



New Jersey Department of Environmental Protection  
Division of Air Compliance and Enforcement

National Association of Clean Air Agencies Workshop

## Diesel Tampering

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Presented by

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# Background

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- NJDEP issued compliance advisory in November 2017  
<https://www.nj.gov/dep/enforcement/advisories/2017-08.pdf>
- Focus on Medium Duty Diesel Pickup Trucks
  - GVWR between 8,501 and 14,000 pounds
- These trucks are not part of NJ MVC Inspection & Maintenance Program
- Tampering is common in this class of vehicles
- Reasons for tampering include: durability, increased MPG, increased HP & torque and lower maintenance costs

# NJDEP Diesel Tampering Regulations

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## N.J.A.C. 7:27-14.3 General Prohibitions

(e) No person shall cause, suffer, allow, or permit any of the following, unless it is performed in accordance with EPA Memorandum 1A or it is exempt from prohibition by CARB Executive Order (information on devices or modifications approved by CARB Executive Order may be obtained from the California Air Resources Board, 1001 "I" Street, PO Box 2815, Sacramento, CA 95812 or at [www.arb.ca.gov](http://www.arb.ca.gov)):

1. The disconnection, detachment, deactivation, or any other alteration or modification from the design of the original vehicle manufacturer or an element of design installed on any motor vehicle with a certified configuration or motor vehicle engine with a certified configuration, except temporarily for the purpose of diagnosis, maintenance, repair, or replacement;

2. The sale, lease, or offer for sale or lease, of any motor vehicle with a certified configuration or motor vehicle engine with a certified configuration in which any element of design installed on such vehicle has been disconnected, detached, deactivated, or in any other way altered or modified from the design of the original vehicle manufacturer; or

3. The sale, or offer for sale, of any device or component as an element of design intended for use with, or as part of, any motor vehicle with a certified configuration or motor vehicle engine with a certified configuration that is not designed to duplicate the function and performance of any element of design installed by the original vehicle manufacturer.

# NJDEP Penalty Schedule

N.J.A.C. 7:27A-3

Penalty Category	Class	First Offense	Fourth Offense
Idling	All vehicles	\$250	\$1,000
Tampering of vehicles	Owner of 4 or less vehicles	\$400	\$6,000
	Owner of 5 or more vehicles	\$1,000	\$15,000
Sale, lease, or offer for sale or lease tampered vehicle	Owner of 4 or less vehicles	\$1,000	\$15,000
	Owner of 5 or more vehicles	\$2,000	\$30,000
Sale, or offer for sale any device or component	All vehicles	\$2,000	\$30,000
Does not have a properly functioning and properly maintained emission ctrl apparatus	Offer for Sale/Sale of Device Component	\$2,000	\$30,000
Installing disconnected, detached, deactivate or modified emission control apparatus	Passenger vehicles	\$500	\$7,500
	Commercial vehicle	\$1,000	\$15,000



# Rolling Coal Law – Signed May 5, 2015



## **N.J.S.A. 26:2C-8.57**

No person shall retrofit any diesel-powered vehicle with any device, smoke stack, or other equipment which enhances the vehicle's capacity to emit soot, smoke, or other particulate emissions, or shall purposely release significant quantities of soot, smoke, or other particulate emissions into the air and onto roadways and other vehicles while operating the vehicle, referred to as "coal rolling."

# Common Diesel Control Devices

- EGR (Exhaust Gas Recirculation) *MY 2003+*
- Catalyst (Oxidative Catalyst, OC) controls unburnt hydrocarbons (HC) *MY 2003+*
- DPF (Diesel Particulate Filter) controls particulate matter (PM) *MY 2007+*
- SCR (Selective Catalytic Reduction) controls NOx using diesel exhaust fluid (DEF) *MY 2010+*

## Other Emission Control Devices

- Calibration and on-board diagnostics (OBD)
- Sensors (temperature, pressure, NOx, PM, Oxygen)
- Direct injection

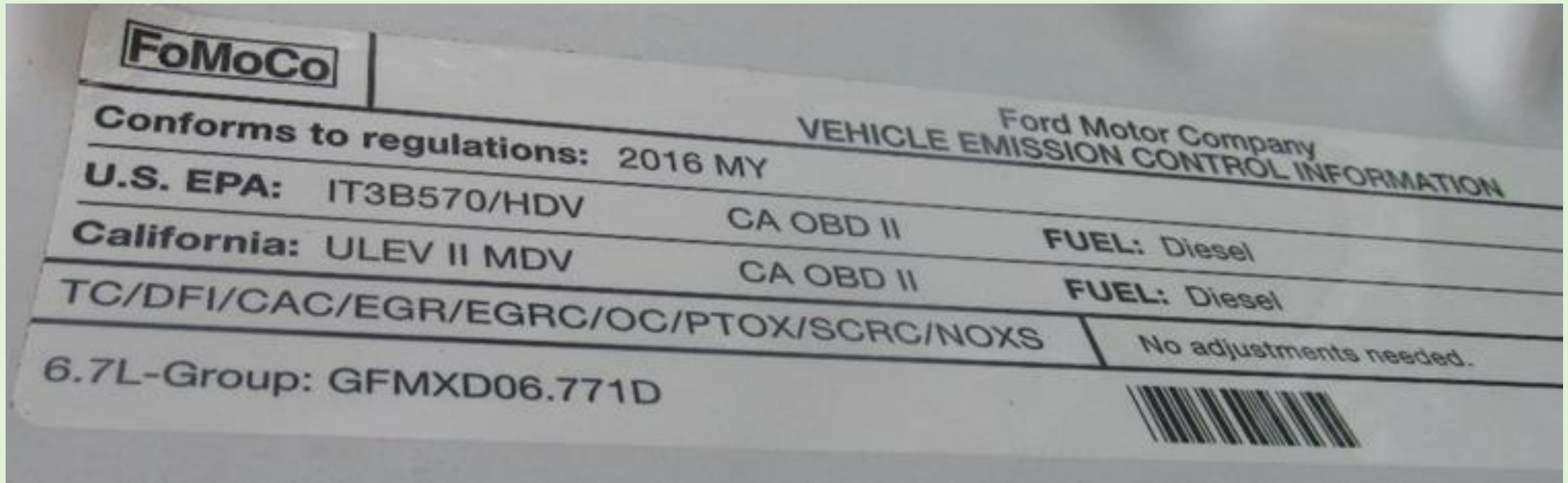


# Acronyms

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- VECI – Vehicle Emissions Control Identification Label
- DDI – Direct Diesel Injection
- DFI – Direct Fuel Injection
- TC – Turbo Charger
- VGT – Variable Geometry Turbocharger
- CAC – Charge Air Cooler (Intercooler)
- EGR – Exhaust Gas Recirculation
- EGRC – Exhaust Gas Recirculation Cooler
- OC – Diesel Oxidation Catalyst
- DPF – Diesel Particulate Filter
- PTOX – Periodic Trap Oxidizer (DPF)
- SCR – Selective Catalyst Reduction
- RDQS – Reductant Quality Sensor
- NOXS – NO<sub>x</sub> Sensors
- LRRRA – Low Rolling Resistance Tires (All)

VECI Label can usually be found on the underside of the hood, on the airbox or on engine near the exhaust manifold

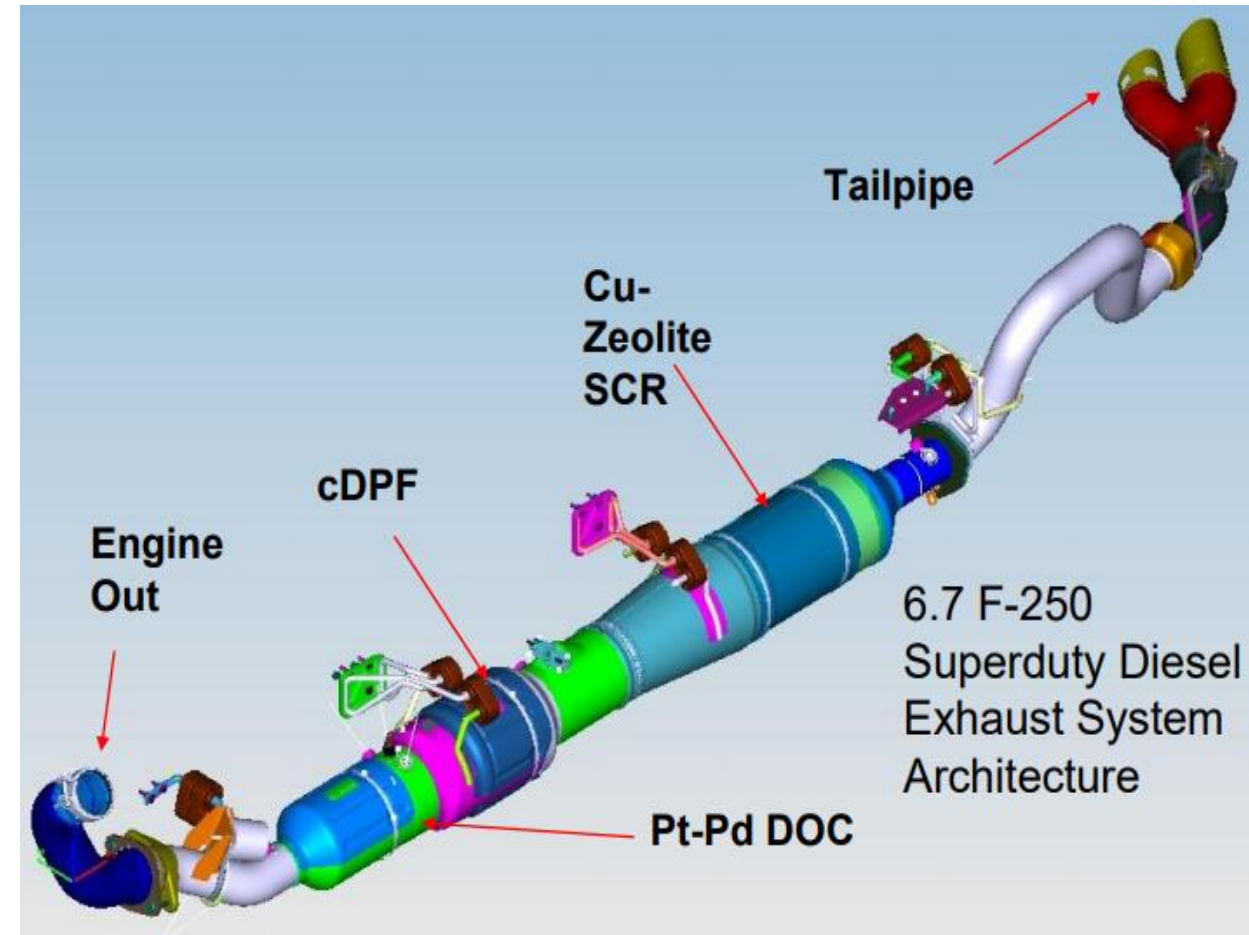
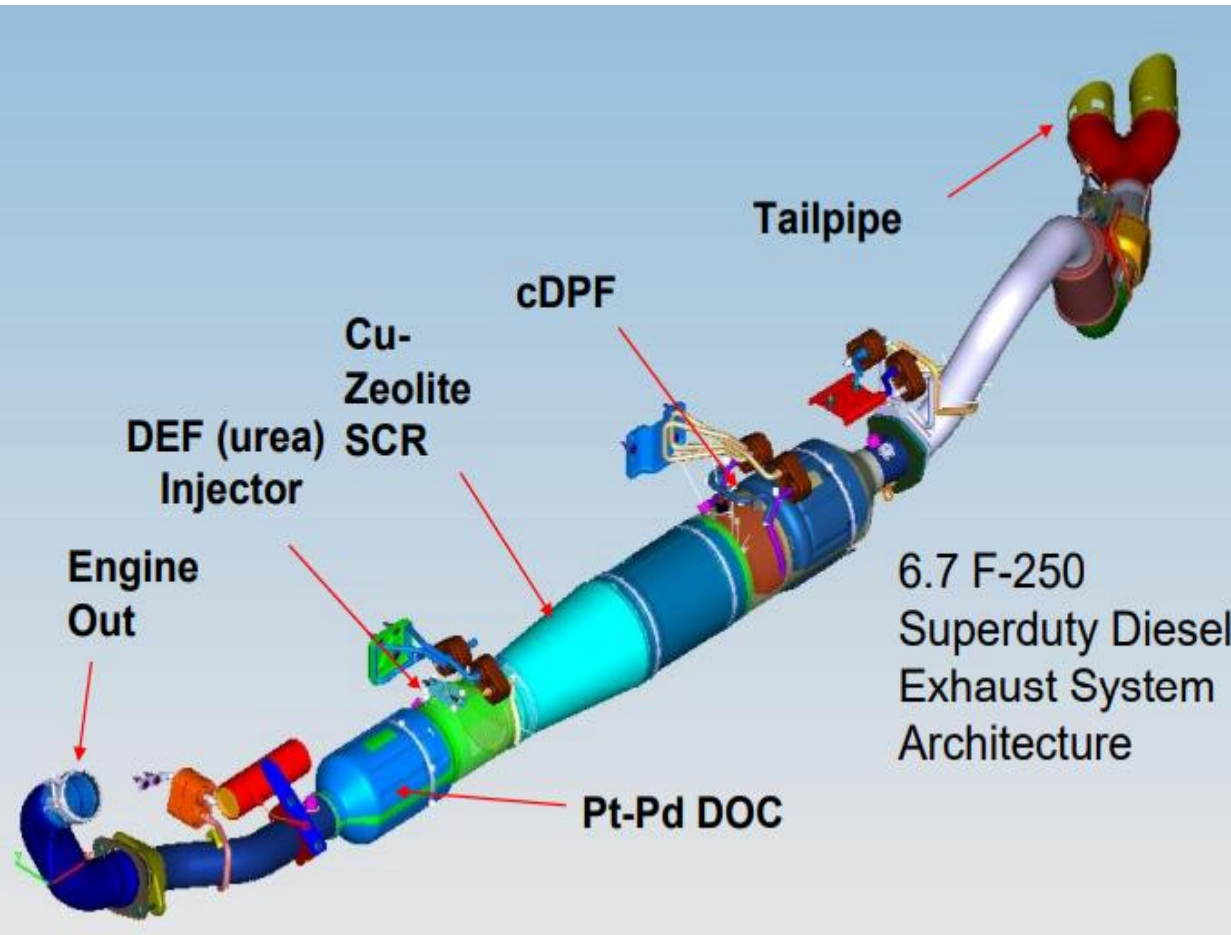




# 2014 Ford 6.7L Exhaust Components

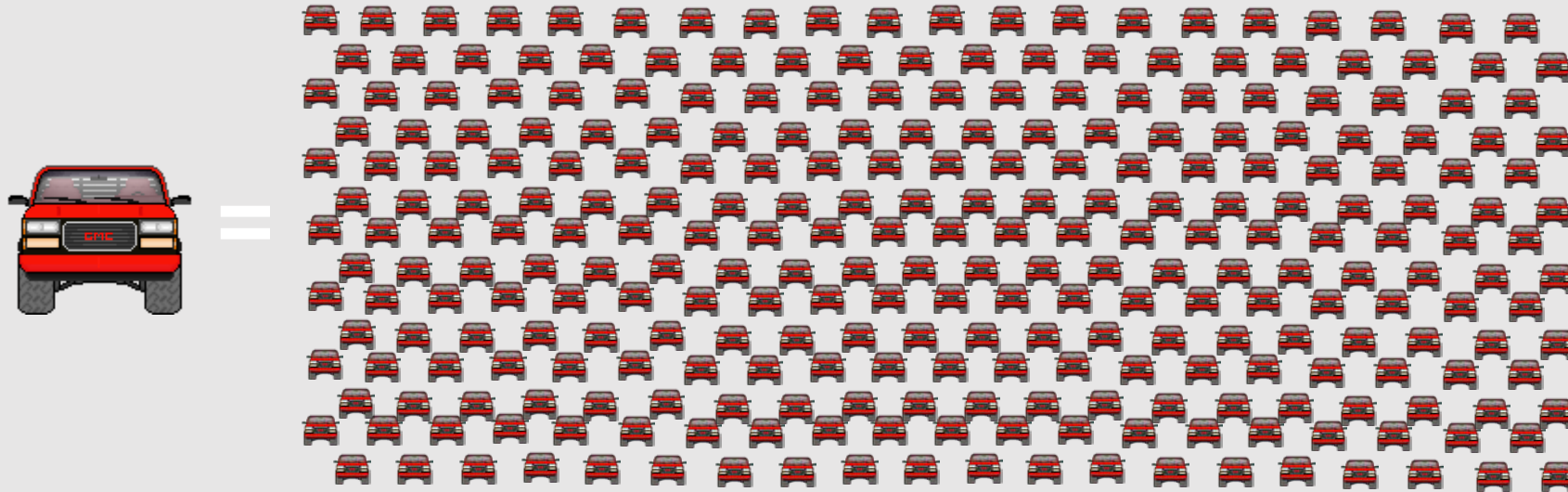
Chassis Certified Configuration

Dynamometer Certified Configuration



# Emissions Increase Due to Full Delete

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The impact of tampering becomes apparent when you look at the emission increases on a fully deleted vehicle.

Testing was conducted without the SCR, DPF, DOC and EGR emission controls

NOx increased by approximately 310 times

NMHC increased by approximately 1,140 times

CO increased by approximately 12 times

PM increased by approximately 40 times



Source: USEPA, Chief Evan Besler, Vehicle and Engine Enforcement Branch; Summit with NJDEP & EPA Region 2

# NJDEP Physical Inspection Procedure

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- 1) A picture will be taken of the front of the vehicle
- 2) A picture will be taken of the VIN label located on the driver's side door jamb
- 3) The VECI label will be found in the engine compartment or on the engine itself and inspected to determine what emissions control equipment is present on the vehicle
- 4) Each of the components listed on the VECI label will be located and inspected for signs of physical tampering
- 5) If any signs of missing components or physical tampering are found:
  - a) A picture of the VECI label will be taken
  - b) A picture of the odometer will be taken
  - c) A picture of each of the missing and/or tampered component locations will be taken
  - d) The vehicle's OBD system will be scanned to document eVIN, calibration identification, and calibration verification number for each of the modules present in the vehicle

# Report Generation

 NJDEP Facility Inspection Worksheet 			
Facility Name	A Dealership	Date	5/20/2019
Facility Address	225 East State St, Trenton	Time	9:00 AM - 4:30 PM
Facility Phone	609-273-6867	PI #	12345
Facility Contacts		Inspectors	
Owner Name		Name	Jeff Kennedy
Name	Guy Incharge	Title	Environmental Engineer 3
Title	General Manager	Name	Tim Davis
Name		Title	Environmental Specialist 3
Title		Name	Zach Keenan
Name		Title	Environmental Engineer 1
Facility Description	Used vehicle dealer, about a third of the inventory is medium duty diesel trucks, shop in rear of facility performs detailing and light mechanic work		
Findings	31% (5/16) of the trucks inspected showed obvious signs of physical tampering		
Notes			

# Report Generation

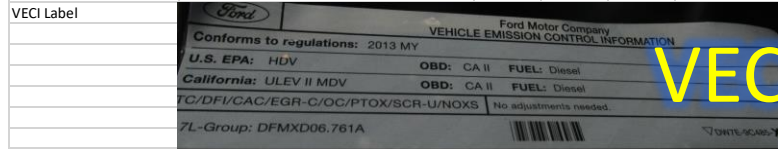
VIN	Year	Make	Model	Mileage	Engine	Engine Family	Tampered	Vehicle #
1FT7W2BT9DEB55459	2013	Ford	F-250	68405	V8, 6.7L; Turbo	DFMXD06.761A	Yes	1
1FT7W2BT9CEC65510	2012	Ford	F-250	69861	V8, 6.7L; Turbo	CFMXD06.761A	Yes	2
3C6UR5PL0FG600629	2015	Ram	2500		L6, 6.7L; Turbo		No	
3C6UD5DL9CG329102	2012	Ram	2500		L6, 6.7L; Turbo		No	
3C63R3GL5FG590552	2015	Ram	3500		L6, 6.7L; Turbo		No	
1FT7W2BT4CEA67871	2012	Ford	F-250		V8, 6.7L; Turbo		No	
1FT7W2BT7FEB28943	2015	Ford	F-250		V8, 6.7L; Turbo		No	
1FT8W3BTXCEB63966	2012	Ford	F-350		V8, 6.7L; Turbo		No	
1FT7W2BT5DEB43972	2013	Ford	F-250		V8, 6.7L; Turbo		No	
1FT8W3BT3FEA36769	2015	Ford	F-350		V8, 6.7L; Turbo		No	
1GTHK34677E565372	2007	GMC	Sierra	121468	V8, 6.6L; Turbo	7GMXH06.6590	Yes	3
3C6UR5FL7FG645620	2015	Ram	2500		L6, 6.7L; Turbo		No	
1FTSW21R98EA29351	2008	Ford	F-250	99051	V8, 6.4L; Turbo	8FMXA06.4AGC	Yes	4
1FT8W3BT4CEB19963	2012	Ford	F-350		V8, 6.7L; Turbo		No	
3D73Y3CL2BG558272	2011	Ram	3500	147999	L6, 6.7L; Turbo	BCEXD06.78WV	Yes	5
1FT7W2BT1EEA57852	2014	Ford	F-250		V8, 6.7L; Turbo		No	
Overall Tampering				Yes			5	31%
				No			11	69%
				Total			16	
In compliance								
Repaired & Verified								
Pending verification								
Awaiting repairs								



# Report Generation

VIN	1FT7W2BT9DEB55459
Model Year	2013
Make	Ford
Model	F-250
Body Type	4 Door Cab; Crew
Trim Level	XL; Platinum; XLT; Cabela; Lariat; King Ranch
Engine Type	V8, 6.7L; Turbo
Country	UNITED STATES
Assy. Plant	Jefferson County, KY
Production Seq. Number	B55459
Check Digit	9
Drive Line Type	4WD
GVWR Class	Class H: 9,001-10,000 lb
Manufacturer	Ford Motor Company
Series	Super Duty
Vehicle Type	Pickup Truck
Vehicle Class	Full-size Pickup
Brake System	Hydraulic
Fuel Type	Diesel
Engine Manufacturer	Ford
Mobile6 Class	HDDV2b
Tonnage	3/4
DLL Version	4.0.8
Data Version	2018.07.026

VIN Decode



VECI Label



Violation



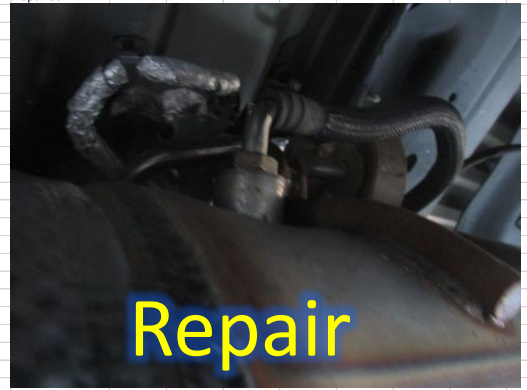
Repair

Exhaust control related wiring disconnected



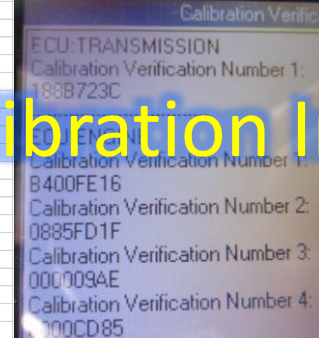
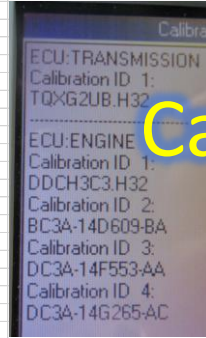
Violation

Repaired



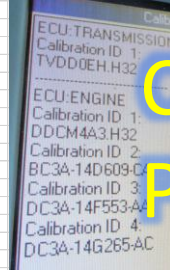
Repair

Calibration information



Calibration Information

After Update



Calibration Information Post Repair

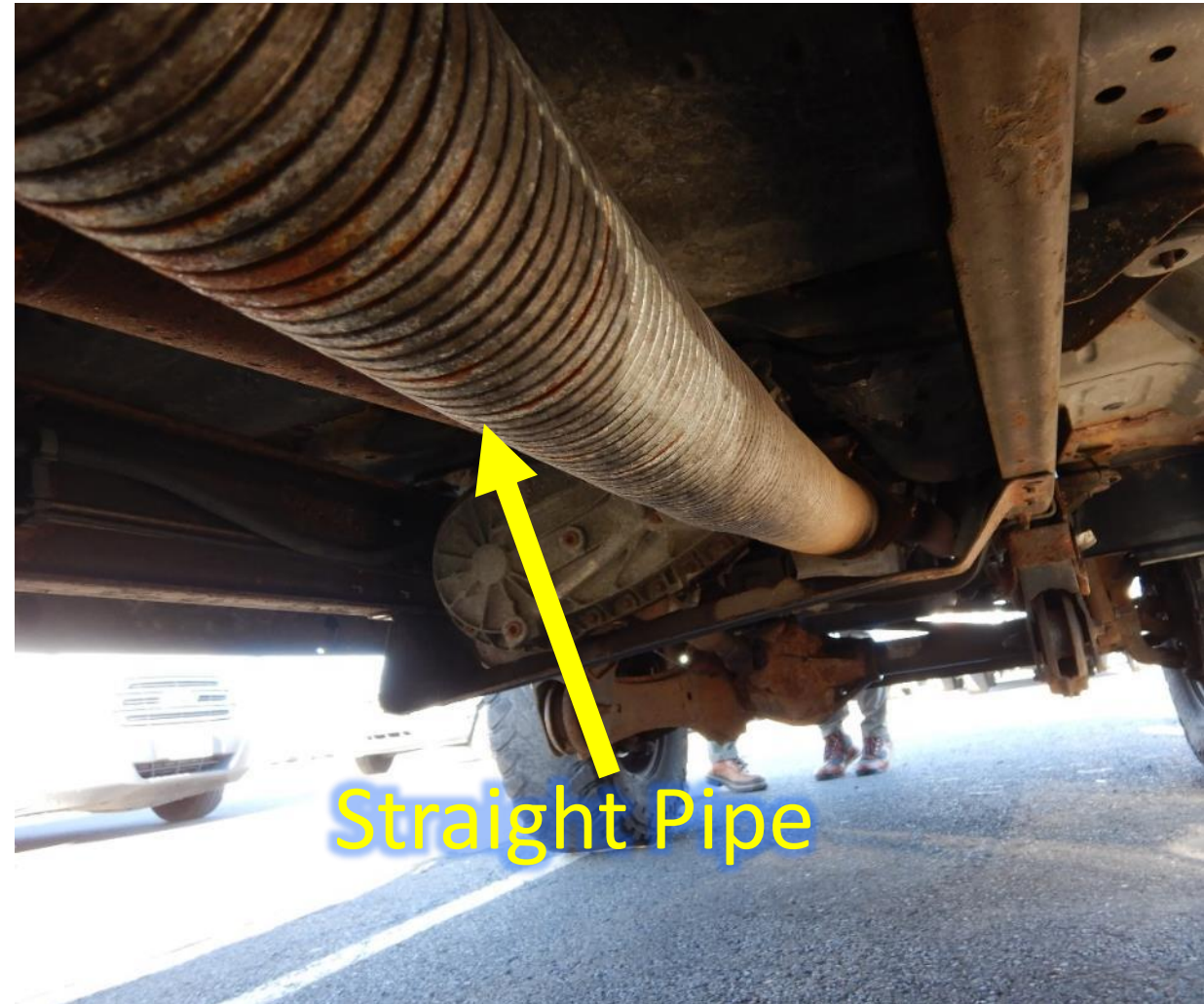
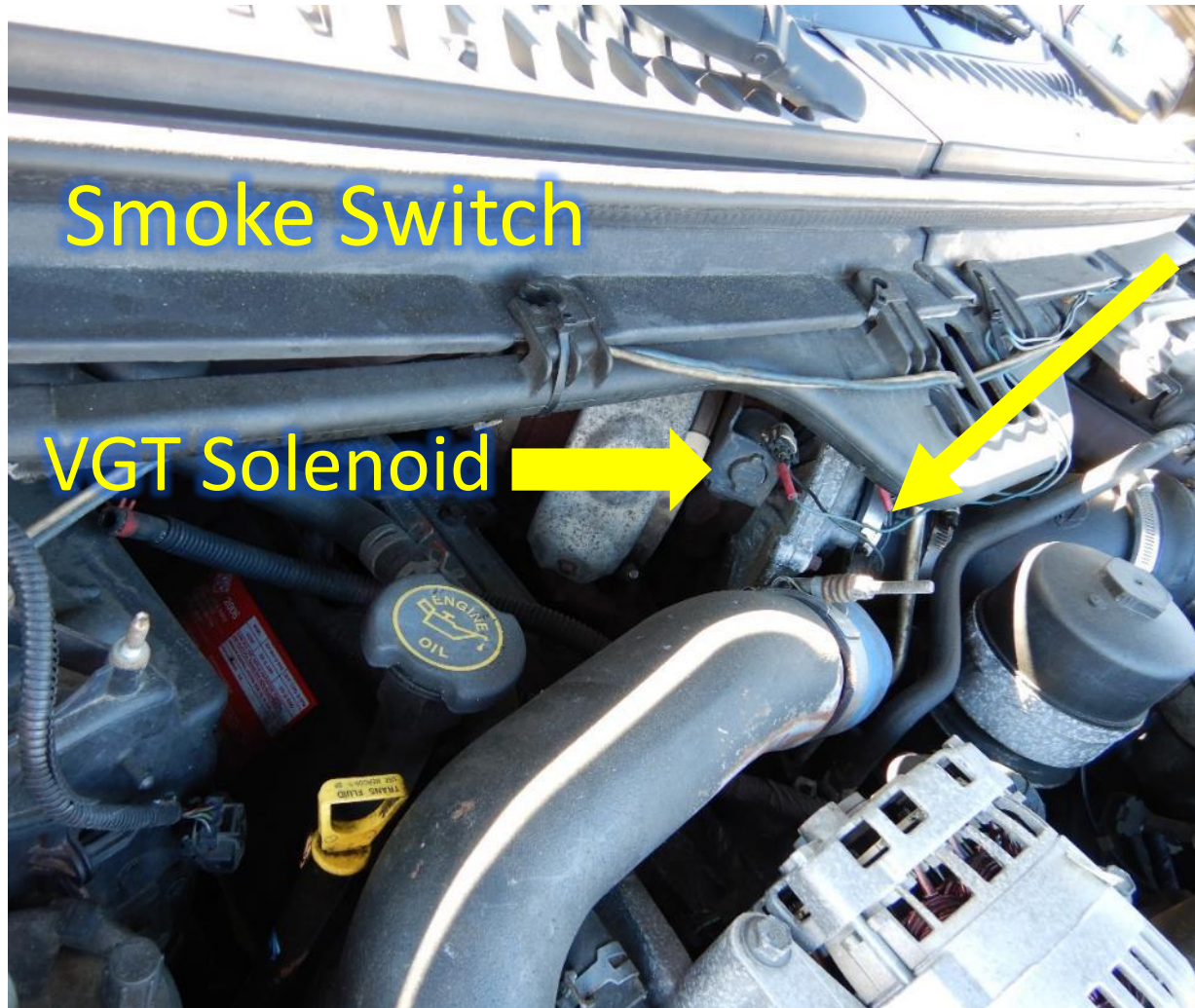
Verification

Model Year	Manufacturer	Model	Engine Siz	Transmiss	Test Group	Module IECALID	CVN
2013	Ford/Lincoln/Mercury	F-Superdu	6.7 A/T	DFMXD06.761A	S07E8	DC3A-14F553-AA	0000CD85
2013	Ford/Lincoln/Mercury	F-Superdu	6.7 A/T	DFMXD06.761A	S07E8	DC3A-14G265-AC	000009AE



# Case Examples

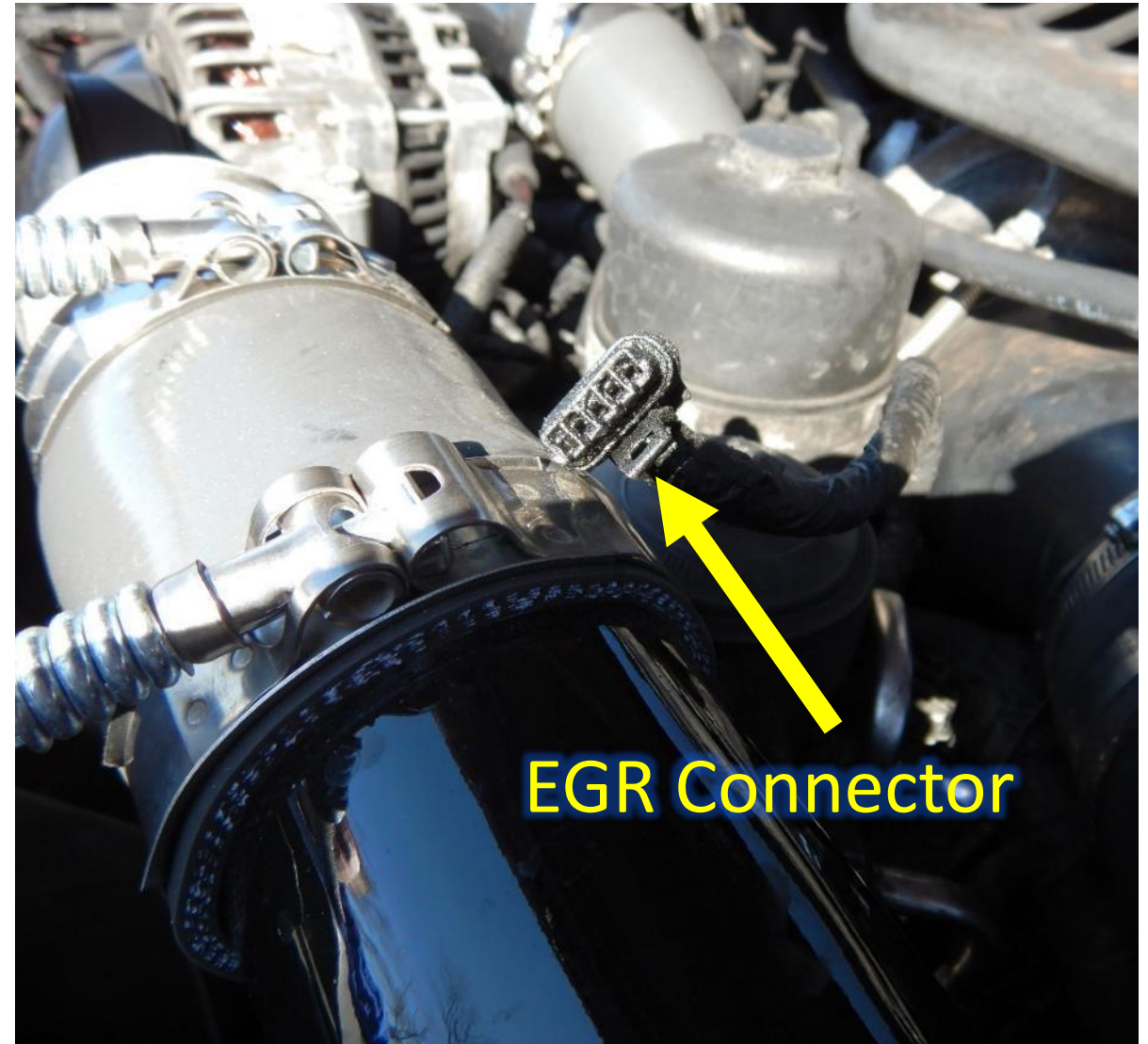
2007 Ford 6.0L Powerstroke





# Case Examples

2005 Ford 6.0L Powerstroke





# Case Examples

2008 Ford 6.4L Powerstroke





# Case Examples

2008 Ford 6.4L Powerstroke





# Case Examples

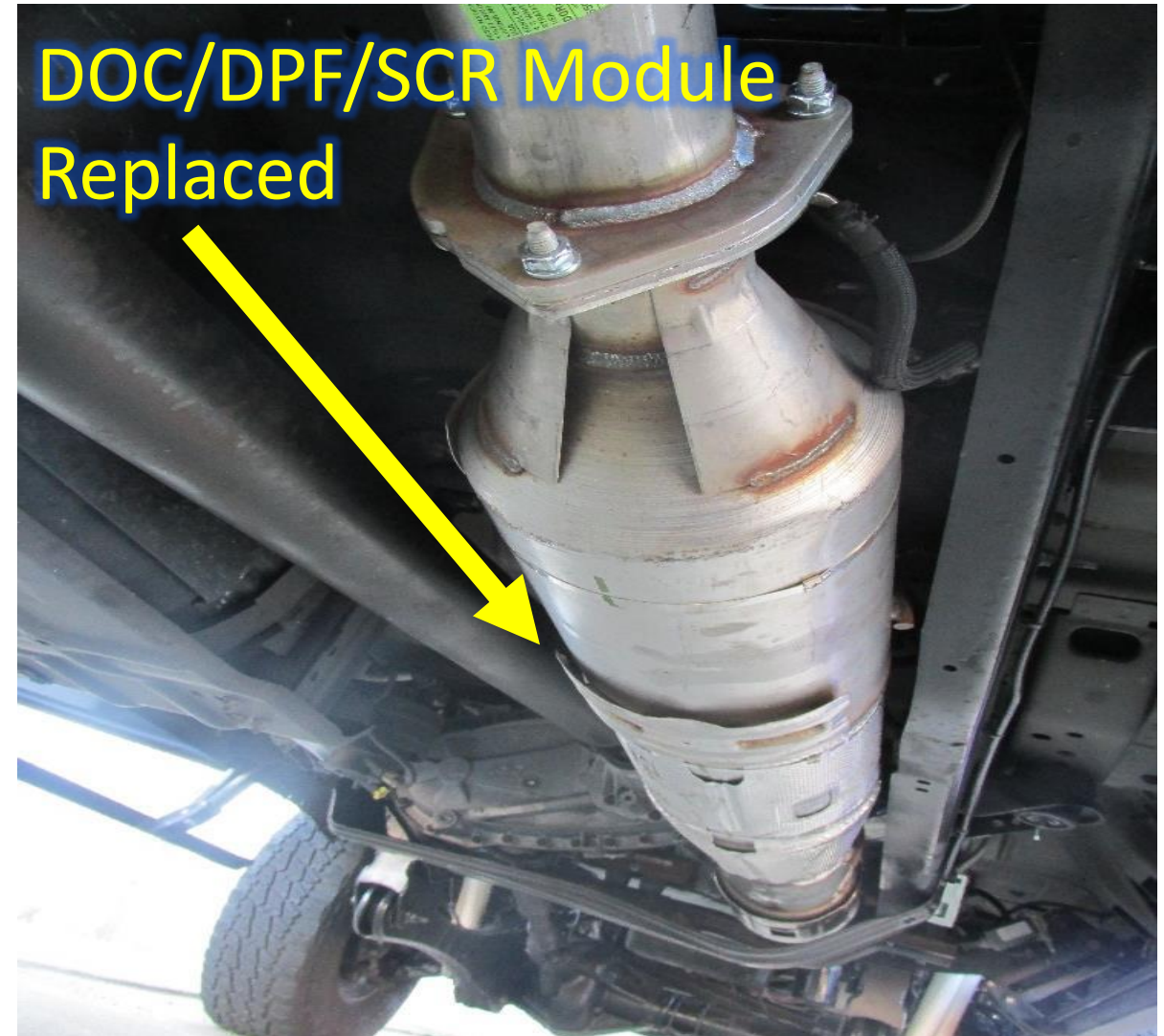
2013 Ford 6.7L Powerstroke





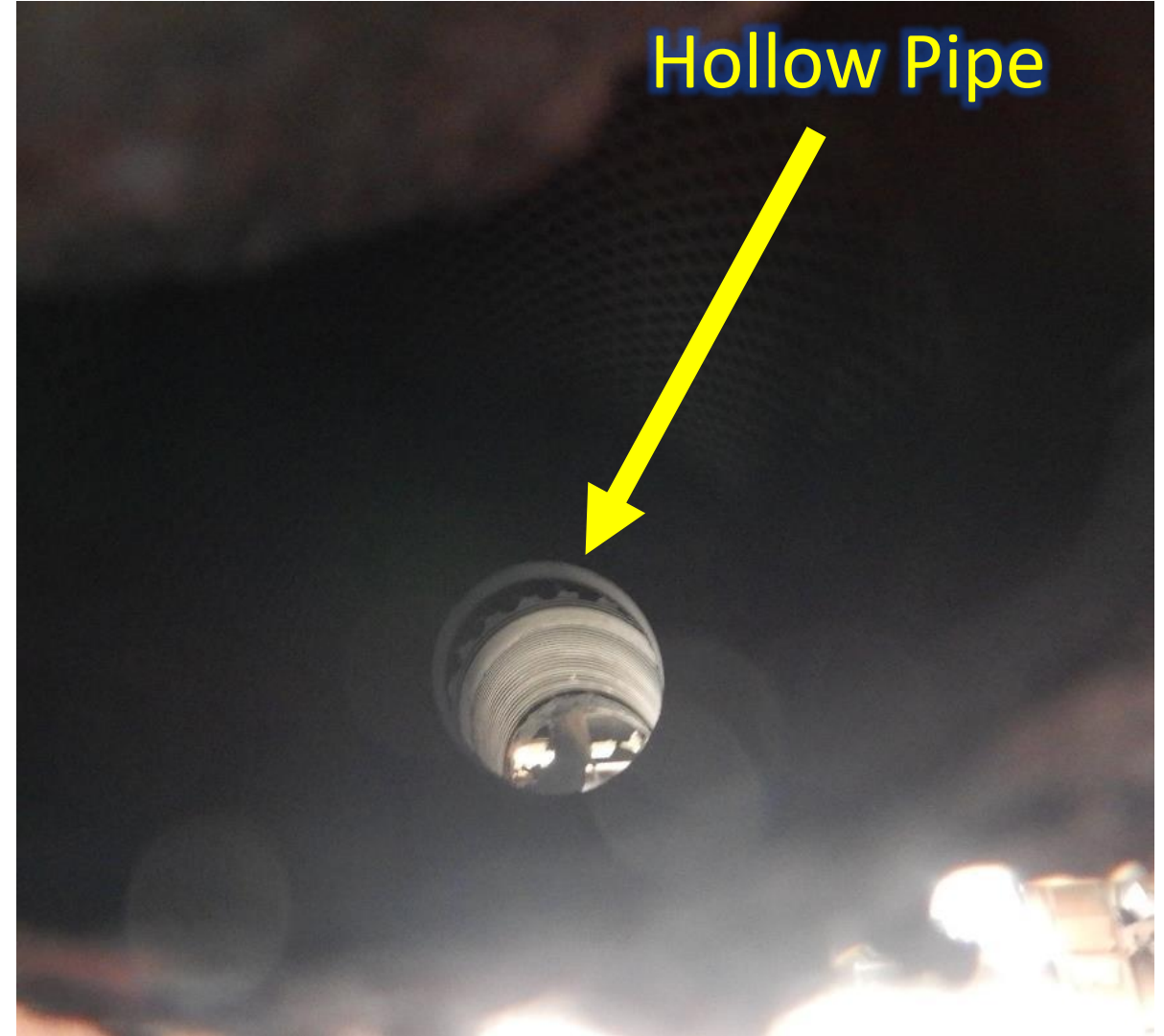
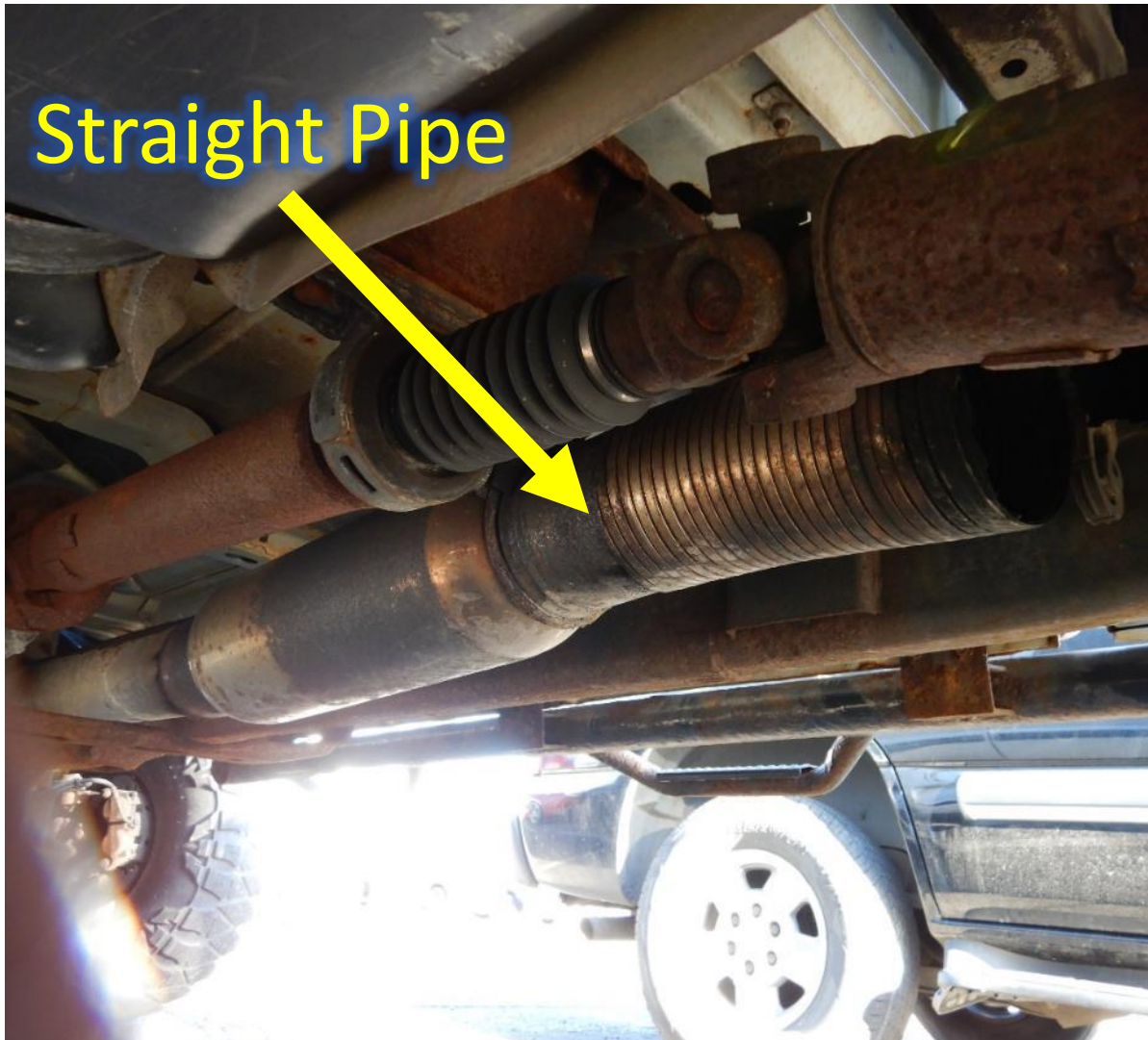
# Case Examples

2013 Ford 6.7L Powerstroke



# Case Examples

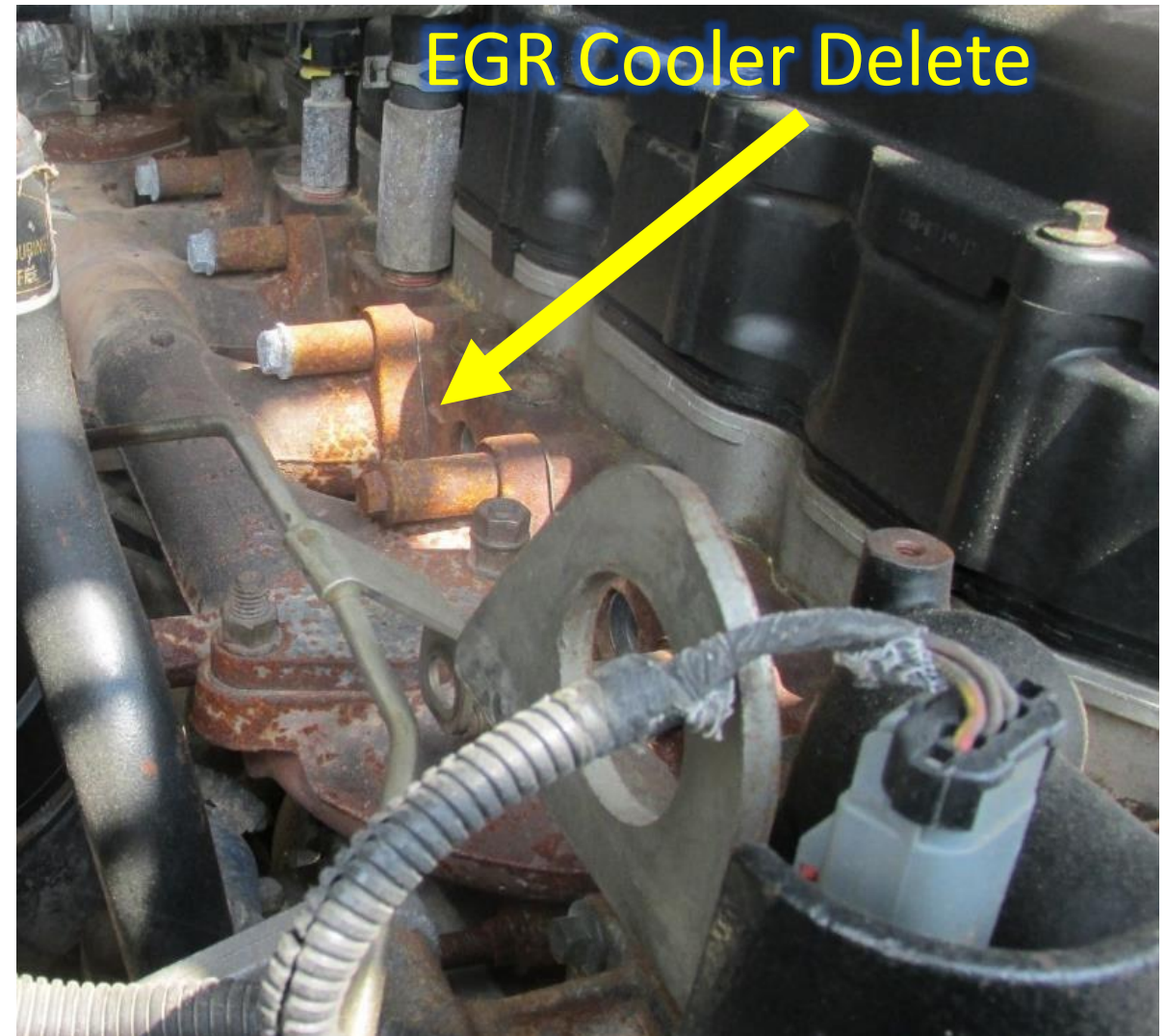
2005 Ram L6 5.9L





# Case Examples

2008 Ram L6 6.7L





# Case Examples

2011 Ram L6 6.7L





# Repair Verification Resources

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## EPA

- <https://www.epa.gov/compliance-and-fuel-economy-data/annual-certification-data-vehicles-engines-and-equipment>
- <https://iaspub.epa.gov/otaqpub/>

## CARB

- <https://www.arb.ca.gov/msprog/onroad/cert/cert.php#3>

## OEMs

- <https://tis2web.service.gm.com/tis2web>
- [socialmedia@gm.com](mailto:socialmedia@gm.com)
- <https://kb.fcawitech.com/article/j2534-flash-availability-document-699.html>
- <https://www.motorcraftservice.com/freeresources/obd>

# What's Ahead

- NJ is currently making changes to the diesel tampering regulations to clarify applicability.
- Looking at penalty amounts for tampering and Rollin' Coal.
- Close to starting a roadside inspection pilot.
- Online vehicle sales.
- Training additional staff.
- Always looking for resources providing numbers for the Electronic Control Unit (ECU) and Calibration ID's to verify repairs and computer flashes.

# Questions / Comments

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