in years or miles for  
23 which vehicles must meet emission standards. Full Useful Life is 10 years or 120,000 miles, whichever  
24 occurs first, for Model Year 2009-2014 2.0 Liter Subject Vehicles and 15 years or 150,000 miles,  
whichever occurs first, for Model Year 2015 2.0 Liter Subject Vehicles.

25 2.392.40 “Generation” means the different versions of emission control technology  
installed in various configurations of 2.0 Liter Subject Vehicles.

26 2.402.41 “Generation 1” or “GEN 1” means the following 2.0 Liter Subject Vehicles:  
27 Volkswagen Jetta (Model Years 2009-2014), Jetta SportWagen (2009-2014), Golf (2010-2014), Beetle



1 (2013-2014), Beetle Convertible (2013-2014), and Audi A3 (2010-2013), containing a lean NOx trap  
2 system, within the test groups specified in the Consent Decree.

3 2.412.42 “Generation 2” or “GEN 2” means the following 2.0 Liter Subject Vehicles:  
4 Volkswagen Passat (Model Year 2012-2014) containing a selective catalytic reduction system with SCR  
5 catalyst in under floor position, within the test groups specified in the Consent Decree.

6 2.422.43 “Generation 3” or “GEN 3” means the following 2.0 Liter Subject Vehicles:  
7 Volkswagen Jetta, Golf, Golf SportWagen, Beetle, Beetle Convertible, Passat and Audi A3 (Model Year  
8 2015), containing an SCR system with the upstream SCR catalyst close-coupled to the engine and an  
9 SCR catalyst in the underfloor position, within the test groups specified in the Consent Decree.

10 2.432.44 “Highway Fuel Economy Test,” “HWFET,” or “HWY FE” mean the test cycle  
11 that represents highway driving as described in 40 C.F.R. Part 600 Appendix I.

12 2.442.45 “Include” and “Including,” as used in this Appendix B, are not limiting terms.

13 2.452.46 “Infrequent Regeneration Adjustment Factor” or “IRAF” mean the adjustment  
14 factor for each pollutant used to account for increased emissions caused by periodic regeneration of  
15 certain control devices, such as DPFs, performed by burning particulates that have accumulated in the  
16 control device. The increased emissions caused by such regeneration are accounted for over the  
17 emission test cycles by adjustment factors, or IRAFs, applicable to the pollutants NMOG, NOx, CO, and  
18 PM.

19 2.462.47 “Maximum Emissions Modification Limits” means the emissions levels, specified  
20 in Tables 1-3, that the Modified Vehicles may not exceed.

21 2.472.48 “Modified Vehicle” means a 2.0 Liter Subject Vehicle that Settling Defendants,  
22 or an entity acting on behalf of Settling Defendants, have modified in accordance with an Approved  
23 Emissions Modification.

24 2.482.49 “MT” means manual transmission.

25 2.492.50 “Noise Vibration and Harshness” or “NVH,” means a measure of the noise level  
26 heard during driving, the vibrations felt during driving, and the harshness of the ride of the vehicle.

27 2.502.51 “Non-Methane Organic Gases” or “NMOG” means the sum of oxygenated and  
28 non-oxygenated hydrocarbons contained in a gas sample as measured using the procedures described in  
40 C.F.R. § 1066.635.

2.512.52 “NOx + NMOG Limit” means an emissions limit concerning the sum of NOx  
plus Non-Methane Organic Gases (NMOG) and required by this Appendix B.

2.522.53 “NOx” means oxides of nitrogen, i.e., the sum of the nitric oxide and nitrogen  
dioxide contained in a gas sample as if the nitric oxide were in the form of nitrogen dioxide.

2.532.54 “NOx Reduction System” means, for the Generation 1 vehicles, all components in  
the exhaust system which enable NOx reduction in conjunction with the NOx trap.

1 2.542.55 “NOx Sensor” means a sensor located in a vehicle’s exhaust system which  
2 measures NOx. The reading from the sensor provides feedback to the emission control system.

3 2.552.56 “NOx Trap” means an exhaust emission control device which traps (adsorbs or  
4 stores) NOx under lean combustion conditions. Periodically, by design, the trapped NOx is reduced to  
5 N2 by reaction with hydrocarbons under rich combustion conditions. This type of emission control  
6 device is sometimes referred to as a lean NOx trap, NOx adsorber, or NOx storage catalyst and is used  
7 on Generation 1 vehicles.

8 2.562.57 “Official Durability Data” means emissions data obtained by periodic testing  
9 during the accumulation of 100% of Full Useful Life mileage on test vehicles, as described in 40 C.F.R.  
10 § 1823-08 and as required under this Appendix B. Official Durability Data is used to determine DFs.

11 2.572.58 “Oven-aged Parts” means parts that are exposed to high temperatures to simulate  
12 the aging achieved through mileage accumulation on a vehicle.

13 2.582.59 “Particulate Matter” or “PM” mean particulates formed during the diesel  
14 combustion process and measured by the procedures specified in 40 C.F.R. Part 86 Subpart B.

15 2.592.60 “Portable Emissions Measurement System” or “PEMS” mean an emissions  
16 measurement system which measures emissions of NOx, CO, CO<sub>2</sub>, and THC (Total Hydrocarbons)  
17 while a vehicle is driven on the road.

18 2.602.61 “Proposed Emissions Modification” means the alterations to 2.0 Liter Subject  
19 Vehicles, including software recalibration and replacement of parts related to the Emissions Control  
20 System, that Settling Defendants may propose for EPA/CARB approval, and that are designed to reduce  
21 emissions, remove all Defeat Devices, and bring the vehicles into compliance with the requirements  
22 specified in this Appendix B.

23 2.612.62 “Required Emissions Test Procedures” shall have the meaning specified in  
24 subparagraph 4.3.2.

25 2.622.63 “Road Mode Calibration” means the Calibration installed on Subject 2.0 Liter  
26 Vehicles when certified, and not reflecting any modification conducted as part of the 2014 Reflash or an  
27 Approved Emissions Modification, that controls Emission Control Systems in the vehicle when driven  
28 on the road, as opposed to during tests for emissions compliance.

2.632.64 “SC03” means the test cycle, described in 40 C.F.R. § 86.160–00 and listed in 40  
C.F.R. Part 86, Appendix I, paragraph (h), which is designed to represent driving under urban conditions  
at elevated temperatures and high solar loading with the air conditioner on.

2.642.65 “SCR Guidelines” means the EPA guidance document, *Certification Procedure  
for Light-Duty and Heavy-Duty Diesel Vehicles and Heavy-Duty Diesel Engines Using Selective  
Catalyst Reduction (SCR) Technologies*, CISD 07-07, March 27, 2007, and the SCR presentation by  
EPA and CARB, *Selective Catalytic Reduction Workshop* (July 20, 2010),  
[http://www.arb.ca.gov/msprog/onroadhd/documents/epa-arb\\_scr\\_workshop\\_7-20-10.pdf](http://www.arb.ca.gov/msprog/onroadhd/documents/epa-arb_scr_workshop_7-20-10.pdf).

1 2.652.66 “SCR Inducements” or “Inducements” means the limitations imposed on vehicle  
2 operation that occur when a vehicle runs out of DEF, has poor quality DEF, or when tampering occurs to  
3 the SCR system. Inducements might include limitations on vehicle speed or rendering inoperable the  
4 restart function of the vehicle.

4 2.662.67 “SCR System” means the combination of components necessary for NO<sub>x</sub> to be  
5 reduced by selective catalytic reduction. These components include the DEF tank, DEF injection system,  
6 SCR catalyst(s), and associated sensors.

6 2.672.68 “Sea Level” means common altitudes at which Settling Defendants conduct  
7 certain tests (0-500 meters height).

8 2.682.69 “Second NO<sub>x</sub> Sensor” means an additional NO<sub>x</sub> sensor which will be added to  
9 Generation 3 vehicles during a Subsequent Service Action.

9 2.692.70 “SFTP Composite” means emissions result weighted over three test cycles  
10 according to the following formula:  $SFTP\ Composite = 0.35 \times (FTP) + 0.28 \times (US06) + 0.37 \times (SC03)$ .

11 2.702.71 “Subsequent Service Action” means a removal, addition, installation,  
12 replacement, repair, or other modification of an emission related component on a Modified Vehicle that  
13 is required to bring the vehicle into compliance with this Appendix B.

13 2.712.72 “Supplemental FTP” or “SFTP” mean the additional test procedures designed to  
14 measure emissions during aggressive and microtransient driving, as described in 40 C.F.R. § 86.159–00  
15 over the US06 cycle, and also the test procedure designed to measure urban driving emissions while the  
16 vehicle’s air conditioning system is operating, as described in 40 C.F.R. § 86.160–00 over the SC03  
17 cycle.

17 2.722.73 “Switch Calibration” means the computerized program utilized by a Subject 2.0  
18 Liter Vehicle’s ECU, prior to receiving an Approved Emissions Modification, to determine if the vehicle  
19 is being tested for emissions or driven on the road. The Switch Calibration program changes the  
20 operation of the vehicle’s Emission Control Systems depending on the driving mode detected by the  
21 program.

20 2.732.74 “Unified Drive Cycle” means the “Unified Cycle Driving Schedule” defined in  
21 Part II of the “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and  
22 Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test  
23 Procedures for Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles,” incorporated by  
24 reference in Cal. Code Regs. tit 13, § 1961.2.

23 2.742.75 “Test Group” means the basic classification unit within a durability group used  
24 for the purpose of demonstrating compliance with exhaust emission standards in accordance with 40  
25 C.F.R. § 86.1841-01.

25 2.752.76 “US06” means the driving schedule described in 40 C.F.R. § 86.159–08 and  
26 listed in 40 C.F.R. 86, Appendix I, section (g), as amended July 13, 2005, entitled, “EPA US06 Driving  
27 Schedule for Light-Duty Vehicles and Light-Duty Trucks” (e.g., hard acceleration, more power  
28 requirement, high speed, high load).

1 malfunction criteria set forth in this Appendix B; (3) federal defect reporting requirements under 40  
 2 C.F.R. Part 85, Subpart T; and (4) California Emissions Warranty and Information Reporting  
 3 requirements under Cal. Code Regs. tit. 13, §§ 2141-2146. As stated in Section VIII of this Appendix B  
 4 (Stipulated Penalties and Other Stipulated Remedies for Noncompliance), EPA and CARB reserve all  
 5 rights and authorities to impose consequences if Settling Defendants fail to comply with these testing  
 6 and reporting requirements, including if such testing demonstrates that the Modified Vehicles exceed the  
 7 Maximum Emissions Modification Limits or the OBD emission threshold malfunction criteria set forth  
 8 in this Appendix B. For OBD in-use compliance measurements, no add-ons are granted; for OBD in-use  
 9 testing, Settling Defendants may precondition the test vehicle through two HWFET cycles to allow  
 10 DeSOx events to occur. For purposes of emissions compliance determinations subsequent to  
 11 EPA/CARB's Notice of Approved Emissions Modification, the Maximum Emissions Modification  
 12 Limits set forth in Tables 1 – 3 shall be adjusted as described in subparagraphs 3.7.1 – 3.7.3 below.  
 13 Settling Defendants may not apply the following in-use add-ons to any of the demonstrations that must  
 14 be included in an Emissions Modification Proposal, and such add-ons apply only to in-use vehicles that  
 15 have been modified in accordance with the applicable Approved Emissions Modification.

10 3.7.1 The applicable in-use NO<sub>x</sub> + NMOG Maximum Emissions Modification Limits  
 11 for Generation 1 shall be determined by adding 0.030 g/mile to the FTP levels and 0.050 g/mile  
 12 to the SFTP levels specified in Table 1;

12 3.7.2 The applicable in-use high altitude NO<sub>x</sub> + NMOG Maximum Emissions  
 13 Modification Limits for Generations 2 and 3 shall be determined by adding 0.050 g/mile to the  
 14 FTP@1620m levels shown in Tables 2 and 3 respectively; and

14 3.7.3 The applicable in-use SFTP NO<sub>x</sub> + NMOG Maximum Emissions Modification  
 15 Limits for Generation 2 shall be determined by adding to 0.050 g/mile to the levels shown in  
 16 Table 2.

17 **3.8 Costs:** Settling Defendants must incur and satisfy costs associated with each Approved  
 18 Emissions Modification, including any Subsequent Service Actions, as required under Appendix A.

18 **3.9 Warranty:** Settling Defendants must provide an Emission Control System and an Engine  
 19 Long Block warranty (collectively, the "Extended Emissions Warranty"). The Extended Emissions  
 20 Warranty shall cover all parts and labor, as well as the cost or provision of a loaner vehicle for warranty  
 21 service lasting longer than 3 hours. Settling Defendants must not impose on consumers any fees or  
 22 charges, and must pay any fees or charges imposed by its dealers related to the warranty service.

22 3.9.1 The Emissions Control System warranty must cover all components which are  
 23 replaced as part of the Approved Emissions Modification and any component which can  
 24 reasonably be impacted by effects of the Approved Emissions Modification, such as increased  
 25 thermal load or cycling, increased soot load, increased use of EGR, increased DPF regeneration,  
 26 and increased fuel injection pressure. The Emissions Control System warranty must also cover, as applicable, any component(s) replaced or newly installed as part of an AEM Correction, any component(s) which can reasonably be impacted by Technical Issue(s), as defined by Paragraph 2.4, that require an AEM Correction, as well as any components which can reasonably be impacted by the AEM Correction itself. The warranty period shall not be extended by installation of an AEM Correction, but will instead continue to run from the installation date of the

1 Approved Emissions Modification. The Emission Control System Warranty shall cover the  
2 following parts, as further specified in the applicable Extended Emissions Warranty Parts  
3 Coverage List submitted by Settling Defendants with each Emissions Modification Proposal, as  
4 further described in subparagraph 4.3.10:

- 5 i. The entire exhaust after treatment system including the DOC, the SCR catalyst (if  
6 applicable), the dosing injector and other DEF system components (if applicable),  
7 the NOx Trap (if applicable), all sensors and actuators, and the exhaust flap;
- 8 ii. The entire fuel system, including the fuel pumps, high pressure common rail, fuel  
9 injectors, and all sensors and actuators;
- 10 iii. EGR system including the EGR valve, EGR cooler, EGR filter, all related hoses  
11 and pipes, and all sensors and actuators;
- 12 iv. The turbocharger;
- 13 v. The OBD System and any malfunctions detected by the OBD systems other than  
14 those related to the transmission; and
- 15 vi. The DPF.

16 3.9.2 The Extended Emissions Warranty shall cover each and every DPF that has failed  
17 as a result of implementing any Approved Emissions Modification. If Settling Defendants can  
18 demonstrate to the satisfaction of EPA/CARB in a Proposed Emissions Modification that  
19 Settling Defendants' dealers can adequately distinguish between a DPF that has reached the  
20 maximum ash load and needs to be replaced as part of normal maintenance and a DPF that has  
21 failed as a result of implementing such Approved Emissions Modification, then the Extended  
22 Emissions Warranty applicable to such Approved Emissions Modification does not need to cover  
23 DPFs that need replacement as part of normal maintenance. If Settling Defendants fail to make  
24 this demonstration then the Extended Emissions Warranty must cover each and every DPF.

25 3.9.3 The Engine Long Block warranty must cover the engine sub-assembly that  
26 consists of the assembled block, crankshaft, cylinder head, camshaft, and valve train.

27 3.9.4 The warranty period for the Extended Emissions Warranty shall be both:

- 28 i. For Generation 1 and 2, 10 years or 120,000 actual miles whichever comes first;  
for Generation 3, 10 years or 150,000 actual miles whichever comes first; and
- ii. 4 years or 48,000 miles, whichever comes first, from date and mileage of  
implementing the Emissions Modification, except for vehicles offered for resale,  
in which case, from the date and mileage of the first resale transaction after the  
modification to the first person who in good faith purchases the vehicle for  
purposes other than resale.



1           3.9.5 If Settling Defendants are required to provide Additional Warranty Extensions  
2 pursuant to subparagraph 3.5.3, the Additional Warranty Extensions shall extend the warranty  
3 periods specified in subparagraphs 3.9.4 (i) – (ii).

4           3.9.6 Settling Defendants must make available online a searchable database that  
5 includes all 2.0 Liter Subject Vehicles, by which users, including Eligible Owners, Eligible  
6 Lessees, and prospective purchasers, may conduct a free-of-charge search by vehicle VIN to  
7 determine whether the Extended Emissions Warranty and any Additional Warranty Extensions  
8 apply to a specific vehicle. To satisfy this requirement, Settling Defendants may include a  
9 webpage that meets these specifications on the Emissions Modification Database, pursuant to  
10 subparagraph 3.1.9. Upon the modification of each and every Modified Vehicle, Settling  
11 Defendants must identify within the database that such vehicle is covered by the Extended  
12 Emissions Warranty and Additional Warranty Extensions, as applicable, by displaying the  
13 applicable warranty disclosure statements when a user enters the VIN. Settling Defendants must  
14 provide the VINs for all such vehicles to EPA/CARB within 15 Days of EPA/CARB’s request.

15           3.9.7 Settling Defendants must also maintain a database that includes all 2.0 Liter  
16 Subject Vehicles, by which Volkswagen and Audi authorized dealers and Volkswagen and Audi  
17 authorized service facilities (collectively, “Dealers”) shall search by vehicle VIN to determine  
18 whether the Extended Emissions Warranty and any Additional Warranty Extensions apply to a  
19 specific 2.0 Liter Subject Vehicle. Settling Defendants shall establish procedures such that the  
20 vehicle VIN shall dictate component or system coverage described in the approved Extended  
21 Emissions Warranty Component List. Such procedures shall include a feature on the database by  
22 which Dealers shall enter the identification number for any part pertaining to a Modified Vehicle  
23 and the database shall inform all Dealers whether such part is covered by the Extended  
24 Emissions Warranty, in accordance with the approved Extended Emissions Warranty Component  
25 List. Settling Defendants must maintain the Extended Emissions Warranty Component List and  
26 the Dealer database to ensure current part identification numbers are listed. In no event shall  
27 warranty coverage be subject to service writers’ discretion.

28           3.9.8 The Extended Emissions Warranty is associated with the car, and remains  
available to any and all subsequent owners and operators.

          3.9.9 The Extended Emissions Warranty shall not supersede or void any outstanding  
warranty. To the extent there is a conflict in any provision(s) of this warranty and any  
outstanding warranty, that conflict shall be resolved to the benefit of the consumer.

          3.9.10 The Extended Emissions Warranty shall not modify, limit, or affect any state,  
local or federal legal rights available to the owners.

          3.9.11 Any waiver of any provision of the Extended Emissions Warranty by an owner is  
null and void.

1           6.1.7. Starting on April 30, 2018, and annually for the following 5 years, Settling  
2 Defendants must provide EPA and CARB with a “Report on In-Use Compliance Assurance for  
3 Modified Vehicles” that summarizes the testing performed pursuant to this Section in the  
4 preceding year. The two vehicles tested under this section shall be two of the vehicles procured  
by the Settling Defendants during the Settling Defendants compliance with the in-use reporting  
and compliance requirements in 40 C.F.R. § 86.1845-04 04 and Cal. Code Regs. tit. 13, § 2137.

5           6.1.8. Settling Defendants must certify all In-Use Compliance test results required under  
6 this Section VI, and submitted to EPA and CARB, in accordance with the certification  
requirements of Paragraphs 33 and 34 of this Consent Decree

7 **VII. ADDITIONAL REQUIREMENTS**

8           **7.1** In implementing any Approved Emissions Modification, Settling Defendants must  
9 comply with the following additional requirements.

10           **7.2** For all Generations, Settling Defendants may not sell or cause to be sold, resell or cause  
11 to be resold, or lease or cause to be leased, any 2.0 Liter Subject Vehicle in Settling Defendants’  
12 possession, or obtained by Settling Defendants as a trade-in or through the Buyback or Lease  
Termination Program under Appendix A until:

13           7.2.1. Settling Defendants complete at least 75% Full Useful Life durability testing on  
14 an official emissions durability vehicle aged on the SRC cycle (a representative vehicle, as  
approved by EPA/CARB, is acceptable for this purpose) and Settling Defendants provide all  
data to EPA and CARB.

15           7.2.2. Settling Defendants complete the Critical OBD Demonstration Testing on a  
16 vehicle aged to at least 75% Full Useful Life on the SRC cycle executed with an Engineering  
Durability Vehicle and Settling Defendants provide all data to EPA/CARB;

17           7.2.3. Settling Defendants remedy any and all OBD noncompliances that are not  
18 provided for under this Appendix B and that are known at the time the OBD demonstration  
19 required under subparagraph 7.2.2 is completed;

20           7.2.4. Settling Defendants perform an applicable Approved Emissions Modification  
21 on any such vehicle and comply with all other requirements applicable to such vehicle under  
Appendix B;

22           7.2.5. Settling Defendants execute all emission-related service actions and repairs  
23 required to bring the vehicle into compliance with Appendix B, apply any and all other recalls  
24 concerning the vehicle, and execute any other required service actions, provided that, to fulfill  
25 this requirement for Generation 3 vehicles, Settling Defendants need not execute the  
26 Subsequent Service Action described in subparagraph 3.4.3;



1           7.2.6. Settling Defendants submit a Proposed Plan for Sale and Lease of Modified  
2 Vehicles, including the materials set forth below.

- 3           i. A statement that the Modified Vehicles comply with the requirements in  
4 Appendix B;
- 5           ii. If the Modified Vehicles do not comply with Appendix B, a statement of all  
6 actions to be undertaken to alter the Emissions Modification to ensure  
7 compliance with Appendix B;
- 8           iii. As necessary, an updated list of OBD noncompliances that were identified  
9 during the testing required under subparagraph 7.2.2; and
- 10           iv. Settling Defendants certify the Proposed Plan for Sale and Lease of Modified  
11 Vehicles in accordance with the certification requirements set forth in Paragraphs  
12 33 and 34 of this Consent Decree.

13           7.2.7. EPA/CARB approve the Proposed Plan for Sale and Lease of Modified Vehicles.  
14 EPA/CARB will respond to the proposal within 14 Days of submittal.

15           7.2.8. For five years following entry of this Consent Decree, Settling Defendants must  
16 submit quarterly reports, certified in accordance with the certification requirements under  
17 Paragraphs 33 and 34 of this Consent Decree, to EPA/CARB to include the following  
18 information:

- 19           i. Each vehicle, by VIN, that has been acquired by Settling Defendants, modified  
20 with an Approved Emissions Modification (including Modified Vehicles that  
21 have been returned to Eligible Owners and Lessors), sold, exported, or  
22 destroyed, including the dates of each occurrence;
- 23           ii. By VIN, the repairs and alterations to each 2.0 Liter Subject Vehicle conducted  
24 to remedy OBD noncompliances and other defects in the relevant Approved  
25 Emissions Modification.

26           **7.3** If the Final OBD Demonstration or the Full Useful Life Durability testing show that  
27 Modified Vehicles do not meet the OBD System or durability requirements of this Appendix B, or if a  
28 substantial number of Modified Vehicles exceed the Maximum Emissions Modification Limits in-use,  
the Approved Emissions Modification shall be suspended, during which time no relevant Emissions  
Modifications may be applied, and no sales, leases, or exports, of relevant Modified Vehicles will be  
permitted, until such time Settling Defendants correct the defects in the Approved Emissions  
Modification.

**7.4** Settling Defendants must make all disclosures to vehicle owners as required by the  
Consent Decree and the FTC Order, and consistent with Appendix A. These requirements are meant to  
ensure owners are able to make an informed decision about participation in the Emissions  
Modification and the availability of the Extended Emissions Warranty.

1           **7.5** Settling Defendants must also comply with any additional labeling, disclosure, and  
2 warranty requirements set forth in Appendix A.

3           **7.6** As more fully described in Appendix A, Settling Defendants may not terminate the  
4 Emissions Modification Program.

5           **7.7 Approved Emissions Modification Corrections.** No later than 15 business days after  
6 Settling Defendants first reasonably believe there is a Technical Issue(s), as defined by Appendix B,  
7 Paragraph 2.4, that require an AEM Correction, they must notify EPA and CARB of such issues  
8 (“Notice of Technical Issue(s”). No later than 30 Days before implementing an AEM Correction,  
9 Settling Defendants must describe to EPA and CARB the Technical Issue(s) that require an AEM  
10 Correction and the proposed technical solution, and provide the information required under 40 C.F.R.  
11 § 86.1842-01(b) and Cal. Code Regs. tit. 13, § 2114 (“Notice of AEM Correction”). Settling  
12 Defendants shall include “Notice of AEM Correction” in the title and subject line of all presentations  
13 and emails to EPA and CARB concerning each proposed correction.

14           **7.7.1. Approved Emissions Modification Suspension.** EPA and CARB may order  
15 Settling Defendants to, and Settling Defendants, if ordered, must make best efforts to  
16 immediately cease installation of an Approved Emissions Modification with Technical Issue(s)  
17 that require correction by, at a minimum, issuing within 72 hours of EPA and CARB’s order,  
18 dealer instructions notifying dealers that Settling Defendants have suspended the AEM and that  
19 installation of the suspended AEM is prohibited until further notice.

20           **7.7.2. Additional Information.** Within 30 Days of a request by EPA and CARB,  
21 Settling Defendants must submit additional information or testing concerning the Technical  
22 Issue(s) that require an AEM Correction and/or concerning the AEM Correction itself. EPA and  
23 CARB may extend the deadline for submitting information to EPA and CARB in response to  
24 such a request. If Settling Defendants fail to provide the required information or testing within 30  
25 Days, or such time as set by EPA and CARB, they shall make best efforts to immediately cease  
26 installation of the AEM Correction by, at a minimum, issuing within 72 hours of the deadline for  
27 submitting the requested information or testing, dealer instructions notifying dealers that Settling  
28 Defendants have suspended the AEM Correction and that installation of the AEM Correction is  
prohibited until further notice, consistent with 40 C.F.R. § 86.1842-01(b)(2).

**7.7.3. Noncompliance.** The AEM Correction must not result in any noncompliance with  
Appendix B, including any noncompliance with the applicable regulations listed in Paragraph  
3.7. If EPA and CARB determine that the AEM Correction results in any such noncompliance,  
EPA and CARB will notify Settling Defendants and may order Settling Defendants not to  
commence or to immediately cease the AEM Correction. In that event, Settling Defendants shall  
make best efforts to immediately cease the AEM Correction by, at a minimum, issuing within 72  
hours of EPA and CARB’s notice, dealer instructions notifying dealers that Settling Defendants  
have suspended the AEM Correction and that installation of the AEM Correction is prohibited  
until further notice. Settling Defendants may submit a revised Notice of AEM Correction,  
including a revised technical solution, subject to the written approval of EPA and CARB.

**7.7.4. Consumer Notice.** The Notice of AEM Correction shall include a draft consumer  
disclosure notice containing information about the AEM Correction of the type required under

1 Appendix B, subparagraph 4.3.8, including a revised warranty statement, as applicable. The  
2 consumer disclosure notice must describe the Technical Issue(s) that require the AEM Correction  
3 and any and all impacts resulting from the Technical Issue(s) that require the AEM Correction.  
4 The notice must also describe any and all reasonably predictable changes resulting from the  
5 AEM Correction itself, including all changes to vehicle attributes that may reasonably be  
6 important to vehicle owners. The Notice of AEM Correction shall also include a draft dealer  
7 instruction that instructs dealers to provide the consumer notice to vehicles owners when the  
8 AEM Correction is installed. The draft consumer disclosure notices and the draft dealer  
9 instruction described in this paragraph must concurrently be provided to the PSC and FTC.

- 10 i. Settling Defendants must issue the consumer notice to affected consumers no  
11 sooner than 15 Days after submitting the Notice of AEM Correction to EPA and  
12 CARB and at least 15 Days before Settling Defendants commence installing an  
13 AEM Correction.
- 14 ii. Additionally, Settling Defendants must issue the consumer notice to affected  
15 consumers no later than 30 Days after submitting the Notice of AEM Correction  
16 to EPA and CARB, regardless of when Settling Defendants commence the  
17 AEM Correction. If no AEM Correction is available within 30 Days after  
18 submittal of the Notice of Technical Issue(s) to EPA and CARB, EPA and  
19 CARB may order Settling Defendants to, and Settling Defendants, if ordered,  
20 must issue to consumers a notice describing the Technical Issue(s), including  
21 the information required under Paragraph 7.7.4, no later than 15 Days after EPA  
22 and CARB's order.
- 23 iii. EPA and CARB may extend the deadlines for issuing the notice(s) to  
24 consumers.
- 25 iv. If EPA and CARB determine a notice is misleading, inaccurate, incomplete, or  
26 inconsistent with the requirements of Appendix B, subparagraph 7.7.4(ii), EPA  
27 and CARB may order, and Settling Defendants, if ordered, must revise the  
28 notice, not commence the AEM Correction and/or make best efforts to cease  
installing the AEM Correction by, at a minimum, issuing within 72 hours of  
EPA and CARB's order, dealer instructions notifying dealers that Settling  
Defendants have suspended the AEM Correction and that installation of the  
AEM Correction is prohibited until further notice.

7.7.5. Consumer Election. Settling Defendants shall not apply an AEM Correction without the express authorization of the vehicle owner.

7.7.6. Loaner Vehicle. Settling Defendants shall provide a loaner vehicle for all AEM Corrections lasting longer than 3 hours.

7.7.7. Consent to Recall. Settling Defendants agree that if they elect to implement an AEM Correction through this process, in the event EPA and CARB determine the AEM Correction results in noncompliance described in subparagraph 7.7.3, Settling Defendants

1 consent to recall all vehicles that have received the AEM Correction and to remedy such  
2 nonconformity in accordance with the recall regulations, 40 C.F.R. Part 85, Subpart S, and Cal.  
3 Code Reg., tit. 13, § 2111, et seq., including obtaining approval of a recall plan as described in  
4 the regulations, provided, however, that any disputes concerning a recall under this Paragraph  
5 7.7 shall be governed by the dispute resolution procedures of the Consent Decree rather than the  
6 procedures described in 40 C.F.R. §§ 85.1801 and 85.1807.

7 7.7.8. **Certification.** Settling Defendants must certify all submissions under the  
8 certification requirements of the Consent Decree, Paragraphs 33 and 34.

9 7.7.9. **Liability for Approved Emissions Modification Defects.** Correction of any  
10 Technical Issue(s), as defined by Appendix B, Paragraph 2.4, that require an AEM Correction  
11 under this Paragraph 7.7 shall be no defense to any liability of Settling Defendants for  
12 noncompliance with Appendix B or the applicable laws and regulations.

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**EXHIBIT B**

Modifications to Second Partial Consent Decree

**APPENDIX B**

**VEHICLE RECALL AND EMISSIONS MODIFICATION PROGRAM  
FOR 3.0 LITER SUBJECT VEHICLES**

**I. PURPOSE**

This Appendix B establishes how Defendants shall submit Proposed Emissions Modifications, and how the United States Environmental Protection Agency (“EPA”) and the California Air Resources Board (“CARB”) (collectively, “EPA and CARB” or “EPA/CARB”) will approve or disapprove any such proposal, should Defendants choose, at their election, to submit a Proposed Emissions Modification. Defendants must comply with the requirements of this Appendix B. No Emissions Modification may be performed by, or on behalf of, Defendants unless and until EPA/CARB approve the applicable Proposed Emissions Modification. Following approval, any Emissions Modification performed by, or on behalf of, Defendants must conform to the applicable Approved Emissions Modification and the requirements set forth herein.

If Defendants submit a Proposed Emissions Modification according to the terms of this Appendix B, and EPA/CARB determine the proposal satisfies the requirements set forth herein, then EPA/CARB will approve that Proposed Emissions Modification. EPA/CARB will issue decisions, including decisions concerning the approval or disapproval of Proposed Emissions Modifications, in accordance with the definitions and decision-making authorities set forth in Paragraphs 21-23 of the Consent Decree. EPA/CARB will review any proposal according to this Appendix B, rather than according to the regulatory processes for reviewing applications for Certificates of Conformity, Executive Orders, or administrative recalls; provided, however, except as otherwise expressly stated herein, the applicable regulatory calculation methods, test procedures, protocols, processes, or procedures shall apply unless an alternative approach is approved by the agencies.

**II. DEFINITIONS**

2.1 Terms used in this Appendix B shall have the meanings set forth below. Terms that are not defined below but are defined in Section III (Definitions) of the Consent Decree shall have the meanings set forth therein.

2.2 “20° F FTP” means the FTP conducted at 20° Fahrenheit, as specified in 40 C.F.R. Part 1066, Subpart H.

2.3 “50° F FTP” means the FTP conducted at 50° Fahrenheit, as specified in Cal. Code Regs. tit. 13, § 1961 and the incorporated test procedures.

2.4 “A-to-B Emissions Demonstration Vehicle” means the vehicle(s) identified for use in A-to-B emissions demonstration purposes in Appendix B-3 to this Consent Decree.

1 2.5 “A-to-B Fuel Economy Demonstration Vehicle” means the vehicle(s) identified for use in  
2 A-to-B fuel economy demonstration purposes in Appendix B-3 to this Consent Decree.

3 2.6 “Adaptive Dosing to Prevent Deposits” (online dosing) means an AECD included in the  
4 Master Series Calibration that modifies DEF dosing such that NH<sub>3</sub> storage mode is no longer active. In  
5 the Master Series Calibration, Adaptive Dosing to Prevent Deposits does not activate and online dosing  
6 is inhibited during US06 and HWY emissions tests.

7 2.62.7 “AEM Correction” means the technical modifications to the Approved Emissions  
8 Modification implemented by Defendants in accordance with the requirements of Appendix B,  
9 Paragraph 7.7, to correct or repair technical issues that constitute noncompliance with Appendix B or the  
10 regulations, or that interfere with the emission control system, the OBD system, durability, performance,  
11 or drivability of a Modified Vehicle during ordinary vehicle operation and use (“Technical Issue(s”).  
12 This process is not available to correct Approved Emissions Modifications that EPA and CARB  
13 determine (1) exceed emissions in-use under Appendix B, Section VI or (2) contain defeat devices.

14 2.72.8 “Approved Emissions Modification” means an Emissions Modification submitted by  
15 Defendants and approved by EPA/CARB.

16 2.82.9 “Auxiliary Emission Control Device” or “AECD” has the meaning set forth in 40 C.F.R.  
17 § 86.1803-01.

18 2.92.10 “Calibration” means a specific parameterization of a vehicle computers’ software,  
19 such as the ECU software, that determines how various processes in engine and exhaust aftertreatment  
20 are controlled under many different operating conditions, or the TCU software that determines when the  
21 transmission will shift gears and operate various actuators in the transmission. A common example of a  
22 process is fuel injection (timing and quantity) under different engine loads and ambient conditions.

23 2.102.11 “Combined Uphill/Downhill and Highway Route” means the driving route shown  
24 and described in Appendix B-4 to this Consent Decree.

25 2.112.12 “Critical OBD Demonstration” means the minimum set of OBD emission  
26 demonstration tests, pursuant to Cal. Code Regs. tit. 13, § 1968.2(h) (2013), that must be completed and  
27 included in the Emissions Modification Proposal, as follows: SCR Catalyst efficiency, SCR Dosing  
28 delivery performance underdosing, all injectors Fuel System Quantity and Timing minimum, all  
injectors Fuel System Quantity and Timing maximum, EGR Low Flow, EGR High Flow, EGR Slow  
Response, EGR cooling, Boost system over-boost, Boost system under-boost, Charge Air Under  
Cooling, DOC efficiency, Too Frequent Regeneration, NOx Sensors Upstream, and PM Filter  
efficiency. Additionally, for the Audi Q7 Generation 2.1 vehicle, Defendants must complete and submit  
with the applicable Emissions Modification Proposal a Critical OBD Demonstration of the DEF dosing  
delivery performance monitor.

2.122.13 “Customized SRC” means the mileage accumulation cycle used to age the 3.0  
Liter Subject Vehicles for purposes of durability demonstrations and OBD demonstrations to achieve an  
acceleration factor of up to 1.8 for mileage accumulation to the equivalent of Full Useful Life, provided  
that if an acceleration factor of less than 1.8 is used for this purpose, that factor value must replace the  
1.8 factor value for all purposes under this Appendix B, where (a) the TCM Step 3 mileage share is  
raised to at least 20 percent on average by artificially lifting the exit/entry modeled SCR-temperature



1 during mileage accumulation; (b) the Mileage Safety Out Parameter is set to an applicable value, which  
2 is calculated by dividing the distance between two regenerations determined during the regulated SRC  
3 procedure by the acceleration factor; (c) the emission testing intervals will equate to equivalent mileage  
4 based on the acceleration factor up to 1.8, meaning 30,000 equivalent miles will result in a delta  
5 odometer mileage of 16,667 miles; and (d) to adjust for accelerated aging, the Defendants must modify  
6 the mileage based aftertreatment device aging factors by dividing the existing distance based axis points  
7 by up to 1.8. Except as otherwise set forth in subparagraph 4.3.2, the Customized SRC shall be run on  
8 the DDVs for each Generation, and on any other vehicles for which the Customized SRC is applicable  
9 (as set forth in Appendix B-3), starting at the agreed mileage parameters set forth in subparagraph 4.3.2  
10 for each test vehicle.

11 2.132.14 “Cylinder Pressure Sensor” means a sensor located in the cylinder head which  
12 directly or indirectly measures pressure or related characteristics inside the cylinder.

13 2.142.15 “Dealers” means Volkswagen, Audi, and Porsche authorized dealers and  
14 Volkswagen, Audi, and Porsche authorized service facilities.

15 2.152.16 “DEF System” means the combination of vehicle components used to store, filter,  
16 measure the level and quality of, thaw, and inject the DEF into the exhaust.

17 2.162.17 “Defeat Device” has the meaning provided under 42 U.S.C. § 7522(a)(3)(B) and  
18 40 C.F.R. § 86.1803-01.

19 2.172.18 “Deterioration Factor” or “DF” means the number, determined pursuant to 40  
20 C.F.R. § 86.1823-08, that represents the change in emissions performance during a vehicle’s Full Useful  
21 Life. The DF is applied to emission results from the required test cycles, as provided in 40 C.F.R. §  
22 86.1841-01 except as provided herein. DFs are used to estimate increases in emissions caused by  
23 deterioration of the emission control system as a vehicle ages over its Full Useful Life.

24 2.182.19 “Diesel Exhaust Fluid” or “DEF” means a liquid reducing agent used in  
25 conjunction with selective catalytic reduction to reduce NO<sub>x</sub> emissions. DEF is generally understood to  
26 be an aqueous solution of urea conforming to the specification of ISO 22241. DEF is used in each  
27 Generation of the 3.0 Liter Subject Vehicles and is sometimes referred to by the trademarked name,  
28 “AdBlue.”

2.192.20 “Diesel Oxidation Catalyst” or “DOC” means part of the emission control system  
that promotes chemical oxidation of CO, NO, and HC, as well as the SOF portion of diesel particulates.  
For 3.0 Liter Subject Vehicles that are passenger vehicles, the DOC is housed in the same housing part  
as the DPF and SCR components. All 3.0 Liter Subject Vehicles that are sport utility vehicles have  
separate housings for the DOC and the DPF.

2.202.21 “Diesel Particulate Filter” or “DPF” means part of the emissions control system  
designed to capture particle emissions through a combination of filtration mechanisms, such as  
diffusional deposition, inertial deposition, or flow-line interception. The process of regeneration  
removes collected particulates from the DPF. During active regeneration, the emissions control system  
is modulated to increase exhaust temperature to promote combustion of the particulate matter by  
oxygen. Additionally, particulate matter is passively and continuously regenerated by reaction with NO<sub>2</sub>  
at lower temperatures (the Continuously Regenerating Trap or CRT effect).

1 2.212.22 “Drivability” means the smooth delivery of power, as demanded by the driver or  
2 operator. Typical elements of Drivability degradation are rough idling, misfiring, surging, increased  
hesitation, or insufficient power.

3 2.222.23 “Durability Demonstration Vehicle,” “DDV,” or “Official Durability Vehicle”  
4 means a vehicle with the final emission Calibration that is run on the Customized SRC to the equivalent  
5 of Full Useful Life. For Generation 1.2, Generation 2.1, and Generation 2.2 SUV, running the  
6 Customized SRC to the equivalent of Full Useful Life requires execution of at least 143 DPF  
7 regenerations. For Generation 2 PC, running the Customized SRC to the equivalent of Full Useful Life  
8 requires execution of at least 190 DPF regenerations. For Generation 1.1, Defendants must determine  
9 the number of regenerations required according to Paragraph 2.12 of this Appendix B. In accordance  
10 with the mileage intervals set forth in subparagraph 4.3.2 of this Appendix B, Defendants shall conduct  
11 emissions testing in the FTP75 on the Durability Demonstration Vehicle, and shall calculate the DF  
12 based on such periodic emissions tests. After completion of mileage accumulation to the equivalent of  
13 Full Useful Life and all applicable emissions tests, the vehicle must be reflashed with the final engine  
Calibration, which includes the final emissions Calibration (used during mileage accumulation to the  
equivalent of Full Useful Life) and the final OBD Calibration. To adjust such final engine Calibration  
for accelerated aging, Defendants must set the mileage based aftertreatment device aging factors by  
dividing the existing distance based axis points by 1.8. The reflashed vehicle is used for Full Useful Life  
emissions compliance and Final OBD Demonstration testing that shall be submitted according to  
subparagraph 3.1.11 of this Appendix B. The Durability Demonstration Vehicles for each Generation  
are set forth in Appendix B-3 to this Appendix B.

14 2.232.24 “Engine Control Unit” or “ECU” means the computer, including associated  
15 software, that controls various engine functions, including emission control system functions, and/or  
16 other functions that may impact vehicle emissions or OBD compliance by processing electrical signals  
17 from sensors and/or electronic signals from other electronic control modules on the vehicle (e.g., TCU,  
SCR control unit, stability control units, brake control units, the body control module, and the  
instrument cluster).

18 2.242.25 “Exhaust Gas Recirculation” or “EGR” means a device that directs a portion of  
19 the exhaust gas into the intake air stream for the purpose of controlling emissions.

20 2.252.26 “Emission Control System” means a unique group of emission control devices,  
21 auxiliary emission control devices, engine modifications and strategies, and other elements of design  
designated by EPA/CARB and used to control exhaust emissions of a vehicle.

22 2.262.27 “Emission Control System Data Parameters” means the data parameters that  
23 Defendants must record while conducting the Required Emissions Test Procedures, including the  
24 preconditioning cycles, and such other tests as set forth in this Appendix B. The Emission Control  
25 System Data Parameters applicable to each Generation are subject to prior-authorization of EPA/CARB.  
Prior to conducting the required test procedures for each Generation, Defendants must submit for  
EPA/CARB review and approval, the proposed emission control system data parameters to be recorded  
during test procedures for the applicable Generation.

26 2.272.28 “Emissions Increasing Auxiliary Emissions Control Device” or “EI-AECD”  
27 means any AECD, as defined in Cal. Code. Regs. tit. 13, § 1968.2(c), that reduces the effectiveness of

1 the emission control system under conditions which may reasonably be expected to be encountered in  
2 normal vehicle operation and use, provided that the need for such AECD is justified by the protection it  
3 provides against vehicle damage or accident. EI-AECDs do not include AECDs that do not sense,  
4 measure, or calculate any parameter or command or trigger any action, algorithm, or alternate strategy;  
5 or AECDs that are activated solely due to any of the following conditions: (1) operation of the vehicle  
6 above 8,000 feet in elevation; (2) ambient temperature; (3) when the engine is warming up and is not  
7 reactivated once the engine has warmed up in the same driving cycle; (4) failure detection (storage of a  
8 fault code) by the OBD system; (5) execution of an OBD monitor; or (6) execution of an infrequent  
9 regeneration event.

7 2.282.29 “Emissions Modification” means the alterations to 3.0 Liter Subject Vehicles  
8 including all software recalibrations, and the replacement, repair, installation, or upgrading of parts  
9 related to the Emission Control System, that are designed to reduce emissions, remove all Defeat  
10 Devices and bring the vehicles into compliance with the applicable emissions standards or limits, and  
11 the other requirements specified in this Appendix B.

10 2.292.30 “Emissions Modification Database” means a searchable database that Defendants  
11 make available online, by which users, including Eligible Owners, Eligible Lessees, and potential  
12 purchasers, may conduct a free-of-charge search by vehicle VIN to determine whether the Emissions  
13 Modification is available for, or has been applied to, a specific vehicle.

13 2.302.31 “Emissions Modification Proposal” means the required materials Defendants  
14 provide in a Submission or multiple Submissions for EPA/CARB review and approval or disapproval of  
15 any Proposed Emissions Modification, if Defendants elect to submit such a proposal.

15 2.312.32 “Engineering Durability Data” means data which is used to estimate the Official  
16 Durability Data. It may be based on a preliminary design of the Emission Modification. It may also be  
17 determined from an extrapolation of incomplete Official Durability Data or by simulating the mileage  
18 accumulation required under 40 C.F.R. § 86.1823-08.

18 2.322.33 “Engineering Durability Vehicle” means a vehicle used for testing to obtain  
19 Engineering Durability Data.

20 2.332.34 “EPA/CARB” means EPA and CARB when the agencies evaluate Defendants’  
21 Submissions and issue decisions, including decisions concerning the approval or disapproval of  
22 Proposed Emissions Modifications, in accordance with the definitions and decision-making authorities  
23 set forth in Paragraphs 21-23 of the Consent Decree.

23 2.342.35 “Federal Test Procedure” or “FTP75” means the driving schedule in 40 C.F.R.  
24 Part 86, Appendix I, Section (a) (EPA Urban Dynamometer Driving Schedule for Light-Duty Vehicles  
25 and Light-Duty Trucks).

25 2.352.36 “FTP-72” means the driving schedule defined in 40 C.F.R. Part 86, Appendix  
26 I(a)(3).

26 2.362.37 “Final OBD Demonstration” means all OBD emission demonstration testing  
27 required under Cal. Code. Regs. tit. 13, § 1968.2(h) (2013), provided, however, if Defendants assert that  
28 only a functional test is required because no failure or deterioration of the specific tested system could

1 result in an engine's emissions exceeding the emission malfunction criteria, Defendants must still  
2 complete the OBD demonstration and submit with the proposal all emission and fault detection data  
3 from vehicles equipped with the Proposed Emissions Modification used to determine that only a  
4 functional test of the system(s) is required.

5 2.372.38 "FTP@1620m" means FTP testing at high-altitude conditions, i.e., a test altitude  
6 of 1,620 meters (5,315 feet), plus or minus 100 meters (328 feet), or equivalent observed barometric test  
7 conditions of 83.3±1 kilopascals.

8 2.382.39 "Full Useful Life" or "FUL" means the regulatory period in years or miles during  
9 which vehicles must meet the applicable emissions standards or limitations specified in this Appendix B.  
10 Full Useful Life is 10 years or 120,000 miles, whichever occurs first, for Model Year 2009-2016 3.0  
11 Liter Subject Vehicles.

12 2.392.40 "Full Useful Life Emissions Demonstration Vehicle" means the vehicle(s)  
13 identified for demonstrating emissions compliance with the Full Useful Life Standards, set forth in  
14 Appendix B-3. Such standards are demonstrated with the inclusions of IRAF.

15 2.402.41 "Generation" means the different versions of emission control technology  
16 installed in various configurations of 3.0 Liter Subject Vehicles.

17 2.412.42 "Generation 1.1" or "GEN 1.1" means the following 3.0 Liter Subject Vehicles:  
18 Model Year 2009-2010 Audi Q7 and VW Touareg, within the Test Groups specified in Paragraph 2.9 of  
19 Appendix A to this Consent Decree.

20 2.422.43 "Generation 1.2" or "GEN 1.2" means the following 3.0 Liter Subject Vehicles:  
21 Model Year 2011-2012 Audi Q7 and VW Touareg, within the Test Groups specified in Paragraph 2.9 of  
22 Appendix A to this Consent Decree.

23 2.432.44 "Generation 2.1" or "GEN 2.1" means the following 3.0 Liter Subject Vehicles:  
24 Model Year 2013-2015 Audi Q7, and Model Year 2013-2014 VW Touareg and Porsche Cayenne,  
25 within the Test Groups specified in Paragraph 2.9 of Appendix A to this Consent Decree.

26 2.442.45 "Generation 2.2 SUV" or "GEN 2.2 SUV" means the following 3.0 Liter Subject  
27 Vehicles: Model Year 2015-2016 VW Touareg and Porsche Cayenne, within the Test Groups specified  
28 in Paragraph 2.9 of Appendix A to this Consent Decree.

2.452.46 "Generation 2 Passenger Cars" or "GEN 2 PCs" means the following 3.0 Liter  
Subject Vehicles: Model Year 2014-2016 Audi A6, A7, A8, A8L, and Q5, within the Test Groups  
specified in Paragraph 2.9 of Appendix A to this Consent Decree.

2.462.47 "Generation 2 SUV" or "GEN 2 SUV" means Generation 2.1 and Generation 2.2  
SUV, collectively.

2.472.48 "Highway Fuel Economy Test," "HWFET," or "HWY FE" mean the test cycle  
that represents highway driving as described in 40 C.F.R. Part 600, Appendix I.

1 2.482.49 “Hydrocarbon Poisoning SCR Catalyst Strategy” means an AECD in the Master  
2 Series Calibration that models the amount of hydrocarbons stored on the SCR catalyst and that  
3 diminishes the ability to store NH<sub>3</sub> on the SCR catalyst so that the SCR efficiency is reduced, and  
4 therefore DEF dosing amount will be reduced within ammonia storage mode. The adjusted SCR  
5 efficiency was not employed during emissions testing. If the amount of hydrocarbons stored on the SCR  
6 catalyst exceeds a calibrated value, the Adaptive Dosing to Prevent Deposits AECD will activate.

5 2.492.50 “Include” and “Including,” as used in this Appendix B, are not limiting terms.

6 2.502.51 “Infrequent Regeneration Adjustment Factor” or “IRAF” means the adjustment  
7 factor for each pollutant used to account for increased emissions caused by periodic regeneration of  
8 certain control devices, such as DPFs, performed by burning particulates that have accumulated in the  
9 control device. The increased emissions caused by such regeneration are accounted for by adjustment  
10 factors, or IRAFs, applicable to the pollutants NMOG, NO<sub>x</sub>, CO, and PM. Defendants shall calculate  
11 the IRAF using the method specified in 40 C.F.R. § 86.004-28(i) based on test vehicles at a minimum of  
12 75% of Full Useful Life. For purposes of the IRAF calculation for GEN 1.1, Defendants shall use the  
13 method specified in 40 C.F.R. § 86.004-28(i), with the regulated SRC for the regeneration interval  
14 determination. For purposes of the IRAF calculation for GEN 2 PC, the regeneration frequency shall be  
15 636 miles between regenerations. For purposes of the IRAF calculation for GEN 1.2 and GEN 2 SUV,  
16 the regeneration frequency shall be 840 miles between regenerations.

13 2.512.52 “Lambda Sensor” means a sensor located in a vehicle’s exhaust system that  
14 measures oxygen or a related characteristic.

15 2.522.53 “Master Series Calibration” means the Calibration installed on Subject 3.0 Liter  
16 Vehicles when originally certified and introduced into commerce that controls Emission Control  
17 Systems in the vehicle. The Master Series Calibration includes the Temperature Conditioning Mode,  
18 Adaptive Dosing to Prevent Deposits, Hydrocarbon Poisoning SCR Catalyst Strategy, and the  
19 Transmission Warmup Mode.

18 2.532.54 “Maximum Emissions Modification Limits” means the emissions levels specified  
19 in Appendix B-1 to this Appendix B that the Modified Vehicles may not exceed.

20 2.542.55 “Mileage Safety Out Parameter” means the mileage value that is set within a  
21 Calibration which, when reached, is treated as the equivalent of a full DPF and triggers a DPF  
22 regeneration.

22 2.552.56 “Modified Vehicle” means a 3.0 Liter Subject Vehicle that Defendants, or an  
23 entity acting on behalf of Defendants, have modified in accordance with an Approved Emissions  
24 Modification.

24 2.562.57 “Noise Vibration and Harshness” means a measure of the noise level heard during  
25 driving, the vibrations felt during driving, and the harshness of the ride of the vehicle.

26 2.572.58 “Non-Methane Organic Gases” or “NMOG” means the sum of oxygenated and  
27 non-oxygenated hydrocarbons contained in a gas sample as measured using the procedures described in  
28 40 C.F.R. § 1066.635.



1 2.582.59 “NOx” means oxides of nitrogen, i.e., the sum of the nitric oxide and nitrogen  
2 dioxide contained in a gas sample as if the nitric oxide were in the form of nitrogen dioxide.

3 2.592.60 “NOx Sensor” means a sensor located in a vehicle’s exhaust system which  
4 directly or indirectly measures NOx or related characteristics.

5 2.602.61 “Official Durability Data” means emissions data obtained by periodic testing  
6 during the accumulation of the equivalent of at least 100% of Full Useful Life mileage accumulated  
7 using the Customized SRC on Durability Demonstration Vehicles, as described in 40 C.F.R. § 1823-08,  
8 and as required under this Appendix B. Official Durability Data is used to determine DFs.

9 2.612.62 “OBD Demonstration Vehicle” means the vehicle(s) identified for each  
10 Generation for OBD demonstration purposes in Appendix B-3 to this Consent Decree.

11 2.622.63 “Particulate Matter” or “PM” means particulates formed during the diesel  
12 combustion process and measured by the procedures specified in 40 C.F.R. Part 86, Subpart B.

13 2.632.64 “Particulate Matter Sensor” or “PM Sensor” means a sensor located in a vehicle’s  
14 exhaust system which directly or indirectly measures particulate matter or related characteristics.

15 2.642.65 “Portable Emissions Measurement System” or “PEMS” means an emissions  
16 measurement system that complies with 40 C.F.R. Part 1065 and that measures emissions while a  
17 vehicle is driven on the road.

18 2.652.66 “Preconditioning” means taking steps consistent with the regulations to ensure  
19 that the exhaust system is stabilized. Preconditioning may include an initial one hour minimum soak and  
20 up to three driving cycles of the UDDS, as specified in 40 C.F.R. § 86.132-96(e)(2). Subject to prior  
21 authorization by EPA/CARB and provided that Defendants demonstrate a need for any additional  
22 preconditioning measure(s) specified in § 86.132-96(e)(2), EPA/CARB may allow such preconditioning,  
23 pursuant to 40 C.F.R. § 86.132-96(d).

24 2.662.67 “Proposed Emissions Modification” means the alterations to 3.0 Liter Subject  
25 Vehicles, including all software recalibrations, and, if applicable, the replacement, repair, installation, or  
26 upgrading of parts related to the Emission Control System, that Defendants may propose for  
27 EPA/CARB approval, and that are designed to reduce emissions, remove all Defeat Devices, and bring  
28 the vehicles into compliance with the requirements specified in this Appendix B.

2.672.68 “Required Emissions Test Procedures” shall have the meaning specified in  
subparagraph 4.3.2(i) of this Appendix B.

2.682.69 “SC03” means the test cycle, described in 40 C.F.R. § 86.160-00 and listed in 40  
C.F.R. Part 86, Appendix I, paragraph (h), which is designed to represent driving under urban conditions  
at elevated temperatures and high solar loading with the air conditioner on.

2.692.70 “Selective Catalytic Reduction” or “SCR” means an active emissions control  
technology system that injects a liquid-reductant agent into the exhaust stream onto a special catalyst.  
The reductant source is Diesel Exhaust Fluid (DEF).

1 2.702.71 “SCR Inducements” or “Inducements” means the limitations imposed on vehicle  
2 operation that occur when a vehicle runs out of DEF, has poor quality DEF, or when tampering occurs to  
3 the SCR system. Inducements might include limitations on vehicle speed or rendering inoperable the  
4 restart function of the vehicle.

4 2.712.72 “SCR System” means the combination of components necessary for NO<sub>x</sub> to be  
5 reduced by selective catalytic reduction. These components include the DEF tank, DEF injection system,  
6 SCR catalyst(s), and associated sensors and controllers.

6 2.722.73 “Standard Road Cycle” or “SRC” means the mileage accumulation cycle  
7 described in 40 C.F.R. Part 86, Appendix V. To accumulate miles on the SRC, the vehicle may be run  
8 on a track or on a mileage accumulation dynamometer.

8 2.732.74 “Sea Level” means common altitudes at which Defendants conduct certain tests  
9 (0-500 meters height).

10 2.742.75 “SFTP Composite” means emissions result weighted over three test cycles  
11 according to the following formula:  $SFTP\ Composite = 0.35 \times (FTP) + 0.28 \times (US06) + 0.37 \times (SC03)$ .

11 2.752.76 “Supplemental FTP” or “SFTP” mean the additional test procedures designed to  
12 measure emissions during aggressive and microtransient driving, as described in 40 C.F.R. § 86.159-00  
13 over the US06 cycle, and also the test procedure designed to measure urban driving emissions while the  
14 vehicle’s air conditioning system is operating, as described in 40 C.F.R. § 86.160-00 over the SC03  
15 cycle.

15 2.762.77 “Temperature Conditioning Mode” or “TCM” means the AECD that controls  
16 engine out emissions and exhaust temperatures when the SCR system is below specified temperatures,  
17 consisting of three or more emission control strategy steps. As originally calibrated in the Master Series  
18 Calibration, the TCM operated the strategy steps during the regulatory test cycles in a different manner  
19 than when driving on the road.

18 2.772.78 “Test Group” means the basic classification unit within a durability group used  
19 for the purpose of demonstrating compliance with exhaust emission standards in accordance with 40  
20 C.F.R. § 86.1841-01.

20 2.782.79 “Transmission Control Unit” or “TCU” means a computer module that regulates  
21 or impacts shifting and clutch functions of a vehicle’s automatic transmission (which may impact fuel  
22 economy and emissions control) by processing electrical signals from the vehicle’s ECU, other  
23 electronic control units (e.g., stability control units, brake control units) and/or sensors, potentially  
24 including the steering wheel position sensor, accelerometers, the brake pedal position sensor, the  
25 transmission fluid temperature sensor, the vehicle speed sensor, and the throttle position sensor.

24 2.792.80 “Transmission Warmup Mode” or “TWM” means a transmission control strategy  
25 designed to change transmission control during warm up to optimize emissions which may impact fuel  
26 economy (e.g., altered shift maps that achieve higher engine speed by preventing the gearbox from  
27  
28



1 selecting the next gear, resulting in faster engine warm-up and decreased engine load which lowers raw  
2 NOx emissions).

3 ~~2.80~~2.81 “Urban/Downtown Los Angeles Route” means the driving route shown and  
described in Appendix B-4 to this Consent Decree.

4 ~~2.81~~2.82 “US06” means the driving schedule described in 40 C.F.R. § 86.159-08 and listed  
5 in 40 C.F.R. 86, Appendix I, section (g), as amended July 13, 2005, entitled, “EPA US06 Driving  
6 Schedule for Light-Duty Vehicles and Light-Duty Trucks” (e.g., hard acceleration, more power  
requirement, high speed, high load).

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1           3.4.2 Comply with the OBD requirements under Cal. Code Regs. tit. 13, § 1968.2  
2 (2013), except for the permitted noncompliances specified in the Permitted Noncompliances  
3 Table and as set forth under this Appendix B.

4           **3.5 Additional Requirements for Generation 2.2 SUV 3.0 Liter Subject Vehicles:** In  
5 addition to the requirements of Paragraph 3.1, each Proposed Emissions Modification for a Generation  
6 2.2 SUV 3.0 Liter Subject Vehicle must also:

7           3.5.1 Comply with the OBD requirements under Cal. Code Regs. tit. 13, § 1968.2  
8 (2013), except for the permitted noncompliances set forth in the Permitted Noncompliances Table and as  
9 set forth under this Appendix B.

10           **3.6 Additional Requirements for Generation 2 Passenger Car 3.0 Liter Subject**  
11 **Vehicles:** In addition to the requirements of Paragraph 3.1, each Proposed Emissions Modification for a  
12 Generation 2 PC 3.0 Liter Subject Vehicle must also:

13           3.6.1 Require the installation of a new Lambda Sensor for all model year vehicles  
14 within Generation 2 PC, and a new Cylinder Pressure Sensor for model year 2014 vehicles only.

15           3.6.2 Comply with the OBD requirements under Cal. Code Regs. tit. 13, § 1968.2  
16 (2013), except for the applicable noncompliances specified in the Permitted Noncompliances  
17 Table and as set forth in this Appendix B.

18           **3.7 Continued Compliance:** Except as otherwise stated in this Appendix B, and as if the  
19 vehicles were originally certified to the applicable emissions standard required under any Approved  
20 Emissions Modification, if tested at any mileage or time during the useful life of the vehicles, Modified  
21 Vehicle test groups remain subject to, and Defendants must comply with: (1) all EPA and CARB  
22 requirements for in-use testing under 40 C.F.R. Part 86, Subpart S, and Cal. Code Regs. tit. 13, §§ 2111-  
23 2140; (2) OBD enforcement pursuant to Cal. Code Regs. tit. 13, § 1968.5; (3) federal defect reporting  
24 requirements under 40 C.F.R. Part 85, Subpart T; and (4) California Emissions Warranty and  
25 Information Reporting requirements under Cal. Code Regs. tit. 13, §§ 2141-2146. As stated in Section  
26 VIII of this Appendix B (Stipulated Penalties and Other Stipulated Remedies for Noncompliance), EPA  
27 and CARB reserve all rights and authorities to impose consequences if Defendants fail to comply with  
28 these testing and reporting requirements, including if such testing demonstrates that the Modified  
Vehicles exceed the applicable emissions standard, Maximum Emissions Modification Limits, or the  
OBD noncompliances set forth in and approved pursuant to this Appendix B. For OBD in-use  
compliance measurements, no add-ons are granted.

**3.8 Costs:** Defendants must incur and satisfy the costs associated with each Approved  
Emissions Modification, as specified in Appendix A.

**3.9 Warranty:** Defendants must provide an Emission Control System and an Engine Long  
Block warranty (collectively, the “Extended Emissions Warranty”) for each Subject 3.0 Liter Vehicle  
receiving an Approved Emissions Modification. The Extended Emissions Warranty shall cover all parts  
and labor, as well as the cost or provision of a loaner vehicle for warranty service lasting longer than 3  
hours. Defendants must not impose on consumers any fees or charges, and must pay any fees or charges

1 imposed by its dealers related to the warranty service. The Extended Emissions Warranty shall provide  
2 warranty coverage as follows.

3 3.9.1 The Emission Control System warranty must cover the entire emission control  
4 system including (1) all components that are replaced, repaired, installed, upgraded, or otherwise  
5 modified as part of the Approved Emissions Modification; (2) all components listed in  
6 subparagraphs 3.9.1 and 3.9.2; (3) and any other component that can reasonably be impacted by  
7 effects of the Approved Emissions Modification. The Emissions Control System warranty must  
8 also cover, as applicable, any component(s) replaced or newly installed as part of an AEM  
9 Correction, any component(s) which can reasonably be impacted by Technical Issue(s), as  
10 defined by Paragraph 2.7, that require an AEM Correction, as well as any components which can  
11 reasonably be impacted by the AEM Correction itself. The warranty period shall not be extended  
12 by installation of an AEM Correction, but will instead continue to run from the installation date  
13 of the Approved Emissions Modification. The Emission Control System warranty must cover, at  
14 a minimum, the following parts:

- 15 i. The entire exhaust aftertreatment system including the DOC, the DPF, the SCR  
16 catalyst, the dosing injector and other DEF system components, all sensors and  
17 actuators, and any exhaust flap;
- 18 ii. The entire fuel system, including the fuel pumps, high pressure common rail, fuel  
19 injectors, and all sensors and actuators;
- 20 iii. The EGR system including the EGR valve, EGR bypass valve, EGR cooler, EGR  
21 filter, all related hoses and pipes, and all sensors and actuators;
- 22 iv. The turbocharger system including all related hoses and pipes, all sensors and  
23 actuators;
- 24 v. The OBD System and any malfunctions detected by the OBD systems; and
- 25 vi. The ECU and the TCU.

26 3.9.2 The Engine Long Block warranty must cover the engine sub-assembly that  
27 consists of the assembled block, crankshaft, cylinder head, camshaft, and valve train.

28 3.9.3 The warranty period for the Extended Emissions Warranty shall be the greater of:

- 29 i. 10 years or 120,000 actual miles whichever comes first; and
- 30 ii. 4 years or 48,000 miles, whichever comes first, from date and mileage of  
31 implementing the Emissions Modification, except for vehicles offered for resale,  
32 in which case, from the date and mileage of the first resale transaction after the  
33 modification to the first person who in good faith purchases the vehicle for  
34 purposes other than resale.

35 3.9.4 Defendants must make available online a searchable database that includes all 3.0  
36 Liter Subject Vehicles, by which users, including Eligible Owners, Eligible Lessees, and

1 prospective purchasers, may conduct a free-of-charge search by vehicle VIN to determine  
2 whether the Extended Emissions Warranty, and any Additional Warranty Extension, applies to a  
3 specific vehicle. To satisfy this requirement, Defendants may include a webpage that meets these  
4 specifications on the Emissions Modification Database, pursuant to subparagraph 3.1.17. Upon  
5 the modification of each and every Modified Vehicle, Defendants must identify whether such  
6 vehicle is covered by the Extended Emissions Warranty by displaying the applicable warranty  
7 disclosure statements when a user enters the VIN. Defendants must provide the VINs for all such  
8 vehicles to EPA/CARB within fifteen (15) Days of EPA/CARB's request.

9 3.9.5 Defendants must also maintain a database that includes all 3.0 Liter Subject  
10 Vehicles, by which Dealers shall search by vehicle VIN to determine whether the Extended  
11 Emissions Warranty applies to a specific 3.0 Liter Subject Vehicle. Defendants shall establish  
12 procedures such that the vehicle VIN shall dictate component or system coverage described in  
13 the approved Extended Emissions Warranty Component List. Such procedures shall include a  
14 feature on the database by which Dealers shall enter the identification number for any part  
15 pertaining to a Modified Vehicle and the database shall inform all Dealers whether such part is  
16 covered by the Extended Emissions Warranty, in accordance with the approved Extended  
17 Emissions Warranty Component List. Defendants must maintain the Extended Emissions  
18 Warranty Component List and the Dealer database to ensure current part identification numbers  
19 are listed. In no event shall warranty coverage be subject to service writers' discretion.

20 3.9.6 The Extended Emissions Warranty is associated with the car, and remains  
21 available to any and all subsequent owners and operators.

22 3.9.7 The Extended Emissions Warranty shall not supersede or void any outstanding  
23 warranty. To the extent there is a conflict in any provision(s) of this warranty and any  
24 outstanding warranty, that conflict shall be resolved to the benefit of the consumer.

25 3.9.8 The Extended Emissions Warranty shall not modify, limit, or affect any state,  
26 local or federal legal rights available to the owners.

27 3.9.9 The Lemon Law Provisions and other warranty provisions set forth in Appendix  
28 A shall apply.

3.9.10 Any waiver of any provision of the Extended Emissions Warranty by an owner is  
null and void.

3.9.11 For Eligible Owners and Eligible Lessees who decline to receive the Emissions  
Modification for an Eligible Vehicle, Defendants must continue to service such Eligible Vehicle  
in accordance with existing applicable warranty provisions, provided that if service of the ECU  
is needed, in no event may Defendants install the Master Series Calibration. Such requirements,  
and the potential effect on Eligible Owners and Eligible Lessees must be clearly described in the  
Emissions Modification Disclosure Statement under subparagraph 4.3.10.

1 authorities to impose consequences if a Modified Vehicle fails an applicable emissions standard  
2 during the Full Useful Life period.

3 6.1.7 For each Approved Emission Modification, Defendants must perform OBD  
4 testing and reporting, in accordance with the requirements of Cal. Code Regs. tit. 13, §§ 1968.2  
5 (j)(2) and (3) (i.e., verification of monitoring requirements on production vehicles, and  
6 verification and reporting of in-use monitoring performance on production vehicles,  
7 respectively). Pursuant to these regulations, Defendants must complete reporting under Cal.  
8 Code Regs. tit. 13, § 1968.2(j)(2) within 180 calendar Days after the first 3.0 Liter Subject  
9 Vehicle is modified in accordance with an Approved Emissions Modification, and must  
10 complete data collection and reporting required under Cal. Code Regs. tit. 13, § 1968.2(j)(3)  
11 within 360 calendar Days after the first 3.0 Liter Subject Vehicle is modified in accordance with  
12 the applicable Approved Emissions Modification. In the event this testing demonstrates that any  
13 Modified Vehicles do not comply with the applicable OBD requirements, Defendants must  
14 submit a remedial plan to EPA and CARB for any such noncompliant Modified Vehicles.

15 6.1.8 Starting on April 30, 2018, and annually for the following 5 years, Defendants  
16 must provide EPA and CARB with a “Report on In-Use Compliance Assurance for Modified  
17 Vehicles” that summarizes the testing performed pursuant to this Section in the preceding year.  
18 The two vehicles tested under this Section shall be two of the vehicles procured by the  
19 Defendants during the Defendants’ compliance with the in-use reporting and compliance  
20 requirements in 40 C.F.R. § 86.1845-04 and Cal. Code Regs. tit. 13, § 2137.

21 6.1.9 Defendants must certify all In-Use Compliance test results required under this  
22 Section VI, and submitted to EPA and CARB, in accordance with the certification requirements  
23 of Paragraphs 34-36 of the Consent Decree.

## 24 **VII. ADDITIONAL REQUIREMENTS**

25 **7.1 FEV Software Analysis.** Defendants shall continue to pay for, provide test vehicles, and  
26 otherwise cooperate with FEV’s analysis of the software in the ECU and TCU of the Subject 3.0 Liter  
27 Vehicles and Proposed Emissions Modifications specified in subparagraph 4.3.16.

28 **7.2** For all Generations, Defendants may not sell or cause to be sold, resell or cause to be  
resold, or lease or cause to be leased, any 3.0 Liter Subject Vehicle in Defendants’ possession, or  
obtained by Defendants in the future, until:

7.2.1. Defendants complete at least the equivalent of 100% Full Useful Life durability  
testing on an Official Durability Vehicle aged on the Customized SRC, and Defendants provide  
all data to EPA and CARB;

1           7.2.2. Defendants complete the Critical OBD Demonstration Testing on a vehicle aged  
2 on the Customized SRC to the equivalent of 75% of Full Useful Life, and Defendants provide  
3 all data to EPA/CARB;

4           7.2.3. Defendants remedy any and all OBD noncompliances that are not provided for  
5 under this Appendix B and that are known at the time the OBD demonstration required under  
6 subparagraph 7.2.2 is completed, and Defendants provide all necessary data and information  
7 showing noncompliances reported under subparagraph 7.2.2 are remedied;

8           7.2.4. Defendants perform an applicable Approved Emissions Modification on any such  
9 vehicle and comply with all other requirements applicable to such vehicle under this Appendix  
10 B;

11           7.2.5. Defendants execute all emission-related service actions and repairs required to  
12 bring the vehicle into compliance with this Appendix B, apply any and all other recalls  
13 concerning the vehicle, and execute any other required service actions;

14           7.2.6. Defendants submit a Proposed Plan for Sale and Lease of Modified Vehicles,  
15 including the materials set forth below:

- 16           i. A statement that the Modified Vehicles comply with the requirements in this  
17 Appendix B;
- 18           ii. If the Modified Vehicles do not comply with this Appendix B, a statement of all  
19 actions to be undertaken to alter the Emissions Modification to ensure compliance  
20 with this Appendix B;
- 21           iii. As necessary, an updated list of OBD noncompliances that were identified during  
22 the testing required under subparagraph 7.2.2; and
- 23           iv. Defendants certify the Proposed Plan for Sale and Lease of Modified Vehicles in  
24 accordance with the certification requirements set forth in Paragraphs 4.3.17 of  
25 this Appendix B;

26           7.2.7. EPA/CARB approve the Proposed Plan for Sale and Lease of Modified Vehicles.  
27 EPA/CARB will respond to the proposal within 14 Days of submittal;

28           7.2.8. For five years following the Effective Date of this Appendix B, Defendants must  
submit quarterly reports, certified in accordance with the certification requirements under  
Paragraphs 34-36 of the Consent Decree, to EPA/CARB to include the following information:

- i. Each vehicle, by VIN, that has been acquired by Defendants, modified with an  
Approved Emissions Modification (including Modified Vehicles that have been  
returned to Eligible Owners and Lessors), sold, exported, or destroyed, including  
the dates of each occurrence; and



- 1           ii. By VIN, the repairs and alterations to each 3.0 Liter Subject Vehicle conducted to  
2           remedy OBD noncompliances and other defects in the relevant Approved  
3           Emissions Modification.

3           **7.3** If the Final OBD Demonstration; Full (or equivalent) Useful Life Durability; testing,  
4           data, or reports created or recorded by FEV; or tests by EPA/CARB show that Modified Vehicles do not  
5           comply with this Appendix B, or if a substantial number of Modified Vehicles exceed the applicable  
6           emissions standards in-use, the Approved Emissions Modification shall be suspended. When an  
7           Approved Emissions Modification is suspended, it may not be applied, and no sales, leases, or exports,  
8           of relevant Modified Vehicles will be permitted, until such time Defendants correct the defects in the  
9           Approved Emissions Modification in accordance with the applicable regulations.

8           **7.4** Defendants must make all disclosures to vehicle owners as required by the Consent  
9           Decree and consistent with Appendix A. These requirements are meant to ensure owners are able to  
10          make an informed decision about participation in the Emissions Modification and the availability of the  
11          Extended Emissions Warranty.

10          **7.5** Defendants must also comply with any additional labeling, disclosure, and warranty  
11          requirements set forth in Appendix A.

12          **7.6** Defendants may not terminate the Emissions Modification Program.

13          **7.67.7 Approved Emissions Modification Corrections.** No later than 15 business days after  
14          Defendants first reasonably believe there is a Technical Issue(s), as defined by Appendix B, Paragraph  
15          2.7, that require an AEM Correction, they must notify EPA and CARB of such issues (“Notice of  
16          Technical Issue(s)”). No later than 30 Days before implementing an AEM Correction, Defendants must  
17          describe to EPA and CARB the Technical Issue(s) that require an AEM Correction and the proposed  
18          technical solution, and provide the information required under 40 C.F.R. § 86.1842-01(b) and Cal. Code  
19          Regs. tit. 13, § 2114 (“Notice of AEM Correction”). Defendants shall include “Notice of AEM  
20          Correction” in the title and subject line of all presentations and emails to EPA and CARB concerning  
21          each proposed correction.

19          **7.7.1. Approved Emissions Modification Suspension.** EPA and CARB may order  
20          Defendants to, and Defendants, if ordered, must make best efforts to immediately cease  
21          installation of an Approved Emissions Modification with Technical Issue(s) that require  
22          correction by, at a minimum, issuing within 72 hours of EPA and CARB’s order, dealer  
23          instructions notifying dealers that Defendants have suspended the AEM and that installation of  
24          the suspended AEM is prohibited until further notice.

23          **7.7.2. Additional Information.** Within 30 Days of a request by EPA and CARB,  
24          Defendants must submit additional information or testing concerning the Technical Issue(s) that  
25          require an AEM Correction and/or concerning the AEM Correction itself. EPA and CARB may  
26          extend the deadline for submitting information to EPA and CARB in response to such a request.  
27          If Defendants fail to provide the required information or testing within 30 Days, or such time as  
28          set by EPA and CARB, they shall make best efforts to immediately cease installation of the  
29          AEM Correction by, at a minimum, issuing within 72 hours of the deadline for submitting the  
30          requested information or testing, dealer instructions notifying dealers that Defendants have



1 suspended the AEM Correction and that installation of the AEM Correction is prohibited until  
2 further notice, consistent with 40 C.F.R. § 86.1842-01(b)(2).

3 **7.7.3. Noncompliance.** The AEM Correction must not result in any noncompliance with  
4 Appendix B, including any noncompliance with the applicable regulations listed in Paragraph  
5 3.7. If EPA and CARB determine that the AEM Correction results in any such noncompliance,  
6 EPA and CARB will notify Defendants and may order Defendants not to commence or to  
7 immediately cease the AEM Correction. In that event, Defendants shall make best efforts to  
8 immediately cease the AEM Correction by, at a minimum, issuing within 72 hours of EPA and  
9 CARB's notice, dealer instructions notifying dealers that Defendants have suspended the AEM  
10 Correction and that installation of the AEM Correction is prohibited until further  
11 notice. Defendants may submit a revised Notice of AEM Correction, including a revised  
12 technical solution, subject to the written approval of EPA and CARB.

13 **7.7.4. Consumer Notice.** The Notice of AEM Correction shall include a draft consumer  
14 disclosure notice containing information about the AEM Correction of the type required under  
15 Appendix B, subparagraph 4.3.8, including a revised warranty statement, as applicable. The  
16 consumer disclosure notice must describe the Technical Issue(s) that require the AEM Correction  
17 and any and all impacts resulting from the Technical Issue(s) that require the AEM Correction.  
18 The notice must also describe any and all reasonably predictable changes resulting from the  
19 AEM Correction itself, including all changes to vehicle attributes that may reasonably be  
20 important to vehicle owners. The Notice of AEM Correction shall also include a draft dealer  
21 instruction that instructs dealers to provide the consumer notice to vehicles owners when the  
22 AEM Correction is installed. The draft consumer disclosure notices and the draft dealer  
23 instruction described in this paragraph must concurrently be provided to the PSC and FTC.

- 24 i. Defendants must issue the consumer notice to affected consumers no sooner  
25 than 15 Days after submitting the Notice of AEM Correction to EPA and CARB  
26 and at least 15 Days before Defendants commence installing an AEM  
27 Correction.
- 28 ii. Additionally, Defendants must issue the consumer notice to affected consumers  
no later than 30 Days after submitting the Notice of AEM Correction to EPA  
and CARB, regardless of when Defendants commence the AEM Correction. If  
no AEM Correction is available within 30 Days after submittal of the Notice of  
Technical Issue(s) to EPA and CARB, EPA and CARB may order Defendants  
to, and Defendants, if ordered, must issue to consumers a notice describing the  
Technical Issue(s), including the information required under Paragraph 7.7.4, no  
later than 15 Days after EPA and CARB's order.
- iii. EPA and CARB may extend the deadlines for issuing the notice(s) to  
consumers.
- iv. If EPA and CARB determine a notice is misleading, inaccurate, incomplete, or  
inconsistent with the requirements of Appendix B, subparagraph 7.7.4(ii), EPA  
and CARB may order, and Defendants, if ordered, must revise the notice, not  
commence the AEM Correction and/or make best efforts to cease installing the

1 AEM Correction by, at a minimum, issuing within 72 hours of EPA and  
2 CARB’s order, dealer instructions notifying dealers that Defendants have  
3 suspended the AEM Correction and that installation of the AEM Correction is  
4 prohibited until further notice.

5 **7.7.5. Consumer Election.** Defendants shall not apply an AEM Correction without the  
6 express authorization of the vehicle owner.

7 **7.7.6. Loaner Vehicle.** Defendants shall provide a loaner vehicle for all AEM  
8 Corrections lasting longer than 3 hours.

9 **7.7.7. Consent to Recall.** Defendants agree that if they elect to implement an AEM  
10 Correction through this process, in the event EPA and CARB determine the AEM Correction  
11 results in noncompliance described in subparagraph 7.7.3, Defendants consent to recall all  
12 vehicles that have received the AEM Correction and to remedy such nonconformity in  
13 accordance with the recall regulations, 40 C.F.R. Part 85, Subpart S, and Cal. Code Reg., tit. 13,  
14 § 2111, et seq., including obtaining approval of a recall plan as described in the regulations,  
15 provided, however, that any disputes concerning a recall under this Paragraph 7.7 shall be  
16 governed by the dispute resolution procedures of the Consent Decree rather than the procedures  
17 described in 40 C.F.R. §§ 85.1801 and 85.1807.

18 **7.7.8. Certification.** Defendants must certify all submissions under the certification  
19 requirements of the Consent Decree, Paragraphs 34–36.

20 **7.7.9. Liability for Approved Emissions Modification Defects.** Correction of any  
21 Technical Issue(s), as defined by Appendix B, Paragraph 2.7, that require an AEM Correction  
22 under this Paragraph 7.7 shall be no defense to any liability of Defendants for noncompliance  
23 with Appendix B or the applicable laws and regulations.