Supreme Court of Ohio Clerk of Court - Filed June 22, 2020 - Case No. 2020-0092

**IN THE SUPREME COURT OF OHIO**

| | | |
|---|---|---|
| State of Ohio *ex rel.* Dave Yost, Ohio Attorney General,<br><br>*Plaintiff-Appellee*,<br><br>v.<br><br>Volkswagen Aktiengesellschaft d/b/a Volkswagen Group and/or Volkswagen AG; Audi AG; Volkswagen Group of America, Inc. d/b/a Volkswagen of America, Inc. or Audi of America, Inc.; Volkswagen of America, Inc.; Audi of America, LLC; Dr. Ing. H.C. F. Porsche AG d/b/a/ Porsche AG; and Porsche Cars North America, Inc.,<br><br>*Defendants-Appellants*. | : | Case No. 2020-0092<br><br>On Appeal from Franklin County Court of Appeals, Tenth Appellate District |

**DEFENDANTS-APPELLANTS' SUPPLEMENT**

Hugh J. Bode (0000487)
Jackie M. Jewell (0090499)
(Counsel of Record)
REMINGER CO. L.P.A.
101 West Prospect Avenue,
Suite 1400
Cleveland, Ohio 44115-1093
Telephone: (216) 430-2114
Facsimile: (216) 687-1841

Robert J. Giuffra, Jr. (PHV-18327-2020)
David M.J. Rein (PHV-18328-2020)
Matthew A. Schwartz (PHV-4707-2020)
SULLIVAN & CROMWELL LLP
125 Broad Street
New York, New York 10004
Telephone: (212) 558-4000
Facsimile: (212) 558-3588

Judson O. Littleton (PHV-18502-2020)
SULLIVAN & CROMWELL LLP
1700 New York Ave., N.W.
Washington, D.C. 20006
Telephone: (202) 956-7500
Facsimile: (202) 293-6330

*Counsel for Defendants-Appellants Volkswagen Aktiengesellschaft d/b/a Volkswagen Group and/or Volkswagen AG, Audi AG, Volkswagen Group of America, Inc. d/b/a Volkswagen of America, Inc. or Audi of America, Inc., Volkswagen of America, Inc., and Audi of America, LLC*

(*Additional Counsel listed on following page*)

L. Bradfield Hughes (0070997)
(Counsel of Record)
Elizabeth L. Moyo (0081051)
PORTER, WRIGHT, MORRIS
& ARTHUR LLP
41 S. High Street, 29th Floor
Columbus, Ohio 43215
Telephone: (614) 227-2000
Facsimile: (614) 227-2100

Joseph Eisert (PHV-18531-2020)
KING & SPALDING LLP
1700 Pennsylvania Ave., N.W. Ste. 200
Washington, D.C. 20006
Telephone: (202) 626-5522
Facsimile: (202) 626-3737

*Counsel for Defendants-Appellants Dr. Ing. h.c. F. Porsche AG d/b/a Porsche AG and Porsche Cars North America, Inc.*

Jayce Born (No. 0097081)
(Counsel of Record)
Jonathan S. Martel (PHV-21858-2020)
ARNOLD & PORTER KAYE SCHOLER LLP
601 Massachusetts Ave.,
NW Washington, DC 20001
Telephone: (202) 942-5000
Facsimile: (202) 942-5999

S. Zachary Fayne (PHV-21859-2020)
ARNOLD & PORTER KAYE SCHOLER LLP
Three Embarcadero Center,
10th Fl. San Francisco, CA 94111
Telephone: (415) 471-3114
Facsimile: (415) 471-3400

Kevin D. Shimp (No. 0097660)
OHIO CHAMBER OF COMMERCE
34 S. Third St., Suite 100
Columbus, OH 43215
Telephone: (614) 228-4201
Facsimile: (614) 228-6403

*Counsel for Amici Curiae Chamber of Commerce of the United States of America, Ohio Chamber of Commerce, and Alliance for Automotive Innovation*

Aaron S. Farmer (0080251)
(Counsel of Record)
Karia A. Ruffin (0095929)
Assistant Attorneys General
Environmental Enforcement Section
30 East Broad Street,
25th Floor
Columbus, Ohio 43215
Telephone: (614) 466-2766
Facsimile: (614) 644-1926

*Counsel for Plaintiff-Appellee, State of Ohio*

**TABLE OF CONTENTS**

*Page*

**CERTIFICATE OF SERVICE**

I, Jackie M. Jewell, hereby certify that, pursuant to S.Ct.Prac.R. 3.11(C)(1), a true copy of the foregoing Defendants-Appellants' Supplement was served upon all Counsel via email this 22nd day of June, 2020.

/s/ *Jackie M. Jewell*
Jackie M. Jewell (0090499)

Aaron S. Farmer (0080251)
(Counsel of Record)
Karia A. Ruffin (0095929)
Assistant Attorneys General
Environmental Enforcement Section
30 East Broad Street,
25th Floor
Columbus, Ohio 43215
Telephone: (614) 466-2766
Facsimile: (614) 644-1926
Email: aaron.farmer@ohioattorneygeneral.gov
karia.ruffin@ohioattorneygeneral.gov

*Counsel for Plaintiff-Appellee, State of Ohio*

Jayce Born (No. 0097081)
(Counsel of Record)
Jonathan S. Martel (PHV-21858-2020)
ARNOLD & PORTER KAYE SCHOLER LLP
601 Massachusetts Ave.,
NW Washington, DC 20001
Telephone: (202) 942-5000
Facsimile: (202) 942-5999

S. Zachary Fayne (PHV-21859-2020)
ARNOLD & PORTER KAYE SCHOLER LLP
Three Embarcadero Center,
10th Fl. San Francisco, CA 94111
Telephone: (415) 471-3114
Facsimile: (415) 471-3400

Kevin D. Shimp (No. 0097660)
OHIO CHAMBER OF COMMERCE
34 S. Third St., Suite 100
Columbus, OH 43215
Telephone: (614) 228-4201
Facsimile: (614) 228-6403

*Counsel for Amici Curiae Chamber of Commerce of the United States of America, Ohio Chamber of Commerce, and Alliance for Automotive Innovation*

**IN THE COURT OF COMMON PLEAS**
**FRANKLIN COUNTY, OHIO**

| | |
|---|---|
| **STATE OF OHIO, *ex rel.*** | CASE NO. _____ |
| **MICHAEL DEWINE** | |
| **OHIO ATTORNEY GENERAL** | |
| 30 E. Broad St, 25th Floor | JUDGE _____ |
| Columbus, Ohio 43215, | |
| Plaintiff, | |
| v. | **COMPLAINT FOR CIVIL PENALTIES AND DAMAGES** |
| **VOLKSWAGEN AKTIENGESELLSCHAFT d/b/a VOLKSWAGEN GROUP and/or VOLKSWAGEN AG** | |
| Breiffach 1849 | |
| 38436 Wolfsburg | |
| Germany, | |
| **AUDI AG** | |
| Auto-Union-Strasse 1 | |
| 85045 Ingolstadt | |
| Germany, | |
| **VOLKSWAGEN GROUP OF AMERICA, INC. d/b/a VOLKSWAGEN OF AMERICA, INC. OR AUDI OF AMERICA, INC.** | |
| 2200 Ferdinand Porsche Drive | |
| Herndon, Virginia 20171 | |
| **c/o CSC-LAWYERS INCORPORATING SERVICE (CORPORATION SERVICECOMPANY ) Statutory Agent** | |
| **50 W. Broad Street, Suite 1800** | |
| **Columbus, Ohio 43215,** | |
| **VOLKSWAGEN OF AMERICA, INC.** | |
| 2200 Ferdinand Porsche Drive | |
| Herndon, Virginia 20171 | |
| **c/o Volkswagen Group of America, Inc., Statutory Agent** | |
| **3800 Hamlin Road** | |
| **Auburn Hills, MI 48326,** | |

**AUDI OF AMERICA, LLC**
2200 Ferdinand Porsche Drive
Herndon, Virginia 20171
**c/o Volkswagen Group of America, Inc.,**
**Statutory Agent**
**3800 Hamlin Road**
**Auburn Hills, MI 48326,**

**DR. ING. H.C. F. PORSCHE AG d/b/a**
**PORSCHE AG**
Porscheplatz 1
70435 Stuttgart
Germany,

AND

**PORSCHE CARS**
**NORTH AMERICA, INC.**,
One Porsche Drive
Atlanta, GA 30354
**c/o CT Corporation System**
**Statutory Agent**
**1300 East Ninth Street**
**Cleveland, Ohio 44114,**

Defendants.

---

## I. INTRODUCTION

1. The State of Ohio seeks relief for the massive, emissions-control-tampering scheme perpetrated by Defendants (collectively "Volkswagen" or "Defendants") in connection with their sale or lease to U.S. consumers of more than 550,000 vehicles, including approximately 14,000 in Ohio, from model year 2009 to 2016.

2. Volkswagen used defeat devices—test recognition software commonly known in the industry as "cycle beaters"—to optimize the performance of their diesel vehicles during emissions tests, as compared to their actual performance on the roads. It did so 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, including Franklin County, Ohio residents, to the health risks of added air pollution.

3. 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. brands equipped with 2.0 liter and 3.0 liter diesel engines (the "Subject Vehicles") from the 2009-2016 model years, which were sold between 2008 and 2015.

4. Volkswagen knew that the defeat devices were illegal, but it continued to install them for years. It challenged research that exposed an obvious, unlawful spike in the vehicles' emissions during road testing. This was especially suspicious because the vehicles' emissions complied with standards during laboratory testing.

5. Volkswagen only admitted to the installation of defeat devices on its vehicles when the United States Environmental Protection Agency ("U.S. EPA") and the California Air Resources Board ("CARB") proposed to decline Volkswagen's 2016 diesel vehicles from certification.

6. 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 "[o]ur 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."

7. 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 software in [Volkswagen's] four cylinder diesel vehicles

from model years 2009-2015 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."

8. In June 2016, Volkswagen articulated in a Partial Settlement Agreement resolving state consumer protection and deceptive practices claims only that "software in the 2.0 Liter Subject Vehicles enables the vehicles' [engine control modules] to detect when the vehicles are being driven on the road, rather than undergoing Federal Test Procedures" and it "renders certain emission control systems in the vehicles inoperative when the [engine control module] detects the vehicles are not undergoing Federal Test Procedures, resulting in emissions that exceed EPA-compliant and CARB-compliant levels when the vehicles are driven on the road."

9. As a result of Volkswagen's scheme, the Subject Vehicles were certified for sale throughout the United States, enabling Volkswagen to sell more than 550,000 Subject Vehicles nationwide and approximately 14,000 in Ohio. These vehicles spewed illegal emissions of at least 45,000 additional tons of nitrogen oxides ("$NO_x$") onto American streets, exacerbating asthma and other respiratory diseases of those who breathed them.

10. Volkswagen believed that its deceit would go undetected, and that even if caught, the consequences would be manageable. A February 29, 2016 court filing by Volkswagen in a European shareholder lawsuit provides an illuminating insight into its cost-benefit calculation when it comes to whether 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.

11. Plaintiff, the State of Ohio's ("the State") objective is to enforce its air pollution control laws and rules including its anti-tampering provisions, and associated common law, to hold accountable violators for their environmental noncompliance.

12. Therefore, the State, on relation of its Attorney General, Michael DeWine, and at the written request of the Director ("Director") of the Ohio Environmental Protection Agency ("Ohio EPA"), hereby institutes this action under R.C. 3704.06 and common law authority, for the assessment of civil penalties and damages.

## II. PARTIES

13. Plaintiff is the State appearing by and through the Ohio Attorney General.

14. The Attorney General is the chief law enforcement officer of the State and is authorized to bring this action pursuant to R.C. 109.02 and 3704.06.

15. Defendant Volkswagen Aktiengesellschaft ("Volkswagen AG") is a corporation organized under the laws of Germany and has its principal place of business in Wolfsburg, Germany. Defendant Volkswagen AG is the parent corporation of the Volkswagen Group, Defendant Volkswagen Group of America, Inc., and Defendant Audi AG.

16. Volkswagen Group ("VW Group") is 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.

17. 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. 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.

18. Defendant Volkswagen Group of America, Inc. ("VWGOA") is a New Jersey corporation, which was registered to do business in Ohio in March of 1976. VWGOA maintains a principal place of business located at 2200 Ferdinand Porsche Drive, Herndon, Virginia. VWGOA is a wholly-owned subsidiary of Volkswagen AG. Within VWGOA, the Engineering and Environmental Office ("EEO") interacts with U.S. regulators and handles regulatory compliance and certification-related issues for Volkswagen AG and Audi AG.

19. Defendant Audi AG is a corporation organized under the laws of Germany that has its principal place of business in Ingolstadt, Germany. Defendant Audi AG is a member of the VW Group, and Defendant Volkswagen AG owns 99.55% of Defendant Audi AG's stock.

20. Defendant Audi of America, LLC, also known as Audi of America, Inc. ("AOA") and Defendant Volkswagen of America, Inc. are both Delaware limited liability companies and wholly-owned, operating units of Defendant VWGOA. Each Defendant has principal places of business located at 2200 Ferdinand Porsche Drive, Herndon, Virginia and 3800 Hamlin Road, Auburn Hills, Michigan. Both of these Defendants were registered to do business in Ohio in March 2008.

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

22. Defendant Porsche Cars North America, Inc. ("Porsche NA") is a Delaware corporation that was registered in Ohio in December 1987. Defendant Porsche NA has its principal place of business at One Porsche Drive, Atlanta, Georgia. Defendant Porsche NA is a wholly-owned subsidiary of Defendant Porsche.

23. Each of the Defendants is a "person" as defined by R.C. 3704.01, R.C. 1.59, and Ohio Adm.Code 3745-80-01.

## III. JURISDICTION AND VENUE

24. The State, by and through its Attorney General, Michael DeWine, brings this action against Defendants to enforce Ohio's Air Pollution Control Statute, R.C. Chapter 3704, and the rules adopted thereunder, at the written request of the Director, and to enforce the common law against conspiracy to violate these laws and rules.

25. 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 R.C. 2307.382 and R.C. 3704.06.

26. At all relevant times, Defendants have purposefully availed themselves of this forum. In addition to the actual sale or lease of the Subject Vehicles in Ohio including Franklin County, Defendants have possessed, advertised, manufactured, and/or installed the Subject Vehicles for their sale or lease with the knowledge that they possessed the unlawful defeat device software, or Defendants otherwise knowingly tampered with the vehicles to disable their

emissions control systems. Defendants have transacted business and/or contracted to supply services or goods in Ohio or have an interest in, use, and/or possess real property in Ohio.

27. In addition, Defendants transacted business in Ohio through approximately 10 Audi dealerships; approximately 20 Volkswagen dealerships; and approximately 8 Porsche dealerships, and conducted business from at least one Ohio location: Volkswagen of America Training Center, 4150 Tuller Rd. #201, Dublin, Franklin County, Ohio 43017.

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

29. Venue lies in the Franklin County Court of Common Pleas pursuant to Civ.R. 3(B).

30. Pursuant to Civ.R. 8(A), the State informs the Court that the amount sought is in excess of twenty-five thousand dollars ($25,000.00).

## IV. STATEMENT OF FACTS

### A. Defendants personally participated and acted in concert to violate environmental laws.

31. 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.

32. At all times material to this Complaint each Defendant, and in conjunction with each other, caused, participated in, controlled, and/or acted, or failed to act, in violation of the statutes, rules, and common law as alleged in this Complaint. In addition, or in the alternative, Defendants knew or should have known about these violations, and each, and in conjunction

with others, had the authority to prevent or stop the violations but failed to exercise the authority to do so.

33. 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.

34. Defendant Volkswagen AG, and its subsidiaries Audi AG, Porsche AG, and VWGOA, designed the Subject Vehicles specifically for sale to U.S. customers by their U.S. affiliates.

35. Defendant Volkswagen AG allocates and controls the overall research and development for the brands in the VW Group, including Audi and Porsche.

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

37. Defendants 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.

38. Defendants share officers and employees of the Defendants among themselves, including several of those involved in the unlawful conduct described in this Complaint, and the officers and employees have moved from the employ of one Defendant to another.

39. At a minimum, each of the Defendants provided each of the other Defendants with substantial assistance, or conspired in carrying out individual company-by-company unlawful emissions schemes, as described in this Complaint.

**B. The diesel technology for Volkswagen's Subject Vehicles had its disadvantages.**

40. Volkswagen designed and developed and ultimately marketed and sold a line of diesel turbocharged direct injection ("TDI") 2.0 and 3.0 liter, light-duty diesel vehicles (the Subject Vehicles) throughout the U.S., including in Ohio.

41. 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 (MY) | Generation (Gen)/Engine | Environmental Protection Agency ("EPA") Test Group | Vehicle Make and Model(s) |
|---|---|---|---|
| 2009 | Gen 1 /EA189 | 9VWXV02.035N<br>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<br>2013<br>2014 | Gen 2 /EA189 | CVWXV02.0U4S<br>DVWXV02.0U4S<br>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 (MY) | 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<br>BADXT03.03UG | VW Touareg<br>Audi Q7 |
| 2012 | CADXT03.02UG<br>CADXT03.03UG | VW Touareg<br>Audi Q7 |
| 2013 | DADXT03.02UG<br>DADXT03.03UG<br>DPRXT03.0CDD | VW Touareg<br>Audi Q7<br>Porsche Cayenne Diesel |
| 2014 | EADXT03.02UG<br>EADXT03.03UG<br>EPRXT03.0CDD<br>EADXJ03.04UG | VW Touareg<br>Audi Q7<br>Porsche Cayenne Diesel<br>Audi A6 Quattro, A7 Quattro, A8L, Q5 |
| 2015 | FVGAT03.0NU2<br>FVGAT03.0NU3<br>FPRXT03.0CDD<br>FVGAJ03.0NU4 | VW Touareg<br>Audi Q7<br>Porsche Cayenne Diesel<br>Audi A6 Quattro, A7 Quattro, A8L, Q5 |
| 2016 | GVGAT03.0NU2<br>GPRXT03.0CDD<br>GVGAJ03.0NU4 | VW Touareg<br>Porsche Cayenne Diesel<br>Audi A6 Quattro, A7 Quattro, A8L, Q5 |

For clarity, the State will refer to the Subject Vehicles throughout this Complaint as follows:

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

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

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

42. Defendants sold, leased, and warranted roughly 475,000 2.0s and approximately 80,000 3.0s in the U.S.

43. Approximately 14,000 Subject Vehicles, including Generation 1s, Generation 2s, Generation 3s and the 3.0s, were sold or leased in Ohio.

44. As of October 1, 2015, more than 1,300 Subject Vehicles were registered in Franklin County, Ohio.

45. 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 filter ("Diesel Particulate Filter" or "DPF").

46. Exhaust Gas Recirculation is used primarily to reduce $NO_x$ emissions by diverting exhaust gases to the intake system and mixing them with fresh air, thereby "thinning" the fresh air, lowering the combustion temperature and reducing the creation of $NO_x$.

47. The Diesel Particulate Filter removes particulate emissions or "soot" from the engine exhaust stream. It must be emptied (or "regenerated") at regular intervals in order for the DPF to control particulate emissions as intended.

48. 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 DPF), they also have disadvantages. First, use of Exhaust Gas Recirculation increases particulate emissions (soot), and necessitates more frequent DPF regeneration to prevent clogging, thereby placing strain on the DPF and increasing the risk of premature DPF failures. Second, regeneration of the Diesel Particulate Filter increases $NO_x$ emissions, increases fuel consumption, and places strain on the engine and the components of the emissions control system, including the DPF, due to the high temperatures needed for regeneration.

49. As the course of conduct described below demonstrates, Volkswagen installed the unlawful defeat devices on its vehicles to address these disadvantages.

**C. Defendants install defeat devices on six lines of their vehicles over a decade.**

**i. The First Defeat Device: Audi's MY 2004-2008 V6 for the European Market**

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

51. Engineers at Audi AG headquarters in Neckarsulm, Germany had developed a new technology for the engine called "Pilot Injection" that could eliminate the traditional 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 the laboratory test cycle on the rolling dynamometer (or "dyno") the European authorities used for emissions testing.

52. Audi solved this problem by implementing defeat-device, or "cycle-beater," software that allowed the engine to recognize the emissions-test cycle and deactivate Pilot Injection during dyno testing.

53. 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."

**ii. The Second Defeat Device: Volkswagen's Generation 1s**

54. As it was planning to launch its Generation 1 diesels in the U.S., 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 (sometimes called by its trade name "AdBlue") in the exhaust stream.

55. The SCR technology was licensed by Volkswagen's competitor, Mercedes-Benz, and the SCR system would have required outfitting the Generation 1s with one or more tanks capable of storing gallons of the urea-based emissions fluid.

56. The engineers and managers responsible for developing the Generation 1s' 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"). The Lean Trap did not depend on SCR and therefore did not require urea tanks.

57. 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 $NO_x$ it stored into nitrogen ("$N_2$").

58. Early in the development of the Lean Trap system, it became apparent to Volkswagen's engineers that regenerating the Lean Trap as frequently as necessary to bring $NO_x$ emissions within legal limits produced excess soot. This additional soot would in turn clog and break the engine's DPF within just 50,000 miles of operation. The full useful life durability standard in the U.S., which Volkswagen was required to meet, was much greater—120,000 miles and even 150,000 miles at a later date.

59. Instead of resolving these challenges lawfully, Volkswagen's engineers in Wolfsburg adapted Audi's "Acoustic Function" defeat device in late 2006.

60. Like the Audi defeat device, the defeat device that Volkswagen implemented in the Generation 1s featured software that could detect when the vehicles were undergoing dyno testing. During dyno testing, the defeat device software substantially increased the frequency of Lean Trap regenerations and increased EGR to lower $NO_x$ emissions to compliant levels. Then, during real driving conditions, the defeat device software substantially reduced the frequency of

Lean Trap regenerations and reduced EGR resulting in $NO_x$ emissions in excess of 15 and 35 times the legal limit.

61. Volkswagen incorporated the Lean Trap regeneration and EGR defeat devices described above in the engine control units ("ECUs") of the 2009- 2014 Jetta, Golf, A3 and new Beetle diesel models, and sold more than 300,000 of these Generation 1 vehicles in the United States, including in Ohio.

**iii. The Third Defeat Device: Audi's 3.0 SUVs**

62. 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 2009 of a new line of luxury diesel SUVs in the U.S. market: the SCR-equipped Audi Q7 and Volkswagen Touareg.

63. Adaptation of its European SCR technology for the U.S. market presented a challenge: to comply with federal $NO_x$ 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.

64. Volkswagen and Audi management decided not to expend the time and money necessary to re-engineer the 3.0s to equip them with larger urea storage tanks, or shorten the length of the service interval set forth in their applications for certification. Instead, they chose to maintain a 10,000-mile service interval and decided once again to employ cycle-beating defeat device software.

65. Defendants featured the EGR defeat device implemented in the Generation 1s and a urea-dosing defeat device for the 3.0s. During dyno testing, the urea-dosing defeat device operated to increase urea dosing and EGR to attain compliant $NO_x$ emissions. During normal

driving conditions, the defeat device reduced the urea dosing and EGR to an artificial limit to enable the too-small urea tanks to last for 10,000 miles between service intervals.

66. 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.

**iv. The Fourth Defeat Device: Volkswagen's Generation 2s**

67. In 2009, Volkswagen turned its attention to the planned roll-out of the 2012 Generation 2 SCR-equipped Passat in the U.S., and faced the same quandary their Audi colleagues confronted—urea tanks that were insufficiently sized to meet the 10,000-mile refill interval to which they certified the Generation 2s.

68. Rather than resolve this engineering problem lawfully, Volkswagen again opted to implement defeat devices. Once the vehicle's computer recognized that it was undergoing dyno testing, the defeat devices increased EGR and urea dosing to bring the $NO_x$ emissions within regulatory limits. Outside of test conditions, however, these cycle-beating, defeat devices reduced the urea dosing rate by half to conserve urea and reduce EGR.

69. 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 Ohio, spanning from model years 2012 to 2014.

**v. The Fifth Defeat Device: The Porsche Cayenne**

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

71. 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 engine, slightly 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 defeat device. 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 and implemented.

72. Porsche's engineering department proceeded to source the Audi defeat-device equipped 3.0 liter engine for its entry into the U.S. diesel market with the 2013 Cayenne diesel SUV.

73. Approximately 14,000 of the defeat device-equipped Porsche vehicles were sold in the U.S., including more than 400 in Ohio.

**vi. The Sixth Defeat Device: Volkswagen's Generation 3s**

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

75. 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.

76. Volkswagen sold nearly 100,000 model year 2015 Generation 3s in the U.S., including in Ohio. Many of the 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.

**D. Defendants knew but concealed the defeat devices despite inquiry from government officials and independent researchers.**

77. Defendants actively sought to conceal the defeat devices from regulators, researchers and the public. Among other things, they:

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

b. buried the results of 2012-2013 internal testing that reflected real world $NO_x$ emissions that exceeded U.S. limits by many multiples;

c. denied independent researchers access to data that would confirm $NO_x$ discrepancies between testing and real driving conditions in Volkswagen's U.S. fleet; and

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

78. Even so, researchers discovered the defeat devices. In March 2014, an Audi AG engineer alerted colleagues at Volkswagen AG and VWGOA EEO to the upcoming publication of a report by the West Virginia University's Center for Alternative Fuels, Engines & Emissions commissioned by the International Council on Clean Transportation (the "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. The ICCT researchers confirmed the findings and reported to VWGOA EEO that their vehicles failed the tests.

79. Documents and information provided as early as May 2014 by managing engineers to multiple senior management officials immediately after the ICCT study's release clearly demonstrate that Defendants knew that the excessive, real-world $NO_x$ emissions could be

readily explained by the existence of the defeat devices described above, and Defendants would be subject to significant penalties if they admitted to regulators that the discrepancies were caused by defeat devices.

80. However, Defendants continued to conceal the existence of their illegal defeat devices until September 2015 when they finally admitted the existence of an illegal defeat device in the Generation 2s that allowed for two calibrations: one for real world driving (Calibration 1) and one for testing (Calibration 2). The pending government authorization to sell Generation 3s motivated Defendants to finally tell the truth about the illegal defeat devices.

81. In the face of regulatory action concerning the 2.0s and the intense public scrutiny they were facing, Defendants failed to acknowledge the existence of illegal defeat devices in the 3.0s.

82. After conducting CARB's testing, the agency issued a press release reporting that in a November 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[.]"

### E. The German Defendants and VWGOA knew but concealed that the Subject Vehicles emitted dangerous and harmful $NO_x$ emissions in amounts far higher than permitted under applicable emissions standards.

83. 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 2.0 and 3.0s that they manufactured and sold in the United States, including in

Ohio, caused the Subject Vehicles to emit many times the allowed $NO_x$ during normal operation in violation of laws and regulations promulgated to protect human health and the environment from mobile sources of air pollution.

84. 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.

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

86. Emissions, in part from Volkswagen, contributed to Ohio's failure to meet the U.S. EPA National Ambient Air Quality Standards for ozone in the following counties: Ashtabula, Butler, Clermont, Clinton, Cuyahoga, Delaware, Fairfield, Franklin, Geauga, Hamilton, Knox, Lake, Licking, Lorain, Madison, Medina, Portage, Summit, and Warren. U.S. EPA adopts these standards to protect the public health, and Ohio seeks to meet these standards accordingly. In addition to the paramount concern for public health, the failure to meet these standards saddles Ohio EPA with a major regulatory burden to improve the air quality in these areas and seek attainment of these standards. Then, Ohio EPA must scientifically demonstrate the attainment to U.S. EPA through a formal redesignation process. Volkswagen should be held accountable not only for the public health risk associated with their emissions but also for the resources exhausted on ozone nonattainment.

87. $NO_x$ 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 Ohio'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.

88. At all material times, Volkswagen was aware that its unlawful actions violated state environmental statutes and regulations more particularly described below in this Complaint.

**F. Defendants admitted to installing the defeat devices as part of their settlement of the State's consumer protection and deceptive trade claims.**

89. In June 2016, Defendants and a collection of states including Ohio entered into a Partial Settlement Agreement to resolve the states' claims under their respective consumer protection and deceptive trade practice laws and rules.

90. In the Partial Settlement Agreement, the states expressly reserved environmental claims (and those claims related to environmental claims), such as the claims provided in this Complaint.

91. As part of that agreement, Defendants made the following admissions regarding defeat devices:

> Admissions. Volkswagen admits: (a) that software in the 2.0 Liter Subject Vehicles enables the vehicles' [engine control modules] ECMs to detect when the vehicles are being driven on the road, rather than undergoing Federal Test Procedures; (b) that this software renders certain emission control systems in the vehicles inoperative when the ECM detects the vehicles are not undergoing Federal Test Procedures, resulting in emissions that exceed EPA-compliant and CARB-compliant levels when the vehicles are driven on the road; and (c) that this software was not disclosed in the Certificate of Conformity and Executive Order applications for the 2.0 Liter Subject Vehicles, and, as a result, the design specifications of the 2.0 Liter Subject Vehicles, as manufactured, differ materially from the design specifications described in the Certificate of Conformity and Executive Order applications.

## V. VIOLATIONS OF OHIO'S AIR POLLUTION CONTROL STATUTE AND RULES

92. Ohio's Air Pollution Control Statute (R.C. Chapter 3704), including the anti-tampering law (R.C. 3704.16) and the rules promulgated thereunder (including Ohio Adm.Code 3745-80-02), establish a comprehensive regulatory scheme designed to prevent pollution to the atmosphere by, among other things, controlling the amount of air contaminants, like NOx, that are emitted from motor vehicles.

93. It is the purpose of all air pollution rules adopted under Chapter 3704 of the Revised Code to set forth such requirements as shall be necessary to secure and maintain those levels of air quality which are consistent with the protection of health and the prevention of injury to plant life, animal life, and property in the State of Ohio, and to provide for the comfortable enjoyment of the natural attractions of the State to the greatest extent practical. All rules of the Director shall be construed in such manner as to effectuate this purpose per Ohio Adm.Code 3745-15-02.

94. R.C. 3704.16(B)(1) states that "no person shall * * * [s]ell, offer for sale, possess for sale, advertise, manufacture, install, or use any part or component intended for use with or as part of any motor vehicle when the primary effect is to bypass, defeat, or render inoperative, in whole or part, the emission control system."

95. Ohio Adm.Code 3745-80-02(A) establishes the same prohibition set forth in R.C. 3704.16(B)(1).

96. R.C. 3704.16(B)(3) states that "no person shall * * * [t]amper with any emission control system installed on or in a motor vehicle prior to its sale and delivery to the ultimate purchaser."

97. Ohio Adm.Code 3745-80-02(C) establishes the same prohibition set forth in R.C.

3704.16(B)(3) except that it prohibits tampering prior to the sale and delivery to the ultimate purchaser or lessee.

98. Under R.C. 3704.16(A), "[t]amper with means to remove permanently, bypass, defeat, or render inoperative, in whole or part, any emission control system that is installed on or in a motor vehicle."

99. R.C. 3704.16(C)(2) states that "no person shall knowingly * * * [s]ell, lease, rent, or offer to sell, lease, or rent, or transfer or offer to transfer title or a right to possession of a motor vehicle that has been tampered with." Each "sale, lease, rental, and offer to sell, lease, or rent, and other transfer or offer to transfer of title or a right to possession of a motor vehicle * * *" is a "separate offense."

100. Ohio Adm.Code 3745-80-02(E) establishes the same prohibition set forth in R.C. 3704.16(C)(2).

101. R.C. 3704.16(C)(3) states that "no person shall knowingly * * * [t]amper with any emission control system installed on or in a motor vehicle after sale, lease, or rental and delivery of the vehicle to the ultimate purchaser, lessee, or renter."

102. Ohio Adm.Code 3745-80-02(F) establishes the same prohibition set forth in R.C. 3704.16(C)(3).

103. R.C. 3704.05(G) states that "[n]o person shall violate any order, rule, or determination of the director issued, adopted, or made under this chapter."

104. R.C. 3704.06(B) states that "[t]he attorney general, upon request of the director, shall bring an action for an injunction, a civil penalty, or any other appropriate proceedings in any court of competent jurisdiction against any person violating or threatening to violate section 3704.05 or 3704.16 of the Revised Code. The court shall have jurisdiction to grant prohibitory

and mandatory injunctive relief and to require payment of a civil penalty upon the showing that the person has violated this chapter or rules adopted thereunder."

105. R.C. 3704.06(C) states that "[a] person who violates section 3704.05 or 3704.16 of the Revised Code shall pay a civil penalty of not more than twenty-five thousand dollars for each day of each violation."

106. The Director, pursuant to his authority, adopted Ohio Adm.Code 3745-80-02 under R.C. Chapter 3704.

**COUNT ONE**
**SALE, ADVERTISE, MANFACTURE, OR INSTALL A DEFEAT DEVICE**

107. Plaintiff incorporates by reference and re-alleges each allegation contained in Paragraphs 1-106.

108. From on or about 2006 through the present, Volkswagen sold, offered to sell, possessed for sale, advertised, manufactured, installed or used any part or component intended for use with a vehicle to bypass or defeat an emission control system on or in each of the Subject Vehicles.

109. The acts or omissions alleged in this Count constitute violations of R.C. 3704.16(B)(1), Ohio Adm.Code 3745-80-02(A), and R.C. 3704.05(G), for which each Defendant is jointly and severally liable, and is subject civil penalties of up to twenty-five thousand dollars ($25,000.00) for each day of each violation, pursuant to R.C. 3704.06(C).

**COUNT TWO**
**TAMPER WITH EMISSIONS CONTROL SYSTEM**

110. Plaintiff incorporates by reference and re-alleges each allegation contained in Paragraphs 1-109.

111. From on or about 2006 through the present, Volkswagen tampered with the

emissions-control system installed on or in each Subject Vehicle before the sale and delivery to the ultimate purchaser or lessee of each Subject Vehicle and/or knowingly tampered with the emissions control system installed on or in each Subject Vehicle after the sale, lease, rental and delivery to the ultimate purchaser, lessee, or renter of each Subject Vehicle.

112. The acts or omissions alleged in this Count constitute violations of R.C. 3704.16(B)(3), Ohio Adm.Code 3745-80-02(C), and R.C. 3704.05(G), and/or 3704.16(C)(3), Ohio Adm.Code 3745-80-02(F), and R.C. 3704.05(G), for which each Defendant is jointly and severally liable, and is subject to civil penalties of up to twenty-five thousand dollars ($25,000.00) for each day of each violation, pursuant to R.C. 3704.06(C).

**COUNT THREE**
**KNOWINGLY SELL, LEASE, RENT, OR OFFER TO SELL MOTOR VEHICLES THAT HAVE BEEN TAMPERED WITH**

113. Plaintiff incorporates by reference and re-alleges each allegation contained in Paragraphs 1-112.

114. From or about 2006 through the present, Volkswagen knowingly sold, leased, rented, transferred or offered to transfer title or a right to possession of each Subject Vehicle after each Subject Vehicle had been tampered with.

115. The acts or omissions alleged in this Count constitute violations of R.C. 3704.16(C)(2), Ohio Adm.Code 3745-80-02(E), and R.C. 3704.05(G), for which each Defendant is jointly and severally liable, and is subject to civil penalties of up to twenty-five thousand dollars ($25,000.00) for each day of each violation, pursuant to R.C. 3704.06(C). Each "sale, lease, rental, and offer to sell, lease, or rent, and other transfer or offer to transfer of title or right to possession of a motor vehicle * * *" is a "separate offense" pursuant to R.C. 3704.016(C)(2).

**COUNT FOUR**
**ENGAGE IN A CIVIL CONSPIRACY AGAINST THE COMMON LAW TO VIOLATE STATE LAWS**

116. Plaintiff incorporates by reference and re-alleges each allegation contained in Paragraphs 1-115.

117. As described above in this Complaint, from on or about 2006 through the present, Defendants purposefully acted in concert or participation with one another to violate, cause, or allow violations of R.C. Chapter 3704 and Ohio Adm.Code 3745-80-02.

118. As described above in this Complaint, at a minimum, the Defendants purposefully provided substantial assistance to one another or purposefully aided and abetted one another through common, mutual understanding or design, to violate, cause, or allow violations of R.C. Chapter 3704 and Ohio Adm.Code 3745-80-02, from 2009 through the present.

119. Defendants caused the State injury or harm by committing the acts or omissions provided in this Complaint in a manner or to a degree that could not have been caused by one lone Defendant.

120. By the actions or omissions described above in this Complaint, the Defendants engaged in a civil conspiracy to violate the duties or requirements imposed upon them by R.C. Chapter 3704 and Ohio Adm.Code 3745-80-02, and as such all are jointly and severally liable for all violations of those legal authorities. The State is entitled to damages including the costs of personnel time for investigating and bringing this action including reasonable attorney fees.

## PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that this Court:

A. ORDER Defendants, jointly and severally, pursuant to R.C. 3704.06 to pay a civil penalty for violations of R.C. Chapter 3704 and Ohio Adm.Code 3745-80-02 as described in the Complaint in the amount of up to and including Twenty-Five Thousand Dollars ($25,000.00) for each day of each violation, including each day of violation subsequent to the filing of this Complaint.

B. ORDER Defendants, jointly and severally, to pay compensatory damages, including but not limited to, the costs of personnel time for investigating, inspecting, and bringing this action, including reasonable attorney fees.

C. ORDER Defendants to pay all court costs associated with this action.

D. RETAIN jurisdiction of this suit for the purpose of making any order or decree which it may deem necessary at any time to carry out its judgment.

E. GRANT such other relief as the Court deems appropriate, just, and equitable.

Respectfully submitted,

MICHAEL DEWINE
OHIO ATTORNEY GENERAL

*/s/ Aaron S. Farmer*

AARON S. FARMER (0080251)
ELIZABETH R. EWING (0089810)
Assistant Attorneys General
Environmental Enforcement Section
30 East Broad Street, 25th Floor
Columbus, Ohio 43215
(614) 466-2766 (phone); (614) 644-1926 (facsimile)
aaron.farmer@ohioattorneygeneral.gov
elizabeth.ewing@ohioattorneygeneral.gov

*Counsel for Plaintiff, State of Ohio*

**IN THE COURT OF COMMON PLEAS**
**FRANKLIN COUNTY, OHIO**

| | |
|---|---|
| **STATE OF OHIO, *ex rel.* MICHAEL DEWINE, OHIO ATTORNEY GENERAL,**<br><br>***Plaintiff,***<br><br>v.<br><br>**VOLKSWAGEN AKTIENGESELLSCHAFT d/b/a VOLKSWAGEN GROUP and/or VOLKSWAGEN AG; AUDI AG; VOLKSWAGEN GROUP OF AMERICA, INC. d/b/a VOLKSWAGEN OF AMERICA, INC., OR AUDI OF AMERICA, INC.; VOLKSWAGEN OF AMERICA, INC.; AUDI OF AMERICA, LLC; DR. ING. H.C. F. PORSCHE AG d/b/a/ PORSCHE AG; and PORSCHE CARS NORTH AMERICA, INC.,**<br><br>***Defendants.*** | **Case No. 16 CV 010206**<br><br>**JUDGE MICHAEL HOLBROOK** |

---

**FIRST AMENDED COMPLAINT FOR CIVIL PENALTIES AND DAMAGES**

---

## I. INTRODUCTION

1. Under Civ. R. 15(A) and within 28 days after service of Defendants' 12(B) motion (served August 31, 2017), the State of Ohio amends its Complaint, filed October 26, 2016, as a matter of course. The State of Ohio seeks relief for the massive emission-control-tampering scheme perpetrated by Defendants (collectively "Volkswagen" or "Defendants") involving more than 550,000 vehicles, including approximately 14,000 in Ohio, from model year 2009 to 2016.

2. Volkswagen used test recognition software commonly known in the industry as "cycle beaters," and by the federal government as "defeat devices," to optimize the performance

of their diesel vehicles during emission tests, as compared to their actual performance on the roads. It did so to conceal the fact that the vehicles did not comply, or come close to complying, with emission standards imposed by the federal government and other states during normal driving, subjecting the American public, including Franklin County, Ohio residents, to the health risks of added air pollution.

3. 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 software-based devices in over a dozen separate U.S. brands equipped with 2.0 liter and 3.0 liter diesel engines (the "Subject Vehicles") from the 2009-2016 model years, which were sold between 2008 and 2015.

4. Volkswagen knew that its acts were wrong, but it continued for years. It challenged research that exposed an obvious, unlawful spike in the vehicles' emissions during road testing. This was especially suspicious because the vehicles' emissions complied with federal and other states' standards during laboratory testing.

5. Volkswagen only admitted to the installation of the software-based devices on its vehicles when the United States Environmental Protection Agency ("U.S. EPA") and the California Air Resources Board ("CARB") proposed to decline Volkswagen's 2016 diesel vehicles from certification.

6. 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 "[o]ur 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."

7. 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 software in [Volkswagen's] four cylinder diesel vehicles from model years 2009-2015 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."

8. As a result of Volkswagen's scheme, the Subject Vehicles were certified for sale throughout the United States, enabling Volkswagen to sell more than 550,000 Subject Vehicles nationwide and approximately 14,000 in Ohio. These vehicles spewed illegal emissions of at least 45,000 additional tons of nitrogen oxides ("$NO_x$") onto American streets during every-day driving, exacerbating asthma and other respiratory diseases of those who breathed them.

9. Volkswagen believed that its deceit would go undetected, and that even if caught, the consequences would be manageable. A February 29, 2016 court filing by Volkswagen in a European shareholder lawsuit provides an illuminating insight into its cost-benefit calculation when it comes to whether 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.

10. Plaintiff, the State of Ohio's ("the State") objective is to enforce its air pollution control laws and rules including its anti-tampering provisions, and associated common law, which prohibit unlawful conduct before it harms or threatens to harm the environment or the public health. These laws and rules are designed to hold violators accountable for their actions.

11. Therefore, the State, on relation of its Attorney General, Michael DeWine, and at the written request of the Director ("Director") of the Ohio Environmental Protection Agency ("Ohio EPA"), hereby institutes this action under R.C. 3704.06 and common law authority, for the assessment of civil penalties and damages.

## II. PARTIES

12. Plaintiff is the State appearing by and through the Ohio Attorney General.

13. The Attorney General is the chief law enforcement officer of the State and is authorized to bring this action pursuant to R.C. 109.02 and 3704.06.

14. Defendant Volkswagen Aktiengesellschaft ("Volkswagen AG") is a corporation organized under the laws of Germany and has its principal place of business in Wolfsburg, Germany. Defendant Volkswagen AG is the parent corporation of the Volkswagen Group, Defendant Volkswagen Group of America, Inc., and Defendant Audi AG.

15. Volkswagen Group ("VW Group") is 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.

16. 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. 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.

17. Defendant Volkswagen Group of America, Inc. ("VWGOA") is a New Jersey corporation, which was registered to do business in Ohio in March of 1976. VWGOA maintains a principal place of business located at 2200 Ferdinand Porsche Drive, Herndon, Virginia. VWGOA is a wholly-owned subsidiary of Volkswagen AG. Within VWGOA, the Engineering and Environmental Office ("EEO") interacts with U.S. regulators and handles regulatory compliance and certification-related issues for Volkswagen AG and Audi AG.

18. Defendant Audi AG is a corporation organized under the laws of Germany that has its principal place of business in Ingolstadt, Germany. Defendant Audi AG is a member of the VW Group, and Defendant Volkswagen AG owns 99.55% of Defendant Audi AG's stock.

19. Defendant Audi of America, LLC, also known as Audi of America, Inc. ("AOA"), and Defendant Volkswagen of America, Inc. are Delaware companies and wholly-owned, operating units of Defendant VWGOA. Each Defendant has principal places of business located at 2200 Ferdinand Porsche Drive, Herndon, Virginia and 3800 Hamlin Road, Auburn Hills, Michigan. Each Defendant was registered to do business in Ohio in March 2008.

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

21. Defendant Porsche Cars North America, Inc. ("Porsche NA") is a Delaware corporation that was registered in Ohio in December 1987. Defendant Porsche NA has its principal place of business at One Porsche Drive, Atlanta, Georgia. Defendant Porsche NA is a wholly-owned subsidiary of Defendant Porsche.

22. Each of the Defendants is a "person" as defined by R.C. 3704.01, R.C. 1.59, and Ohio Adm.Code 3745-80-01.

## III. JURISDICTION AND VENUE

23. The State, by and through its Attorney General, Michael DeWine, brings this action against Defendants to enforce Ohio's Air Pollution Control statute, R.C. Chapter 3704, and the rules adopted thereunder, at the written request of the Director, and to enforce the common law against conspiracy to violate these laws and rules.

24. 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 R.C. 2307.382 and R.C. 3704.06.

25. At all relevant times, Defendants have purposefully availed themselves of this forum. In addition to the actual sale or lease of the Subject Vehicles in Ohio including Franklin County, Defendants have knowingly tampered with the vehicles to disable their emission control systems during the vehicles' every-day operation; during their software-based-device recalls and updates ("fixes")[1]; and during the vehicles' every-day operation after the updates ("fixes"). Defendants have transacted business and/or contracted to supply services or goods in Ohio or have an interest in, use, and/or possess real property in Ohio.

[1] The use of "fix" throughout the First Amended Complaint does not assert or concede that Defendants corrected their violations at any time. Rather, the use of "fix" represents Defendants' deceptive recalls and updates to software that perpetuated or advanced the violations alleged here. At all times relevant to this First Amended Complaint, Defendants' "fixes" unlawfully tampered with emission controls resulting in unnecessary pollution.

26. In addition, Defendants transacted business in Ohio through approximately 10 Audi dealerships; approximately 20 Volkswagen dealerships; and approximately 8 Porsche dealerships, and conducted business from at least one Ohio location: Volkswagen of America Training Center, 4150 Tuller Rd. #201, Dublin, Franklin County, Ohio 43017.

27. As the allegations in this First Amended Complaint reveal, the exercise of specific jurisdiction over all Defendants is proper and consistent with due process.

28. Venue lies in the Franklin County Court of Common Pleas pursuant to Civ. R. 3(B).

29. Pursuant to Civ. R. 8(A), the State informs the Court that the amount sought is in excess of twenty-five thousand dollars ($25,000.00).

## IV. STATEMENT OF FACTS

### A. Defendants personally participated and acted in concert to violate environmental laws.

30. Unless otherwise stated, the allegations set forth in this First Amended Complaint are based upon Defendants' admissions, 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.

31. At all times material to this First Amended Complaint each Defendant, and in conjunction with each other, caused, participated in, controlled, and/or acted, or failed to act, in violation of the statutes, rules, and common law as alleged in this First Amended Complaint. In addition, or in the alternative, Defendants knew or should have known about these violations, and each, and in conjunction with others, had the authority to prevent or stop the violations but failed to exercise the authority to do so.

32. Defendants worked in concert with the common objective of engaging in the emission-cheating scheme described in this First Amended Complaint. Even though each Defendant is a separate legal entity and thus cannot work within the scope of each other's employment, each Defendant was, and still is, the agent of the others for the purpose of the emission-cheating scheme, 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.

33. Defendant Volkswagen AG, and its subsidiaries Audi AG, Porsche AG, and VWGOA, designed the Subject Vehicles specifically for sale to U.S. customers by their U.S. affiliates.

34. Defendant Volkswagen AG allocates and controls the overall research and development for the brands in the VW Group, including Audi and Porsche.

35. For the Subject Vehicles that Volkswagen, Audi, and Porsche sold in the United States, VWGOA's EEO acted as their representative before U.S. and other state regulators for compliance and certification-related issues. Volkswagen AG and Audi AG, at the very least, along with their American counterparts, certified or attempted to certify the Subject Vehicles, and addressed compliance issues before U.S. EPA and the CARB.

36. Defendants 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.

37. Defendants share officers and employees of the Defendants among themselves, including several of those involved in the unlawful conduct described in this First Amended

Complaint, and the officers and employees have moved from the employ of one Defendant to another.

38. At a minimum, each of the Defendants provided each of the other Defendants with substantial assistance, or conspired in carrying out individual company-by-company unlawful activities, as described in this First Amended Complaint.

**B. The diesel technology for Volkswagen's Subject Vehicles had its disadvantages.**

39. Volkswagen designed and developed and ultimately marketed and sold a line of diesel turbocharged direct injection ("TDI") 2.0 and 3.0 liter, light-duty diesel vehicles (the Subject Vehicles) throughout the U.S., including in Ohio.

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 (MY) | Generation (Gen)/Engine | Environmental Protection Agency ("EPA") Test Group | Vehicle Make and Model(s) |
|---|---|---|---|
| 2009 | Gen 1 /EA189 | 9VWXV02.035N<br>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<br>2013<br>2014 | Gen 2 /EA189 | CVWXV02.0U4S<br>DVWXV02.0U4S<br>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 (MY) | 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<br>BADXT03.03UG | VW Touareg<br>Audi Q7 |
| 2012 | CADXT03.02UG<br>CADXT03.03UG | VW Touareg<br>Audi Q7 |
| 2013 | DADXT03.02UG<br>DADXT03.03UG<br>DPRXT03.0CDD | VW Touareg<br>Audi Q7<br>Porsche Cayenne Diesel |
| 2014 | EADXT03.02UG<br>EADXT03.03UG<br>EPRXT03.0CDD<br>EADXJ03.04UG | VW Touareg<br>Audi Q7<br>Porsche Cayenne Diesel<br>Audi A6 Quattro, A7 Quattro, A8, A8L, Q5 |
| 2015 | FVGAT03.0NU2<br>FVGAT03.0NU3<br>FPRXT03.0CDD<br>FVGAJ03.0NU4 | VW Touareg<br>Audi Q7<br>Porsche Cayenne Diesel<br>Audi A6 Quattro, A7 Quattro, A8, A8L, Q5 |
| 2016 | GVGAT03.0NU2<br>GPRXT03.0CDD<br>GVGAJ03.0NU4 | VW Touareg<br>Porsche Cayenne Diesel<br>Audi A6 Quattro, A7 Quattro, A8, A8L, Q5 |

For clarity, the State will refer to the Subject Vehicles throughout this First Amended Complaint as follows:

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

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

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

41. Defendants sold, leased, and warranted roughly 475,000 2.0s and approximately 80,000 3.0s in the U.S.

42. Approximately 14,000 Subject Vehicles, including Generation 1s, Generation 2s, Generation 3s and the 3.0s, were sold or leased in Ohio.

43. As of October 1, 2015, more than 1,300 Subject Vehicles were registered in Franklin County, Ohio.

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 emission control features remained constant: all the Subject Vehicles employed exhaust gas recirculation ("Exhaust Gas Recirculation" or "EGR") and were equipped with a diesel particulate filter ("Diesel Particulate Filter" or "DPF").

45. Exhaust Gas Recirculation is used primarily to reduce $NO_x$ emissions by diverting exhaust gases to the intake system and mixing them with fresh air, thereby "thinning" the fresh air, lowering the combustion temperature and reducing the creation of $NO_x$.

46. The Diesel Particulate Filter removes particulate emissions or "soot" from the engine exhaust stream. It must be emptied (or "regenerated") at regular intervals in order for the DPF to control particulate emissions as intended.

47. While both technologies have emission-related advantages (reducing $NO_x$ emissions in the case of EGR and reducing soot emissions in the case of the DPF), they also have disadvantages. First, use of Exhaust Gas Recirculation increases particulate emissions (soot), and necessitates more frequent DPF regeneration to prevent clogging, thereby placing strain on the DPF and increasing the risk of premature DPF failures. Second, regeneration of the DPF increases $NO_x$ emissions, increases fuel consumption, and places strain on the engine and the

components of the emission control system, including the DPF, due to the high temperatures needed for regeneration.

48. As the course of conduct described below demonstrates, Volkswagen installed the software-based devices on its vehicles to address these disadvantages.

### C. Defendants' software-based devices on six lines of their vehicles tamper with emission control systems for nearly a decade.

#### i. The First Device: Audi's MY 2004-2008 V6 for the European Market

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

50. Engineers at Audi AG headquarters in Neckarsulm, Germany had developed a new technology for the engine called "Pilot Injection" that could eliminate the traditional 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 emission standards during the laboratory test cycle on the rolling dynamometer (or "dyno") the European authorities used for emission testing.

51. Audi solved this problem by implementing "cycle-beater" software that allowed the engine to recognize the emission-test cycle and deactivate Pilot Injection during dyno testing.

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

#### ii. The Second Device: Volkswagen's Generation 1s

53. As it was planning to launch its Generation 1 diesels in the U.S., 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 (sometimes called by its trade name "AdBlue") in the exhaust stream.

54. The SCR technology was licensed by Volkswagen's competitor, Mercedes-Benz, and the SCR system would have required outfitting the Generation 1s with one or more tanks capable of storing gallons of the urea-based fluid.

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

56. 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 $NO_x$ it stored into nitrogen ("$N_2$").

57. Early in the development of the Lean Trap system, it became apparent to Volkswagen's engineers that regenerating the Lean Trap as frequently as necessary to bring $NO_x$ emissions within federal limits produced excess soot. This additional soot would in turn clog and break the engine's DPF within just 50,000 miles of operation. The full useful life durability standard in the U.S., which Volkswagen was required to meet, was much greater—120,000 miles and even 150,000 miles at a later date.

58. Instead of resolving these challenges lawfully, Volkswagen's engineers in Wolfsburg adapted Audi's "Acoustic Function" device software in late 2006.

59. Like the Audi device, the one that Volkswagen implemented in the Generation 1s featured software that could detect when the vehicles were undergoing dyno testing. During dyno testing, the software substantially increased the frequency of Lean Trap regenerations and

increased EGR to lower $NO_x$ emissions. Then, during real driving conditions, the software substantially reduced the frequency of Lean Trap regenerations and reduced EGR resulting in a substantial increase in $NO_x$ emissions.

60. Volkswagen incorporated the Lean Trap regeneration and EGR software-based device described above in the engine control units ("ECUs") of the 2009- 2014 Jetta, Golf, A3 and new Beetle diesel models, and sold more than 300,000 of these Generation 1 vehicles in the United States, including in Ohio.

**iii. The Third Device: Audi's 3.0 SUVs**

61. 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 2009 of a new line of luxury diesel SUVs in the U.S. market: the SCR-equipped Audi Q7 and Volkswagen Touareg.

62. Adaptation of its European SCR technology for the U.S. market presented a challenge: to comply with federal $NO_x$ 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.

63. Volkswagen and Audi management decided not to expend the time and money necessary to re-engineer the 3.0s to equip them with larger urea storage tanks, or shorten the length of the service interval set forth in their applications for certification. Instead, they chose to maintain a 10,000-mile service interval and decided once again to employ cycle-beating software.

64. Defendants featured the EGR device implemented in the Generation 1s and a urea-dosing device for the 3.0s. During dyno testing, the urea-dosing device operated to increase

urea dosing and EGR to attain federally-compliant $NO_x$ emissions. During normal driving conditions, the software-based device reduced the urea dosing and EGR to an artificial limit to enable the small urea tanks to last for 10,000 miles between service intervals, but it increased pollution as a result.

65. Audi approved and installed both the urea-dosing device and the EGR device for production into the 3.0s for sale in the U.S. market from 2009-2016.

**iv. The Fourth Device: Volkswagen's Generation 2s**

66. In 2009, Volkswagen turned its attention to the planned roll-out of the 2012 Generation 2 SCR-equipped Passat in the U.S., and faced the same quandary their Audi colleagues confronted—urea tanks that were insufficiently sized to meet the 10,000-mile refill interval to which they certified the Generation 2s.

67. Rather than resolve this engineering problem lawfully, Volkswagen again opted to implement devices. Once the vehicle's computer recognized that it was undergoing dyno testing, the software-based devices increased EGR and urea dosing to bring the $NO_x$ emissions within federal-regulatory limits. Outside of test conditions, however, the software reduced the urea-dosing rate by half to conserve urea and reduce EGR, and the pollution exacerbated.

68. With the approval of Volkswagen supervisory executives, company engineers went forward with the dosing and EGR devices, installing them in roughly 80,000 Volkswagen Passats in the U.S. market, including Ohio, spanning from model years 2012 to 2014.

**v. The Fifth Device: The Porsche Cayenne**

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

70. 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 engine, slightly 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 device. 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 and implemented.

71. Porsche's engineering department proceeded to source the Audi device equipped 3.0-liter engine for its entry into the U.S. diesel market with the 2013 Cayenne diesel SUV.

72. Approximately 14,000 of the device-equipped Porsche vehicles were sold in the U.S., including more than 400 in Ohio.

**vi. The Sixth Device: Volkswagen's Generation 3s**

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

74. In doing so, Volkswagen again opted to implement EGR and urea-dosing devices like those it implemented in the Generation 2s and the 3.0s. Volkswagen sold nearly 100,000 model year 2015 Generation 3s in the U.S., including in Ohio. Many of the 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 federally-regulated limits.

**D. Defendants knew but concealed the software-based devices.**

75. Defendants, including their executive and senior management, knew the devices tampered with the Subject Vehicle's emission control systems during normal driving operation.

76. Defendants actively sought to conceal the devices from regulators, researchers and the public. Among other things, they:

a. directed the removal of references to the software-based devices (or the "acoustic function" as it was called internally) from documentation;

b. buried the results of 2012-2013 internal testing that reflected real world $NO_x$ emissions that exceeded U.S. limits by many multiples;

c. denied independent researchers access to data that would confirm $NO_x$ discrepancies between testing and real driving conditions in Volkswagen's U.S. fleet;

d. failed to disclose the emission-increasing devices in their certifications to federal and other state regulators which falsely represented full compliance with applicable emission and durability standards;

e. affixed labels to the engines of the Subject Vehicles indicating compliance with federal and California emission regulations and standards for importation purposes;

f. marketed the Subject Vehicles as "clean diesel" and friendly to the environment even though Defendants knew that they caused excessive air pollution; and

g. updated software-based devices on Generation 3 vehicles, before their sale, under the guise of attempting to comply with a revised U.S. EPA rule.

77. At various times and periods relevant to this First Amended Complaint, and other dates to be discovered, Defendants imposed recalls or "fixes" to update the software-based devices on existing (registered or licensed) Subject Vehicles. They did so to perpetuate or advance the tampering of emission control systems despite Defendants' purported improvement of the Subject Vehicles.

78. As just one example, beginning in April 2013 and continuing at least through 2014 and other dates yet to be discovered, Defendants recalled and updated, or "fixed," the initial mode of operation from testing mode to normal-driving mode on Subject Vehicles already registered or licensed. Of course, with the normal-driving mode as the default setting, rather than testing mode, the pollution from the Subject Vehicles increased deceptively and unnecessarily. Defendants added a steering wheel angle function that, along with the software, triggered the change in initial operation. Before the "fix," these registered or licensed vehicles encountered hardware failures when the testing mode was the default setting. Despite Defendants' claim that they recalled these vehicles to improve them, Defendants, instead, implemented this change so that the existing Subject Vehicles could easily detect testing methods.

79. In spite of all of Defendants efforts (including but not limited to those set forth in Paragraphs 76-78 above), researchers discovered the software-based devices. In March 2014, an Audi AG engineer alerted colleagues at Volkswagen AG and VWGOA EEO to the upcoming publication of a report by the West Virginia University's Center for Alternative Fuels, Engines & Emissions commissioned by the International Council on Clean Transportation (the "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 federal emission limits. The ICCT researchers confirmed the findings and reported to VWGOA EEO that their vehicles failed the tests.

80. Documents and information provided as early as May 2014 by managing engineers to multiple senior management officials immediately after the ICCT study's release clearly demonstrate that Defendants knew that the excessive, real-world $NO_x$ emissions released

during every-day driving could be readily explained by the existence of the devices described above, and Defendants would be subject to significant penalties if they admitted to regulators that the discrepancies were caused by the devices.

81. On or about 2014 through June 2015, and other dates yet to be discovered, Defendants, again, engaged in recalls and updates, or "fixes," to registered or licensed Subject Vehicles that at the very least perpetuated, if not advanced, the tampering of these vehicles' emission control systems through the software-based devices.

82. Defendants continued to conceal the existence of their devices until September 2015 when they finally admitted the existence of the software in the Generation 2s that allowed for two calibrations: one for real-world driving (Calibration 1) and one for testing (Calibration 2). The pending government authorization to sell Generation 3s motivated Defendants to finally tell the truth about the software-based devices.

83. In the face of regulatory action concerning the 2.0s and the intense public scrutiny they were facing, Defendants failed to acknowledge the existence of the software-based devices in the 3.0s.

84. CARB decided to conduct its own independent testing, from the results of which the agency issued a press release reporting that in a November 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[.]"

**E. Defendants admit to their unlawful conduct.**

85. Through at least one guilty plea and a series of civil settlements, Defendants admit that their software-based devices tamper with emission control systems during the Subject Vehicles' normal driving operation.

86. On April 4, 2017, the United States District Court, Northern District of California entered a joint stipulation to remand and settle state environmental complaints from 10 states (referred to as "Section 177 States"—Ohio is not included) against Defendants. The second partial settlement agreement between those states and Defendants (attached as Exhibit A to the federal court's entry for joint stipulation to remand and settle) provides the following admissions from Defendants Volkswagen AG, Audi AG, Volkswagen Group of America, Inc. (d/b/a Volkswagen of America, Inc. or Audi of America, Inc.), Audi of America, L.L.C. (together in that second partial settlement agreement as "Volkswagen") and Dr. Ing. H.c.F. Porsche AG and Porsche Cars North America, Inc. (together in that second partial settlement agreement as "Porsche"):

> Admissions.
>
> (A) Volkswagen admits that:
>
> > i. software in the 2.0 and 3.0 Liter Subject Vehicles enables the vehicles' engine control modules to detect when the vehicles are being driven on the road, rather than undergoing Federal Test Procedures, and that this software renders certain emission control systems in the vehicles inoperative when the engine control module detects the vehicles are not undergoing Federal Test Procedures, resulting in NOx emissions that exceed EPA-compliant and CARB-compliant levels (which CARB standards are applicable in the Section 177 States that are parties hereto) when the vehicles are driven on the road;
>
> > ii. this software was not disclosed in the Certificate of Conformity and Executive Order applications for the 2.0 and 3.0 Liter Subject Vehicles, and as a result, the design specifications of

> the 2.0 and 3.0 Liter Subject Vehicles, as manufactured, differ materially from the design specifications described in the Certificate of Conformity and Executive Order applications.
>
> (B) Porsche admits that:
>
> i. software in the 3.0 Liter Subject Vehicles enables the vehicles' engine control modules to detect when the vehicles are being driven on the road, rather than undergoing Federal Test Procedures, and that this software renders certain emission control systems in the vehicles inoperative when the engine control module detects the vehicles are not undergoing Federal Test Procedures, resulting in NOx emissions that exceed EPA-compliant and CARB-compliant levels (which CARB standards are applicable in the Section 177 States that are parties hereto) when the vehicles are driven on the road;
>
> ii. this software was not disclosed in the Certificate of Conformity and Executive Order applications for the 3.0 Liter Subject Vehicles, and, as a result, the design specifications of the 3.0 Liter Subject Vehicles, as manufactured, differ materially from the design specifications described in the Certificate of Conformity and Executive Order applications.

87. Even before this admission, on March 10, 2017, Volkswagen AG entered a guilty plea to three federal crimes before the United States District Court, Eastern District of Michigan. Under the plea, Defendant Volkswagen AG "admits, agrees, and stipulates that the factual allegations set forth in Exhibit 2 (the Statement of Facts) [attached to the federal plea agreement] are true and correct, that it is responsible under the laws of the United States for the acts of its employees described in Exhibit 2, and that the facts set forth in Exhibit 2 accurately reflect the Defendant's [Volkswagen AG] criminal conduct and provide a factual basis for the guilty plea." Defendant Volkswagen AG "agrees that it will neither contest the admissibility of, nor contradict, the Statement of Facts contained in Exhibit 2 in any proceeding."

88. This Defendant provides various admissions in the statement of facts, Exhibit 2 to the plea agreement, including that "it is responsible for the acts of its employees set forth in this

Statement of Facts, which acts [Volkswagen AG] acknowledges were within the scope of employees' employment and, at least in part, for the benefit of [Volkswagen AG]."

89. Volkswagen AG admits that if its software device detects that the vehicle operates under normal driving conditions, the device runs "in a different mode, in which the effectiveness of the vehicle's emissions control systems was reduced substantially, causing the vehicle to emit substantially higher NOx * * *."

90. Defendant Volkswagen AG admits that its employees caused the installation of the software devices in the 2.0 and 3.0 Liter Subject Vehicles; the fraudulent certification to the federal government and California; the importation of the vehicles by deception; and false marketing of the Subject Vehicles as "clean diesel" and friendly to the environment.

91. Volkswagen AG further admits to a recall and update, or "fix," of purported hardware failures in the 2.0 liter Subject Vehicles implemented on or about April 2013 through a date to be discovered. The original setting for these engines was on the testing-mode, not normal-driving mode, which increased the stress on the vehicles. Defendant's employees switched the default setting to normal-driving mode to alleviate the company's concerns while increasing air pollution. To ensure that the vehicle would recognize the upcoming testing-mode, employees implemented a feature involving the steering wheel angle. This tactic, along with the software, signaled to the vehicle whether the test mode or normal-driving mode applied in that circumstance. Defendants first incorporated this update, or "fix," into new 2.0 Liter Subject Vehicles. Then, during recalls or purported maintenance, Defendants and their employees installed the software update in vehicles already registered or licensed to consumers.

92. Volkswagen AG also admits, from 2014 to June 2015, it implemented "fixes" to software and hardware in registered or licensed Subject Vehicles that continued to tamper with the emission controls during every-day driving.

**F. The Subject Vehicles emitted dangerous and harmful $NO_x$ emissions in amounts far higher than permitted under federal emission standards.**

93. At all relevant times, the Defendants have known that the software installed or updated in Subject Vehicles that they manufactured, sold, or for those registered or licensed vehicles, recalled and updated, in the United States, including in Ohio, caused the Subject Vehicles to emit many times the allowed $NO_x$ during normal operation. This negatively impacts the environment and human health.

94. 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.

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

96. Emissions, in part from Volkswagen, contributed to Ohio's failure to meet the U.S. EPA National Ambient Air Quality Standards for ozone in the following counties: Ashtabula, Butler, Clermont, Clinton, Cuyahoga, Delaware, Fairfield, Franklin, Geauga, Hamilton, Knox, Lake, Licking, Lorain, Madison, Medina, Portage, Summit, and Warren. U.S. EPA adopts these standards to protect the public health, and Ohio seeks to meet these standards accordingly. In addition to the paramount concern for public health, the failure to meet these

standards saddles Ohio EPA with a major regulatory burden to improve the air quality in these areas and seek attainment of these standards. Then, Ohio EPA must scientifically demonstrate the attainment to U.S. EPA through a formal redesignation process. Volkswagen should be held accountable not only for the public health risk associated with their emissions but also for the resources exhausted on ozone nonattainment.

97. $NO_x$ 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 Ohio'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.

98. At all material times, Volkswagen was aware that its unlawful actions violated state environmental statutes and regulations more particularly described below in this First Amended Complaint.

## V. VIOLATIONS OF OHIO'S AIR POLLUTION CONTROL STATUTE

99. Ohio's Air Pollution Control statute (R.C. Chapter 3704), including the anti-tampering law (R.C. 3704.16) and the rules promulgated thereunder (including Ohio Adm.Code 3745-80-02), establish a comprehensive regulatory scheme designed to prevent pollution of air contaminants like NOx before it harms or threatens to harm the environment or the public health.

100. It is the purpose of all air pollution rules adopted under Chapter 3704 of the Revised Code to set forth such requirements as shall be necessary to secure and maintain those levels of air quality which are consistent with the protection of health and the prevention of injury to plant life, animal life, and property in the State of Ohio, and to provide for the

comfortable enjoyment of the natural attractions of the State to the greatest extent practical. All rules of the Director shall be construed in such manner as to effectuate this purpose per Ohio Adm.Code 3745-15-02.

101. Under R.C. 3704.16(A), "[t]amper with means to remove permanently, bypass, defeat, or render inoperative, in whole or part, any emission control system that is installed on or in a motor vehicle."

102. R.C. 3704.16(C)(3) states that "no person shall knowingly * * * [t]amper with any emission control system installed on or in a motor vehicle after sale, lease, or rental and delivery of the vehicle to the ultimate purchaser, lessee, or renter."

103. Ohio Adm.Code 3745-80-02(F) establishes the same prohibition set forth in R.C. 3704.16(C)(3).

104. R.C. 3704.05(G) states that "[n]o person shall violate any order, rule, or determination of the director issued, adopted, or made under this chapter."

105. R.C. 3704.06(B) states that "[t]he attorney general, upon request of the director, shall bring an action for * * * a civil penalty, or any other appropriate proceedings in any court of competent jurisdiction against any person violating or threatening to violate section 3704.05 or 3704.16 of the Revised Code. The court shall have jurisdiction * * * to require payment of a civil penalty upon the showing that the person has violated this chapter or rules adopted thereunder."

106. R.C. 3704.06(C) states that "[a] person who violates section 3704.05 or 3704.16 of the Revised Code shall pay a civil penalty of not more than twenty-five thousand dollars for each day of each violation."

107. The Director, pursuant to his authority, adopted Ohio Adm.Code 3745-80-02

under R.C. Chapter 3704.

**COUNT ONE**
**SOFTWARE-BASED DEVICES TAMPER WITH EMISSION CONTROL SYSTEMS DURING NORMAL DRIVING OPERATION**

108. Plaintiff incorporates by reference and re-alleges each allegation contained in Paragraphs 1-107.

109. From on or about 2008 through the present, Defendants knowingly tampered with the emission control system installed on or in each Subject Vehicle after the sale, lease, or rental and delivery of each Subject Vehicle to the ultimate purchaser, lessee, or renter of each Subject Vehicle.

110. The acts or omissions alleged in this Count constitute violations of R.C. 3704.16(C)(3), Ohio Adm.Code 3745-80-02(F), and R.C. 3704.05(G), for which each Defendant is jointly and severally liable, and is subject to civil penalties of up to twenty-five thousand dollars ($25,000.00) for each day of each violation, pursuant to R.C. 3704.06(C).

111. Each day of each violation includes but is not limited to each day that the software-based devices on or in each registered or licensed Subject Vehicle tampered with the emission control system during the Subject Vehicle's normal use or operation.

**COUNT TWO**
**TAMPER WITH EMISSION CONTROL SYSTEMS BY RECALLING AND UPDATING SOFTWARE-BASED DEVICES**

112. Plaintiff incorporates by reference and re-alleges each allegation contained in Paragraphs 1-111.

113. From or about 2008 through the present, Defendants knowingly tampered with the emission control system installed on or in each Subject Vehicle after the sale, lease, or rental and delivery of each Subject Vehicle to the ultimate purchaser, lessee, or renter of each Subject Vehicle.

114. The acts or omissions alleged in this Count constitute violations of R.C. 3704.16(C)(3), Ohio Adm.Code 3745-80-02(F), and R.C. 3704.05(G), for which each Defendant is jointly and severally liable, and is subject to civil penalties of up to twenty-five thousand dollars ($25,000.00) for each day of each violation, pursuant to R.C. 3704.06(C).

115. Each day of each violation includes but is not limited to each day that the Defendants recalled and updated, or "fixed," the software-based devices on or in each registered or licensed Subject Vehicle.

**COUNT THREE**
**SOFTWARE-BASED DEVICES AFTER RECALLS AND UPDATES TAMPER WITH EMISSION CONTROL SYSTEMS DURING NORMAL DRIVING OPERATION**

116. Plaintiff incorporates by reference and re-alleges each allegation contained in Paragraphs 1-115.

117. From on or about 2008 through the present, Defendants knowingly tampered with the emission control system installed on or in each Subject Vehicle after the sale, lease, or rental and delivery of each Subject Vehicle to the ultimate purchaser, lessee, or renter of each Subject Vehicle.

118. The acts or omissions alleged in this Count constitute violations of R.C. 3704.16(C)(3), Ohio Adm.Code 3745-80-02(F), and R.C. 3704.05(G), for which each Defendant is jointly and severally liable, and is subject to civil penalties of up to twenty-five thousand dollars ($25,000.00) for each day of each violation, pursuant to R.C. 3704.06(C).

119. Each day of each violation includes but is not limited to each day that the recalled and updated, or "fixed," software-based devices on or in each registered or licensed Subject Vehicle tampered with the emission control system during the Subject Vehicle's normal use or operation.

**COUNT FOUR**
**ENGAGE IN A CIVIL CONSPIRACY AGAINST THE COMMON LAW TO VIOLATE STATE LAWS**

120. Plaintiff incorporates by reference and re-alleges each allegation contained in Paragraphs 1-119.

121. As described above in this First Amended Complaint, from on or about 2008 through the present, Defendants purposefully acted in concert or participation with one another to violate, cause, or allow violations of R.C. Chapter 3704 and Ohio Adm.Code 3745-80-02.

122. As described above in this First Amended Complaint, at a minimum, the Defendants purposefully provided substantial assistance to one another or purposefully aided and abetted one another through common, mutual understanding or design, to violate, cause, or allow violations of R.C. Chapter 3704 and Ohio Adm.Code 3745-80-02, from 2008 through the present.

123. Defendants caused the State injury or harm by committing the acts or omissions provided in this First Amended Complaint in a manner or to a degree that could not have been caused by one lone Defendant.

124. By the actions or omissions described above in this First Amended Complaint, the Defendants engaged in a civil conspiracy to violate the duties or requirements imposed upon them by R.C. Chapter 3704 and Ohio Adm.Code 3745-80-02, and as such all are jointly and severally liable for all violations of those legal authorities. The State is entitled to damages including the costs of personnel time for investigating and bringing this action including reasonable attorney fees.

## PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that this Court:

A. ORDER Defendants, jointly and severally, pursuant to R.C. 3704.06 to pay a civil penalty for violations of R.C. Chapter 3704 and Ohio Adm.Code 3745-80-02 as described in the First Amended Complaint in the amount of up to and including Twenty-Five Thousand Dollars ($25,000.00) for each day of each violation, including each day of violation subsequent to the filing of this First Amended Complaint.

B. ORDER Defendants, jointly and severally, to pay compensatory damages, including but not limited to, the costs of personnel time for investigating, inspecting, and bringing this action, including reasonable attorney fees.

C. ORDER Defendants to pay all court costs associated with this action.

D. RETAIN jurisdiction of this suit for the purpose of making any order or decree which it may deem necessary at any time to carry out its judgment.

E. GRANT such other relief as the Court deems appropriate, just, and equitable.

Respectfully submitted,

MICHAEL DEWINE
OHIO ATTORNEY GENERAL

*/s/ Aaron S. Farmer*

AARON S. FARMER (0080251)
ELIZABETH R. EWING (0089810)
Assistant Attorneys General
Environmental Enforcement Section
30 East Broad Street, 25th Floor
Columbus, Ohio 43215
(614) 466-2766 (phone); (614) 644-1926 (facsimile)
aaron.farmer@ohioattorneygeneral.gov
elizabeth.ewing@ohioattorneygeneral.gov
*Counsel for Plaintiff, State of Ohio*

`

**CERTIFICATE OF SERVICE**

I certify that under Civ. R. 5 a true and accurate copy of the foregoing *First Amended Complaint* was served upon the following counsel on September 25, 2017, by electronic mail, by regular U.S. Mail, postage prepaid, and if applicable, the Court's electronic-filing system.

Hugh J. Bode
REMINGER CO., L.P.A.
101 West Prospect Avenue, Suite 1400
Cleveland, Ohio 44115
Telephone: (216) 430-2114
Facsimile: (216) 687-1841
Email: hbode@reminger.com

*and*

200 Civic Center Drive
Suite 800
Columbus, Ohio 43215
Email: hbode@reminger.com
Telephone: (614) 228-1311
Facsimile: (614) 232-2410

*Of Counsel*
Robert J. Giuffra, Jr. (*pro hac vice pending*)
Sharon L. Nelles (*pro hac vice pending*)
David M.J. Rein (*pro hac vice pending*)
Matthew A. Schwartz (*pro hac vice pending*)
SULLIVAN & CROMWELL LLP
125 Broad Street
New York, New York 10004
Telephone: 212-558-4000
Facsimile: 212-558-3588
giuffrar@sullcrom.com
nelless@sullcrom.com
reind@sullcrom.com
schwartzmatthew@sullcrom.com

*Attorneys for Volkswagen AG, Volkswagen Group of America, Inc., Volkswagen of America, Inc. AUDI AG, and AUDI of America, LLC*

Terrance M. Miller
PORTER, WRIGHT, MORRIS & ARTHUR, LLP
41 S. High Street Suites 2800-3200
Columbus, OH 43215
Telephone: 614-227-2142
Facsimile: 614-227-2100
tmiller@porterwright.com

*Of Counsel*
Joseph A. Eisert (*pro hac vice pending*)
KING & SPALDING LLP
1700 Pennsylvania Ave., N.W. Suite 200
Washington, DC 20006
Telephone: 202-737-0500
Facsimile: 202-626-3737
jeisert@kslaw.com

*Attorneys for Dr. Ing. h.c. F. Porsche AG andPorsche Cars North America, Inc.*

MICHAEL DEWINE
OHIO ATTORNEY GENERAL

*/s/ Aaron S. Farmer*
AARON S. FARMER (0080251)
Assistant Attorney General