COMMONWEALTH OF MASSACHUSETTS

SUFFOLK, ss.

SUPERIOR COURT
CIVIL ACTION NO. 16-2266D

COMMONWEALTH OF MASSACHUSETTS,

Plaintiff,

v.

VOLKSWAGEN AG; AUDI AG;
VOLKSWAGEN GROUP OF AMERICA, INC.;
DR. ING. H.C. F. PORSCHE AG, d/b/a
PORSCHE AG; and PORSCHE CARS NORTH
AMERICA, INC.;

Defendants.

CIVIL COMPLAINT

TABLE OF CONTENTS

I. INTRODUCTION

1. The Commonwealth seeks relief for the massive and deliberate deception of consumers and regulators perpetrated by the defendants (collectively "Volkswagen" or "Defendants") in connection with their marketing and sale to U.S. consumers of nearly 600,000 vehicles, including nearly 16,000 in Massachusetts, from 2009 to 2016. Defendants' violations strike at the heart of state environmental laws designed to protect public health by strictly limiting motor vehicle pollution. Those laws rest on the foundation that prohibiting the sale of vehicles that fail emissions tests reflecting real-world driving conditions will help protect residents of the Commonwealth from smog and other pollutants that cause respiratory illness and premature death.

2. Volkswagen defrauded the public and state and federal regulators by designing and deploying air pollution control "defeat devices" that detected and then switched on (or ramped up) air pollution control equipment when their diesel vehicles were undergoing emissions tests and then turned off (or dialed down) the pollution control when the vehicles were driven on the road. Despite being required under law to disclose the existence of any defeat devices, Volkswagen concealed them for a decade, across multiple Volkswagen, Audi, and Porsche makes and models. It did so: (a) to conceal the fact that the vehicles did not comply, or come close to complying, with applicable state and federal emissions standards during normal driving, subjecting the American public to the health risks of added air pollution; (b) to mislead regulators and the public into believing that the vehicles were "clean" and "green" and therefore a good option for purchase by environmentally conscious consumers; and (c) to deceive car-buyers into paying a higher price for the vehicles than would have been warranted had the true facts about the vehicles' non-compliance with applicable environmental regulations been known.

3. Volkswagen has admitted all this. At a September 2015 event to promote the 2016

Passat, Michael Horn, then President and CEO of Volkswagen Group of America, Inc., was plain-spoken, telling the audience "[l]et's be clear about this. Our company was dishonest with the [U.S. Environmental Protection Agency] and the California Air Resources Board and with all of you, and, in my German words, we have totally screwed up."

4. A few weeks later, in prepared testimony before the House Committee on Energy and Commerce Subcommittee on Oversight and Investigations on October 8, 2015, Horn offered more detail, confirming "that emissions in [Volkswagen's] four cylinder diesel vehicles from model years 2009 to 2015 contained a 'defeat device' in the form of hidden software that could recognize whether a vehicle was being operated in a test laboratory or on the road. The software made those vehicles emit higher levels of nitrogen oxides when the vehicles were driven in actual road use than during laboratory testing."

5. The decision to install defeat devices was not made by "a couple of software engineers," as Horn suggested in his testimony. Nor was it confined to the 2.0 liter diesel vehicles that were the focus of the 2014 independent study that led to the exposure of Volkswagen's emissions fraud to the public. Rather, it was the result of a willful and systematic scheme of cheating by dozens of employees at all levels of the company regarding emissions, after Volkswagen was unwilling to manufacture diesel vehicles that would meet state and federal emissions standards in the United States. This scheme, which extended over nearly a decade, was perpetrated by Volkswagen AG and its Audi, Volkswagen, and Porsche subsidiaries, through their employees, executives, officers, and managers. Inside each company, the existence of the scheme was an open secret.

6. Defendants' unlawful conduct involved different engineering and testing teams operating across different facilities in both Germany and the United States and the placement of

the illegal defeat devices in over a dozen separate U.S.-market Audi, Volkswagen, and Porsche models equipped with 2.0 liter and 3.0 liter diesel engines ("Subject Vehicles")[1] from the 2009-2016 model years, which were sold between 2008 and 2015.

7. In addition to defrauding the agencies responsible for testing car emissions, Volkswagen carried out a cynical fraud on the American car-buying public. It traded on the reputation for stellar engineering that Audi (whose slogan was "Truth in Engineering"), Porsche, and Volkswagen enjoyed, by aggressively marketing and promoting the non-compliant diesel engines to U.S. consumers as the product of environmentally-friendly German high technology, thereby obtaining premiums for the vehicles on the basis of this fundamentally dishonest marketing.

8. Volkswagen's illegal and deceptive conduct had several interrelated objectives. First, Volkswagen sought to increase sales and market share in the United States, part of the company's stated goal of becoming the world's highest-selling car manufacturer. Second, Volkswagen sought to create an environmental "halo" effect (and thus boost brand equity) across the full spectrum of the company's car offerings by falsely marketing its "green" diesel vehicles. Third, the defeat devices enabled Volkswagen to bring diesel cars to the U.S. market more rapidly and more cheaply than it could have by building truly emissions-compliant engines. Fourth, the defeat devices allowed Volkswagen and Audi to compensate for and conceal a number of technological and design deficiencies, including durability problems associated with several of its key drivetrain components, including diesel particulate or soot filters, and for the fact that the urea tanks in Subject Vehicles equipped with selective catalytic reduction emission control systems were significantly undersized.

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[1] The Subject Vehicles are identified in the chart at paragraph 40, *infra*.

9. For years after its initial adoption of defeat devices in the Audi Q7 SUV and the Volkswagen Jetta and as new diesel car models were introduced or updated, Volkswagen continued to cheat by adapting its defeat device software to the modified engines and emissions systems associated with the newer models.

10. Even when independent real-world driving test results threatened public exposure of Volkswagen's deception, the company continued to actively conceal the existence of the defeat devices by repeatedly denying the validity of testing that exposed the gap between the Subject Vehicles' emissions on the road, as contrasted with emissions in testing conditions, and by conducting sham recalls in 2014 and 2015 to deflect regulatory scrutiny about the emissions problems. Indeed, even after state and federal regulators began asking tough questions in April 2014, Defendants continued their deceptive marketing campaign in the United States, spending tens of millions of dollars to promote the Subject Vehicles as "clean" and "green" and selling more than 144,000 of the Subject Vehicles from April 2014 (when the Subject Vehicles' true real-world NO_x (oxides of nitrogen) emissions first came to light in the U.S.) through September 2015.

11. As a result of Volkswagen's scheme, the Subject Vehicles were certified for sale throughout the United States, enabling Volkswagen to sell nearly 600,000 Subject Vehicles nationwide and nearly 16,000 in Massachusetts. Based on initial estimates, these vehicles illegally spewed more than 45,000 tons of NO_x emissions onto American streets, potentially exacerbating asthma and other respiratory diseases of those who breathed them.

12. Volkswagen implemented the defeat devices in willful contempt of the laws of the Commonwealth of Massachusetts and other United States jurisdictions and with utter disregard for consumers, the environment, and the health effects of its conduct.

13. Volkswagen believed that its deceit would go undetected or that, even if caught, the consequences would be manageable. A February 29, 2016, court filing by Volkswagen in a European shareholder lawsuit illuminates Volkswagen's assessment of the costs and benefits of choosing to break the law:

> [B]eginning in the 1970s, violations of the prohibition against defeat devices under U.S. environmental law had recurred at irregular intervals in the United States, the theoretical possibility that sanctions might be imposed due to a potential violation of U.S. environmental protection provisions seemed at the time to pose only a moderate cost risk. The fines imposed for such violations in the 1990s against automobile manufacturers that were also well-known (including General Motors, Ford, and Honda) were for relatively low amounts. Even the highest fine to date, which amounted to U.S.-$ 100 million and was imposed in 2014 against the Hyundai/Kia group, was at the lower end of the statutory range of fines. This case involved roughly 1.1 million vehicles, which works out to a fine of barely U.S.-$ 91 per vehicle. It is obvious that fines in this amount are not even remotely capable of influencing the share price of a globally operative company such as VOLKSWAGEN. Even if the fine were U.S.-$ 100 per vehicle, the total penalty in the present case would amount to U.S.-$ 50 million, which would have no potential effect whatsoever on share prices.

Braunschweig, Case No. 02106-15/BE/Hn, Defendants' Answer (Feb. 29, 2016) at 47.

14. Worse yet, Volkswagen employees destroyed relevant documents in the wake of the defeat device scandal, despite being alerted to an impending litigation hold, and the Volkswagen AG Supervisory Board recently recommended compensation totaling $70 million for its Management Board members for 2015 alone. These actions highlight the stubborn and unrepentant corporate culture at Volkswagen which spawned the systematic cheating and deception described in this Complaint.

15. The Commonwealth of Massachusetts ("Commonwealth"), by and through its Attorney General, Maura Healey, brings this civil action in Superior Court for civil redress, including civil penalties and injunctive relief, against Defendants pursuant to the portion of the Massachusetts Public Health Law that protects the atmosphere from pollution and contamination, G.L. c. 111, §§ 142A-142O ("Air Act"), and its implementing regulations, found at 310 C.M.R.

7.00 *et seq*. ("Air Regulations"), including the Massachusetts Low Emission Vehicle Regulation, 310 C.M.R. 7.40 ("MA LEV Regulations"), and the Massachusetts Motor Vehicle Inspection and Maintenance Program Regulations, found at 310 C.M.R. 60.02 ("MA I&M Regulations"). The relevant civil statutes and regulations, which authorize the Superior Court to grant appropriate injunctive relief and award civil penalties of up to $25,000 per day for violations of the Air Act, the Air Regulations, the MA LEV Regulations, and the MA I&M Regulations, are described in more detail in Section V, below.

16. The Commonwealth seeks civil penalties from Volkswagen in amounts sufficient to punish it for its conduct and deter it and other automakers from repeating this form of misconduct, together with appropriate injunctive and equitable relief and the Commonwealth's reasonable costs of investigation and litigation, including reasonable attorneys' fees.

II. PARTIES

17. The Plaintiff is the Commonwealth, appearing by and through the Attorney General and the Department of Environmental Protection ("Department").

18. The Attorney General is the chief law enforcement officer of the Commonwealth and is authorized to bring this action pursuant to G.L. c. 12, §§ 3, 5, 10, and 11D.

19. The Department is an agency of the Commonwealth, with the powers and duties set forth in the Air Act and Air Regulations. Its principal office is at 1 Winter Street, in Boston, Massachusetts.

20. Volkswagen AG is a corporation organized under the laws of Germany, with its principal place of business in Wolfsburg, Germany. According to Volkswagen AG's 2015 Annual Report, its sales revenue for North America was over €35.384 billion in 2015 (€7.784 billion more than in 2014).

21. Volkswagen AG is the parent company of the Volkswagen Group ("VW

Group")—an organizational and trade term referring to Volkswagen AG's automotive brands (including Volkswagen Passenger Cars and subsidiaries Audi and Porsche) and financial services business.

22. Volkswagen AG and the VW Group are managed by Volkswagen AG's Board of Management. A Supervisory Board appoints, monitors, and advises the Board of Management and issues its rules.

23. Each brand in the VW Group also has its own Brand Board of Management. The members of the Brand Boards of Management manage their respective brands, pursuant to targets and requirements laid down by the Volkswagen AG Board of Management.

24. Volkswagen Group of America, Inc. ("VWGoA"), is a New Jersey corporation that registered to do business in Massachusetts on June 7, 1973. VWGoA does business in all fifty states and the District of Columbia and maintains a principal place of business at 2200 Ferdinand Porsche Drive in Herndon, Virginia. VWGoA is a wholly-owned subsidiary of Volkswagen AG. VWGoA is closely controlled and directed by Volkswagen AG. Within VWGoA, the Michigan-based Engineering and Environmental Office ("EEO") interacts with U.S. regulators and handles regulatory compliance and certification-related issues for Volkswagen AG and Audi AG.

25. Audi AG ("Audi") is a member of the VW Group. Audi is a corporation organized under the laws of Germany and has its principal place of business in Ingolstadt, Germany. Volkswagen AG, which owns 99.55 percent of Audi's stock, controls Audi. Audi of America, LLC, also known as Audi of America, Inc. ("AoA"), is wholly owned operating unit of VWGoA. VWGoA is responsible for the acts of AoA in the Commonwealth and the United States. AoA is closely controlled and directed by Volkswagen AG and Audi AG.

26. Dr. Ing. h.c. F. Porsche AG d/b/a Porsche AG ("Porsche") is a member of the VW Group. Porsche is a corporation organized under the laws of Germany, has its principal place of business in Stuttgart, Germany, and is a wholly owned subsidiary of Volkswagen AG.

27. Porsche Cars North America, Inc. ("Porsche NA"), is a Delaware corporation that registered to do business in Massachusetts on December 17, 1987. Porsche NA has its principal place of business at One Porsche Drive in Atlanta, Georgia. Porsche NA is a wholly owned subsidiary of Porsche and is closely controlled and directed by Porsche.

III. JURISDICTION AND VENUE

28. This Court has jurisdiction over the subject matter of this action, personal jurisdiction over the Defendants and authority to grant the relief requested pursuant to G.L. c. 111, §§ 142A, 142B, 142K, and 142M; G.L. c. 214, § 1; G.L. c. 12, § 10; and G.L. c. 223A, § 3.

29. As set forth above, the Defendants are the German automaker Volkswagen AG and its subsidiaries Audi AG and Porsche AG, and their wholly-owned American affiliates and subsidiaries, VWGoA and Porsche NA.

30. At all relevant times, Volkswagen AG, Audi AG, Porsche, VWGoA, and Porsche NA have purposefully availed themselves of this forum. Among other things, Volkswagen AG, Audi AG, and Porsche:

a. Designed the Subject Vehicles, with their defeat device software, for sale within the United States, including within the Commonwealth;

b. Directed VWGoA's EEO and Porsche NA to submit to U.S. regulators applications for certification to sell the Subject Vehicles in the United States, including within the Commonwealth;

c. Directed VWGoA's EEO and Porsche NA to make periodic submissions

and certifications regarding the Subject Vehicles' compliance with applicable emissions standards and requirements to U.S. regulators, including the Department, as required by the MA LEV regulations and Department policy;

d. Oversaw and/or directed VWGoA's, AoA's, and Porsche NA's development and placement of the false and misleading marketing and advertising of the Subject Vehicles (including as "Clean Diesel") to U.S. consumers, including in the Commonwealth;

e. Directed VWGoA, AoA, and Porsche NA to expressly warrant to buyers and lessees in the Commonwealth the Subject Vehicles' compliance with applicable emissions standards;

f. Directed VWGoA to issue to buyers and lessees in the Commonwealth false and/or misleading recall notices in or around January and March 2015; and

g. Controlled and directed VWGoA's, AoA's, and Porsche NA's interactions with and message to U.S. regulators and the public, including consumers in the Commonwealth, in the aftermath of the 2014 independent study that led to the exposure of Volkswagen's fraud to the public.

31. In addition, Defendants transacted business in the Commonwealth through at least thirty-six car dealerships in the Commonwealth (at least eleven Audi dealerships; twenty Volkswagen dealerships; and five Porsche dealerships), and conducted business from at least one location in the Commonwealth: the Training Center/TSC/Group Academy, at 753 Forrest Street in Marlborough.

32. Accordingly, the exercise of specific jurisdiction over all Defendants is consistent with due process.

33. Venue lies in the Suffolk Superior Court pursuant to G.L. c. 223, § 5.

IV. FACTS

A. THE DEFENDANTS ACTED IN CONCERT TO VIOLATE ENVIRONMENTAL LAWS AND PERPETRATE A MASSIVE FRAUD ON REGULATORS AND CONSUMERS.

34. Unless otherwise stated, the allegations set forth in this Complaint are based upon information obtained from the documents produced by Defendants, the testimony of Defendants' current and former employees, publicly available press reports, and information and documents obtained from other third-party sources through Plaintiff's investigatory efforts.

35. At all times material to this Complaint, the Defendants worked in concert with the common objective of engaging in the emissions cheating scheme described in this Complaint. Each of the Defendants was, and still is, the agent of the others for this purpose, and each has acted, and is acting, for the common goals and profit of them all. Therefore, all acts and knowledge ascribed to one of them are properly imputed to the others. Among other things:

a. Volkswagen AG allocates and controls the overall research and development and marketing budgets for the brands in the VW Group;

b. For the Subject Vehicles that Volkswagen, Audi, and Porsche sold in the United States, VWGoA's EEO acted as their representative before U.S. regulators for compliance and certification-related issues;

c. AoA is an operating unit of VWGoA;

d. The three brands share engineering research and development and engine concepts and designs, including, in this case, Volkswagen's incorporation of Audi-designed software and hardware elements into its EA 189 diesel

engine for the Generation 1 and 2 Subject Vehicles and Porsche's use of the Audi 3.0 liter diesel engine for its Cayenne SUV Subject Vehicle;

e. Officers and employees of the Defendants, including several of those involved in the unlawful conduct described in this Complaint, are shared among the Defendants, and have moved from the employ of one Defendant to another.[2] Among other examples:

i. Martin Winterkorn served as CEO of Audi AG from 2002 to 2007, when the defeat devices were first developed, before being elevated in 2007 to CEO at Volkswagen AG, a position Winterkorn held until shortly after Defendants' unlawful conduct was publicly exposed in September 2015;

ii. Wolfgang Hatz led Audi's Powertrain Department (engines and transmissions) from 2001 to 2007, when Audi developed its first defeat device for its 3.0 liter V6 diesel engine for the European market. In 2007, Hatz assumed the same role at Volkswagen, just as Volkswagen was finalizing its own defeat devices for its U.S.-market 2.0 liter diesels. In 2011, Hatz moved to the top engineering job at Porsche, where he oversaw its rollout of a defeat device-equipped 3.0 liter Audi V6 to the U.S. market the following year;

iii. Ulrich Hackenberg held senior engineering positions, including

[2] Attached as an Appendix to this Complaint is a schematic representation reflecting the corporate positions of many of the individuals referenced in the Complaint, including their movement from one Defendant to another over time.

emissions responsibilities, at Audi from 2002 to 2007. Hackenberg then moved to Volkswagen from 2007 to 2013, when both companies were developing and implementing their defeat device strategies, before moving back to Audi from 2013 to 2015;

iv. Oliver Schmidt, who headed the EEO office within VWGoA in 2014 and early 2015 before returning to Volkswagen AG in Germany, played an important role from both positions in Defendants' efforts to conceal from U.S. regulators the true reason for the Subject Vehicles' unlawfully high real-world NO_x emissions, first detected in Spring 2014; and

v. James Liang was one of the engineers at Volkswagen AG in Wolfsburg, Germany, directly involved in the development of the defeat device for the Generation 1 Volkswagen Jetta in 2006; by 2014 and 2015, he was conducting tests for VWGoA at its Oxnard, California facility as part of Defendants' efforts to conceal from regulators that the defeat devices were responsible for the Subject Vehicles' illegal emissions.

f. Senior management at Volkswagen AG and Audi AG discussed, planned, and coordinated the response to the diesel scandal as it unfolded for Volkswagen, Audi, and Porsche in the United States.

36. At a minimum, each of the Defendants provided each of the other Defendants with substantial assistance or aided and abetted one another in carrying out individual, company-by-company unlawful schemes to misrepresent actual NO_x emissions, as described in this

Complaint.

37. Each Defendant engaged in multiple violations of the Commonwealth's environmental laws. The conduct of each of Volkswagen AG, Audi AG, Porsche, and VWGoA was knowing and willful.

1. LAUNCH OF THE SUBJECT VEHICLES IN THE UNITED STATES

38. Beginning in the 1990s, Volkswagen rapidly expanded its sales of diesel light-duty vehicles in Europe. After success in Europe, and in response to Toyota's commercial growth in the United States with its environmentally advanced hybrid technology, Volkswagen began to design and develop and ultimately marketed and sold a line of diesel turbocharged direct injection ("TDI") 2.0 and 3.0 liter light-duty diesel vehicles (i.e., the Subject Vehicles) throughout the United States, including in the Commonwealth.

39. Through its marketing and advertising, Volkswagen sought to transform the reputation of diesel engines among American consumers as noisy and smoky workhorses best left to trucks and buses into one of smooth-running, high-technology automotive engines that would deliver fuel efficiency, high performance, and low NO_x emissions.

40. The Subject Vehicles include the following makes and models sold or leased in the United States for the 2009 through 2016 model years:

2.0 Liter Diesel Models

Model Year	Generation (Gen)/Engine	Environmental Protection Agency ("EPA") Test Group	Vehicle Make and Model(s)
2009	Gen 1 / EA189	9VWXV02.035N 9VWXV02.0U5N	VW Jetta, VW Jetta Sportwagen
2010	Gen 1 / EA189	AVWXV02.0U5N	VW Golf, VW Jetta, VW Jetta Sportwagen, Audi A3
2011	Gen 1 / EA189	BVWXV02.0U5N	VW Golf, VW Jetta, VW Jetta Sportwagen, Audi A3

2012	Gen 1 / EA189	CVWXV02.0U5N	VW Golf, VW Jetta, VW Jetta Sportwagen, Audi A3
2013	Gen 1 / EA189	DVWXV02.0U5N	VW Beetle, VW Beetle Convertible, VW Golf, VW Jetta, VW Jetta Sportwagen, Audi A3
2014	Gen 1 / EA189	EVWXV02.0U5N	VW Beetle, VW Beetle Convertible, VW Golf, VW Jetta, VW Jetta Sportwagen
2012 2013 2014	Gen 2 / EA189	CVWXV02.0U4S DVWXV02.0U4S EVWXV02.0U4S	VW Passat
2015	Gen 3 / EA288	FVGAV02.0VAL	VW Beetle, VW Beetle Convertible, VW Golf, VW Golf Sportwagen, VW Jetta, VW Passat, Audi A3

3.0 Liter Diesel Models

Model Year	EPA Test Group(s)	Vehicle Make and Model(s)
2009	9ADXT03.03LD	VW Touareg, Audi Q7
2010	AADXT03.03LD	VW Touareg, Audi Q7
2011	BADXT03.02UG BADXT03.03UG	VW Touareg Audi Q7
2012	CADXT03.02UG CADXT03.03UG	VW Touareg Audi Q7
2013	DADXT03.02UG DADXT03.03UG DPRXT03.0CDD	VW Touareg Audi Q7 Porsche Cayenne Diesel
2014	EADXT03.02UG EADXT03.03UG EPRXT03.0CDD EADXJ03.04UG	VW Touareg Audi Q7 Porsche Cayenne Diesel Audi A6 Quattro, A7 Quattro, A8L, Q5
2015	FVGAT03.0NU2 FVGAT03.0NU3 FPRXT03.0CDD FVGAJ03.0NU4	VW Touareg Audi Q7 Porsche Cayenne Diesel Audi A6 Quattro, A7 Quattro, A8L, Q5
2016	GVGAT03.0NU2 GPRXT03.0CDD GVGAJ03.0NU4	VW Touareg Porsche Cayenne Diesel Audi A6 Quattro, A7 Quattro, A8L, Q5

41. For simplicity and clarity, throughout this Complaint:

a. the 2.0 liter Generation 1/EA-189s, the Generation 2/EA-189s, and Generation 3/EA-288s identified above will be referred to as "Generation

1s," "Generation 2s," and "Generation 3s," respectively, and collectively as "2.0s";

b. the 3.0 liter models will be referred to collectively as "3.0s"; and

c. the 2.0s and 3.0s will be referred to collectively as the "Subject Vehicles."

42. Defendants sold, leased, and warranted more than 487,000 2.0s and more than 86,000 3.0s in the United States.

43. More than 15,000 Subject Vehicles, including Generation 1s, Generation 2s, Generation 3s, and 3.0s, were sold or leased in Massachusetts. As of October 1, 2015, 14,617 Subject Vehicles were registered through the Commonwealth's Registry of Motor Vehicles ("RMV").

44. As described directly below, the diesel exhaust after-treatment technology Volkswagen designed and implemented in the Subject Vehicles changed over time and across engine generations, but certain key emissions control features remained constant: all the Subject Vehicles employed exhaust gas recirculation ("Exhaust Gas Recirculation" or "EGR") and were equipped with a diesel particulate, or soot, filter ("Soot Filter").

45. Exhaust Gas Recirculation is used primarily to reduce NO_x emissions by redirecting exhaust back into the engine's intake system and mixing it with fresh air, thereby reducing the amount of oxygen in the engine, lowering the combustion temperature, and reducing the creation of NO_x.

46. The Soot Filter removes particulate emissions (that is, soot) from the engine's exhaust. The soot accumulates in the Soot Filter until it is periodically burned off and emitted as ash in what are known as "Soot Filter Regenerations" to prevent the Soot Filter from becoming clogged or overloaded.

47. While both technologies have emissions-related advantages (reducing NO_x emissions in the case of EGR and reducing soot emissions in the case of the Soot Filter), they also have disadvantages:

a. Use of Exhaust Gas Recirculation increases soot and necessitates more frequent Soot Filter Regenerations to prevent clogging, thereby placing strain on the Soot Filter and increasing the risk of premature Soot Filter failures.

b. Soot Filter Regenerations in turn increase NO_x emissions, increase fuel consumption, and place strain on the engine and the components of the emissions control system, including the Soot Filter itself, due to the high temperatures needed for regeneration.

48. As the course of conduct described below demonstrates, Volkswagen was unwilling to spend the time or money necessary to address these engineering challenges in a lawful manner.

2. VOLKSWAGEN'S DEFEAT DEVICE DEVELOPMENT AND IMPLEMENTATION WAS NOT AN ISOLATED EVENT BUT AN ITERATIVE PROCESS ACROSS DIFFERENT EMISSIONS CONTROL SYSTEMS AND DIFFERENT LINES OF VEHICLES.

49. In trying to leverage its existing diesel engine technology for the U.S. market, Volkswagen faced an engineering challenge: diesel engines, though generally more fuel-efficient than gasoline engines, are high NO_x emitters, making compliance with U.S. regulation of NOx emissions challenging.

50. To sell the Subject Vehicles in the United States, Volkswagen AG and Audi AG (acting through VWGoA's EEO) and Porsche (acting through Porsche NA) applied for and obtained Certificates of Conformity from the Environmental Protection Agency ("EPA") and

Executive Orders from the California Air Resources Board ("CARB"). In those applications, Defendants were required to disclose, among other things, all Auxiliary Emissions Control Devices ("AECDs") in the vehicles, i.e., any engine function that senses temperature, vehicle speed, engine RPM, or any other parameter for the purpose of activating, modulating, or deactivating the operation of any part of the emission control system. For each such AECD, Defendants were required to provide: a written, detailed justification; the parameters the AECD senses and controls; and a rationale for why the AECD is not a "defeat device."

51. An AECD that operates to thwart applicable emissions standards by reducing the effectiveness of an automobile's emissions control system in everyday driving conditions is known in the industry as a "cycle-beater," and in U.S. legal terms as a "defeat device." Deployment of defeat devices has long been illegal in the Commonwealth. *See* Section V (Regulatory Background), below.

52. Defendants certified the Generation 1s, the Generation 2s, and the 3.0s to California's LEV II emissions standards, which impose a NO_x emission limit of 0.05 grams per mile ("g/mi") at a durability standard of 50,000 miles and 0.07 g/mi at 120,000 miles.

53. Defendants certified the Generation 3s to California's LEV III emissions standards, which imposed a combined non-methane organic gas and NO_x limit of 0.125 g/mi at a durability standard of 150,000 miles.

54. Unwilling to design and manufacture the Subject Vehicles so that they would meet these standards in all conditions (during laboratory testing and in real driving conditions, in the customer's hands), Defendants cheated.

55. They implemented a defeat device in the form of test recognition software in the Subject Vehicles' engine control units ("ECUs") that recognized when the Subject Vehicles were

undergoing laboratory test cycles on a rolling dynamometer (also known as a "treadmill," "roller," or "dyno") using time and temperature parameters, among others. When the software detected a test cycle, it altered the emissions controls to bring emissions into compliance with applicable standards. Outside of the test cycle, the software deactivated the emissions controls, resulting in NO_x emissions far in excess of permissible limits.

56. For example, the defeat devices on the 2.0 liter cars work by directing the engine to run in one of two modes: a "testing" mode during which the car's emissions systems are fully operational and a "driving" mode during which the car's emissions systems are rendered inoperative.

57. Every time one of these cars is started, it automatically enters into "testing" mode. During the first several minutes of operation, the software checks the car's acceleration and speed profile against the tightly-defined acceleration and speed profiles of the government-specified emissions test cycles used to test a car's emissions.

58. As an illustration, one of these test cycles, the FTP 75, tests a car's emissions over a fixed cycle of acceleration and deceleration, run on a stationary test bench. Over the first several minutes of the cycle, the car must accelerate from a stop to the equivalent of thirty-one miles per hour, cruise briefly, come to a stop again, accelerate again to fifty-seven miles per hour, cruise briefly, come to a stop again, accelerate again to thirty-six miles per hour, and then come to a stop again.

59. If the defeat device software determines that the car is running in a test cycle, it keeps the engine in "testing" mode so that the car's emissions controls remain fully operational. If, on the other hand, the software determines the car is being driven in normal, random conditions as occurs in real-world driving, the defeat device software switches the engine into

"driving" mode, during which emissions controls are rendered inoperative, with the effect that NO_x emissions increase by a factor of up to 40 times the legal limits.

a. The First Defeat Device: Audi's Model Year 2004-2008 V6 for the European Market

60. Audi encountered early emissions-related engineering challenges in 1999, as it embarked on the development of its large, 3.0 liter V6 diesel engine luxury cars for the European market.

61. Engineers at Audi AG headquarters in Neckarsulm, Germany, had developed a new technology for the engine called "Pilot Injection" that could eliminate the disagreeable clattering noise of diesel engines at start-up through the injection of additional fuel into the engine on ignition. However, activation of Pilot Injection upon ignition caused the engine to exceed European emissions standards during European authorities' dyno testing.

62. Audi solved this problem by implementing defeat device software that allowed the engine to recognize the European emissions test cycle and deactivate Pilot Injection during dyno testing.

63. Audi developed and deployed this cycle-beating defeat device software on its European-market Audi 3.0-liter V6 diesels from 2004-2008. Because of its noise-reducing properties, Audi dubbed this defeat device the "Acoustic Function."

b. The Second Defeat Device: Volkswagen's Generation 1s

64. In the early-mid 2000s, as it was planning to launch its Generation 1 diesels in the United States, Volkswagen explored equipping its Generation 1 engines with selective catalytic reduction ("Selective Catalytic Reduction" or "SCR") technology. SCR technology chemically reduces NO_x emissions by spraying liquid urea (often called by its trade name, "AdBlue") in the exhaust stream, thereby creating nitrogen and water. The SCR technology available at the time, however, was licensed by Volkswagen's competitor, Mercedes-Benz; in addition, as with any

SCR system, it would have required outfitting the Generation 1s (including the small, model year 2009 Jetta) with one or more tanks capable of storing gallons of the liquid urea.

65. In 2006, the engineers and managers responsible for developing the Generation 1's EA 189 engine decided against using SCR technology in favor of a simpler, in-house emissions reduction system, known as a Lean-NO_x Trap ("Lean Trap"), which did not depend on SCR and, therefore, did not require urea tanks.

66. Rather, the Lean Trap operated by trapping the NO_x emissions in a catalytic converter and then periodically running the engine in a fuel-rich mode to "regenerate" the catalytic converter, thereby converting the stored NO_x stored into nitrogen and oxygen.

67. Early in the development of the Lean Trap system, however, it became apparent to Volkswagen's engineers that regenerating the Lean Trap and EGR as frequently as necessary to bring NO_x emissions within legal limits produced excess soot for the Soot Filter, thereby requiring more frequent emissions- and fuel-intensive Soot Filter regenerations that strained the engine. The excess soot would, in turn, clog and break the engine's Soot Filter within just 50,000 miles of operation, far sooner than the initially 120,000- and later 150,000-mile Full Useful Life U.S. durability standard that it was required to meet.

68. In late 2006, facing these major engineering challenges and a management-imposed production deadline and with the knowledge and approval of their managers, Volkswagen's engineers in Wolfsburg adapted Audi's "Acoustic Function" defeat device to overcome these issues.

69. Like the Audi defeat device, the defeat devices Volkswagen implemented in the Generation 1s featured software that could detect when the vehicles were undergoing a dyno test based on, among other parameters, temperature and time. During a dyno test, the defeat device

software substantially increased the frequency of Lean Trap regenerations and increased EGR to bring NO_x emissions down to compliant levels. In contrast, during real-world driving, the defeat device software substantially reduced the frequency of Lean Trap regenerations and reduced EGR, resulting in NO_x emissions between fifteen and thirty-five times the legal limit.

70. Volkswagen incorporated the Lean Trap regeneration and EGR defeat devices described directly above in the ECUs of the model year 2009-2014 Jetta, Golf, A3 and New Beetle diesel models. Over 300,000 of these Generation 1 vehicles were sold in the United States, including in the Commonwealth.

c. The Third Defeat Device: Audi's 3.0 SUVs

71. At the time Volkswagen engineers in Wolfsburg were developing the Generation 1 diesel engine, their colleagues at Audi's Neckarsulm headquarters were developing a 3.0 liter diesel engine for the anticipated release in model year 2009 of a new line of luxury diesel SUVs in the U.S. market: the SCR-equipped Audi Q7 and Volkswagen Touareg.

72. Adaptation of its European SCR technology for the U.S. market presented a challenge: to comply with more stringent U.S. NO_x limits and an EPA rule that tied urea tank refills to the manufacturer's service intervals, Audi's 3.0 liter vehicles in the United States would require larger urea tanks than their European counterparts.

73. In or around July 2006, the issue of the effect of undersized urea tanks on the ability to comply with emissions standards reached the attention of Martin Winterkorn, then the CEO of Audi AG (and later of the VW Group parent company, Volkswagen AG), as well as "H. Müller," which another Audi executive testified is a reference to Matthias Müller, then head of Project Management for Audi AG and now Mr. Winterkorn's successor as CEO of Volkswagen AG.

74. Ultimately, Volkswagen and Audi decided not to expend the time and money

necessary to re-engineer the 3.0s to equip them with larger urea storage tanks. Nor did they seek to address the storage tank issue, as they could have, by shortening the length of the service interval set forth in their applications for certification. Some competitors, for example, had service intervals as low as 7,500 or even 5,000 miles; Volkswagen and Audi, however, chose to maintain a 10,000-mile service interval.

75. Instead, they decided once again to employ defeat device software.

76. In addition to the EGR defeat device implemented in the Generation 1s, the 3.0s also featured a urea dosing defeat device. The urea dosing defeat device operated to increase urea dosing during dyno testing and reduce the urea dosing to an artificial limit during real driving conditions to enable the too-small urea tanks to last for 10,000 miles between service intervals.

77. Audi approved and installed both the urea dosing defeat device and the EGR defeat device for production into the 3.0s for sale in the U.S. market from 2009-2016, resulting in NO_x emissions of roughly nine times the legal limit in everyday driving conditions. Not including the Porsche Cayenne diesel SUVs discussed below, approximately 74,500 of the 3.0s were sold in the United States, including the Commonwealth.

d. The Fourth Defeat Device: Volkswagen's Generation 2s

78. In 2009, Volkswagen turned its attention to the planned roll-out in the United States of the model year 2012 Generation 2 SCR-equipped Passat, a model heavier than its Generation 1 predecessors and therefore unsuitable for a Lean Trap emissions control system. In designing an SCR-equipped emissions system for the Passat, however, Volkswagen's engineers now faced the same quandary their Audi colleagues had confronted: insufficient space in the vehicle package to incorporate urea tanks large enough to meet the 10,000-mile refill interval to which they certified the Generation 2s.

79. Rather than resolve this engineering problem (or seek to mitigate it by certifying

the vehicles to shorter service intervals), Volkswagen opted to implement EGR and urea dosing defeat devices. Once the ECU recognized the vehicle was on a dyno—based on various inputs including vehicle speed, timing and (in the Generation 2s) steering wheel angle—the defeat devices increased EGR and urea dosing to bring the NO_x emissions within regulatory limits. Outside of test conditions, however, defeat devices reduced the urea dosing rate by half to conserve urea and reduced EGR.

80. With the approval of Volkswagen supervisory executives, company engineers went forward with the dosing and EGR defeat devices, installing them in roughly 80,000 Volkswagen Passats in the U.S. market, including in the Commonwealth, spanning from model year 2012 to model year 2014. In real-world conditions, the Generation 2.0s sold in this country exceeded lawful NO_x emissions levels by five to twenty times.

e. The Fifth Defeat Device: The Porsche Cayenne

81. In 2010, Volkswagen AG acquired Porsche and the founding family of Porsche became Volkswagen's leading shareholders. The following year, Porsche also decided it wanted to enter the U.S. diesel market with its new Cayenne SUV.

82. Porsche approached its sister company Audi about acquiring Audi's 3.0 liter V6 diesel engine for use in the Cayenne. Audi agreed to supply Porsche the U.S.-market 3.0, lightly re-tuned for Porsche. In supplying the engine, Audi personnel educated their counterparts at Porsche about the engine's primary features, including the urea dosing strategy.

83. In communications in or around September 2011 that included Audi engineer Martin Gruber, then head of Volkswagen AG Engine Development, Ulrich Hackenberg, and Porsche's electronics development chief, Carsten Schauer, among others, Audi explained to Porsche personnel the 3.0s' urea tank-size limitation, the EPA requirement tying urea refills to service intervals, and the resulting urea-dosing strategy that Audi had devised.

84. Notwithstanding this information, Porsche's engineering department, then led by Wolfgang Hatz, proceeded to source the Audi defeat device-equipped 3.0 liter engine for its entry into the U.S. diesel market with the model year 2013 Cayenne diesel SUV.

85. Approximately 13,600 of the defeat device-equipped Porsche vehicles were sold in the United States, including in the Commonwealth.

86. With the defeat device, Porsche Cayennes are estimated to emit NO_x at roughly nine times the legal limit.

f. The Sixth Defeat Device: Volkswagen's Generation 3s

87. In or about 2013, Volkswagen decided to discontinue the Lean Trap emissions system in favor of an SCR-based system for all its model year 2015 2.0s (the Beetle, Golf, Jetta, Passat, and the Audi A3).

88. In doing so, Volkswagen again opted to implement EGR and urea dosing defeat devices like those it implemented in the Generation 2s and the 3.0s.

89. Volkswagen sold nearly 100,000 model year 2015 Generation 3s in the United States, including in the Commonwealth. These cars were sold even after Defendants became aware of independent, real-world studies that made clear that the Subject Vehicles were emitting NO_x in real driving conditions far in excess of the legal limits.

3. VOLKSWAGEN AND AUDI IMPLEMENTED THE DEFEAT DEVICES KNOWING THAT THEY WERE ILLEGAL.

90. From the inception of its 2006 plan to launch the Subject Vehicles in the United States, Volkswagen intensively researched whether it could pass off the various defeat devices as legally permitted (if disclosed) Emission Increasing Auxiliary Emission Control Devices ("EI-AECDs"). Its conclusion was that it could not.

91. EI-AECDs may be legal if they are designed to run only in limited, extreme

driving circumstances to protect the engine and only if (a) the automaker discloses them to the regulators and (b) the regulators determine the software is not actually designed primarily to cheat the emissions test.

92. On October 3, 2006, multiple executives and managers from Volkswagen AG, Audi AG, and VWGoA's EEO met with CARB officials to provide a "technical description of future light-duty diesel emission control strategies [Lean Trap and SCR] and to discuss emission certification implications (e.g., timing)." According to Volkswagen's Meeting Report, during the meeting, CARB officials repeatedly requested "additional detail regarding AECDs." The report documents that, as a follow-up, "EEO, Volkswagen AG, and Audi AG [agreed] to review regulations to help identify AECDs, particularly EI-AECDs." They further promised to provide CARB a more complete description of the AECDs by spring 2007, in particular noting: "[p]er [C]ARB request, identify, describe function (e.g., activate, deactivate, or modulate the operation of emission control devices), describe effect on emission levels[.]"

93. Following the October 3, 2006 meeting with CARB, the topic of AECDs and defeat devices became a subject of intensive internal discussion at Volkswagen and Audi, both in Germany and in the United States. In an email to several of his VWGoA colleagues and multiple engineers at Audi AG and Volkswagen AG in November 2006, VWGoA EEO official Stuart Johnson explained, "almost all AECDs are really calibration issues and strategies, such as having a timing shift for engine starts, shutting off EGR [sic] certain modes such as extended idle to prevent plugging, timing changes for altitude, etc. . . . The agencies are really focused on how often an AECD is used." He referenced an earlier lawsuit in which heavy-duty engine manufacturers were caught using "cycle beating strategies [with] timers on them that enacted the injection timing change once the engine was in a mode for a specific length of time" as a "clear

violation of the spirit of the emission regulations and the certification test procedure."

94. A few days later, Leonard Kata, Manager of Emission Regulations and Certification at VWGoA's EEO, emailed multiple Volkswagen AG and Audi AG managers noting:

> In connection with the introduction of future diesel products, there has been considerable discussion recently regarding the identification of Auxiliary Emission Control Devices (AECDs) . . . The agencies' interest in the identification of AECDs is to determine whether any of these devices can be considered a defeat device.

95. In the email, Kata went on to explain how an EGR system that runs differently under test conditions than in real driving conditions—a central function of the defeat device software in all the Subject Vehicles—would constitute a defeat device:

> EPA also discusses the concept of the existence of a defeat device strategy if a manufacturer's choice of basic design strategy cannot provide the same degree of emission control during both [emissions-test cycle] and [non-emissions-test cycle] operation when compared with other systems available in the industry. A simple example is an EGR system that provides adequate performance under [emissions-test cycle] conditions, but insufficient performance under non-[emissions-test cycle] conditions (e.g., higher speed, load or temperature). This lack of control under [non-emissions-test cycle] conditions will be considered a defeat device.

96. In the AECD analysis attached to his email, Kata also explained:

> Both EPA and [C]ARB define a defeat device as an AECD "...that reduces the effectiveness of the emission control system under conditions that may reasonably be expected to be encountered in normal vehicle operation and use unless: (1) Such conditions are substantially included in the Federal emission test procedure; (2) The need for the AECD is justified in terms of protecting the vehicle against damage or accident; or (3) The AECD does not go beyond the requirement of engine starting."

97. On March 21, 2007, multiple managers and engineers at Volkswagen AG (Richard Dorenkamp, James Liang, and Juergen Peter), Audi AG (Klaus Appel, Dr. Armin Burkardt, Giovanni Pamio, and Lothar Rech), and VWGoA's EEO (Leonard Kata and Norbert Krause) had a follow-up meeting with CARB "to discuss Auxiliary Emission Control Devices

(AECDs) associated with the diesel concepts presented." A Volkswagen Meeting Report summarizing the discussions states, in relevant part:

> VW [sic] position regarding "normal vehicle operation" is that the light-duty vehicle emission test procedures cover normal vehicle operation in customer's hands. [CARB official] Duc Nguyen expects emission control systems to work during conditions outside of the emissions tests. Volkswagen agrees.

98. Despite being fully aware of the prohibitions in this country against defeat devices, Volkswagen, Audi, and Porsche proceeded to roll out hundreds of thousands of diesel vehicles with 2.0 and 3.0 liter engines onto the American market from the 2009 through 2016 model years, all of which featured undisclosed and illegal defeat devices. They concluded, in other words, that risking the imposition of fines was an acceptable cost of doing business.

4. INTERNALLY, VOLKSWAGEN EXECUTIVES AND ENGINEERS OPENLY DISCUSSED THE DEFEAT DEVICES.

99. At the same time as Defendants were assuring CARB their emissions control systems would work during real-world driving, executives and engineers within their Powertrain Development departments were developing and implementing emissions-increasing defeat devices, in the normal course of business.

100. In addition to line-level engineers, discussions concerning defeat device development and implementation taking place over the next decade would include dozens of executives and senior managers. These included, for example:

b. Frank Tuch (2010-2015 head of Volkswagen AG Quality Management and a direct report to Volkswagen AG CEO and Management Board Member, Martin Winterkorn);

c. Bernd Gottweis (2007-2014 head of Product Safety within Volkswagen AG Quality Management);

d. Rudolf Krebs, Jens Hadler, Heinz-Jakob Neusser, and Friedrich Eichler

(heads of Volkswagen AG's Powertrain Development from 2005-2007, 2007-2011, 2011-2013, and 2013-2015, respectively)

e. Multiple Volkswagen AG division heads, including Hanno Jelden (head of Drive Electronics from Nov. 2005-Sept. 2015), Falko Rudolph (Diesel Engine Development from Nov. 2006-Sept. 2010), Stefanie Jauns-Seyfried (head of Functions and Software Development within Powertrain Electronics from Nov. 2005-Sept. 2015), Richard Dorenkamp and Thorsten Duesterdiek (former (2003-2013) and current (2013-present) heads of Ultra-low Emissions Engines and Exhaust Post-Treatment within Diesel Engine Development), Hermann-Josef Engler (head of Passenger Car Engines within Diesel Engine Development), and Mathias Klaproth (head of Diesel System Applications within Powertrain Electronics);

f. Numerous managers and engineers within these divisions, including Burkhard Veldten, Volker Gehrke, and Dieter Mannigel (in Diesel Engine Functions within Powertrain Electronics' Functions and Software Development department) and Andreas Specht, Hartmut Stehr, Michael Greiner, and James Liang (in Procedures and Exhaust Post-Treatment within the Diesel Engine Development department);

g. Top Audi engineers, including Giovanni Pamio (General Manager of V6 Diesel Engines), Henning Loerch (Director of Exhaust Gas Aftertreatment), and Martin Gruber (Director of Audi Diesel Engine Thermodynamics Department); and

h. The Chief of Porsche's Electronics Development, Carsten Schauer.

101. Among other things, these communications detail the use of the defeat devices to reduce raw emissions during test cycles and reduce EGR and Soot Filter regeneration during real driving conditions and otherwise describe the expansion, modification and optimization of the cycle-beating Acoustic Function, well into 2014.

102. A February 29, 2016, statement of defense filed by Volkswagen in a pending European shareholder lawsuit (referenced in paragraph 13, *supra*) offers insight into why, in light of its knowledge of the illegality of its conduct and the potential fines the company thought it would face, Volkswagen nevertheless opted to proceed with its fraudulent scheme:

> Under the Clean Air Act, violations of the statutory emission standards may be sanctioned by fines called civil penalties. While these fines may be as much as U.S.-$ 37,500 per vehicle and are thus in theory quite high, the statutory maximum amounts have to date played no role in practice. Nonetheless, they define the available range of penalties for the relevant U.S. authorities and are thus routinely cited in the corresponding notices—as was also the case with the EPA's Notice of Violation of 18 September 2015.
>
> * * *
>
> Regardless of the statutory maximum amounts and the abstract presentation of the fine assessment criteria in the law, fines in practice do not even approach the upper end of the range, especially in cases involving passenger cars in large numbers (instead of heavy trucks).

5. VOLKSWAGEN AND AUDI CONTINUED TO DENY THE EXISTENCE OF THE DEFEAT DEVICES AND DECEPTIVELY MARKET THE SUBJECT VEHICLES EVEN AFTER THEIR EXISTENCE CAUGHT THE ATTENTION OF U.S. REGULATORS.

103. While speaking about the defeat devices relatively openly in internal discussions, Defendants actively sought to conceal the defeat devices from regulators, researchers, and the public. Among other things, they:

a. Directed the removal of reference to the defeat device (or the "acoustic function" as it was called internally) from ECU documentation;

b. Buried the results of 2012-2013 internal testing that reflected real-world

NO_x emissions exceeding U.S. limits by many multiples;

c. Obfuscated in response to questions presented by Dutch researchers in March 2012 concerning lowered EGR in real-world driving conditions and corresponding increases in NO_x emissions;

d. Denied independent researchers access to data that would confirm NO_x discrepancies between testing and real-world driving conditions in Volkswagen's U.S. fleet; and

e. Failed to disclose the illegal, emissions-increasing defeat devices in their certifications to state and federal regulators that falsely represented full compliance with applicable emissions and durability standards.

a. Volkswagen's Reaction to the Spring 2014 Publication of the ICCT Report

104. On March 31, 2014, an Audi AG engineer alerted colleagues at Volkswagen AG and VWGoA's EEO to the upcoming publication of a report by West Virginia University's ("WVU") Center for Alternative Fuels, Engines & Emissions, commissioned by the International Council on Clean Transportation ("ICCT Report"). The ICCT Report found that real world emissions from two of the three light-duty diesel vehicles it tested contained levels of NO_x between five and thirty-five times higher than the legal emissions limits. WVU researchers conducted these tests using a portable emissions measurement system ("PEMS")—essentially a lightweight laboratory used to test and/or assess mobile source emissions in real driving conditions—rather than on a dynamometer.

105. Anxiety within the company about the possibility that the vehicles that failed were Volkswagens was demonstrated by the flurry of internal Volkswagen and Audi communications that followed. Within days, those fears were confirmed when ICCT researchers told EEO that the vehicles that failed were a 2012 Jetta with an Lean Trap (a Generation 1) and a 2013 Passat with

an SCR system (a Generation 2).

106. Thereafter, EEO began fielding calls and requests for reports and analyses of the ICCT Report from multiple high-ranking Volkswagen executives, including Michael Horn (then CEO and President of VWGoA), Carsten Krebs (a Director at VWGoA), Frank Tuch (then head of Group Quality Management for Volkswagen AG), Bernd Gottweis (then head of Product Safety within Volkswagen AG Group Quality Management) and Christian Klingler (then Volkswagen AG Management Board member responsible for Sales and Marketing).

107. Documents and information provided by managing engineers at Volkswagen AG, Audi AG, VWGoA, and AoA (including several engineers who participated in the design and implementation of the defeat devices in the early-2000s) to multiple senior management officials (including Martin Winterkorn, then CEO of Volkswagen AG and Chairman of Volkswagen AG's Board of Management, and Christian Klingler, then member of Volkswagen AG's Board of Management responsible for Sales and Marketing) in the immediate aftermath of the ICCT Report clearly demonstrate that, from Volkswagen group level management all the way down the line, it was well-understood that:

a. The high real-world NO_x emissions could be readily explained by the existence of the defeat devices described above;

b. Volkswagen and Audi would be subject to significant penalties if they admitted to regulators the discrepancies were caused by defeat devices;

c. Volkswagen could be required to buy back the vehicles if it could not bring the emissions down with a software update; and

d. If Volkswagen opted to stay silent, EPA or CARB could obtain vehicles and conduct emissions testing that would reveal the existence of the defeat

devices.

108. Indeed, in a May 23, 2014, letter to Martin Winterkorn, CEO and Chairman of Volkswagen AG's Board of Managers, Volkswagen AG Quality Assurance head Frank Tuch warned:

> A thorough explanation for the dramatic increase in NO_x emissions cannot be given to the authorities. It can be assumed that the authorities will then investigate the VW systems to determine whether Volkswagen implemented a test detection system in the engine control unit software (so-called defeat device) and, in the event a "treadmill test" is detected, a regeneration or dosing strategy is implemented that differs from real driving conditions.
>
> In Drivetrain Development, modified software versions are currently being developed which can reduce the RDE, but this will not bring about compliance with the limits, either.
>
> We will inform you about the further development and discussion with the authorities.

109. With the risks of detection in mind, Volkswagen embarked on a strategy to de-escalate and deflect scrutiny. It publicly denied that the Subject Vehicles failed emissions requirements. It neutrally acknowledged the existence of the problem without explaining its known cause to authorities or involving Volkswagen AG Group Product Safety, to maintain the illusion that the problem was insignificant. And it proposed software updates to "optimize" the emissions on the Generation 1 and 2 vehicles that were the focus of the ICCT Study.

110. Yet as the executives at Volkswagen AG, Audi AG, VWGoA, and AoA who worked on this damage-control effort well knew, the proposed software modifications would:

a. Only bring the Generation 1s' emissions down to ten times the legal limits, while at the same time increasing fuel consumption;

b. Only bring the Generation 2s' emissions down to five times the legal limits;

c. Only bring the Generation 3s' (i.e., all the model year 2015 Subject

Vehicles with 2.0 liter engines, which were about to roll off the production line) emissions down to double the legal limits; and

d. In the case of the SCR-equipped Subject Vehicles—the Generation 2s, the Generation 3s, and the 3.0s—nearly double urea dosing requirements, thereby necessitating additional urea tank refills for a significant percentage of drivers.

111. And so began Volkswagen's sixteen-plus month campaign, from May 2014 until September 3, 2015 (and beyond for the 3.0 liter Subject Vehicles), to mislead and confuse regulators and the public about the true cause of the high real-driving NO_x emissions identified in the ICCT Report: Volkswagen's installation of illegal defeat devices.

b. Volkswagen's Desperate Efforts to Deflect Scrutiny of the Model Year 2015 Generation 3s Before They Hit the U.S. Market

112. One of the most pressing dilemmas Volkswagen faced in the immediate aftermath of the ICCT Report was related to the SCR-equipped model year 2015 Generation 3s that were set to roll off the production line a few months later for delivery in the United States with the illegal defeat devices installed.

113. In or around March 2014, just before the ICCT Report was released, Volkswagen had applied to CARB and EPA to certify the model year 2015 Generation 3s to the LEV III—a more stringent standard than the LEV II standard to which they had certified the earlier model year 2009 to model year 2014 2.0 liter Subject Vehicles.

114. With the publication of the ICCT Report and the resulting intense scrutiny from regulators, Volkswagen was under immediate pressure to bring the Generation 3s into actual compliance with LEV III standards as quickly and quietly as possible.

115. With respect to the urea dosing, in particular, Volkswagen estimated that even to

bring emissions down to within two times the legal limits, urea dosing would need to nearly double (from 0.8 liters/1,000 miles up to 1.5 liters/1,000 miles). And even then, according to Volkswagen's own estimates, twenty percent of Generation 3 owners would have to refill their urea tanks well before 10,000 miles.

116. Unwilling to come clean with the regulators, Volkswagen decided to use an impending change to EPA rules (effective September 8, 2014) permitting automakers to decouple urea tank refills from service intervals as a pretext to update the software in the Generation 3s waiting in U.S. ports, turning down the defeat device and increasing the urea dosing during real-world driving, before they got into regulators' or customers' hands.

117. Thus, in early June 2014, Volkswagen submitted revisions to its applications for certification to CARB and EPA changing the anticipated urea refill interval from 10,000 miles to "approximately 10,000 miles."

118. Sensitive that the potentially increased number of urea refills and impact on drivability (vehicles with empty urea tanks cannot be started) brought "significant rejection reason to potential buyers," Volkswagen also began discussing how to announce and message this change to dealers and consumers.

119. Given the time constraints and the significant threat to future sales, Volkswagen treated this matter with urgency and involved a multitude of executives and engineers at Volkswagen AG, Audi AG, VWGoA, and AoA.

120. Volkswagen's communications to dealers and the public regarding the changes in urea consumption for the Generation 3s falsely and/or misleadingly:

a. Suggested the vehicles would meet EPA and CARB emissions standards;

b. Omitted any mention of the fact that NO_x emissions in real driving

conditions would still be as much as double legal limits;

c. Claimed that only customers with aggressive driving styles would see the intervals between refills reduced when, in fact, internal estimates reflected that 20 percent of drivers would have to refill their urea tanks before 10,000 miles (according to Audi AG and Volkswagen AG estimates, between 6,000 and 8,000 miles); and

d. Suggested that the older SCR-equipped Generation 2s (namely, model year 2012-2014 Passats) would not require increased urea dosing to comply with LEV II emissions standards.

121. Volkswagen further mischaracterized the decision to increase urea dosing as a proactive decision by the company to meet more stringent LEV III emissions standards when, in reality, it was a ruse to conceal from authorities Volkswagen's illegal urea dosing strategy.

c. Volkswagen's Attempt to Placate Regulators by Offering Sham Software Recalls on the Generation 1s and Generation 2s

122. At the same time it was covertly managing the Generation 3 defeat device issue, Volkswagen was also attempting to downplay the scope and severity of the problem with the Generation 1 and Generation 2 Subject Vehicles. Volkswagen was particularly focused on preventing CARB from conducting its own tests on the Generation 1s, over 400,000 of which were already on U.S. roads, spewing NO_x at up to forty times the legal limits.

123. At an October 1, 2014, teleconference with CARB attended by multiple managers from VWGoA's EEO, including its former and current head (Oliver Schmidt and Stuart Johnson) and Emission Regulations and Certification Manager (Len Kata), and Volkswagen AG engineer Juergen Peter, Volkswagen cited bogus technical explanations for the high emissions, omitted any mention of the true cause of the high NO_x emissions, and assured regulators it could

"optimize" the vehicles' emissions performance by conducting software recalls.

124. Volkswagen made these representations notwithstanding its knowledge that the proposed software recalls—recalls whose true purpose was to turn down the defeat devices in the Generation 1s (by increasing EGR and Lean Trap regeneration) and Generation 2s (by increasing EGR and urea dosing)—would not bring the vehicles into compliance with applicable emissions standards and, further, that they would increase fuel and urea consumption, respectively.

125. In its November 26, 2014, and December 12, 2014, recall-related submissions to CARB and EPA, Volkswagen touted the Generation 2 software recall as a "pro-active" "upgrade." In the description of the corrective action to CARB and EPA in those submissions, Volkswagen did not state why the software action was needed. Rather, it stated:

> Improvements have been made with regard to the [particulate matter] PM filter loading / regeneration model. The updated software incorporates the latest engineering experiences to enhance the accuracy of the PM filter model. The implemented changes do not have a negative impact on the KI-factor determination or influence the on road performance of the vehicle.
>
> Improvements have been made ensuring a higher Ammonia filling level of the SCR catalyst. This ensures that the SCR catalyst is more robust against NO_x-peaks caused by dynamic and transient speed / load changes. The new software incorporates the latest engineering experiences to enhance the efficiency of the SCR system.

126. The notices to dealers and consumers issued thereafter, in or around January 2015, were similarly misleading and deceptive, stating: "the vehicle's engine management software has been improved to assure the vehicle's tailpipe emissions are optimized and operating efficiently. Under certain operating conditions, the earlier strategy may have increased the chance of the vehicle's [malfunction indicator lamp] light illuminating." The customer letter further disingenuously stated that the recall was being undertaken "[a]s part of Volkswagen's ongoing commitment to our environment, and in cooperation with the United States Environmental Protection Agency."

127. These notices were indisputably deceptive. No dealer or customer who received one would have understood why the recall was being conducted or the fact that the Subject Vehicles' urea consumption would likely substantially increase, in many cases requiring consumers for the first time to refill their urea tanks between 10,000 mile service intervals.

128. Volkswagen's March 2015 recall-related submissions concerning the software update for the Generation 1s were similarly misleading and deceptive, again describing the action as a "pro-active" "upgrade" of ECM Software levels. Its description of the "specific modification" to EPA stated:

> These changes will assist in reducing [malfunction indicator lamp] illumination for DTC P0401 & P2463, thus reducing the frequency of unnecessary replacement of after treatment system components. In addition, the vehicle's engine management software strategy has been modified to optimize the PM filter loading and regeneration model under extreme driving conditions.

129. Volkswagen further falsely reported that the update would "pose no impact on fuel economy."

130. As with the earlier Generation 2 recall-related notices, Volkswagen told dealers and customers: "the vehicle's engine management software has been improved to assure the vehicle's tailpipe emissions are optimized and operating efficiently. Under certain operating conditions, the earlier strategy may have increased the chance of the vehicle's [malfunction indicator lamp] light illuminating." Volkswagen omitted any mention of the reason for the software update, the fact that post-update real-driving NO_x emissions would still be up to ten times legal limits, or the anticipated decrease in fuel economy.

d. Audi's Efforts to Deflect Regulators' Suspicion about the 3.0s

131. Around the same time Volkswagen was meeting with regulators to describe the proposed 2.0 recalls and offering a host of improbable reasons for the NO_x discrepancies the recalls were meant to fix, regulators' suspicions about the 3.0s started to build.

132. Those suspicions were well-founded. Internal PEMS tests on multiple 3.0s conducted by Audi itself (starting in Fall 2014) reflected real-world NO_x emissions many times higher than permissible limits.

133. In February 2015, in response to increasing pressure from regulators for transparency on the 3.0s (and, in particular, questions about whether the upcoming model year 2016 vehicles for which Audi was then seeking certification were beset by the same issues as the 2.0s), EEO conveyed results of Audi's late 2014–early 2015 PEMS testing of a model year 2016 Audi A8 V6 TDI to CARB: "emissions at a level of three times the NO_x ULEV II [full useful life] standard."

134. Audi attributed the discrepancy between NO_x emissions on the dyno and on the PEMS to "increased driving dynamics in combination with a lot more unsteady driving characteristics" and to the fact that "the driving kinematics in the [Los Angeles] area are significantly different from standard [test cycle] characteristics," such that "a sustainable high SCR effectiveness in comparison to the regulatory [test cycle] can[not] be reached and therefore leads to an increase in NO_x emissions." Audi further claimed:

> the temporary reduction of the SCR effectiveness is caused by the underfloor position of the SCR system and therefore represents a physical boundary of the technical capability of the system and no intervention in the control strategy. Therefore Volkswagen concludes that the current SCR-application fulfils the requirement of the AECD regulation. As a consequence Audi requests an unconditional [Executive Order].

135. Although it had conducted additional PEMS tests of earlier and current 3.0 model years and obtained considerably worse results (NO_x emissions during real-world driving of ten times legal levels), Audi AG did not disclose those results to regulators or consumers. Instead, Audi disclosed only that it planned to alter the applicable software to improve real-world emissions for future 3.0 models. At the same time, Defendants continued to deceptively market

and sell the 3.0s to consumers.

e. Volkswagen's Continuing Efforts to Mislead Regulators

136. Over the course of spring 2015, CARB made multiple requests for information concerning: (a) whether the software updates Volkswagen offered for the Generation 1s and Generation 2s had brought those vehicles into compliance with relevant standards; and (b) whether the model year 2016 Generation 3s and the 3.0s for which neither EPA nor CARB had yet issued certifications were beset by the same issues.

137. CARB officials followed up multiple times requesting from Volkswagen more specific information regarding how the software controlled urea dosing on the model year 2016 2.0s and 3.0s for which Volkswagen was then seeking certification. Engineers and officials at Volkswagen AG, Audi AG, and VWGoA were in frequent contact with CARB, but would not provide CARB clear answers. They strung CARB along for months.

138. Upon learning that CARB planned to conduct confirmatory testing of an updated Generation 2 using "Special Cycles," i.e., consecutive test cycles on the dynamometer, internal emails between EEO and engineers at Volkswagen AG began to reflect desperation and panic. In a May 18, 2015, email to several managers and engineers within Volkswagen AG's Powertrain Development Department and to EEO head Stuart Johnson, Volkswagen AG engineer Juergen Peter conveyed serious concern regarding what CARB's plan to conduct Special Cycles would expose, asking his colleagues: "Do we need to discuss next steps?" With respect to CARB's questions relating to the soot loading of the Soot Filter, Peter begged: "Come up with the story please!"

139. The same concern about the growing frequency and intensity of CARB's requests for information was reflected in a May 21, 2015, email from Mike Hennard, Senior Manager of Emissions Compliance at EEO, to multiple Volkswagen AG managers and engineers. It stated:

"Please be aware that this type of action from [CARB] staff / management is not a normal process and that we are concerned that there may be possible future problems / risks involved. It should also be noted that this TDI software issue is being reviewed and monitored by upper management at [C]ARB." After receiving Hennard's email, one of the senior managers wrote an email to Hennard's manager (VWGoA EEO head Stuart Johnson) admonishing him for allowing his direct report to send such an open email to those recipients.

140. In June 2015, CARB conducted confirmatory testing on a 2012 SCR-equipped Passat (a Generation 2). Based on that testing, CARB notified Volkswagen that it had concluded "VW's 'fix' Calibration" did not: (a) "directly address the lack of [urea] dosing filling strategy on some drive cycles"; (b) "directly address high NO_x emissions on drive cycles extending beyond 1,400 seconds. VW's [urea] filling strategy is still only invoked once per drive cycle; therefore, NO_x emissions will continue to increase as the drive cycle progresses"; and (c) "address why or when the filling strategy is invoked. Some drive cycle [sic] may never activate the [urea] filling strategy."

141. Thus, CARB indicated it could not certify the model year 2016 Generation 3s until it received confirmation they did not have the same parameters for urea dosing as the updated Generation 2s, which had already failed CARB's confirmatory testing.

6. VOLKSWAGEN FINALLY ADMITTED ITS MISCONDUCT ON THE 2.0S WHEN IT THOUGHT DOING SO WOULD PROMPT REGULATORS TO CERTIFY MODEL YEAR 2016 GENERATION 3S.

142. Volkswagen's repeated attempts to assure CARB that the "Gen 3 2016 [model year] did not share the [Gen 2] strategy or concern" were unavailing.

143. By mid-July 2015, Volkswagen had not obtained certification to sell the model year 2016 Generation 3s, the new vehicles were piling up in the ports, and every interaction with regulators raised more questions and concerns than it answered.

144. On or about July 20, 2015, upon learning that CARB planned to test a model year 2015 Generation 3 to resolve questions about whether these vehicles (and the model year 2016 Generation 3s) were in compliance with applicable standards, VWGoA EEO head Stuart Johnson internally floated the possibility of "discussing a 'working mistake' with [C]ARB" and further suggested "how we handle this could be a positive step if we tie it to the refill interval and dosing strategy."

145. In an email dated July 21, 2015, VWGoA President and CEO, Michael Horn, conveyed the urgency of the situation to multiple board members and executives in Germany (including Christian Klingler, Volkswagen AG Management Board member responsible for Sales and Marketing, and Heinz-Jakob Neusser, the Volkswagen Passenger Car Board member responsible for Technical Development). Horn made clear that certification of the model year 2016 Generation 3s was at risk if Volkswagen failed to provide CARB all the outstanding information it was awaiting.

146. Thereafter, on or about August 5, 2015, Volkswagen AG Engine Development head (and former VWGoA EEO head) Oliver Schmidt and VWGoA EEO head Stuart Johnson met with CARB management and admitted that, even after the software recalls, the Generation 1s and Generation 2s did not meet legal requirements. With respect to the SCR-equipped Generation 2s, they attributed the low urea dosing to efforts to conserve urea due to the 10,000-mile refill interval. Yet the Generation 2 recall Volkswagen had just conducted should have addressed that issue, given the September 2014 change to EPA rules allowing refills to occur between the 10,000 mile service intervals.

147. A week later, on August 12, 2015, while still withholding the model year 2016 Generation 3 certifications because of concerns the model year 2015 and 2016 Generation 3s

suffered from the same dosing issues as the Generation 2s, CARB technical staff again requested "the exact parameters that control [Generation 3 urea] dosing and show the before & after calibration difference that corrected the lack of dosing issues found during our [Generation 2] testing."

148. After extensive internal discussion by and among VWGoA EEO head Stuart Johnson and multiple high-level executives at Volkswagen AG (including Oliver Schmidt, head of Engine Development, and Bernd Gottweis, then head of Quality Management/Product Safety) in which Johnson expressed doubts concerning whether it would be possible to give CARB what it requested "given the complication of today's code," Volkswagen again decided to obfuscate. Rather than provide CARB the information it sought regarding the model year 2016 Generation 3 urea dosing parameters, Volkswagen AG dispatched Johnson to reiterate to CARB the "same message Oliver [Schmidt] brought last week when we both met with [CARB officials], which is a partial admission that concern of the 10K refill interval is another parameter that influences the dosing and that is why he is not always seeing the dosing at the enabling temperature."

149. Johnson's effort to allay CARB's concerns was unsuccessful. As Johnson reported in an August 12, 2015, email report to multiple high-level executives, managers, and engineers at Volkswagen AG (Oliver Schmidt, Friedrich Eichler, Bernd Gottweis, Daniel Schukraft, Juergen Peter, Detlef Stendel, Richard Preuss, and Thorsten Duesterdiek), notwithstanding his assurances, CARB "still asked for information. This is not a new request. [CARB] has asked for the parameters in the calibration of Gen 2 that are limiting the dosing to ensure that it is not in Gen 3."

150. On August 18, 2015, Volkswagen AG Powertrain Development head Friedrich Eichler sought authority from then Volkswagen Passenger Car Board member and head of

Volkswagen AG Engine Development Heinz-Jakob Neusser to send multiple Volkswagen AG diesel department heads (together with current and former VWGoA EEO heads Stuart Johnson and Oliver Schmidt) to meet with CARB the following day, August 19, 2015. The express goal of the meeting was to secure the release of the model year 2016 Generation 3 vehicles and to convince CARB that Volkswagen would be able to implement measures to reduce the Generation 2's real driving NO_x emissions values to an acceptable level within an agreed timeframe. To do that, they agreed to (again): acknowledge problems in the Generation 1 and Generation 2; promise another software update to the Generation 2 in mid-2016; and, rather than answer the questions being posed about the Generation 3s directly, continue to assure CARB that the lessons learned from the Generation 2 issues had informed and improved the emissions controls in the Generation 3s.

151. Consistent with the agreed-upon approach, the technical presentation Volkswagen made to CARB on August 19, 2015 (entitled "Technical Information to enable [C]ARB to issue the MY16—Gen 3 certificate"), generally described the modifications to the Generation 3 dosing strategy as compared to the Generations 2s, and generally described the inputs, but did not provide the actual values that enabled or disabled urea dosing or admit any time- or distance-related inputs. Nor did the presentation acknowledge that the Generation 3s would not meet applicable emissions standards in real-world driving.

152. This presentation did not satisfy CARB, which demanded more information and continued to withhold model year 2016 Generation 3 certification.

153. By late August 2015, Volkswagen had more reason to be concerned than simply the growing number of model year 2016 Subject Vehicles piling up at the ports. CARB obtained a model year 2016 Generation 3 for testing on August 26, 2015, making the discovery of the

defeat devices virtually inevitable. Volkswagen management knew they needed to provide CARB the information it sought and expressly recognized that potential financial liability necessitated creation of a reserve. Yet they had not decided whether and to what extent they should disclose other functions controlled by the defeat devices, e.g., Lean Trap regeneration and EGR.

154. On September 3, 2015, at a meeting attended by multiple CARB officials, Volkswagen AG executives and managers (Friedrich Eichler, Richard Preuss, Oliver Schmidt, Thorsten Duesterdiek, Burkhard Veldten), and VWGoA EEO head Stuart Johnson, Volkswagen finally admitted the existence of an illegal defeat device in the Generation 2s and disclosed the existence of "test recognition software and engine map/dosing changes between road and chassis dyno."

155. At that September 3, 2015, meeting, Volkswagen admitted the Generation 2 Engine Control Units had two calibrations: one for real-world driving ("Calibration 1") and one for testing ("Calibration 2"). Volkswagen disclosed that, in Calibration 1, the urea dosing, EGR, and Rail Pressure were lower. In Calibration 2, Volkswagen disclosed that the urea dosing, EGR, and Rail Pressure were higher. In addition, Volkswagen provided greater detail regarding the enable/disable values for these calibrations.

156. Far from convincing the regulators that certification of the model year 2016 Generation 3s should move forward, Volkswagen's admission raised additional questions and concerns to which CARB sought a response, including concerns regarding compliance with applicable durability standards (given the anticipated increase in the number of Soot Filter regenerations post-software update).

157. On September 18, 2015, EPA issued to Volkswagen a Notice of Violation

("September 2015 NOV") reflecting the agency's determination that:

> VW manufactured and installed defeat devices in certain model year 2009 through 2015 diesel light-duty vehicles equipped with 2.0 liter engines. These defeat devices bypass, defeat, or render inoperative elements of the vehicles' emissions control system that exists to comply with [Clean Air Act] emission standards. . . . Additionally, the EPA has determined that, due to the existence of the defeat devices in these vehicles, these vehicles do not conform in all material respects to the vehicle specifications described in the applications for the certificates of conformity that purportedly cover them.

158. The same day, CARB sent an "In-Use Compliance" letter to Volkswagen describing its investigation of the "reasons behind these high NO_x emissions observed on their 2.0 liter diesel vehicles over real world driving conditions[]" and its related discussions with Volkswagen. According to CARB, those discussions "culminated in VW's [September 3, 2015] admission to CARB and EPA staff that it has, since model year 2009, employed a defeat device to circumvent CARB and the EPA emission test procedures."

7. EVEN IN THE FACE OF FORMAL ACTION CONCERNING THE 2.0S, AUDI AND VOLKSWAGEN CONTINUED TO DENY THE EXISTENCE OF DEFEAT DEVICES IN THE 3.0S.

159. In the face of regulatory action concerning the 2.0s and intense public scrutiny, Defendants continued to publicly deny the existence of illegal defeat devices in the 3.0s.

160. At the same time as it was publicly denying its 3.0s were affected, managers and engineers at Audi AG and EEO were discussing how to disclose to CARB the existence of time- and temperature-based urea dosing and EGR software strategies in the 3.0s, without acknowledging that these were forms of the same illegal defeat devices that Volkswagen had admitted existed in the Generation 2s.

161. In or around October 2015, CARB conducted its own Special Cycle testing on a model year 2016 Audi A6 and a model year 2014 Volkswagen Touareg.

162. In a second round of notices issued on November 2, 2015, EPA and CARB

notified Volkswagen they had conducted defeat device screening and certification testing on a model year 2016 Audi A6 and a model year 2014 Volkswagen Touareg and "observed the same type of emissions behaviors as those in which VW has admitted defeat devices exist. These activities corroborate testing conducted by U.S. EPA and Environment Canada on a 2014 VW Touareg (Test Group EADXT03.02UG) and a 2015 Porsche Cayenne (Test Group FPRXT03.0CDD), respectively. This testing has also yielded evidence of a defeat device."

163. On November 20, 2015, CARB issued a press release reporting that, in a November 19, 2015, meeting with EPA and CARB, "VW and AUDI told EPA and CARB that the issues raised in the In-Use Compliance letter extend to all 3.0 liter diesel engines from model years 2009 through 2016." Thereafter, in an In-Use Compliance Letter dated November 25, 2015, CARB confirmed its determination "that all 3.0 liter model years 2009-2016 test groups of the [Audi AG, Porsche AG, Porsche Cars North America, Volkswagen AG, and Volkswagen Group of America, Inc.] are in noncompliance with CARB standards[.]"

164. In sum, Volkswagen denied its misconduct to state and federal regulators for eighteen months from the initial publication of the ICCT study, all the while continuing to sell vehicles that violated the laws of the Commonwealth.

8. THE GERMAN DEFENDANTS AND VWGOA KNEW THAT THE SUBJECT VEHICLES EMITTED NO_X EMISSIONS IN AMOUNTS FAR HIGHER THAN PERMITTED.

165. At all relevant times, the German Defendants—Volkswagen AG, Audi AG, and Porsche—and Volkswagen's U.S. subsidiary, VWGoA, have known that the defeat devices installed in the 2.0s and 3.0s they manufactured and sold in the United States, including in the Commonwealth, caused the Subject Vehicles to emit many times the allowed NO_x during normal operation, in violation of state laws and regulations promulgated to protect human health and the environment from mobile sources of air pollution.

166. The excess NO_x emitted by the Subject Vehicles combines in the atmosphere with volatile organic compounds ("VOCs") in a complicated reaction in the presence of heat and sunlight to form ozone, a major component of urban smog that harms the public health and damages the environment.

167. Ozone contributes to many human respiratory health problems, including chest pains, shortness of breath, coughing, nausea, throat irritation, and increased susceptibility to respiratory infections and illnesses, such as asthma, and disproportionately affects vulnerable members of society, particularly children and the elderly.

168. NO_x emissions also cause eutrophication of and excess nutrient loading in coastal and other waters, reduce the diversity of fish and other life in these waters, and, along with sulfur dioxide found in the atmosphere from other sources, contribute to the creation of fine nitrate and sulfate particles. Like ozone, fine particulates affect the Commonwealth's residents by causing human respiratory distress, cardiovascular disease, and even premature mortality. Fine nitrate and sulfate particles are also toxic to aquatic life and vegetation.

169. At all relevant times, Volkswagen has been aware of the requirements of the state environmental statutes and regulations more particularly described above in this Complaint. For example, the MA LEV Regulation at 310 C.M.R. 7.40(2)(a)(2) requires car manufacturers to comply with the Fleet Average Non-Methane Organic Gas ("NMOG") or NMOG plus NO_x Exhaust Emission Requirement in Massachusetts. Since at least model year 2009, Volkswagen has been filing with the Department the NMOG Fleet Average Reports for Volkswagen vehicles delivered for sale in Massachusetts, as required by the MA LEV Regulation at 310 C.M.R. 7.40 (5)(a) and (b). As a result of the defeat devices in the Subject Vehicles, those fleet averages (and any resulting NMOG credits/debits reported) were false.

170. Likewise, in order to obtain certification to sell the Subject Vehicles in the United States, Volkswagen submitted to the EPA and CARB applications for Emission Certification falsely certifying the Subject Vehicles' compliance with applicable emissions and durability standards and CA LEV regulations. These applications contained the following false statements:

> Statement of Compliance:
>
> The Volkswagen Group states that any element of design, system, or emission control device installed on or incorporated in the Volkswagen Group's new motor vehicles or new motor vehicle engines for the purpose of complying with standards prescribed under section 202 of the Clean Air Act, will not, to the best of the Volkswagen Group's information and belief, cause the emission into the ambient air of pollutants in the operation of its motor vehicles or motor vehicle engines which cause or contribute to an unreasonable risk to public health or welfare except as specifically permitted by the standards prescribed under section 202 of the Clean Air Act. The Volkswagen Group further states that any element of design, system, or emission control device installed or incorporated in the Volkswagen Group's new motor vehicles or new motor vehicle engines, for the purpose of complying with standards prescribed under section 202 of the Clean Air Act, will not, to the best of the Volkswagen Group's information and belief, cause or contribute to an unreasonable risk to public safety.
>
> Durability Statement:
>
> Based on the Volkswagen Group's good engineering judgment, all the vehicles described in this Application for Certification comply with all applicable intermediate and full useful life standards.

171. Moreover, Volkswagen failed to disclose or describe the defeat devices on the list of AECDs required in the Applications. To the extent it disclosed the existence of them as AECDs, it falsely represented they were "active" in all conditions (i.e., in test and real driving conditions).

172. Volkswagen's certifications to state and federal environmental regulators concerning the Subject Vehicles' purported compliance with applicable law were false and misleading. As a result, Volkswagen sold and leased more than 15,400 non-compliant Subject Vehicles in the Commonwealth.

9. VOLKSWAGEN MANIPULATED ON-BOARD DIAGNOSTICS SYSTEMS TO CONCEAL THE DEFEAT DEVICES.

173. The Commonwealth and other states have adopted Inspection and Maintenance ("I&M") programs that require all registered motor vehicles to pass periodic inspection tests that evaluate, among other things, the vehicles' emissions systems. In the Commonwealth, as elsewhere, the inspection tests do not directly measure the cars' emissions, but rely instead on the vehicles' on-board diagnostics ("OBD") to relay information on whether the cars' emissions system is functioning properly. State and federal law require auto manufacturers to equip their cars with OBD systems that electronically report failures of emissions systems to mechanics or inspectors during service or inspection.

174. Properly-functioning OBD systems would have reported the failure of Volkswagen's defeat-device equipped cars to run their EGR systems properly and would have alerted inspectors, mechanics, and car owners that the cars' emissions systems were not functioning correctly and required repair.

175. To allow its defeat device-equipped vehicles to pass the Commonwealth's (and other states') inspection and maintenance tests, Volkswagen therefore needed to and, in fact, did implement a further cheat: it programmed the OBD systems on its defeat device-equipped cars to falsely report at inspection time that the automobiles' emissions systems, including EGR, were working properly.

176. This deception subverted the Commonwealth's I&M program and caused a substantial waste of time and resources: for a period of more than seven years, despite subjecting the Subject Vehicles to thousands of periodic inspections, the Commonwealth's inspectors, mechanics, and car owners were misled into believing that Defendants' vehicles complied with applicable environmental laws when, in fact, they were grossly violating those laws.

B. DEFENDANTS DEFRAUDED CONSUMERS BY PROMISING "GREEN," "CLEAN DIESEL" CARS.

177. At all relevant times, in an effort to spur sales in the United States, Volkswagen proudly touted the performance and reliability of its diesel vehicles and its purported environmental leadership, intentionally targeting its marketing to environmentally-concerned and -conscious consumers.

178. From as early as 2007, internal documents relating to "Volkswagen's Opportunities with Clean Diesel" reflect Volkswagen's determination to "OWN the segment before the competition come to market" and "own 'Clean Diesel' the way Toyota owns 'Hybrid.'" Volkswagen's marketing strategy focused on positioning "Clean Diesel as [an] environmental halo over [the] VW brand" and making "environmental conscience" the "centerpiece" of Volkswagen's "innovation/technology story."

179. Volkswagen's false advertising was effective, helping it become the largest seller of diesel passenger vehicles in the United States and sell approximately 11,000,000 of the Subject Vehicles in approximately 150 countries around the world. By 2015, Volkswagen became the world's largest automaker by sales, and by July of 2015 ranked eighth on the Fortune Global 500 list of the world's largest companies.

180. Even in the wake of the ICCT study in Spring 2014 and its own internal PEMS testing that confirmed the high real driving emissions in the 2.0s and 3.0s, and even as the regulators grew increasingly skeptical about the Subject Vehicles' emission compliance, Volkswagen did nothing to modify or scale back its message of environmental leadership and the benefits of "Clean Diesel" in the United States.

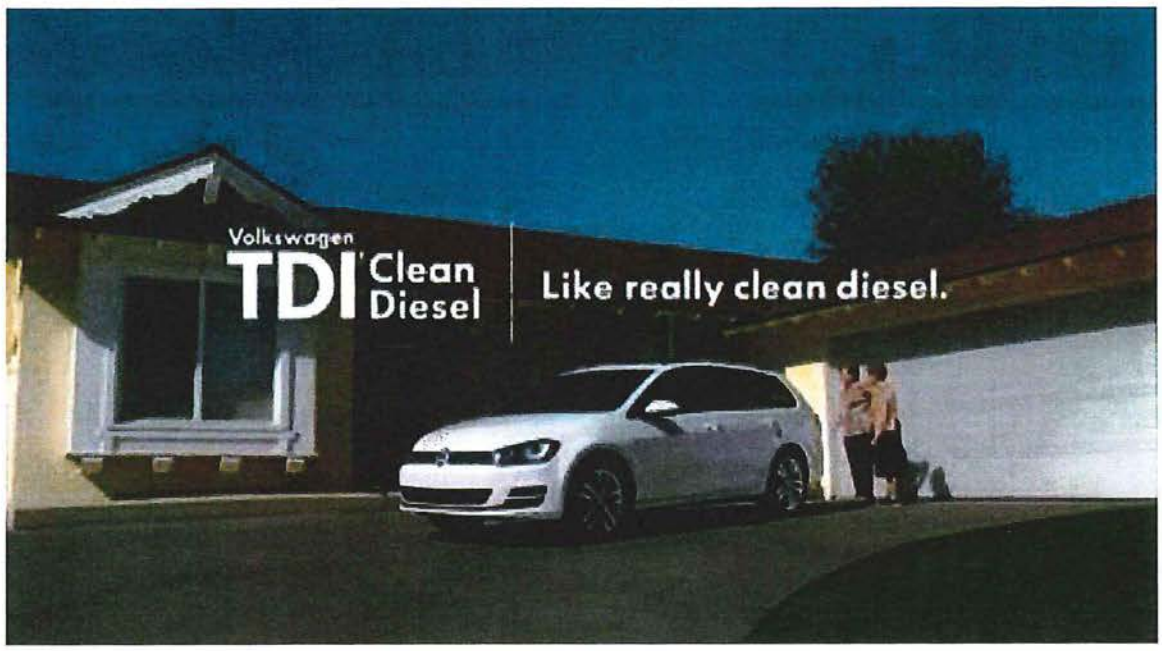
1. DEFENDANTS' "CLEAN DIESEL" PROMOTION PERMEATED THE MEDIA.

181. At all relevant times, VWGoA and AoA were responsible for marketing and

selling the Volkswagen and Audi brand Subject Vehicles, subject to coordination with and general oversight by Volkswagen AG and Audi AG.

182. From 2009 through 2015, VWGoA and AoA spent hundreds of millions of dollars to develop and place internet, television, and print ads advertising the fuel efficiency, performance, and environmental hygiene of the Subject Vehicles, to rebrand diesel as a clean-running, fuel-efficient, fun alternative to their gas and hybrid competitors, and to associate the Volkswagen and Audi brands with progressive ideals, environmental consciousness, and innovation.

183. Commercial videos lampooned as "old wives' tales" the notion that diesel was dirty and noxious. "[Diesel] used to be dirty," says one character, "but this is 2015." A character places her scarf against the exhaust of a diesel and states, "see how clean it is!" The ad is followed by a statement: "Like really clean diesel." Exemplars are provided below.



184. As of March 30, 2015, Volkswagen's "Old Wives Tales" ad campaign alone—a media campaign aimed at debunking the myths that diesel cars were, among other things, sluggish, stinky, and dirty—had gotten over 9.9 million views on Visible Measures True Reach, 13.5 million Tumblr impressions, and over 5 million Twitter impressions. Indeed, within just 6 hours of posting, the "Dirty" video alone got over 80,000 views.

185. In separate commercials, including during multiple Super Bowls, VWGoA and AoA touted the Volkswagen Jetta TDI and Audi A3 TDI as the "Green Car of the Year."

186. A 2010 AoA press release announcing the decision to advertise during the Super Bowl stated: "The spot will highlight the Audi A3 TDI, recently named by Green Car Journal as the 2010 'Green Car of the Year' and will have a fun, tongue-in-cheek environmental theme . . . This year, Audi will demonstrate its leadership position within the luxury segment with a brand spot that delivers the message that being environmentally conscious might not be easy, but the Audi A3 TDI clean diesel is now a proven environmental solution." Metrics from that Super Bowl ad reflect the commercial had 115.6 million viewers and was, at the time, the second most

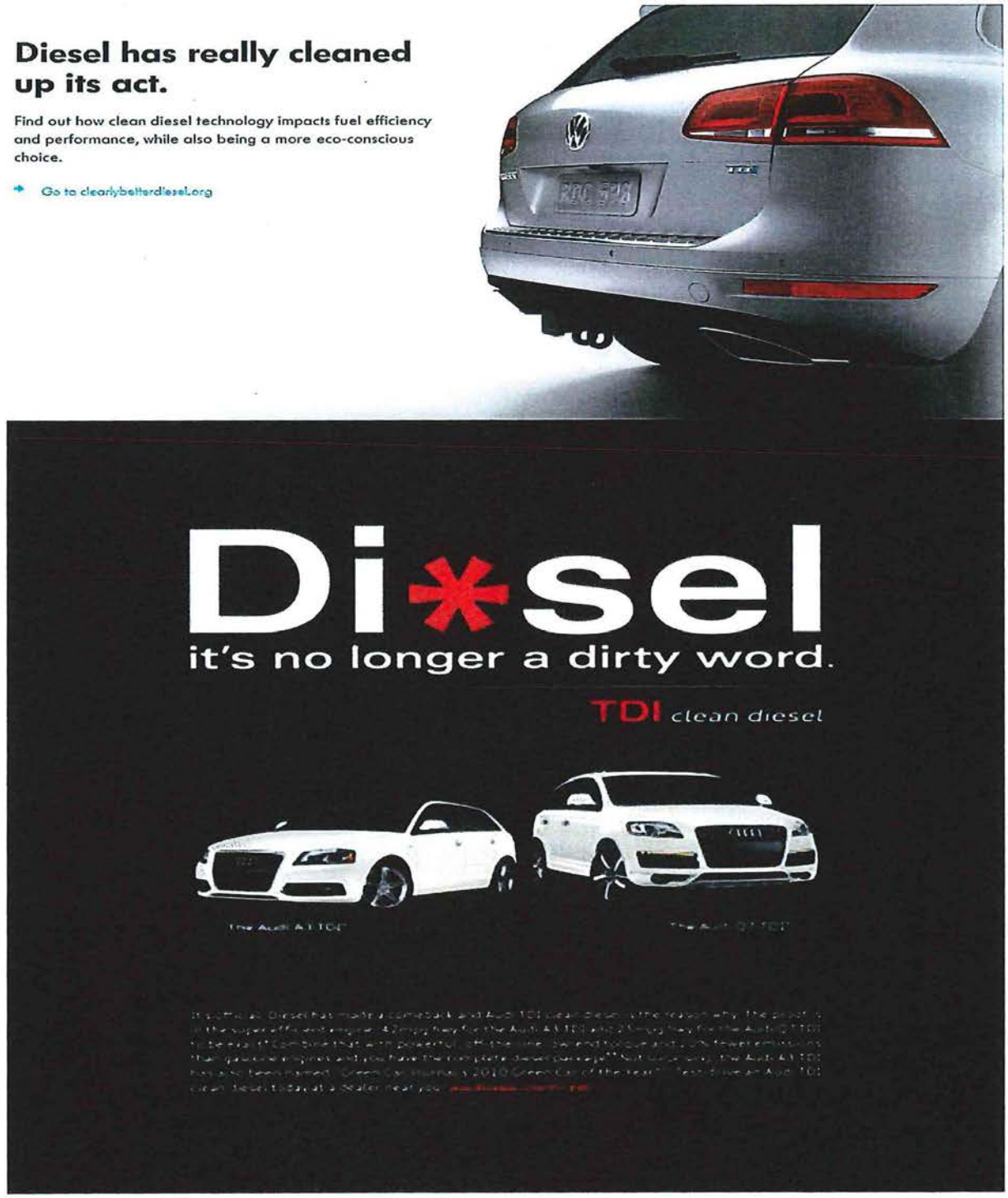
watched commercial in U.S. history.

187. A commercial for the Audi A3 TDI urged consumers to "Do Your Part" and went on to depict the TDI engine as efficient, high-performing, and, therefore, a "more fun" alternative to forms of green transportation such as cycling, bio-diesel, and public transit.

188. Press releases issued by VWGoA and AoA concerning the Subject Vehicles were misleading as well, falsely touting the effectiveness of the emissions control systems. For example, an August 25, 2013, press release for the model year 2014 Touareg falsely claimed its Selective Catalytic Reduction system "helps reduce NO_x emissions by up to 90 percent. This lets the engine meet the ULEV/Tier 2, BIN 5 standards imposed across all 50 U.S. states."

189. Marketing brochures likewise contained misstatements about the effectiveness of the emissions control systems. A brochure for the model year 2015 Audi A3, for example, featuring Audi's slogan, "Truth in Engineering," contained the following misleading claim about the A3's NO_x reduction technology: "[w]ith innovative diesel particulate filters and the nontoxic AdBlue reducing agent, we eliminate up to 95% of diesel NO_x emissions."

190. Print ads featuring tag-lines like "This ain't your daddy's diesel," "Diesel has really cleaned up its act," and "Di*sel[:] it's no longer a dirty word" (exemplars directly below) were geared toward rebranding diesel as a clean and fun alternative to Volkswagen and Audi's gasoline and hybrid competitors.



191. These ads directed consumers to promotional websites such as TDItruthanddare.com and clearlybetterdiesel.org, launched by Volkswagen in March 2009, which included promotional ads, videos, and interactive tools (exemplar below) dramatizing claims of TDI engines' cleanness, or clearlybetterdiesel.org, which presented as an informational

factsheet listing claims about the environmental, efficiency, and performance benefits of "Clean Diesel" engines.

192. Like the ad below, Volkswagen and Audi ads uniformly promised consumers not only a "clean" car, but one that was higher performing, more "fun" to drive, and more fuel efficient than non-diesel options.

Not just how far, but how fun.

With efficient diesel technology, TDI Clean Diesel lets you travel much farther between stops for fuel than with comparable gasoline engines. And since our TDI Clean Diesel engines are turbocharged, each one of those miles will be infinitely more fun.

193. Defendants also claimed in advertising that their Clean Diesel models typically retain a higher resale value than similar gasoline vehicles.

194. Defendants disseminated these advertisements and marketing materials throughout the United States, including in the Commonwealth.

2. PORSCHE DECEIVED CONSUMERS BY PROMISING "CLEAN DIESEL" CARS.

195. Defendant Porsche NA was responsible for marketing and selling the model year 2013 to 2016 Cayennes, subject to coordination with and general oversight by Porsche.

196. Porsche's literature for its first diesel-powered Porsche, the Cayenne, heavily touted its new, "clean" diesel technology that allowed for clean emissions while retaining the feel of a sports car.

197. A Porsche brochure for the Cayenne Diesel described the vehicle as a "technological marvel, able to take its unique fuel source and transform it into clean, efficient, and incredibly torque-rich power," further noting: "what is new" in the Cayenne "is the degree of refinement that Porsche has brought to it, making a new 3.0-liter turbo diesel V6 that is far

advanced from what many people perceive—especially in terms of its acceleration, clean emissions, and quiet-running operation."

198. Porsche described the Cayenne's emission control system as "innovative" and "intelligent" and claimed, among other things, the Cayenne's Exhaust Gas Recirculation, Soot Filter, and Selective Reduction Catalytic Converter "help to ensure the reduction of harmful pollutants into the environment and make the Cayenne Diesel compliant with U.S. emissions standards."

199. These claims were false, deceptive, and unfair because, in fact, as a result of the implementation of the defeat devices, the Cayennes were only "compliant" with U.S. emissions standards during dyno testing.

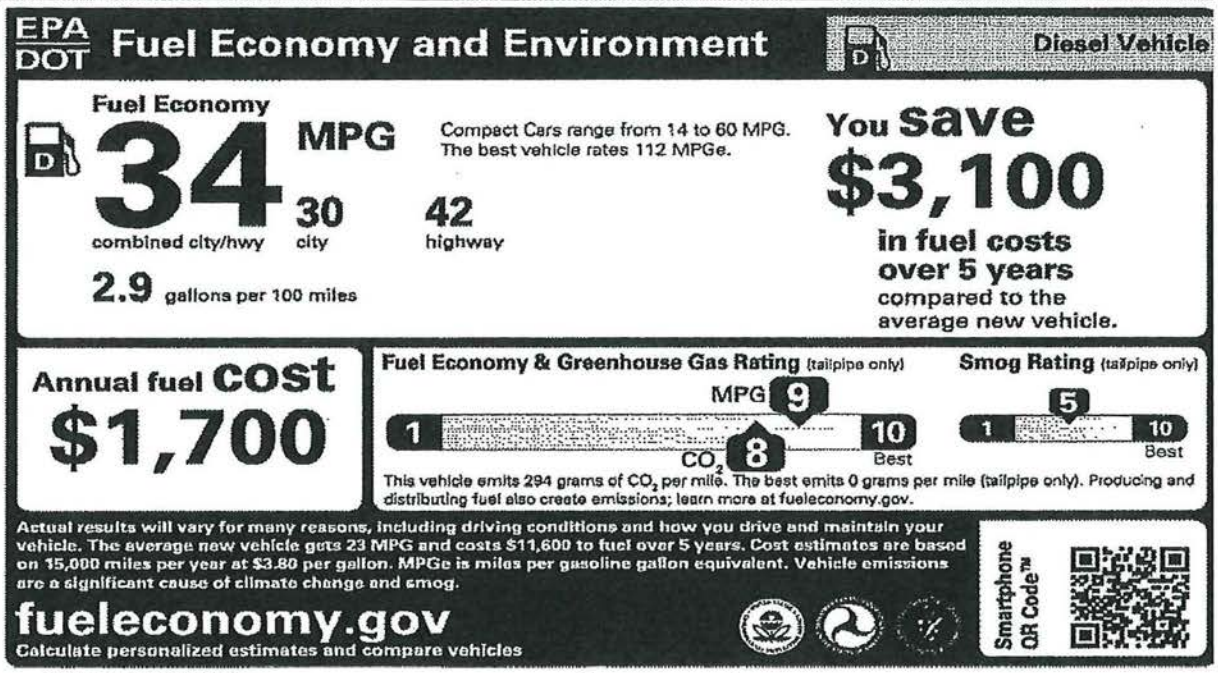
200. The brochures described above were made available to consumers in many parts of the United States, including in the Commonwealth.

3. VOLKSWAGEN SUBJECTED BUYERS AND LESSEES TO A BARRAGE OF FALSE REPRESENTATIONS AND WARRANTIES AT THE POINT OF SALE.

201. In addition to promoting sales through its misleading advertising campaigns, Volkswagen knowingly subjected actual and potential buyers and lessees to additional misrepresentations at the point of sale and after.

202. Window stickers affixed to each of the Subject Vehicles for sale or lease reflected average "smog ratings" when, in fact, the Subject Vehicles' NO_x emissions—a major factor in smog ratings—actually exceeded applicable standards by as much as forty times. For example, the representations below were affixed to the window of a 2013 Volkswagen Golf TDI:

Good Clean Diesel Fun.



203. In California emissions warranties (applicable to residents of Massachusetts, pursuant to 310 C.M.R. 7.40(4)), Defendants expressly warranted to each "original retail purchaser or original lessee and any subsequent purchaser or lessee that every [Subject Vehicle] imported by Volkswagen was designed, built and equipped" to conform to applicable CARB requirements (and, therefore, the Air Act and MA LEV Regulations).

204. These express warranties were categorically false in light of the installation of the defeat devices.

4. VOLKSWAGEN'S ENVIRONMENTAL MESSAGE RESONATED WITH BUYERS AND LESSEES WHO PURCHASED THE SUBJECT VEHICLES BELIEVING THEM TO BE ENVIRONMENTALLY FRIENDLY.

205. Consumers purchased and leased Subject Vehicles based on Volkswagen's false and misleading representations that the vehicles would be environmentally friendly and clean, fuel-efficient, compliant with all applicable emissions standards, and would provide superior performance. Purchasers were willing to pay price premiums of thousands of dollars per car,

depending on the model and trim packages, despite the fact that, unbeknownst to them, the Subject Vehicles they purchased and leased, far from containing the "clean" diesel engines with high performance that Volkswagen advertised and promised, grossly violate environmental emissions standards during normal operations and, depending on the remedial measures required to ensure compliance, are likely to see declines in performance.

206. A significant portion of owners purchased or leased one of the Subject Vehicles because of its clean diesel and environmentally friendly promotions. Many if not most would not have purchased or leased the vehicles had Volkswagen accurately disclosed that the Volkswagen diesel vehicles failed to meet state and federal emissions and durability standards.

207. As a result of these deceptive and/or fraudulent business practices, their failure to disclose that under normal operating conditions the Subject Vehicles emit up to forty times the allowed levels of NO_x pollution, Defendants sold Subject Vehicles that, based on initial estimates, have illegally emitted over 45,000 additional tons of NO_x in the United States, often into economically disadvantaged communities adjoining highways whose residents are prone to asthma and other respiratory diseases that NO_x emissions exacerbate.

208. If the Commonwealth had known of the true effect of the defeat devices on the operation of the "clean diesel" engine systems and the true levels of pollutants the engines emitted, the Commonwealth would not have allowed the Subject Vehicles to be placed in Massachusetts for sale, lease, or use on its roadways, and the Commonwealth and its residents would have avoided significant NO_x and related air pollution.

C. PREVIOUS SCANDALS AND PENALTIES HAVE FAILED TO DETER VOLKSWAGEN FROM ENGAGING IN ILLEGAL CONDUCT.

209. As described above, in terms of compliance with state and federal emissions regulations and honest marketing in the United States, Volkswagen's pattern and practice have

been ones of rampant and repeated illegality. Time and again, when compliance with the law proved too expensive or inconvenient, Volkswagen decided to cheat; when threatened with disclosure, it dissembled and deceived.

210. Nor is the conduct described in this Complaint Volkswagen's first brush with U.S. law. On the contrary, Volkswagen was required to implement controls in connection with past misconduct and to pay penalties to resolve prior emissions-related matters in this country. Those controls and penalties were, however, insufficient to prevent the conduct complained of in this Complaint or to otherwise affect the corporate culture that spawned it.

211. In 1974, Volkswagen entered into a settlement with the EPA to resolve allegations it had gamed pollution control systems in four model year 1973 vehicle models by changing carburetor settings and shutting off emissions control systems at low temperatures, in violation of the 1970 Clean Air Act and EPA regulations.

212. While Volkswagen denied wrongdoing, it paid a $120,000 fine and agreed to make several internal management control changes to ensure future compliance with the CAA and EPA regulations.

213. More recently, in the winter of 1999-2000, Volkswagen began to receive numerous warranty claims on certain of its vehicles for cracked oxygen sensors. The sensors were gradually cracking on engine start-up in cool and damp environments due to thermal shock. Eventually, the crack would cause the vehicle's "check engine" light to illuminate. A defective oxygen sensor would cause a vehicle to emit higher levels of non-methane hydrocarbons and carbon monoxide than allowed by federal emission standards. Volkswagen did not file an emissions defect information report with EPA until June 15, 2001, a month after EPA independently discovered the problem through a random surveillance test of a Volkswagen

vehicle.

214. In June 2005, VWGoA resolved this matter by entering into a Consent Decree with the EPA and Department of Justice to resolve allegations that Volkswagen violated Section 208 of the Clean Air Act, 42 U.S.C. § 7542, and 40 C.F.R. § 85.1903, by failing to file an emissions defect information report with the EPA within fifteen working days after an emission-related defect was found to affect twenty-five vehicles or engines of the same model year.

215. Under the June 2005 Consent Decree, Volkswagen was required to: conduct a $26 million recall; implement an enhanced defect tracking, investigating, and reporting system regarding possible defects in emissions-related components to ensure future compliance; send a status report to EPA once a year that described all actions taken by the company to comply with the Consent Decree; and pay $1.1 million to the United States.

D. ATTORNEY-SANCTIONED DOCUMENT DESTRUCTION IN GERMANY AND THE SUPERVISORY BOARD'S RECENT AWARD OF €63 MILLION TO COMPENSATE EXECUTIVES FURTHER REFLECT THE BROKEN CORPORATE CULTURE AT VOLKSWAGEN.

216. In or around late August 2015, as regulators in the United States were closing in and the Defendants' diesel scandal was about to publicly break, a senior attorney in Volkswagen AG's legal department in Wolfsburg advised multiple fellow employees that a litigation hold was about to be issued and that, once it was issued, it might become impossible to destroy or delete documents.

217. At least eight employees—all in engineering departments involved in the creation of the defeat devices—got the unmistakable message: they promptly deleted or removed incriminating data about devices from the company's records. Some but not all of the data has been recovered.

218. Recent actions by Volkswagen's Supervisory and Management Boards

demonstrate that the company's culture that incentivizes cheating and denies accountability comes from the very top and, even now, remains unchecked.

219. On April 22, 2016, Volkswagen AG issued its Annual Report for 2015. In it, the company laid out the compensation it would pay to the members of its Management Board for 2015, the same year those members presided over the present emissions scandal—the costliest and most destructive debacle in the company's postwar history.

220. Despite the failure of the Management Board to avert this debacle or to manage it in a way consistent with its legal obligations, they have not been held accountable. The company's Annual Report reported that Volkswagen would pay to each of the nine sitting Management Board members who had served in 2015 at least €4 million in compensation. In total, the Report states that current and former Management Board members would receive compensation totaling €63 million.

221. In addressing the diesel scandal, the Annual Report stated that the Management Board members proposed, and the company accepted, that roughly thirty percent of each sitting Board member's 2015 performance-related compensation be withheld until April 2019, at which time the withheld portion would be paid if the company's stock price rises by then by at least twenty-five percent.

222. This "hold-back" proposal set an extremely low bar: the baseline price against which share increases would be measured is not the company's share price before news of the scandal broke, but rather is set at approximately €112, near the post-scandal lows for Volkswagen stock and thirty percent lower than where the shares were trading on the eve of the September 18, 2015, announcements that sent the company's shares tumbling. Indeed, under the Management Board members' proposal, as accepted by the company, the Board members will

recover their bonus compensation in full if Volkswagen's share price creeps up to as little as €140 by April 2019—a figure still thirteen percent lower than the stock's price the day before Volkswagen's emissions cheating was announced last September.

223. Further, under their proposed compensation scheme, members of the Management Board would be able to double their withheld bonuses if the stock rises only a bit more in that timeframe, to €168. Put differently, to reach that double-bonus level, the Management Board members proposed, and the company accepted, that Volkswagen's share price rise by a paltry 3.7 percent in the three and a half years from September of last year to April of 2019.

224. This compensation plan therefore is designed to likely reward—and certainly in no way penalize—the nine sitting Management Board members for presiding over chronically illegal behavior and failing to make timely disclosures when the existence of defeat devices came to senior management's attention, as it did no later than May 2014.

225. As to the members of the Management Board who left the company in the wake of the emissions scandal and are directly implicated in it—in particular, Martin Winterkorn, the former CEO of Volkswagen AG, and his protégé, Christian Klingler, who headed the company's marketing efforts—Volkswagen's rewarding of their improper behavior is even more remarkable.

226. As set forth in Volkswagen's April 2016 Annual Report, Mr. Winterkorn received €7.3 million in compensation last year, with all of it to be paid out by the end of this year and none of it made contingent on future stock price increases. In addition, the company reported that it had extended to Mr. Winterkorn a severance payment of €9.2 million.

227. As for Mr. Klingler—who as described above was one of those who contacted VWGoA's EEO with concerns immediately following the release of the ICCT study—the

Annual Report states that he will receive €4.8 million for his work on the Management Board from January through September of 2015 (when Volkswagen's cover-up was in full swing), again with no portion withheld or made contingent on future share price increases. On top of this, Mr. Klingler is slated to receive a full two-year severance package of €14.4 million, with no portion of it withheld either for future contingencies or for past misconduct.

228. In May, Volkswagen's Supervisory Board—consisting of representatives of the Porsche family, which owns over fifty percent of the company's stock, as well as representatives from the state of Lower Saxony, Volkswagen's unions, a Swedish bank, and the Qatari sovereign wealth fund—stated that it supported in full the above-described payments to the Management Board, as well as the actions generally of the Management Board over the past year. At the same time, the Supervisory Board recommended that the company's shareholders likewise support the Management Board's compensation for and actions taken during the company's catastrophic 2015 at the General Meeting of Volkswagen's shareholders on June 22, 2016.

229. As supposed justification for this recommendation, the Supervisory Board purported to rely on the absence of incriminatory findings by Jones Day, the law firm it has hired to investigate the emissions scandal and which has not yet completed its investigation:

> This recommendation is based on information currently available from the not yet concluded investigation into the diesel matter by U.S. law firm Jones Day. . . . Although the investigation by Jones Day is still ongoing, according to information currently available, no serious and manifest breaches of duty on the part of any serving or former members of the Board of Management have been established that would stand in the way of granting ratification at this time.

230. In issuing this statement, the Supervisory Board made clear that Jones Day's work is far from finished. But in its rush to shower senior management with generous compensation, the Supervisory Board has decided to rely on the fact that—based on its (undisclosed) "currently available" information—former and current Management Board members have not yet been

shown to have committed "serious and manifest breaches of duty." This decision was made despite the evidence, recounted above, that at least by the spring of 2014, key Volkswagen executives were on notice of the cause of high real-world driving NO_x emissions and did nothing to prevent both Audi and Volkswagen from repeatedly deceiving regulators and the American public for another eighteen months.

E. VOLKSWAGEN'S ANNOUNCEMENT OF A PARTIAL SETTLEMENT WITH THE UNITED STATES, CALIFORNIA AND OTHER STATES, AND THE PRIVATE PLAINTIFFS' GROUP DOES NOT ADDRESS OR RESOLVE ANY CLAIMS FOR CIVIL PENALTIES FOR VOLKSWAGEN'S NUMEROUS ENVIRONMENTAL VIOLATIONS.

231. On June 28, 2016, Volkswagen announced a partial settlement of the claims asserted against it by litigants in a multidistrict litigation pending in the United States District Court for the Northern District of California. The terms of the partial settlement, which is subject to court approval, require Volkswagen to, *inter alia*: (1) either buy back or fix the 2.0 liter Subject Vehicles and provide owners and lessees with additional compensation; (2) establish an environmental mitigation fund in the amount of $2.7 billion to fund projects in all states to reduce NO_x emissions; and (3) invest $2 billion ($800 million in California and $1.2 billion in other states) over ten years to improve infrastructure, access, and education to support zero emission vehicles. In separate partial settlements announced the same day, Volkswagen agreed to pay civil penalties to over forty states, including the Commonwealth, of approximately $1,100 per car (or over $500 million in total) solely for Defendants' violation of the consumer fraud laws of those states.

232. The partial settlements do not address or resolve any claims for civil penalties for Volkswagen's numerous environmental violations. And although the settlements do contemplate resolution of injunctive relief claims to mitigate the environmental damage caused by its conduct, even those claims will not be fully resolved unless and until the proposed mitigation

trust agreement is finalized and executed by a designated state agency.

233. In the partial settlements announced on June 28, 2016, Volkswagen admits to (1) installing software in the 2.0 liter Subject Vehicles that "renders certain emission control systems in the vehicles inoperative . . . resulting in emissions that exceed EPA-compliant and CARB-compliant levels when the vehicles are driven on the road," and (2) failing to disclose the existence of those defeat devices in Volkswagen's applications to regulators, so that "the design specifications of the 2.0 Subject Vehicles, as manufactured, differ materially from the design specifications described" in those applications.

V. REGULATORY BACKGROUND

234. The Commonwealth's environmental laws require motor vehicles to meet certain emissions standards and mandate substantial penalties for violations.

235. The Air Act and the Air Regulations promulgated thereunder, including the general air pollution prevention provision set forth in 310 C.M.R. 7.01, the MA LEV Regulations at 310 C.M.R. 7.40 et seq., and the MA I&M Regulations found at 310 C.M.R. 60.02, establish a comprehensive regulatory scheme designed to prevent pollution to the atmosphere by, among other things, controlling the amount of air contaminants, like NO_x, that are emitted from motor vehicles.

236. The MA LEV Regulations incorporate and enforce the State of California's Low Emission Vehicle Program Regulations ("CA LEV Regulations"), found at California Code of Regulations ("C.C.R.") Title 13, § 1900 *et seq.*, so that automobiles delivered for sale in Massachusetts must meet California's emissions standards, and violations of the CA LEV Regulations are violations of the Air Act and the Air Regulations. 310 C.M.R. 7.40(1)(a) and (c). California's and Massachusetts' emissions standards for light-duty diesel motor vehicles are more stringent than those of the United States Environmental Protection Agency ("EPA").

237. The MA LEV Regulations, through their incorporation of the CA LEV Regulations, prohibit the use of defeat devices in any new light-duty vehicle and certain other vehicles. *See* 13 C.C.R. § 1961(d) (model year 2001 to model year 2014); 13 C.C.R. § 1961.2(d) (model year 2015 on).

238. The Air Regulation at 310 C.M.R. 7.01 prohibits persons owning, leasing, or controlling any air contamination source, including motor vehicles, from emitting air contaminants that cause or contribute to a condition of air pollution, from making any false, inaccurate, incomplete, or misleading statements in any submission to the Department, and from failing to comply with any notification or certification submitted to the Department or any approval issued by the Department.

239. The MA I&M Regulation at 310 C.M.R. 60.01 likewise prohibits persons from causing or contributing to a condition of air pollution, and from submitting false, inaccurate, incomplete, or misleading documents or information to the Department.

240. Pursuant to the MA I&M Regulations at 310 C.M.R. 60.02(5)(a) and (8)(a)(2), light-duty diesel motor vehicles in Massachusetts must be inspected annually for safety and air emissions compliance.

241. An inspected vehicle must fail an emissions inspection if it does not meet the applicable diesel emissions standard for opacity, 310 C.M.R. 60.02(12)(a), or if the on-board diagnostic ("OBD") system has been tampered with or altered in such a way as to make OBD system testing impossible. 310 C.M.R. 60.02(12)(b)(1).

242. G.L. c. 111, § 142M(f) and the MA I&M Regulation at 310 C.M.R. 60.02(23) also prohibit tampering with any motor vehicle emission control device or system, or otherwise causing a motor vehicle to no longer comply with state or federal law, emissions standards, or

motor vehicle registration requirements.

243. Under G.L. c. 111, § 142M(a) and the MA I&M Regulation at 310 C.M.R. 60.02, "tampering" includes removing or rendering inoperative any emissions control device or element of design installed on or in a motor vehicle or motor vehicle engine.

244. Pursuant to G.L. c. 111, §142K(b), motor vehicles or engines may not be sold or offered for sale in Massachusetts if they have not been certified in accordance with the MA LEV Regulations.

245. The MA LEV Regulation at 310 C.M.R. 7.40(2)(h) also prohibits any person from disconnecting, modifying, or altering an emission-related part of a motor vehicle (except during repair or replacement) and from operating on any Commonwealth highway any motor vehicle without a correctly installed and properly operating emission control device.

246. The MA LEV Regulation at 310 C.M.R. 7.40(2)(b) forbids the sale, lease, or delivery of new or used motor vehicles unless all required exhaust and evaporative emission controls are working properly.

247. Pursuant to the MA LEV Regulations at 310 C.M.R. 7.40(2)(a) and (3), most new vehicles may not be sold, imported, delivered, purchased, leased, rented, acquired, or registered unless they are covered by a valid executive order from CARB and are certified as meeting the emissions requirements of the applicable CA LEV Regulations, 13 C.C.R. §§ 1956 through 2065.

248. The MA LEV Regulation at 310 C.M.R. 7.40(4)(a)(1) requires manufacturers of new vehicles that are sold, leased, offered for sale or lease, or registered in Massachusetts, to warrant that each such vehicle shall comply over its warranty term with all requirements of the CA LEV Regulations, 13 C.C.R. §§ 2035 through 2041.

249. Under the MA LEV Regulation at 310 C.M.R. 7.40(2)(d), no new passenger cars of model year 1995 and after may be registered in Massachusetts unless valid "emission control labels" showing that they are certified for sale in California under the CA LEV Regulations have been affixed to them. Under the MA LEV Regulation at 310 C.M.R. 7.40(2)(e), no manufacturer may deliver for sale any new passenger cars of model year 2010 or later that do not have valid "environmental performance labels" disclosing their smog and global warming scores in accordance with the CA LEV Regulations.

250. G.L. c. 111, § 142A provides for civil penalties of up to $25,000 per day for each violation of the Air Act and/or the Air Regulations, and authorizes injunctive relief to prevent further violations.

251. G.L. c. 111, § 142M(f) also provides for civil penalties of up to $25,000 per day for each emissions control device tampering violation or action that caused a motor vehicle to no longer comply with applicable emissions standards and inspection criteria.

252. In addition, G.L. c. 111, § 142K(e) provides for civil penalties of up to $25,000 per day for each violation of G.L. c. 111, § 142K and/or the MA LEV Regulations.

VI. CAUSES OF ACTION

COUNT I: VIOLATIONS OF THE AIR ACT AND THE AIR REGULATIONS ARISING FROM DEFENDANTS' SURREPTITIOUS USE OF DEFEAT DEVICES IN THE SUBJECT VEHICLES (ALL DEFENDANTS)

253. The Commonwealth re-alleges the facts above and incorporates them herein by reference.

254. The Air Regulation at 310 C.M.R. 7.01 provides that no person owning, leasing, or controlling the operation of any air contamination source shall willfully, negligently, or through the failure to provide the necessary equipment or to take the necessary precautions,

allow any emission from said air contamination source of such quantities of air contaminants which will cause, by themselves or in conjunction with other air contaminants, a condition of air pollution.

255. The Air Regulation at 310 C.M.R. 7.00 defines "air pollution" as the presence in the ambient air space of one or more air contaminants or combinations of air contaminants in such concentrations and of such duration as to cause a nuisance; be injurious or potentially injurious to human or animal life, vegetation or property; or unreasonably interfere with the comfortable enjoyment of life and property or the conduct of business.

256. The MA I&M Regulation at 310 C.M.R. 60.01(1) likewise prohibit persons from causing or contributing to a condition of air pollution.

257. Each of the Subject Vehicles is an "air contamination source" within the meaning of 310 C.M.R. 7.00 *et seq*. and as used in the Air Act.

258. The NO_x emitted to the ambient air from each of the Subject Vehicles is an "air contaminant" within the meaning of 310 C.M.R. 7.00 *et seq*. and as used in the Air Act.

259. Defendants are "persons" within the meaning of 310 C.M.R. 7.00 *et seq*., 310 C.M.R. 60.00 *et seq*., and as used in the Air Act.

260. By causing through the use of the defeat devices the emission of air contaminants to the ambient air from each of the Subject Vehicles in amounts exceeding the Commonwealth's NO_x emissions standards, which are the same as California's under the CA LEV Regulations, Defendants caused or contributed repeatedly to conditions of air pollution in violation of the Air Act, 310 C.M.R. 7.01, and 310 C.M.R. 60.01(1).

COUNT II: VIOLATIONS OF THE AIR ACT AND THE AIR REGULATIONS BY CAUSING THE SUBJECT VEHICLES TO REPEATEDLY EMIT NO_X IN EXCESS OF THE COMMONWEALTH'S NO_X EMISSIONS

LIMITS FOR LIGHT-DUTY MOTOR VEHICLES (ALL DEFENDANTS)

261. The Commonwealth re-alleges the facts above and incorporates them herein by reference.

262. Pursuant to the MA LEV Regulation at 310 C.M.R. 7.40(1)(d) and the Air Act, the MA LEV Regulations at 310 C.M.R. 7.40 are applicable to all 1995 and subsequent model year passenger cars, including the Subject Vehicles.

263. Pursuant to the MA LEV Regulation at 310 C.M.R. 7.40(1)(c), the Commonwealth, acting through the Department, has adopted as its own and incorporated by reference the CA LEV standards for emissions of NO_x from light-duty motor vehicles that are set forth in 13 C.C.R. §§ 1961 and 1961.2.

264. By using defeat devices that caused each of the Subject Vehicles to repeatedly emit NO_x in amounts exceeding the NO_x emissions standards of 13 C.C.R. §§ 1961 and 1961.2, as incorporated through 310 C.M.R. 7.40(1)(c), Defendants violated the Air Act, 310 C.M.R. 7.40(1)(c), and 310 C.M.R. 7.40(1)(d).

COUNT III: VIOLATIONS OF THE AIR ACT AND THE AIR REGULATIONS ARISING FROM DEFENDANTS' FALSE SUBMISSIONS TO THE DEPARTMENT (ALL DEFENDANTS)

265. The Commonwealth re-alleges the facts above and incorporates them herein by reference.

266. The Air Regulation at 310 C.M.R 7.01(2) provides that no person shall make any false, inaccurate, incomplete, or misleading statements in any application, record, report, plan, design, statement, or document submitted to the Department or required to be kept by law.

267. The Air Regulation at 310 C.M.R 7.01(3) provides that any person who submits a notification or certification to or obtains an approval issued by the Department shall comply with

the terms and conditions contained therein.

268. The MA I&M Regulation at 310 C.M.R. 60.01(2) likewise prohibits persons from submitting false, inaccurate, incomplete, or misleading documents or information to the Department.

269. The MA LEV Regulations at 310 C.M.R. 7.40(2)(d) and 310 C.M.R. 7.40(2)(e), respectively, require most new cars, including the Subject Vehicles, to have affixed to them valid "emission control labels," showing that they are certified for sale in California under the CA LEV Regulations, and valid "environmental performance labels," disclosing their smog and global warming scores, in accordance with the CA LEV Regulations, 13 C.C.R. § 1965.

270. The emission control labels affixed to the Subject Vehicles were not "valid," because Defendants fraudulently procured the certifications on which the labels were based by disclosing to California inaccurate and falsified emissions and technical information about the Subject Vehicle. Said labels would not have been valid had the presence of the defeat devices been disclosed to California at the time of application for the certifications on which said labels were based.

271. By presenting the Subject Vehicles for sale and possible registration in Massachusetts with emission control labels that were invalid because they were based on certifications that were fraudulently procured on the basis of inaccurate and falsified emissions and technical data, Defendants violated the Air Act, 310 C.M.R 7.01(2), and 310 C.M.R. 60.01(2).

272. The environmental performance labels for the Subject Vehicles were not "valid" because they failed to disclose accurate smog and global warming scores for the Subject Vehicles in accordance with the CA LEV Regulations, 13 C.C.R. § 1965.

273. By delivering the Subject Vehicles for sale in Massachusetts without valid environmental performance labels that accurately disclosed their smog and global warming scores in accordance with the CA LEV Regulations, 13 C.C.R. § 1965, Defendants violated the Air Act, 310 C.M.R 7.01(2), and 310 C.M.R. 60.01(2).

274. For each of the model years 2009 through 2016, Defendants submitted to the Department Final NMOG Fleet Average Reports and NO_x emission data reports pursuant to the MA LEV Regulation at 310 C.M.R. 7.40(5) that reported inaccurate fleet averages that were based on fraudulent NO_x emissions data for the Subject Vehicles because of the use of the defeat devices, and Defendants thereby violated the Air Act, 310 C.M.R 7.01(2), and 310 C.M.R. 60.01(2).

275. For each of the model years 2009 through 2016, Defendants submitted to the Department CARB Executive Orders that certified emissions control systems for the Subject Vehicles. These Executive Orders were issued based on fraudulent emissions data and information submitted by Defendants that failed to disclose the existence of the defeat devices, and Defendants thereby violated the Air Act, 310 C.M.R 7.01(2), and 310 C.M.R. 60.01(2).

COUNT IV: VIOLATIONS OF THE AIR ACT AND 310 C.M.R. 7.40(2)(A) ARISING FROM MISREPRESENTATIONS THAT DEFENDANTS POSSESSED VALID CARB EXECUTIVE ORDERS FOR THE SUBJECT VEHICLES (ALL DEFENDANTS)

276. The Commonwealth re-alleges the facts above and incorporates them herein by reference.

277. Pursuant to G.L. c. 111, § 142K(b), motor vehicles or motor vehicle engines may not be sold or offered for sale in Massachusetts unless they have been certified under the MA LEV Regulations.

278. Pursuant to the MA LEV Regulation at 310 C.M.R. 7.40(2)(a), most new vehicles

(with exceptions not applicable here) may not be sold, imported, delivered, purchased, leased, rented, acquired, or registered unless they are covered by a valid executive order from CARB that certifies the emission control systems.

279. For each of the model years 2009 through 2016, Defendants submitted to the Department for the Subject Vehicles CARB Executive Orders that were invalid because they were procured by submitting to CARB fraudulent emissions data and information that failed to disclose the existence of the defeat devices, and Defendants thereby violated the Air Act and 310 C.M.R 7.40(2)(a).

COUNT V: VIOLATION OF THE ANTI-TAMPERING PROVISIONS OF THE AIR ACT AND THE AIR REGULATIONS ARISING FROM INSTALLATION AND USE OF DEFEAT DEVICES IN THE SUBJECT VEHICLES (ALL DEFENDANTS)

280. The Commonwealth re-alleges the facts above and incorporates them herein by reference.

281. Pursuant to the MA LEV Regulation at 310 C.M.R. 7.40(2)(h)(1), no person shall disconnect, modify, or alter any "emissions-related part" that affects any regulated emissions from a motor vehicle that is subject to California or federal emission standards, except for purposes of repair or replacement.

282. By installing and using a defeat device on each of the Subject Vehicles to cause the emissions control system of that Subject Vehicle to be disconnected, modified, or altered within the meaning of the MA LEV Regulation at 310 C.M.R. 7.40(2)(h)(1), Defendants violated the Air Act and 310 C.M.R. 7.40(2)(h)(1) with respect to each of the Subject Vehicles.

283. Pursuant to the MA LEV Regulation at 310 C.M.R. 7.40(2)(h)(2), no person may operate or even leave standing on any Commonwealth highway any motor vehicle that must have an emissions control device unless the emission control device is correctly installed and in

operating condition.

284. By installing and using a defeat device on each of the Subject Vehicles to cause the emissions control system of that Subject Vehicle not to operate properly, Defendants violated the Air Act and 310 C.M.R. 7.40(2)(h)(2) with respect to each of the Subject Vehicles.

285. The MA LEV Regulation at 310 C.M.R. 7.40(2)(b) prohibits motor vehicle dealers from selling, offering for sale or lease, or delivering any vehicle subject to 310 C.M.R. 7.40 unless all required exhaust and evaporative emission controls are operating properly.

286. By installing and using a defeat device on each of the Subject Vehicles to cause the emissions control system of that Subject Vehicle to not operate properly, and by providing the Subject Vehicles to dealers for sale or lease to customers, Defendants violated, or caused or allowed the violation of, the Air Act and 310 C.M.R. 7.40(2)(b) with respect to each of the Subject Vehicles.

287. G.L. c. 111, § 142M(f) and the MA I&M Regulation at 310 C.M.R. 60.02(23) prohibit tampering with any motor vehicle emission control device or system, or otherwise causing a motor vehicle to no longer comply with state or federal law, emissions standards, or motor vehicle registration requirements.

288. G.L. c. 111, § 142M(a) and the MA I&M Regulation at 310 C.M.R. 60.02 define "tampering" to include removing or rendering inoperative any emissions control device or element of design installed on or in a motor vehicle or motor vehicle engine.

289. By installing and using a defeat device on each of the Subject Vehicles to render inoperative in normal, non-emissions test operating conditions its emissions control system, Defendants violated the Air Act and 310 C.M.R. 60.02(23) with respect to each of the Subject Vehicles.

290. Pursuant to the MA I&M Regulation at 310 C.M.R. 60.02(12)(b)(1), a motor vehicle that is subject to annual emissions testing pursuant to the MA I&M Regulations must fail that inspection if the OBD system has been altered in such a way as to make emissions testing impossible.

291. By installing and using a defeat device on each of the Subject Vehicles to make it impossible for the OBD to produce an accurate assessment of that Subject Vehicle's true emissions performance, Defendants violated the Air Act and 310 C.M.R. 60.02(12)(b)(1) with respect to each of the Subject Vehicles.

292. The MA LEV Regulation at 310 C.M.R. 7.40(4)(a)(1) requires manufacturers of new vehicles that are sold, leased, offered for sale or lease, or registered in Massachusetts to warrant that each such vehicle shall comply over its warranty term with all requirements of the CA LEV Regulations, Title 13 C.C.R. §§ 2035 through 2041.

293. By installing and using a defeat device on each of the Subject Vehicles to make it impossible for its emissions control system to perform as it was and is required to perform, Defendants violated the terms of its warranty and could not possibly continue to warrant that each such vehicle would comply over its warranty term with all requirements of the CA LEV Regulations, Title 13 C.C.R. §§ 2035 through 2041, and Defendants thereby violated the Air Act and 310 C.M.R. 7.40(4)(a)(1).

COUNT VI: THE DEFENDANTS ARE LIABLE FOR ENGAGING IN A CIVIL CONSPIRACY TO VIOLATE ENVIRONMENTAL LAWS AND REGULATIONS OF THE COMMONWEALTH

294. The Commonwealth re-alleges the facts above and incorporates them herein by reference.

295. As described above in this Complaint, the Defendants knowingly acted in concert or participation with one another to violate or to cause, suffer, or allow violations of the Air Act

and the Air Regulations (including the MA LEV Regulations and the MA I&M Regulations).

296. As described above in this Complaint, at a minimum, the Defendants knowingly provided substantial assistance to one another or knowingly aided and abetted one another to violate or to cause, suffer, or allow violations of the Air Act and the Air Regulations (including the MA LEV Regulations and the MA I&M Regulations).

297. By taking the actions described above in this Complaint, the Defendants engaged in a civil conspiracy to violate the duties imposed upon them by the Air Act and the Air Regulations (including the MA LEV Regulations and the MA I&M Regulations) and as such all are jointly and severally liable for all violations of those legal authorities.

PRAYER FOR RELIEF

WHEREFORE, the Commonwealth requests that this Court, after trial on the merits, grant the following relief:

A. Enter an order permanently enjoining Volkswagen from:

1. Selling, offering for sale, introducing into commerce, or delivering for introduction into commerce into the Commonwealth any new motor vehicle equipped with a defeat device or any new motor vehicle not eligible for sale pursuant to emissions and environmental standards in the Commonwealth;
2. Bypassing, defeating, or rendering inoperative any device or element of design installed on or in a new motor vehicle in compliance with emissions and environmental standards in the Commonwealth; and
3. Submitting or causing to be submitted false or misleading certifications to the Department; and

B. Require Volkswagen to submit to a third-party monitor overseen by the Court to

ensure Volkswagen's future compliance with emissions and environmental standards in the Commonwealth; and

C. Order Volkswagen to pay to the Commonwealth a civil penalty of $25,000 for each day of each violation of G.L. c. 111, §§ 142A-142O; 310 C.M.R. 7.00 *et seq.*; 310 C.M.R. 7.40 *et seq.*; and 310 C.M.R. 60.02 *et seq.*; and

D. Grant such additional relief as the Court deems appropriate and just.

Respectfully submitted,

THE COMMONWEALTH OF MASSACHUSETTS
MAURA HEALEY
ATTORNEY GENERAL

By: _____

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Dated: July 19, 2016

APPENDIX

Key Volkswagen, Audi and Porsche Executives and Engineers

Volkswagen AG Supervisory Board
Porsche - Piech Family / Unions / Lower Saxony (Germany) / Qatar

Volkswagen AG Management Board *as of Sept. 1, 2015* included:

Chairman of the Board
Martin Winterkorn (2007-2015)*

Audi
Rupert Stadler (2010-)

Porsche
Matthias Mueller (2015)

Sales & Marketing
Christian Klingler (2010-2015)*

Volkswagen AG

Chief Executive Officer
Martin Winterkorn (2007-2015)*; Matthias Mueller (2015-)

Group Product Management
Matthias Mueller (2007-2010)

Group Quality Management
Frank Tuch (2010-2015)*
Product Safety
Bernd Gottweis (2007-2014); Daniel Schukraft (2014-)

Engine Development
VW Group: Wolfgang Hatz (2007-12)*; H-J Neusser (2013-15)*
VW Brand: Ulrich Hackenberg (2007-13)*; H-J Neusser (2013-15)*
Direct report to Neusser: Oliver Schmidt (Mar. 2015-)

Powertrain Development
Rudolf Krebs (2005-2007); Jens Hadler (2007-2011)
Heinz-Jakob Neusser (2011-2013)*;Friedrich Eichler (2013-2015)*

Drive Electronics
Hanno Jelden (2005-2015)*

Functions and Software Dev.
Stefanie Jauns-Seyfried (2005-15)*

Diesel Project Application
Mathias Klaproth

Engine Functions
Burkard Veldten
Volker Gehrke
Dieter Mannigel

Diesel Engine Development
Jens Hadler (2005-2007)
Falko Rudolph (2007-2011) *
Joern Kahrstedt (2011-2015)*

Diesel Engines (4-cyl.)
Herman-Josef Engler (2003-2013)

Exhaust Post-Treatment
Richard Dorenkamp (2003-2013)
Thorsten Duesterdiek (201-3)
Andreas Specht

Procedures
Hartmut Stehr
Michael Greiner
James Liang

Registration/Vehicle Test Facilities
Richard Preuss (2006-)
Detlef Stendel
Juergen Peter

Chief Engineers VW / Audi / Porsche during Defeat Device Developments

Wolfgang Hatz*
Audi (2001-2007)
VW (2007-2012)
Porsche (2011-2015)

Ulrich Hackenberg*
Audi (2002-2007)
VW (2007-2013)
Audi (2013-2015)

Volkswagen Group of America (VWGoA)

CEO and President
Michael Horn (2014-2016)*

Engineering and Environmental Office (EEO)

VW, Audi and Porsche Diesel Certification
Gen. Manager: Oliver Schmidt (2010- Mar. 2015);
Stuart Johnson (2015-)
Senior Mgr Emissions Compliance: Michael Hennard
Senior Certifications Mgr: Leonard Kata

VWGoA Emissions Testing and Software Engineers
James Liang (VW)
Moritz Freudenberger (Audi)

Audi AG

Chief Executive Officer
Martin Winterkorn (2002-2007)*; Rupert Stadler (2007-)

Product Management
Matthias Mueller (1995-2006)

Global Concept, Engine and Electronics Development
Ulrich Hackenberg (2002-2007; 2013-2015)*
Wolfgang Hatz (2007-2012)*

Global V6 Diesel Development
Ulrich Weiss*

US V6 Diesel Development
Giovanni Pamio*

US V6 Diesel Exhaust Treatment (Emissions)
Manager - Henning Loerch
Coordinator – Armin Burkardt

US V6 Diesel Thermodynamics
Manager – Thomas Reuss
Coordinator – Martin Gruber

US V6 Diesel Development On-Board Diagnostics
Manager – Klaus Appel

Certification
Worldwide Certifications – Konrad Kolesa
US Emissions Certifications – Carsten Nagel
Emissions Certification Engineer – Carsten Stang

Porsche AG
Matthias Mueller – Chairman of Board (2010-2015)
Carsten Schauer - Chief of Electronics Development (2008-2013)

Porsche Cars North America

* Indicates that an employee has either resigned, been suspended, or been terminated from the Volkswagen Group since the September 2015 revelations that Volkswagen employed defeat devices on its US-market diesel engines.