Application for Certification

Part 1

FORD MOTOR COMPANY

APPLICATION FOR CERTIFICATION – PART I

2017 MODEL YEAR

Durability Group: HFMXDPDNNE1C

Evaporative Family: N/A

Test Group: HFMXD06.771D

Durability Group Description: Four Stroke, Diesel Cycle
Diesel Fueled, Direct Diesel Injection, Catalyst Code F

Test Group Description: 6.7L V8
Federal IT3B570 / California MDV (10,001-14,000 lb GVWR)

Applicable Standards: Federal IT3B570 / California ULEV II

Carlines Covered:
F350/F450 4x2/4x4 Complete

Vehicles Tested:

FFA1-6.7-J-598 Config. 0: (FTP TN: FFMX10029788, HWY TN: FFMX10029789)

Release Date: Aug 22, 2016

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(Running change updates)

SECTION 2

Durability Group Description

For a description of the Durability Group for this test group refer to Section 16.00.00.00 of the Common Section.

SECTION 3

Evaporative/Refueling Family Description

Not applicable for diesel vehicles

SECTION 4

Durability Procedure Description

For a description of the Durability Procedure,
refer to Section 16.00.00.00 of the Common Section.

SECTION 5

Test Group Description

For a description of this Test Group, refer to the Cover Page (00.00.00.00) and to the Test Results Section (07.00.00.00) of this application.

SECTION 6

Test Vehicle Description

For a description of this Test Vehicles utilized in this Test Group, refer to Section 07.00.00.00 of this application.

SECTION 7

EPA Certification Summary Information Report

(Test Results)

Certification Summary Information Report

Manufacturer	Ford Motor Company	**Manufacturer Code**	FMX
Test Group	HFMXD06.771D	**Evaporative/Refueling Family**	--
Certificate Number	--	**CARB Executive Order #**	--
Certificate Issue Date	--	**Certificate Revision Date**	--
Certificate Effective Date	--	**Conditional Certificate**	--
CSI Revision #	--	**CSI Submission/Revision Date**	06/02/2016 10:08:09 AM
Model Year	2017		

Test Group Information

CSI Type	Update for Correction	**Running Change Reference Number**	--
GHG Exempt Status	Not Exempt		

Drive Sources and Fuel(s)

Drive Source #1: Combustion Engine

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Diesel	Common Rail Direct Diesel Injection	--

Hybrid Indicator	No		
Multiple Fuel Storage	--	**Rechargeable Energy Storage System Indicator**	--
Multiple Fuel Combustion	--	**Off-board Charge Capable Indicator**	--
Fuel Cell Indicator	--	**EPA Vehicle Class**	HDV2, M7
Federal Clean Fuel Vehicle	No	**Federal Clean Fuel Vehicle Standard**	--
Federal Clean Fuel Vehicle ILEV	No	**California Partial Zero Emissions Vehicle Indicator**	No
Durability Group Name	HFMXDPDNNE1C	**Durability Group Equivalency Factor**	1
Reduced Fee Test Group	No	**Certification Region Code(s)**	FA, CA
Complies with HD GHG 2b/3 regulations?	Yes		
Introduction into Commerce Date	--	**CAP2000 Conditional Certificate?**	N/A
Independent Commercial Importer?	--	**Alternative Fuel Converter Certificate?**	--
SFTP Federal Composite Compliance Identifier	Not Applicable	**SFTP Tier 2 Composite CO Option**	No
SFTP LEV-III Composite Compliance Indicator	No		
OBD Compliance Type	CARB	**OBD Demonstration Vehicle Test Group**	HFMXD06.771D
Test Group OBD Compliance Level	Full - no deficiencies	**Number of Test Group OBD Deficiencies**	0
OBD Deficiencies Comments	--		
Mfr Test Group Comments	F-Series Super-Duty 10,001-14. CH4 Cert Lvl = 0.02 g/mile vs. 0.05 g/mi std. N2O=0.06 g/mi vs 0.05 g/mi std. HCHO emissions being applied against Tier2 standards per discussion with EPA 4/17/2015.		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	HFMXD06.771D	**Evaporative/Refueling Family**	--

Models Covered by this Certificate

Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
Ford Motor Company	1 - Ford	350 - F450 4X4 PICKUP DIESEL	California + CAA Section 177 states	Part-time 4-Wheel Drive	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford	390 - F350 2WD DIESEL	Federal	2-Wheel Drive, Rear	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford	350 - F450 4X4 PICKUP DIESEL	Federal	Part-time 4-Wheel Drive	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford	390 - F350 2WD DIESEL	California + CAA Section 177 states	2-Wheel Drive, Rear	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford	392 - F350 4WD DIESEL	Federal	Part-time 4-Wheel Drive	Semi-Automatic	6	Yes
Ford Motor Company	1 - Ford	392 - F350 4WD DIESEL	California + CAA Section 177 states	Part-time 4-Wheel Drive	Semi-Automatic	6	Yes

Engine Description

Hybrid Type	--	**Hybrid Description**	--
Engine Type	4-Stroke Compression Ignition	**Mfr Engine Description**	4-Stroke Compression Ignition
Engine Block Arrangement	V-shaped engine	**Mfr Engine Block Arrangement Description**	--
Camless Valvetrain Indicator	No	**Oil Viscosity/Classification**	10W-30/CJ-4
Number of Cylinders/Rotors	8		

After Treatment Device(s) (ATD)

Mfr After Treatment Device (ATD) Comments	--
Direct Ozone Reduction (DOR) Device	--
Mfr Emission Control Device Comments	--

Certification Summary Information Report

Test Group	HFMXD06.771D	**Evaporative/Refueling Family**	--

Engine Configuration Number 1

Engine Displacement (liters)	6.7	**Engine Rated Horsepower**	440
Number of Inlet Valves Per Cylinder	2	**Number of Exhaust Valves Per Cylinder**	2
Air Aspiration Method	Turbocharged	**Number of Air Aspiration Devices**	1
Air Aspiration Device Configuration	Single	**Charge Air Cooler Type**	Liquid
Cylinder Deactivation	No		
Cylinder Deactivation Description	N/A		
Variable Valve Timing	No		
Variable Valve Timing System Description	N/A		
Variable Valve Lift?	No		
Variable Valve Lift System Description	N/A		
Number of Knock Sensors	0	**Number of Air/Fuel Sensors**	2
Air/Fuel Sensor # 1 Type	Nitrogen oxide	**Air/Fuel Sensor # 1 Description**	N/A
Air/Fuel Sensor # 2 Type	Nitrogen oxide	**Air/Fuel Sensor # 2 Description**	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	Yes	**Cooled Exhaust Gas Recirculation**	Yes
EGR Type	Electronic/Electric	**Exhaust Gas Recirculation Description if 'Other'**	N/A
Closed Loop Air Injection System	No		
Air Injection Type	Not Applicable	**Air Injection Type if 'Other'**	N/A
Mfr Engine Configuration Comments	--		

Official Test Numbers

Test Group Fuel	FTP	US06	SC03	Cold CO	Highway	EPA City Litmus Value	EPA City Litmus Threshold	EPA Highway Litmus Value	EPA Highway Litmus Threshold	CREE Weighting Factor
Diesel	FFMX10029788	--	--	--	FFMX10029789	--	10.4	--	14.0	--

Certification Summary Information Report

Test Group	HFMXD06.771D	**Evaporative/Refueling Family**	--

Emission Data Vehicle Information

Vehicle ID / Configuration	FFA1-6.7-J-598 / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	FFMXD06.771D	**Original Evaporative/Refueling Family**	--
Original Test Vehicle Model Year	2015		

Vehicle Model

Represented Test Vehicle Make	Ford	**Represented Test Vehicle Model**	F-350

Leak Family Details

Leak Family Identifier	--	**Leak Family Name**	--

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Combustion Engine	Diesel

Hybrid Indicator	No		
Multiple Fuel Storage	--	**Multiple Fuel Combustion**	--
Fuel Cell Indicator	--	**Rechargeable Energy Storage System Indicator**	--
Rechargeable Energy Storage System	--	**Rechargeable Energy Storage System, if 'Other'**	--
Off-board charge Capable Indicator	--		
Odometer Correction -- Initial	0	**Odometer Correction Factor**	1.03
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor		
Odometer Correction Units	Miles		
Engine Code	FFA17C05	**Rated Horsepower**	440
Displacement (liters)	6.7		
Air Aspiration Method	Turbocharged	**Air Aspiration Method, if 'Other'**	
Number of Air Aspiration Devices	1	**Air Aspiration Device Configuration**	Single
Charge Air Cooler Type	Liquid	**Drive Mode While Testing**	Part-time 4-Wheel Drive
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	10078	**Equivalent Test Weight (pounds)**	11500
GVWR (lbs)	13000	**N/V Ratio**	27.8
Axle Ratio	3.73		
Transmission Type	Semi-Automatic	**# of Transmission Gears**	6
Transmission Lockup	Yes	**Creeper Gear**	No

Dynamometer Coefficients:

	Target Coefficients			Set Coefficients			
Coefficient Category	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients**
City/Highway/Evap	63.65	1.9002	0.04872	23.582	0.84245	0.05295	37.4

Emission Control Device Comments --

Certification Summary Information Report

Test Group	HFMXD06.771D	**Evaporative/Refueling Family**	--
Manufacturer Test Vehicle Comments	F-350 4x4 Crew Cab Box Delete, GVWR=13000lb., Curb Weight=10114 lb., Transmission: 6R140 Semi-Automatic		

Certification Summary Information Report

Test Group	HFMXD06.771D	**Evaporative/Refueling Family**	--

Test #	**FFMX10029788**	**Test Procedure**	**2 - CVS 75 and later (w/o can. load)**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	19 - Federal Cert Diesel 7-15 PPM Sulfur
Test Date	01/30/2014	**Fuel**	Diesel
Fuel Batch ID	--	**Fuel Calibration Number**	--
Vehicle Class	HDV2 (Federal HD chassis Class 3 GVW 10001-14000), MDV7 (Cal. LEV 2/3 MDV GVW 10001-14000)	**DF Type**	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4837	**Odometer Units**	M
4WD Test Dyno	No	**Diesel Adjustment Factor Usage**	U
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	--	**Road Speed Fan Usage**	--

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	866.427	--
FE BAG 1 (Bag 1 Fuel Economy)	11.7073	11.7073
CO2 BAG 2 (Bag 2 Carbon Dioxide)	775.728	--
FE BAG 2 (Bag 2 Fuel Economy)	13.1163	13.1163
CO2 BAG 3 (Bag 3 Carbon Dioxide)	712.697	--
FE BAG 3 (Bag 3 Fuel Economy)	14.2762	14.2762
METHANE (CH4 - Methane)	0.0115847	--
CO (Carbon Monoxide)	0.363467	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.13602	--
DT-EER (Drive Trace Energy Economy Rating)	1.34369	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.9317	--
HCHO (Formaldehyde)	0.0048817	--
MFR FE (Manufacturer Fuel Economy)	13.0812	13.0812
NOX (Nitrogen Oxide)	0.168462	--
N2O (Nitrous Oxide)	0.069585	--
HC-NM (Non-methane Hydrocarbon)	0.0124485	--
NMOG (Non-methane organic gas (California))	0.0129464	--
PM (Particulate Matter)	0.0102	--
HC-TOTAL (Total Hydrocarbon)	0.0216609	--

Certification Summary Information Report

Test Group	HFMXD06.771D	**Evaporative/Refueling Family**	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	779	778
Optional Carbon-Related Exhaust Emissions	800	799

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	777.231	--

Manufacturer Test Comments NMOG = 1.0 * NMHCr

Certification Summary Information Report

Test Group HFMXD06.771D **Evaporative/Refueling Family** --

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NMHC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal Tier 3 HD Class 3 Transitional Bin 570	CO	0.36	--	--	-0.01 UP	0.38	--	0.7	7.3	Pass
Fed	120,000 miles	Federal Tier 3 HD Class 3 Transitional Bin 570	CO2	778	--	--	0 UP	0	--	778	--	--
Fed	120,000 miles	Federal Tier 3 HD Class 3 Transitional Bin 570	HCHO	0.0049	--	--	0 UP	0.0024	--	0.007	0.040	Pass
Fed	120,000 miles	Federal Tier 3 HD Class 3 Transitional Bin 570	NMOG	0.0129	--	--	0.0006 UP	0.0295	--	0.043	99.999	Pass
Fed	120,000 miles	Federal Tier 3 HD Class 3 Transitional Bin 570	NMOG+NOX	0.1829	--	--	0 UP	--	--	0.323	.570	Pass
Fed	120,000 miles	Federal Tier 3 HD Class 3 Transitional Bin 570	NOX	0.17	--	--	0.05 UP	0.06	--	0.3	0.4	Pass
Fed	120,000 miles	Federal Tier 3 HD Class 3 Transitional Bin 570	PM	0.010	--	--	-0.001 UP	0.000	--	0.01	0.02	Pass
CA	120,000 miles	California LEV-II ULEV	CO	0.36	--	--	-0.01 UP	0.38	--	0.7	7.3	Pass
CA	120,000 miles	California LEV-II ULEV	HCHO	0.0049	--	--	0 UP	0.0024	--	0.007	0.021	Pass
CA	120,000 miles	California LEV-II ULEV	NMOG	0.0129	--	1	0.0006 UP	0.0295	--	0.043	0.167	Pass
CA	120,000 miles	California LEV-II ULEV	NOX	0.17	--	--	0.05 UP	0.06	--	0.3	0.4	Pass
CA	120,000 miles	California LEV-II ULEV	PM	0.010	--	--	-0.001 UP	0.000	--	0.01	0.06	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.

Certification Summary Information Report

Test Group	HFMXD06.771D	**Evaporative/Refueling Family**	--

Test #	**FFMX10029789**	**Test Procedure**	**3 - HWFE**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	19 - Federal Cert Diesel 7-15 PPM Sulfur
Test Date	01/30/2014	**Fuel**	Diesel
Fuel Batch ID	--	**Fuel Calibration Number**	--
Vehicle Class	MDV7 (Cal. LEV 2/3 MDV GVW 10001-14000)	**DF Type**	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4848	**Odometer Units**	M
4WD Test Dyno	No	**Diesel Adjustment Factor Usage**	U
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	--	**Road Speed Fan Usage**	--

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.0039575	--
CO (Carbon Monoxide)	0.140468	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	2.40697	--
DT-EER (Drive Trace Energy Economy Rating)	0.060913	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.41121	--
HCHO (Formaldehyde)	0.0005445	--
MFR FE (Manufacturer Fuel Economy)	19.9749	19.9749
NOX (Nitrogen Oxide)	0.0077705	--
N2O (Nitrous Oxide)	0.038094	--
HC-NM (Non-methane Hydrocarbon)	0	--
PM (Particulate Matter)	0.005	--
HC-TOTAL (Total Hydrocarbon)	0.002006	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	510	509
Optional Carbon-Related Exhaust Emissions	522	521

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	509.204	--

Manufacturer Test Comments NMOG = 1.0 * NMHC

Certification Summary Information Report

Test Group	HFMXD06.771D	Evaporative/Refueling Family	--

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
CA	120,000 miles	California LEV-II ULEV	NOX	0.01	--	--	0.05 UP	0.06	--	0.1	0.8	Pass

Fuel Properties

Certification Summary Information Report

Test Group	HFMXD06.771D	**Evaporative/Refueling Family**	--

Consolidated List of Standards

Exhaust Standards

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Both
Vehicle Class	MDV7 (Cal. LEV 2/3 MDV GVW 10001-14000)	**Standard Level**	California LEV-II ULEV
Fuel	Diesel	**Test Procedure**	CVS 75 and later (w/o can. load)

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	CO	--	--	--	-0.01	0.07	--	0.38	7.3
120,000 miles	HCHO	--	--	--	0	-0.0002	--	0.0024	0.021
120,000 miles	NOX	--	--	--	0.05	-0.62	--	0.06	0.4
120,000 miles	PM	--	--	--	-0.001	0.007	--	0.000	0.06

Cert Region	Federal	**Cert/In-Use Code**	Both
Vehicle Class	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	**Standard Level**	Federal Tier 3 HD Class 3 Transitional Bin 570
Fuel	Diesel	**Test Procedure**	CVS 75 and later (w/o can. load)

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	CO	--	--	--	-0.01	0.07	--	0.38	7.3
120,000 miles	CO2	--	--	--	0	0	--	0	999
120,000 miles	HCHO	--	--	--	0	-0.0002	--	0.0024	0.040
120,000 miles	NMOG	--	--	--	0.0006	-0.0087	--	0.0295	99.999
120,000 miles	NMOG+NOX	--	--	--	0	0	--	0	.570
120,000 miles	NOX	--	--	--	0.05	-0.62	--	0.06	0.4
120,000 miles	PM	--	--	--	-0.001	0.007	--	0.000	0.02

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Both
Vehicle Class	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	**Standard Level**	California LEV-II ULEV
Fuel	Diesel	**Test Procedure**	CVS 75 and later (w/o can. load)

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	NMOG	--	--	1	0.0006	-0.0087	--	0.0295	0.167

Certification Summary Information Report

Test Group	HFMXD06.771D	**Evaporative/Refueling Family**	--
Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Both
Vehicle Class	MDV7 (Cal. LEV 2/3 MDV GVW 10001-14000)	**Standard Level**	California LEV-II ULEV
Fuel	Diesel	**Test Procedure**	HWFE

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	NOX	--	--	--	0.05	-0.62	--	0.06	0.8

Certification Summary Information Report

Test Group	HFMXD06.771D	Evaporative/Refueling Family	--

Glossary

Useful Life

4	4,000 miles	120	120,000 miles
50	50,000 miles	150	150,000 miles
100	100,000 miles		

Emission Name

HC-TOTAL	Total Hydrocarbon	METHANOL	CH3OH - Methanol
CO	Carbon Monoxide	N2O	Nitrous Oxide
CO2	Carbon dioxide	SPITBACK	Spitback Hydrocarbon in grams
CREE	Carbon-Related Exhaust Emissions	AMP-HRS	Integrated Amp-hours
OPT-CREE	Optional Carbon-Related Exhaust Emissions	START-SOC	System Start State of Charge Watt-hours
NOX	Nitrogen Oxide	END-SOC	System End State of Charge Watt-hours
PM	Particulate Matter	ACT-DISTANCE	Actual Distance Driven (miles)
PM-COMP	SFTP Composite Particulate Matter	AS-VOLT	Average System Voltage
HC-NM	Non-methane Hydrocarbon	CO2 BAG 1	Bag 1 Carbon Dioxide
OMHCE	Organic material Hydrocarbon Equivalent	CO2 BAG 2	Bag 2 Carbon Dioxide
OMNMHCE	Organic material non-methane HC equivalent	CO2 BAG 3	Bag 3 Carbon Dioxide
NMOG	Non-methane organic gas (California)	CO2 BAG 4	Bag 4 Carbon Dioxide
HCHO	Formaldehyde	NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides
H3C2HO	Acetaldehyde	NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	DT-IWRR	Drive Trace Inertia Work Ratio Rating
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	DT-ASCR	Drive Trace Absolute Speed Change Rating
CO-COMP	SFTP Composite Carbon Monoxide	DT-EER	Drive Trace Energy Economy Rating
ETHANOL	C2H5OH - Ethanol	COMB-CREE	Combined Carbon-Related Exhaust Emissions
FE BAG 1	Bag 1 Fuel Economy	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions
FE BAG 2	Bag 2 Fuel Economy	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only
FE BAG 3	Bag 3 Fuel Economy	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only
FE BAG 4	Bag 4 Fuel Economy	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only
MFR FE	Manufacturer Fuel Economy	LEAK-DIA	Effective Leak Diameter (inches)
HC	Hydrocarbon for Running Loss and ORVR	LEAK-GAS CAP	Gas Cap Leakage (cc/min)
METHANE	CH4 - Methane		

Certification Region

CA	California + CAA Section 177 states	FA	Federal

Exhaust Emission Standard Level

B1	Federal Tier 2 Bin 1	L3ULEV340	California LEV-III ULEV340
B2	Federal Tier 2 Bin 2	L3ULEV250	California LEV-III ULEV250
B3	Federal Tier 2 Bin 3	L3ULEV200	California LEV-III ULEV200
B4	Federal Tier 2 Bin 4	L3SULEV170	California LEV-III SULEV170
B5	Federal Tier 2 Bin 5	L3SULEV150	California LEV-III SULEV150

Certification Summary Information Report

Test Group	HFMXD06.771D	**Evaporative/Refueling Family**	--
B6	Federal Tier 2 Bin 6	L3LEV630	California LEV-III LEV630
B7	Federal Tier 2 Bin 7	L3ULEV570	California LEV-III ULEV570
B8	Federal Tier 2 Bin 8	L3ULEV400	California LEV-III ULEV400
B9	Federal Tier 2 Bin 9	L3ULEV270	California LEV-III ULEV270
B10	Federal Tier 2 Bin 10	L3SULEV230	California LEV-III SULEV230
B11	Federal Tier 2 Bin 11	L3SULEV200	California LEV-III SULEV200
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	T3B160	Federal Tier 3 Bin 160
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	T3B125	Federal Tier 3 Bin 125
L2	California LEV-II LEV	T3B110	Federal Tier 3 Transitional Bin 110
L2OP	California LEV-II LEV Optional	T3B85	Federal Tier 3 Transitional Bin 85
U2	California LEV-II ULEV	T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover
S2	California LEV-II SULEV	T3B70	Federal Tier 3 Bin 70
ZEV	California ZEV	T3B50	Federal Tier 3 Bin 50
OT	Other	T3B30	Federal Tier 3 Bin 30
T1	Federal Tier 1	T3B20	Federal Tier 3 Bin 20
PZEV	California PZEV	T3B0	Federal Tier 3 Bin 0
L2LEV160	California LEV-II LEV160	HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395
L2ULEV125	California LEV-II ULEV125	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340
L2SULEV30	California LEV-II SULEV30	HDV2B250	Federal Tier 3 HD Class 2b Bin 250
L2LEV395	California LEV-II LEV395	HDV2B200	Federal Tier 3 HD Class 2b Bin 200
L2ULEV340	California LEV-II ULEV340	HDV2B170	Federal Tier 3 HD Class 2b Bin 170
L2LEV630	California LEV-II LEV630	HDV2B150	Federal Tier 3 HD Class 2b Bin 150
L2ULEV570	California LEV-II ULEV570	HDV2B0	Federal Tier 3 HD Class 2b Bin 0
L3LEV160	California LEV-III LEV160	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630
L3ULEV125	California LEV-III ULEV125	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570
L3ULEV70	California LEV-III ULEV70	HDV3B400	Federal Tier 3 HD Class 3 Bin 400
L3ULEV50	California LEV-III ULEV50	HDV3B270	Federal Tier 3 HD Class 3 Bin 270
L3SULEV30	California LEV-III SULEV30	HDV3B230	Federal Tier 3 HD Class 3 Bin 230
L3SULEV20	California LEV-III SULEV20	HDV3B200	Federal Tier 3 HD Class 3 Bin 200
L3LEV395	California LEV-III LEV395	HDV3B0	Federal Tier 3 HD Class 3 Bin 0

Transmission Type Code			
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual
A	Automatic	OT	Other
AM	Automated Manual	SA	Semi-Automatic
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)

Drive System Code			
4	4-Wheel Drive	P	Part-time 4-Wheel Drive
F	2-Wheel Drive, Front	A	All Wheel Drive
R	2-Wheel Drive, Rear		

Certification Summary Information Report

Test Group	HFMXD06.771D	**Evaporative/Refueling Family**	--

Additional Terms and Acronyms

AFC	Alternative Fuel Converter	ICI	Independent Commercial Importer
CSI	Certificate Summary Information	ORVR	Onboard Refueling Vapor Recovery
DF	Deterioration Factor	SIL	Shift Indicator Light
Evap	Evaporation, Evaporative	Trans	Transmission

SECTION 8

Emission Testing Waiver Statements

For applicable test waiver statements, refer to Section 14.00.00.00 of the Common Section.

SECTION 8

Emission Testing Waiver Statements and Statements of Compliance

Statement of Compliance for test group (HFMXD06.771D)

Ford Motor Company's test and production vehicles do not have defeat devices. All AECDs have been declared and described in the application. This test group has been designed and engineered to comply with 40 CFR 86.1809-12 (prohibition of defeat devices), satisfies 40 CFR 86.1844-01 (application submittal requirements for AECDs), and does not utilize alternate emissions control maps that are unique for testing purposes relative to on-road operation.

For additional statements of compliance, please refer to Section 14.01.00.00 of the Common Section.

SECTION 9

OBD-II System Description

For a description of the OBD System utilized for this Test Group, refer to Section 16.06.00.00 of the Common Section.

SECTION 11

AECD Description

AECD description submitted to EPA Verify separately for this test group.

Vehicle Homologation & Compliance (VH&C)
Sustainability, Environment & Safety Engineering

Allen Park Test Laboratory
1500 Enterprise Drive, Suite 3W-200
Allen Park, Michigan 48101-2053

AECD Statement – Non Tier 2/Interim Tier3 HDV
(Chassis or Dyno Cert)

Date: May 31, 2016

To: VH&C – Car & Truck Certification Department

Subject: AECD Compliance Statements for Test Group HFMXD06.771D

The following attestation is provided to support the certification requirements for proper AECD[1] implementation and disclosure. This attestation covers the calibration content and its interactions with emissions-relevant hardware and control strategies, including those developed by outside vendors that are released under the responsibility of the attesting P/T Calibration Supervisor.

My team and/or I have reviewed the Defeat Device Decision Tree[2], relevant VH&C policy documents, calibration guidelines, and AECD descriptions[3]. Based on these reviews and/or consultation with VH&C, I attest that, to the best of my knowledge, AECDs within the subject test group are:

1. Implemented in accordance with the defeat device regulations as described in the decision tree, and
2. Described and properly justified in the application for emissions certification (i.e., the AECD Descriptions and the Part-1 Calibration Description Pages – see footnote 3).

5/25/16

Powertrain Calibration Supervisor

1. An AECD (Auxiliary Emissions Control Device) is any element of design (see below) which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum or load, or any other parameter for the purpose of or having the affect of activating, modulating, delaying, or deactivating the operation of any part of the emission control system.

   An element of design is any control system (i.e., computer software, electronic control system, emission control system, computer logic), and/or control system calibrations, and/or the result of systems interaction and/or hardware items on a motor vehicle or motor vehicle engine.

2. https://www.tc2.ford.com/ts/VEE/certification/AECD/docs/aecdtree.pdf

3. The latest AECD Descriptions are found at the link below along with references specific to this test group in the Part-1 Calibration Descriptions pages (Section 12.00.02). https://www.tc2.ford.com/ts/VEE/certification/AECD/ . If omissions or inaccuracies are identified, contact VH&C for resolution.

SECTION 12

Description of Vehicles Covered by Certificate
and
Testing Parameters

12.00.01.00 Common Family Parameters – Test Group HFMXD06.771D

Program: F-Series Super Duty Diesel

Test Group Information	
Vehicle/Engine Class	HDV2
Vehicle Fuel Category	*Single Fuel*
Operating Fuel 1	*Diesel*
Operating Fuel 2	*Diesel*

Engine Displacement (liters)	6.7L
Engine Cooling medium	OAT Coolant
SAE net HP @ RPM (prem fuel)	440 hp @ 2800 rpm
SAE net HP @ RPM (prem fuel)	
SAE net HP @ RPM (prem fuel)	
SAE net torque ft-lb @ RPM (prem fuel)	860 ft-lbs @ 1600 rpm
SAE net torque ft-lb @ RPM (prem fuel)	
Cylinder Deactivation	N
Variable Valve Timing (VVT)	N
Variable Valve Lift	N
Number of Inlet Valves Per Cylinder	2
Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method*	*Turbocharged (TC)*
Number of Air Aspiration Devices	1
Air Aspiration Configuration	*N=Single*
Charge Air Cooler Type* (TG-51)	*Liquid*
Number of Charge Air Cooler	1
Charge Air Cooler Configuration	*Single*

Exhaust Emission Control System:	
Exhaust Gas Recirculation (EGR)*	Yes
Cooled EGR	Yes
EGR Type	*EEGR=Electronic/Electric*
Electronic Controls	PCM
Closed Loop Air Injection System	N
Air injection Type (AIR)*	NA=Not applicable
Location of injected air	None
Direct Ozone Reduction (DOR) Device	NE=Not equipped

Calibrations that Vary with Time or Dist.	See Common Section
Maintenance Schedule	*Normal*
Compression ratio (nominal)	16.2:1
Cylinder head design Ref. (08.05)	OHV

Camshaft Timing: (with VCT fully advanced) Cam Phase – Computer Controlled	no VCT
Int valve opens (° BTDC)	30.5
Int valve closes (° ABDC)	57.4
Int valve duration (°)	267.8
Int valve maximum lift (mm)	8.55
Exh valve opens (° BBDC)	75.2
Exh valve closes (° ATDC)	42.1
Exh valve duration (°)	297.3
Exh valve maximum lift (mm)	8.84
Valve lash (N/A for RFF)	Hydraulic Lash Adj

Fuel Metering System	Direct Diesel (DDI)

After-Treatment Device Information	
After-Treatment Type	DPF=Diesel Particulate Filter
After-Treatment Configuration	DOC, SCR, DPF
After-Treatment Type/size/code	Ref. 16.00.01
Feedback Sensor Type:	
Knock sensor	NO
Oxygen sensor (O_2S)*	NO
Heated oxygen sensor (HO_2S)*	NO
Air/Fuel Sensor (AFS)*	NO
Heated Air/Fuel Sensor (HAFS)*	NO
Feedback Sensor Configuration	NOx Sensor

Engine Test Group: HFMXD06.771D
Issued: May 31, 2016

* - VECI Label Content

12.00.02.00 Calibration Descriptions -HFMXD06.771D

Exhaust Calibration	Application	Transmission	Leak Check	Vehicle
HFE17C0501,02,05,06	50s	6R140	n/a	P558 F350 SRW
HFE17D0501,02,05,06	50s	6R140	n/a	P558 F350 DRW
HFE17R0501,02,05,06	50s	6R140	n/a	P558 F450 Lite

Reference Specifications

Idle RPM	PCM Controlled
Target (BASE) in Drive ; (A/C-off / A/C-on)	600/600 RPM A/T
Target (BASE) in Neutral ((A/C-off / A/C-on)	600/600 RPM A/T

Special conditions which may require idle speeds higher than BASE are listed below:

Potential Idle Speed Modifier	Function Utilized (Y/ N)	Purpose
Low or high air charge temperature	N	Heater, A/C or engine cooling performance
Low catalyst temperature	N	Achieve/maintain light off
Low engine coolant temperature	Y	Combustion stability
Low or high ambient temperature	Y	Heater or A/C performance
High transmission oil temperature	Y	Ensure adequate fluid pressure
Low battery voltage	Y	Avoid stalling or no-start
High Alternator load	N	Preserve battery life and avoid low voltage
High-speed fan operation	N	For engine and A/C condenser cooling
Extended neutral idle time	N	Maintain catalyst temperature
Power steering pressure	N	Ensure adequate P/S assistance
High Altitude	N	Maintain air mass flow to avoid stalling
Alternate calibration	N	Use to prevent issues during plant drives/marshalling
Drive Speed Control or Shift Delay	N	Increase engine speed to improve cabin heating or cooling

Fuel Injector	119.9 mg/stroke @ max power	
Fuel Pressure Reg	0 - 2000 bar (30,000 psi)	
Crankcase CCV Valve	orifice	0-205 Liters/min
EGR valve	0 - 130 kg/hr	
High Temp Thermostat (2)	Start to Open: 88ºC (1) Start to Open: 90ºC (2)	
Low temp Thermostat (2)	Start to Open: 20ºC (1) Start to Open: 45ºC (2)	

Powertrain Control Module (PCM) -- PCM controlled calibrations for emission-related components are described in the AECD section 16.05.

2017 MY 6.7L P473
Chassis Dynamometer Exhaust Emissions Parts List
OVER 10K

Engine Family(ies)	Certification Level	Calibration(s)	w/PCM	Assembly Part #	TCM
HFMXD06.771D	R01	HFE17C0501	(P558)	PHC3A–12A650–KB	HC3A-12B565-FB
HFMXD06.771D	R02	HFE17C0502	(P558)	PHC3A–12A650–KC	HC3A-12B565-FC
HMFXD06.771D	R05	HFE17C0505	(P558)	PHC3A-12A650—KD	HC3A-12B565-FD
HFMXD06.771D	R06	HFE17C0506	(P558)	PHC3A-12A650—KE	HC3A-12B565-FE
HFMXD06.771D	R01	HFE17D0501	(P558)	PHC3A–12A650–ABB	HC3A-12B565-EB
HFMXD06.771D	R02	HFE17D0502	(P558)	PHC3A–12A650–ABC	HC3A-12B565-FC
HFMXD06.771D	R05	HFE17D0505	(P558)	PHC3A-12A650—ABD	HC3A-12B565-FD
HFMXD06.771D	R06	HFE17D0506	(P558)	PHC3A-12A650- ABE	HC3A-12B565-FE
HFMXD06.771D	R01	HFE17R0501	(P558)	PHC3A–12A650–ADB	HC3A-12B565-GB
HFMXD06.771D	R02	HFE17R0502	(P558)	PHC3A–12A650–ADC	HC3A-12B565-GC
HFMXD06.771D	R05	HFE17R0505	(P558)	PHC3A -12A650-ADD	HC3A-12B565-GD
HFMXD06.771D	R06	HFE17R0506	(P558)	PHC3A-12A650-ADE	HC3A-12B565-GE

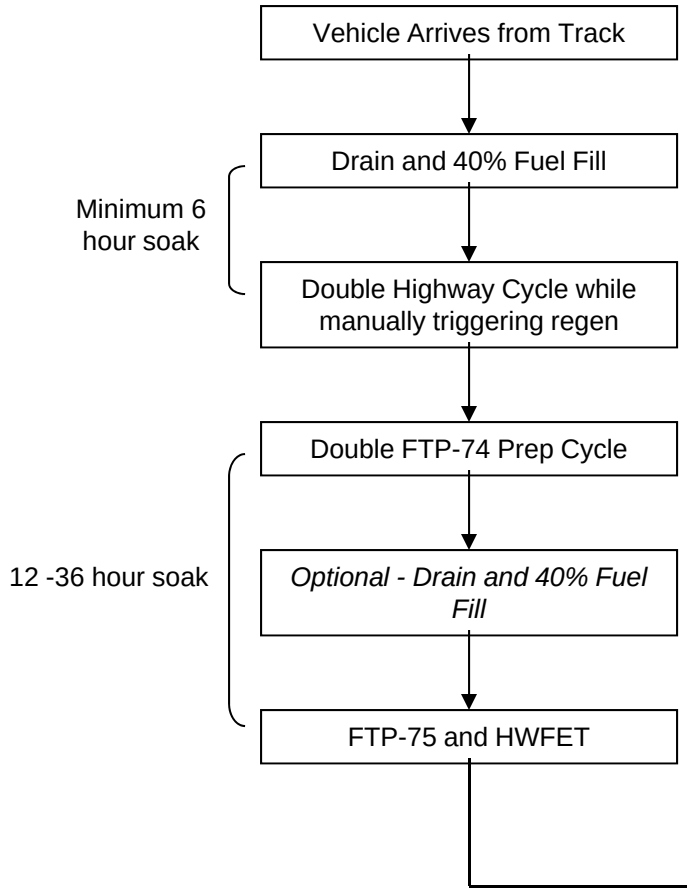
---------- All Other Exhaust Emission Parts ---------

Part Name (Quantity if more than 1)	Part Number
Catalyst (DPF Assembly)	HC34-5H240-BA
Camshaft Position Sensor	BC3Q-12K073-AA
Crankshaft Position Sensor	BC3Q-6C315-CA
Oil Separator	BC3Q-6A785-ED
	FC3Q-6A785-AD
EGR Vacuum Solenoid Valve	BC3Q-9F454-DA
EGR Cooler Bypass	HC3Q-9U433-AA
EGR Coolant Temp. Sensor	BC3A-12B591-BB
	HC3A-12B591-BA
	BC3A-12B591-BA
EGR Inlet Tube	FC3Q-9E469-AA
Fuel Injector (8)	FC3Q-9K546-AA
Fuel Volume Control Valve	BC3Q-9J307-AA
Low Pressure Fuel & Temperature Sensor	FC3Q-9G756-AB
High Fuel Rail Pressure Sensor	BC3Q-9F838-AA
Fuel Rail Pressure Sensor (part of Rail Assy)	BC3Q-9D280-BD
	BC3Q-9D280-AC
Fuel Pressure Regulator Control	BC3Q-9C968-AA
High Pressure Fuel Pump	FC3Q–9B395-AA
Mass Air Flow Sensor	BC31-12B579-AA
Manifold Absolute Pressure Sensor (MAP)	BC3Q-9F479-AD
Feedgas NOx Sensor	DC3A-5J299-CC
Tailpipe NOx Sensor	DC3A-5J299-DC
Feedgas NOx Control Module	DC3A-5K202-AC
Tailpipe NOx Control Module	DC3A-5L234-AA
Electric Throttle Body	BC3Q-9F991-DA
DSL Part Filter Pressure Inlet	HC3A-5H295-BC

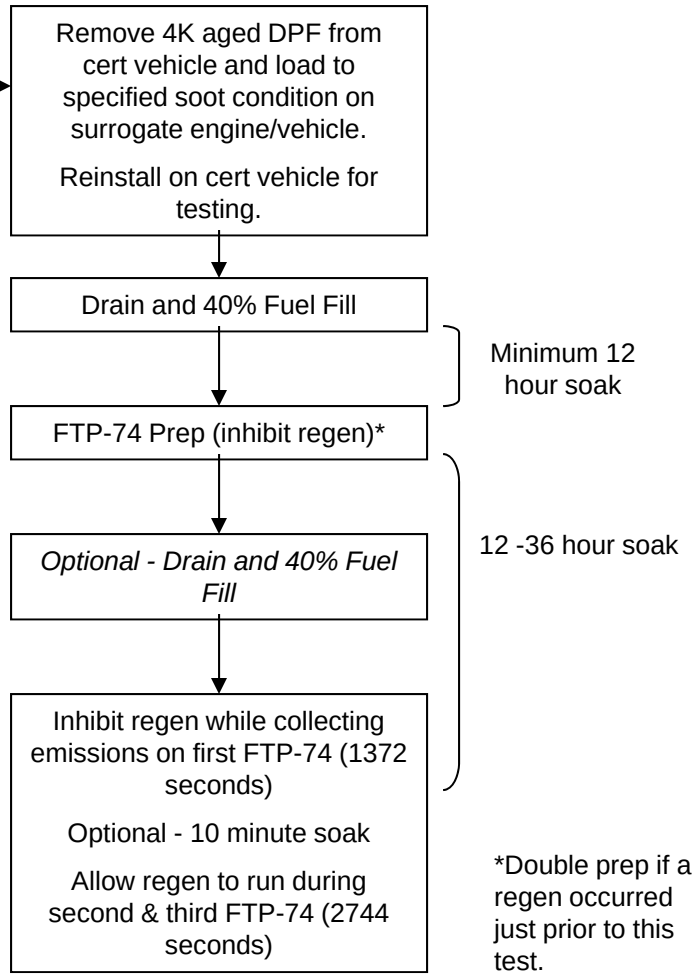
Urea Injector	FC44-5J281-AC
Urea Supply Module (1)	HC34-5J229-AA
Var. Geo. Turbo Charge Control (VGTC)	HC3Q-9G438-AC
Glow Plug	BC3Q-6M090-CA
Glow Plug Control Module	FC3A-12B533-BB
Engine Coolant Temp. Sensor (ECT)	FT4A-12A648-BA
Intake Air Temperature Sensor (IAT)	4R8Q-12A697-BB
Thermostat	HC34-8575-CBD
Sensor& Mod Asy Exh Prtclt	HC34-5L239-BA
Air Cleaner Assembly	CC34-9600-AC

Diesel Test Process

Base Emission Testing ("Clean DPF")



Regen Emission Testing ("Full DPF")



*Double prep if a regen occurred just prior to this test.

12.00.04.00

Test Group: HFMXD06.771D
Issued: 5/31/2016
Revised:

2017 TEST VEHICLE REQUIREMENTS

	Durability Data Vehicle	CAP2000 Emission Data Vehicle Exhaust
Evap. Emission Family	N/A	N/A
Displacement Liters	6.7L	6.7L
Engine Code	DDDA0_P4_15MY_O10k_DF_v5	DFA17C0505
Fuel Tank Code	TY	TS
Catalyst Code	*	*
Exhaust Control System	TC/DFI/CAC/EGR/EGR-C/ OC/PTOX/SCRC/NOXS	TC/DFI/CAC/EGR/EGR-C/ OC/PTOX/SCRC/NOXS
Model	F350 4x4 DRW	F-350 4x4 Crew Cab DRW (simulating F-350 4x4 Box Delete DRW)
Transmission	Auto-6	Auto-6
Shift Schedule	N/A	N/A
Equivalent Test Weight	11000 lbs	11500 lbs
THP/DPA	f_0=60.38, f_1=1.8896 f_2=0.03656	f_0=63.65, f_1=1.9002 f_2=0.04872
Axle Ratio	4.30	3.73
N/V Ratio - RPM/MPH		27.8
Tires	LT245/75R17	LT245/75R17

ACTUAL TEST VEHICLES

Model Year	2015	2015
Engine Family	FFMXD06.771D	FFMXD06.771D
Vehicle ID No	FE41-6.7-444	FFA1-6.7-J-598
Configuration Number	N/A	0

* See Section 16

Calibration and Hardware Revision Summary

R01 Calibration c/o from 2016 R21.
R01 to R02 changes include: Improved air meter transfer function, EGR set points to match new AIS, communize pedal ratch with gasoline calibrations, updates to battery temperature model, fan changes to minimize clutch drop, PTO limits to align with max temps, tach filter adjustments, torque converter characterization for improved engagements, fixes for start for waiting for glow plug, engine protection updates, enable service tool reset for DPF, regen updates, and starter FMEM updates.
Transmission: pressure control refinements for back out upshifts and adaptive learning improvements.
OBD:

a. Changes to KOEO/KOER/diagnostic service routines
b. Changes to prevent NOx/O2 sensor monitors from running prior to sensor light-off
c. Change to monitor for ABS module timeout to non-MIL status
d. Changes to FG and TP NOx sensor NOx adaption (P2201, P229F) to run only in EOM0
e. Enable MIL monitors for FG/TP O2 sensor comparison (P2A01), improper information from PCM to FG or TP NOx module (U05A1, U05A2)
f. Entry condition changes to SCR conversion monitor (P20EE) to ensure robust detection, detection on cycle
g. Change to debounce for TP O2 adaption outside limits (P2A01) to ensure MIL illumination immediately after out of range adaption
h. FMEM changes to prevent the FG or TP NOx sensor from reporting as valid if that sensor has reported a HW failure
i. Change to threshold for TP NOx sensor negative NOx offset monitor (P229F) to production intent (-10 ppm) (consistent with ARB submission)
j. Change to prevent reporting a DTC for loss of vehicle speed (P0500) in a key-off condition
k. Assign EGT signal closest to sensor for FG, TP NOx sensor heater rationality monitors (P220E, P220F)
l. Temporary expansion of threshold for TP NOx sensor positive offset in response to SW bug identified (to be fixed in next release)
m. Disable operation of TP NOx positive offset monitor in fueling condition (P229F) (consistent with ARB submission)
n. Enable non-MIL monitor for park/neutral switch plausibility (P0850)
o. Mode $01-$09, readiness reporting updates
p. Change to monitors for CAN timeouts to ensure proper debounce behavior
q. Updates to DPF leakage monitor (P2002) to improve robust on-road detection
r. Set exhaust mass flow entry conditions, thresholds, monitor debounce for FG/TP NOx heater rationality monitors (P220E, P220F)
s. New monitor for non-stuck signal for TP NOx sensor (P229F)
t. Calibration update for thermostat monitor (P0128)
u. Increase debounce time for unacceptably high speed on reductant pump monitor (P208B) to improve robustness
v. Threshold change to clogged reductant line monitor (P218F) to improve diagnostic completion frequency
w. Change to maximum reductant mass to allow reductant level monitors to run (P203B, P206B, P206C, P206D, P21CD) to more closely approximate actual HW
x. Change to EGT sensor to model diagnostics (P0544, P2031, P242A, P246E) to require the monitor for EGT (X) to complete before EGT (X+1) may complete
y. Change to make non-plausible oil pressure switch monitor (P1678) non-MIL
z. P-code update to assign T3-related P-codes to EGRT1 and EGR cooler outlet temperature (COT) P-codes to EGRT2 (consistent with ARB submission)
aa. FMEM updates for airpath, CAN timeout monitors
bb. Debounce change to prevent monitors tied to turbine outlet pressure (P3) from healing within same drive cycle as fault set
cc. Changes to intrusive NMHC conversion monitor (P0420) for improved robustness, detection on cycle

Changes from R02 to R05 include: Enablement of MSR for traction control, turn off fuel pump immediately after key off, enable DewDet feature for FG NOx, update oxidation MAP, regen improvements, and revised turbo setpoint delay to improve sound quality,
Transmission: Cold shift quality improvements, cold weather converter lock up improvements, modified oil temperature transfer function at extreme cold ambients, and changes to prevent unwanted downshifts while is vehicle speed limiting.
OBD:

a. Service routine for injectors
b. P0069 - Entry condtion change to meet APR
c. P0544, P2031, P242A, P246E, P24C2 EGT Sensor-Model Rationality, Implement pinpointing design change for improved robustness and specific sensor detection
d. P220F, P220E Nox heater rationality debounce changed to allow monitor completion
e. P2201, P229F Nox offset debounce changed to improve monitor robustness
f. P2A01 O2 sensor circuit range check disable mask changed to include minimum time after startup
g. P229F TP Nox offset plausability disabled for sw design change, will enable at R06, SCR efficiency capable of detecting offset failure
h. P2A01 O2 sensor circuit range check updated FIDs to inhibit FMO in case of O2 sensor fault
i. Additional dew point FID added for double dew point strategy
j. P2201 Nox offset inhibit monitor upon completion
k. P229F Nox offset plaus production intent offset threshold
l. P2459, Regen Frequency monitor threshold updated based on latest emissions data
m. P20EE, SCRMonEff cumulative FG NOx required for monitor completion
n. P20EE, SCRMonEff Efficiency Threshold change to variable map
o. P20EE, SCRMonEff enabled time required for monitor completion
p. P0300-P0308, Misfire, Setting full range detection to partial range detection
q. P0170, FMO, Entry Condition Change for EOM3
r. Run reductant concentration monitor P206C, P206D above 0C
s. P0299 Underboost Torque and engine speed entry condtion change
t. Update pcodes to U1012, U1013
u. Update pcodes to P025C, P025D
v. Reset activation counter for safety monitor when there is no MSR (Motor Slip Regulation) event
w. Temporarily disable EGR cooler efficiency test in key-on-engine-running self-test

Changes from R05 to R06 include: Fan control improvements, update to low charge protection feature for a/c, PTO robustness actions, ECU operation after key off, adjustments to airmass setpoints to prevent throttle from closing at high airflows, udates to turbo compressor coking model, changes to improve displayed fuel economy, modified oil quality backstop to 350 engine hours, disable start/stop feature in UrCtl logic, modified entry conditions to improve urea quality measurement, enable FG and TP NOx sensor adaptive, Updates to eliminate errant negative EisGov governer reaction during speed control, removed tap up/tap down limits, and modified transient VGT calibration to avoid high P3 pressure and high expansion ratios.
Transmission: Improvements to adaptive pressure control, improvements to torque converter engagement feel, improvements to 6-5 shift quality, allow shp_acc_brk_ctr to start counting up more quickly at light brake pressure for ACC equipped trucks, and improved shift feel on high rpm 3-4 upshifts.
OBD:

a. Enable circuit diagnostics for low pressure fuel pump module relay (P1671)
b. Set maximum torque and engine speed entry conditions for misfire monitor (P0300-P308) to 75% of max, appropriate to partial-range monitoring
c. Correct Fan speed FMEM to freeze and replace signal properly
d. Increase EGT sensor to model diagnostic delay timer after EOM change to prevent false codes (P0544, P2031, P242A, P246E)
e. Update SCR Efficiency monitor P20EE entry conditions for emisisons and on road robustness (SCR temp, Ambient temp, ANR, exhaust flow, and space velocity)

f. Establish SCR Efficiency monitor P20EE threshold map from emissions and on-road testing with updated threshold SCR part
g. Remove deficiency: Enable TP Nox max offset monitor P229F
h. New ammonia slip detection to inhibit TP Nox offset monitor P229F during slip events
i. Change threshold for FG and TP Nox offset monitors P229F P2201, based on Nox adaption
j. TP Nox offset monitor P229F runs once per drive
k. Improve FG and TP Nox heater rationality P220E P220F entry conditions and threshold map to prevent false codes
l. Increase threshold of FG to TP O2 comparison P2A01 per error stack up analysis
m. U040F change from P to U code
n. Update P0546, U029D, U029E FMEM to allow SCR Tamper chain
o. Inhibit VGT Slow response monitor P132B during PTO operation, which can toggle across activation conditions
p. Update EGR high flow monitor P0402 threshold to improve emissions and on road detection
q. Refine engine speed entry condition for EGR high flow monitor P0402 to prevent operation in conditions with significant model errors
r. Update EGR cooler bypass monitor P245A engine speed and exhaust flow entry conditions to prevent operation in conditions with significant EGR model errors
s. Threshold change to air mass monitor P02EC at idle due to setpoint ramping in cold weather
t. Robustness for main brake and reduntant brake quality factor P0504
u. Increase debounce for P1934 vehicle speed missing from ABS fault based on CAN signal speed
v. KOER service updates (boost, airflow, temp) and disable cruise button test which is not required
w. PID reporting updates for starter motor, PTO, PID $64
x. Service test updates (speed of fuel rail pressure changes, disable unnecessary checks during $3D mode)
y. Add 30% torque derate FMEM for P0299, P132B, P0069
z. Update FMEM torque limits based on normal torque curve
aa. Update Mode$06 and Mode$09 reporting per direction from CARB
bb. Updated sensor signal quality reactions to match carryover production programs
cc. CAC monitor P026A threshold update at high load to prevent false codes
dd. Complete calibration of Tstat monitor P0128 coolant temp models
ee. Turn off Engine Serial Number from reporting for CC
ff. Update threshold for P2459 Regen Frequency monitor based on current emissions results

Vehicle Description Report

Application: 50 ST

Test Group: HFMXD06.771D

ID Number	5378051	5377951	5378230	5377637	5377638	5377647	5377648	5377483
Displacement	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Calibration	HFE17C0506	HFE17C0506	HFE17D0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506
Fuel Tank(s)	TV	TV	TV	TV	TV	TV	TV	TV
Vehicle Line	F350	F350	F350	F350	F350	F350	F350	F350
Wheel Configuration	Sngl RW	Sngl RW	Dual RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	REGULAR CAB	REGULAR CAB	REGULAR CAB	REGULAR CAB	REGULAR CAB	REGULAR CAB	REGULAR CAB	REGULAR CAB
Wheelbase	Long	Long	Long	Long	Long	Long	Long	Long
Trans Code Combo	A CV	A CV	A CV	A CV	A CV	A CV	A CV	A CV
Drive	4X2	4X2	4X2	4X4	4X4	4X4	4X4	4X4
Curb Weight	6885	6895	7245	7341	7341	7346	7346	7351
LVW - ETW	9000	8500	10500	9500	9500	9500	9500	9000
Loaded Weight	7185	7195	7545	7641	7641	7646	7646	7651
ALVW - ETW	9000	8500	10500	9500	9500	9500	9500	9000
Adj. Loaded Weight	8992	8748	10622	9370	9420	9373	9423	9176
GVWR	11100	10600	14000	11400	11500	11400	11500	11000
Min Axle Ratio	3.31	3.31	3.55	3.31	3.31	3.31	3.31	3.31
Max Axle Ratio	3.55	3.55	4.1	3.55	3.55	3.55	3.55	3.55
Min N/V Ratio	24.2	24.5	26.4	24.2	24.2	23.4	23.4	24.5
Max N/V Ratio	26	26.4	30.5	26	26	25.1	25.1	26.4
A/C	Y	Y	Y	Y	Y	Y	Y	Y
Altitude Exempt	N	N	N	N	N	N	N	N
Altitude Intend use	All	All	All	All	All	All	All	All
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT275/65R18	LT245/75R17	LT245/75R17	LT275/65R18	LT275/65R18	LT275/70R18	LT275/70R18	LT245/75R17
Max Tire Size	LT275/65R18	LT265/70R17	LT245/75R17	LT275/65R18	LT275/65R18	LT275/65R20	LT275/65R20	LT265/70R17
Alt Tire 1								
Alt Tire 2								
Alt Tire 3								
Alt Tire 4								
Alt Tire 5								
Alt Tire 6								
Alt Tire 7								

Vehicle Description Report

Application: 50 ST

Test Group: HFMXD06.771D

ID Number	5377904
Displacement	6.7
Calibration	HFE17D0506
Fuel Tank(s)	TV
Vehicle Line	F350
Wheel Configuration	Dual RW
Body Style	REGULAR CAB
Wheelbase	Long
Trans Code Combo	A CV
Drive	4X4
Curb Weight	7694
LVW - ETW	11000
Loaded Weight	7994
ALVW - ETW	11000
Adj. Loaded Weight	10847
GVWR	14000
Min Axle Ratio	3.55
Max Axle Ratio	4.1
Min N/V Ratio	26.4
Max N/V Ratio	30.5
A/C	Y
Altitude Exempt	N
Altitude Intend use	All
Calibration Application	50ST
Min Tire Size	LT245/75R17
Max Tire Size	LT245/75R17
Alt Tire 1	
Alt Tire 2	
Alt Tire 3	
Alt Tire 4	
Alt Tire 5	
Alt Tire 6	
Alt Tire 7	

Vehicle Description Report

Application: 50 ST

Test Group: HFMXD06.771D

ID Number	5378134	5378133	5378045	5378050	5378044	5378235	5377631	5377639
Displacement	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Calibration	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17D0506	HFE17C0506	HFE17C0506
Fuel Tank(s)	TU	TU	TU	TV	TV	TU	TU	TU
Vehicle Line	F350	F350	F350	F350	F350	F350	F350	F350
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Dual RW	Sngl RW	Sngl RW
Body Style	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB
Wheelbase	Long	Long	Long	Short	Short	Long	Long	Long
Trans Code Combo	A CV	A CV	A CV	A CV	A CV	A CV	A CV	A CV
Drive	4X2	4X2	4X2	4X2	4X2	4X2	4X4	4X4
Curb Weight	7349	7349	7358	7211	7221	7764	7814	7816
LVW - ETW	9500	9500	9000	9000	9000	11000	9500	9500
Loaded Weight	7649	7649	7658	7511	7521	8064	8114	8116
ALVW - ETW	9500	9500	9000	9000	9000	11000	9500	9500
Adj. Loaded Weight	9374	9424	9179	9206	9010	10882	9557	9608
GVWR	11400	11500	11000	11200	10800	14000	11300	11400
Min Axle Ratio	3.31	3.31	3.31	3.31	3.31	3.55	3.31	3.31
Max Axle Ratio	3.55	3.55	3.55	3.55	3.55	4.1	3.55	3.55
Min N/V Ratio	24.2	24.2	24.5	24.2	24.5	26.4	24.5	24.2
Max N/V Ratio	26	26	26.4	26	26.4	30.5	26.4	26
A/C	Y	Y	Y	Y	Y	Y	Y	Y
Altitude Exempt	N	N	N	N	N	N	N	N
Altitude Intend use	All	All	All	All	All	All	All	All
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT275/65R18	LT275/65R18	LT245/75R17	LT275/65R18	LT245/75R17	LT245/75R17	LT245/75R17	LT275/65R18
Max Tire Size	LT275/65R18	LT275/65R18	LT265/70R17	LT275/65R18	LT265/70R17	LT245/75R17	LT265/70R17	LT275/65R18
Alt Tire 1								
Alt Tire 2								
Alt Tire 3								
Alt Tire 4								
Alt Tire 5								
Alt Tire 6								
Alt Tire 7								

Vehicle Description Report

Application: 50 ST

Test Group: HFMXD06.771D

ID Number	5377640	5377649	5377650	5377742	5377632	5377645	5377641	5377653
Displacement	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Calibration	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506
Fuel Tank(s)	TU	TU	TU	TU	TV	TV	TV	TV
Vehicle Line	F350	F350	F350	F350	F350	F350	F350	F350
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB	SUPER CAB
Wheelbase	Long	Long	Long	Long	Short	Short	Short	Short
Trans Code Combo	A CV	A CV	A CV	A CV	A CV	A CV	A CV	A CV
Drive	4X4	4X4	4X4	4X4	4X4	4X4	4X4	4X4
Curb Weight	7816	7821	7821	7821	7687	7690	7690	7694
LVW - ETW	9500	9500	9500	9500	9500	9500	9500	9500
Loaded Weight	8116	8121	8121	8121	7987	7990	7990	7994
ALVW - ETW	9500	9500	9500	9500	9500	9500	9500	9500
Adj. Loaded Weight	9658	9610	9660	9660	9394	9545	9595	9547
GVWR	11500	11400	11500	11500	11100	11400	11500	11400
Min Axle Ratio	3.31	3.31	3.31	3.55	3.31	3.31	3.31	3.31
Max Axle Ratio	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55
Min N/V Ratio	24.2	23.4	23.4	24.1	24.5	24.2	24.2	23.4
Max N/V Ratio	26	25.1	25.1	24.1	26.4	26	26	25.1
A/C	Y	Y	Y	Y	Y	Y	Y	Y
Altitude Exempt	N	N	N	N	N	N	N	N
Altitude Intend use	All	All	All	All	All	All	All	All
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT275/65R18	LT275/70R18	LT275/70R18	LT275/65R20	LT245/75R17	LT275/65R18	LT275/65R18	LT275/70R18
Max Tire Size	LT275/65R18	LT275/65R20	LT275/70R18	LT275/65R20	LT265/70R17	LT275/65R18	LT275/65R18	LT275/65R20
Alt Tire 1								
Alt Tire 2								
Alt Tire 3								
Alt Tire 4								
Alt Tire 5								
Alt Tire 6								
Alt Tire 7								

Vehicle Description Report

Application: 50 ST

Test Group: HFMXD06.771D

ID Number	5377656	5377744	5377903
Displacement	6.7	6.7	6.7
Calibration	HFE17C0506	HFE17C0506	HFE17D0506
Fuel Tank(s)	TV	TV	TU
Vehicle Line	F350	F350	F350
Wheel Configuration	Sngl RW	Sngl RW	Dual RW
Body Style	SUPER CAB	SUPER CAB	SUPER CAB
Wheelbase	Short	Short	Long
Trans Code Combo	A CV	A CV	A CV
Drive	4X4	4X4	4X4
Curb Weight	7694	7694	8203
LVW - ETW	9500	9500	11000
Loaded Weight	7994	7994	8503
ALVW - ETW	9500	9500	11000
Adj. Loaded Weight	9597	9597	11102
GVWR	11500	11500	14000
Min Axle Ratio	3.31	3.55	3.55
Max Axle Ratio	3.55	3.55	4.1
Min N/V Ratio	23.4	24.1	26.4
Max N/V Ratio	25.1	24.1	30.5
A/C	Y	Y	Y
Altitude Exempt	N	N	N
Altitude Intend use	All	All	All
Calibration Application	50ST	50ST	50ST
Min Tire Size	LT275/70R18	LT275/65R20	LT245/75R17
Max Tire Size	LT275/70R18	LT275/65R20	LT245/75R17
Alt Tire 1			
Alt Tire 2			
Alt Tire 3			
Alt Tire 4			
Alt Tire 5			
Alt Tire 6			
Alt Tire 7			

Vehicle Description Report

Application: 50 ST

Test Group: HFMXD06.771D

ID Number	5378136	5378137	5378128	5378135	5378043	5378237	5377815	5377819
Displacement	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Calibration	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17D0506	HFE17C0506	HFE17C0506
Fuel Tank(s)	TZ	TZ	TZ	TU	TU	TZ	TZ	TZ
Vehicle Line	F350	F350	F350	F350	F350	F350	F350	F350
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Dual RW	Sngl RW	Sngl RW
Body Style	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB
Wheelbase	Long	Long	Long	Short	Short	Long	Long	Long
Trans Code Combo	A CV	A CV	A CV	A CV	A CV	A CV	A CV	A CV
Drive	4X2	4X2	4X2	4X2	4X2	4X2	4X4	4X4
Curb Weight	7648	7648	7653	7421	7426	8024	8127	8134
LVW - ETW	9500	9500	9500	9500	9000	11000	10000	10000
Loaded Weight	7948	7948	7953	7721	7726	8324	8427	8434
ALVW - ETW	9500	9500	9500	9500	9000	11000	10000	10000
Adj. Loaded Weight	9524	9574	9376	9360	9163	11012	9814	9767
GVWR	11400	11500	11100	11300	10900	14000	11500	11400
Min Axle Ratio	3.31	3.31	3.31	3.31	3.31	3.55	3.31	3.31
Max Axle Ratio	3.55	3.55	3.55	3.55	3.55	4.1	3.55	3.55
Min N/V Ratio	24.2	24.2	24.5	24.2	24.5	26.4	24.5	24.2
Max N/V Ratio	26	26	26.4	26	26.4	30.5	26.4	26
A/C	Y	Y	Y	Y	Y	Y	Y	Y
Altitude Exempt	N	N	N	N	N	N	N	N
Altitude Intend use	All	All	All	All	All	All	All	All
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT275/65R18	LT275/65R18	LT245/75R17	LT275/65R18	LT245/75R17	LT245/75R17	LT245/75R17	LT275/65R18
Max Tire Size	LT275/65R18	LT275/65R18	LT265/70R17	LT275/65R18	LT265/70R17	LT245/75R17	LT265/70R17	LT275/65R18
Alt Tire 1								
Alt Tire 2								
Alt Tire 3								
Alt Tire 4								
Alt Tire 5								
Alt Tire 6								
Alt Tire 7								

Vehicle Description Report

Application: 50 ST

Test Group: HFMXD06.771D

ID Number	5377820	5377822	5377823	5377851	5377633	5377643	5377644	5377651
Displacement	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
Calibration	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506	HFE17C0506
Fuel Tank(s)	TZ	TZ	TZ	TZ	TU	TU	TU	TU
Vehicle Line	F350	F350	F350	F350	F350	F350	F350	F350
Wheel Configuration	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW	Sngl RW
Body Style	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB	CREW CAB
Wheelbase	Long	Long	Long	Long	Short	Short	Short	Short
Trans Code Combo	A CV	A CV	A CV	A CV	A CV	A CV	A CV	A CV
Drive	4X4	4X4	4X4	4X4	4X4	4X4	4X4	4X4
Curb Weight	8134	8139	8139	8139	7887	7894	7894	7899
LVW - ETW	10000	10000	10000	10000	9500	9500	9500	9500
Loaded Weight	8434	8439	8439	8439	8187	8194	8194	8199
ALVW - ETW	10000	10000	10000	10000	9500	9500	9500	9500
Adj. Loaded Weight	9817	9770	9820	9820	9544	9647	9697	9650
GVWR	11500	11400	11500	11500	11200	11400	11500	11400
Min Axle Ratio	3.31	3.31	3.31	3.55	3.31	3.31	3.31	3.31
Max Axle Ratio	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55
Min N/V Ratio	24.2	23.4	23.4	24.1	24.5	24.2	24.2	23.4
Max N/V Ratio	26	25.1	25.1	24.1	26.4	26	26	25.1
A/C	Y	Y	Y	Y	Y	Y	Y	Y
Altitude Exempt	N	N	N	N	N	N	N	N
Altitude Intend use	All	All	All	All	All	All	All	All
Calibration Application	50ST	50ST	50ST	50ST	50ST	50ST	50ST	50ST
Min Tire Size	LT275/65R18	LT275/70R18	LT275/70R18	LT275/65R20	LT245/75R17	LT275/65R18	LT275/65R18	LT275/70R18
Max Tire Size	LT275/65R18	LT275/65R20	LT275/70R18	LT275/65R20	LT265/70R17	LT275/65R18	LT275/65R18	LT275/65R20
Alt Tire 1								
Alt Tire 2								
Alt Tire 3								
Alt Tire 4								
Alt Tire 5								
Alt Tire 6								
Alt Tire 7								

Vehicle Description Report

Application: 50 ST

Test Group: HFMXD06.771D

ID Number	5377740	5377652	5377905	5378255
Displacement	6.7	6.7	6.7	6.7
Calibration	HFE17C0506	HFE17C0506	HFE17D0506	HFE17R0506
Fuel Tank(s)	TU	TU	TZ	TZ
Vehicle Line	F350	F350	F350	F450
Wheel Configuration	Sngl RW	Sngl RW	Dual RW	Dual RW
Body Style	CREW CAB	CREW CAB	CREW CAB	CREW CAB
Wheelbase	Short	Short	Long	Long
Trans Code Combo	A CV	A CV	A CV	A CV
Drive	4X4	4X4	4X4	4X4
Curb Weight	7899	7899	8472	9057
LVW - ETW	9500	9500	11000	11500
Loaded Weight	8199	8199	8772	9357
ALVW - ETW	9500	9500	11000	11500
Adj. Loaded Weight	9700	9700	11236	11528
GVWR	11500	11500	14000	14000
Min Axle Ratio	3.55	3.31	3.55	4.3
Max Axle Ratio	3.55	3.55	4.1	4.3
Min N/V Ratio	24.1	23.4	26.4	31.3
Max N/V Ratio	24.1	25.1	30.5	31.3
A/C	Y	Y	Y	Y
Altitude Exempt	N	N	N	N
Altitude Intend use	All	All	All	All
Calibration Application	50ST	50ST	50ST	50ST
Min Tire Size	LT275/65R20	LT275/70R18	LT245/75R17	225/70R19.5G
Max Tire Size	LT275/65R20	LT275/70R18	LT245/75R17	225/70R19.5G
Alt Tire 1				
Alt Tire 2				
Alt Tire 3				
Alt Tire 4				
Alt Tire 5				
Alt Tire 6				
Alt Tire 7				

SECTION 14

Request for Certification

Vehicle Homologation & Compliance
Safety, Environment, & Sustainability Engineering
Ford Motor Company

Allen Park Test Laboratory
1500 Enterprise Drive, Suite 3W-200
Allen Park, Michigan 48101-2053

May 31, 2016

Mr. Dan Cullen
Certification Division
Mobile Source Pollution Control
U. S. Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, Michigan 48105

Dear Mr. Cullen:

Ford Motor Company (Ford) herewith submits its Part I Application for Certification for 2017 model year diesel-powered heavy-duty vehicles (HDVs) contained in Ford's 50 state test group HFMXD06.771D. We have elected to optionally certify these vehicles on the chassis dynamometer, as allowed under 40 CFR 86.1863-07. The test fuel used is Federal ultra low sulfur diesel.

The EPA certification and in-use exhaust emission standards applicable to this test group are:

Certification FTP Standards (g/mi)	Useful Life	NMOG+ NOx	CO	NOx	PM	HCHO
HDV (10,001-14,000 lb GVWR)	120K	0.570	7.3	0.4	0.02	0.040

HCHO emissions being applied against Tier 2 standards per discussions with EPA April 17, 2015.

Based on Ford Motor Company's good engineering judgment, all the vehicles described in this Application are designed to comply with the applicable full useful life standards, as described above, and CH_4/N_2O standards in 40 CFR 1037.104(c).

This Part I application for certification has been prepared in accordance with the standardized format recommended by EPA via its mail out # VPCD-99-06 (LDV, LDT, SVM), subject: "CAP 2000 Implementation: Guidance Documents and Workshop", dated April 22, 1999. Therefore, in accordance with the provisions of 40 CFR 86.1844-01(d)(14), Ford requests that a Certificate of Conformity be issued for the HDV test group listed in this Application for Certification.

Please contact Leonard Kaminski at 313-805-5457, if you have any questions regarding this submission.

Sincerely

Todd M. Fagerman, Manager
Car and Truck Certification
Certification Programs

Vehicle Homologation & Compliance
Safety, Environment, & Sustainability Engineering
Ford Motor Company

Allen Park Test Laboratory
1500 Enterprise Drive, Suite 3W-200
Allen Park, Michigan 48101-2053

May 31, 2016

Ms. Annette Hebert, Chief
Emissions Compliance, Automotive Regulations and Science Division
Air Resources Board
9480 Telstar Avenue, Suite 4
El Monte, California 91731

Dear Ms. Hebert:

Ford Motor Company (Ford) herewith submits its Part I Application for Certification for 2017 model year diesel-powered medium duty vehicles (MDVs) contained in Ford's 50 state test group HFMXD06.771D. The test fuel used is Federal ultra low sulfur diesel.

The FTP certification and in-use standards applicable to this test group for vehicles offered in California are as follows:

Certification FTP Standards (g/mi)	Useful Life	NMOG	CO	NOx	PM	HCHO
LEV II ULEV (10,001-14,000 lb GVWR)	120K	0.167	7.3	0.4	0.06	0.021

Based on Ford Motor Company's good engineering judgment, all the vehicles described in this Application are designed to comply with the applicable intermediate and full useful life standards, as described above.

This Part I application for certification has been prepared in accordance with the standardized format recommended by EPA via its mail out # VPCD-99-06 (LDV, LDT, SVM), subject: "CAP 2000 Implementation: Guidance Documents and Workshop"' dated April 22, 1999. This Application has also been prepared in accordance with the California Air Resources Board, Final Regulation Order, Amendments to Sections 1960.1, 1960.5, 1961, and 1962 Title 13, California Code of Regulations (As Amended August 4, 2005). Therefore, in accordance with the provisions of 40 CFR 86.1844-01(d)(14), Ford requests that an Executive Order be issued for the MDV test group listed in this Application for Certification.

Please contact Leonard Kaminski at 313-805-5457, if you have any questions regarding this submission.

Sincerely

Todd M. Fagerman, Manager
Car and Truck Certification
Certification Programs

cc: Depinder Paul

SECTION 15

Other Information

US EPA Fee Form

General Information

Date:	03/29/2016
Process Code:	Submit New Filing Fee Form
Manufacturer Code:	FMX
Manufacturer Name:	Ford Motor Company

Manufacturer Contact

Name:	Todd Fagerman
Email Address:	tfagerma@ford.com
Phone:	313-594-0680
Calendar Year complete application submitted to EPA:	2016
Engine Family / Evaporative Family / Test Group:	HFMXD06.771D

Certificate Request Type (Industry Sector Code)

- ○ On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (Federal) (A, B, D, J, T, V)
- ○ On-Highway HDE Dyno Cert (Federal) (E, H)
- ● On-Highway LD ICI, MDPV ICI, HDV ICI (A, B, D, J, T, V)
- ○ On-Highway Motorcycle (C)
- ○ On-Highway HDV Evap (F)
- ○ On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (California-Only) (A, B, D, J, T, V)
- ○ On-Highway HDE Dyno Cert (California-Only) (E, H)
- ○ Nonroad CI (L)
- ○ Nonroad SI (B, S)
- ○ Locomotive (G, K)
- ○ All Nonroad Recreational, excluding Marine engines (X, Y)
- ○ All Marine (Including IMO) (M, N, W)
- ○ Component Certification for Evaporative Emissions (P)

IMO Name (Required for dual US/IMO Marine Only):	
ICI VIN Number (Required for ICIs Only):	
Do you qualify for a Reduced Fee (RF)?	
What is the total number of vehicles, engines, or units covered?:	
What is the aggregate total retail value of the vehicles, engines or units covered?:	

Payment Information

Amount Owed:	62,113.00
Payment Type:	Offline ACH

Comments:

SECTION 16

Confidential Information

SECTION 17

California ARB Requirements

E.O.#

2017 AIR RESOURCES BOARD CERTIFICATION REVIEW SHEET
PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES

Manufacturer Ford Motor Company Exh. Test Group: HFMXD06.771D Evap. Fam.: n/a

Engine Code Types: CA____ 49S___ 50S X ORVR: Yes__ No X

Exhaust Std: LEV2__ ULEV2 X SULEV2 ___ SULEV2+PZEV ___ U.S. EPA: _____

Vehicle Class(es) Select all that apply: PC_____ T1L2 (< 6,000 GVW; 0-3750 LVW) _____
T2L2 (<6,000 GVW; 3751-5750 LVW)_____ T3L2 (6,001-8,500 GVW; 3751-5750 ALVW) _____
T4L2 (6,001-8,500 GVW; 5751-8,500 ALVW) _____ M4L2 (8,500 – 10,000 GVW) _____
M5L2 (10,001 – 14,000 GVW) X

Single Cert Std for Multi-Class Eng Fam: ___ specify: (N/A, PC, T1L2, T2L2, T3L2, T4L2, M4L2, M5L2)

Exhaust Useful life: 100K ___ 120K X 150K ___ Evap Useful life: 100K ___ 120K ___ 150K ___

Exhaust In-Use Standard: Full X Alternative ____ Evap In-Use Standard: Full ____ Alternative___

Fuel Type(s): Dedicated X Flex-Fuel___ Dual-Fuel___ Bi-Fuel____ Gasoline___ Diesel X
CNG____ LNG____ LPG_____ M85_____ E85 _____ Other (specify):_____

Exh Emiss Test Fuel(s): Tier 2 Unleaded _____ Indo___ CBG___ CNG___ LPG___ M85___

Diesel: 13 CCR 2282__ 40 CFR 86.113-90__ 40 CFR 86.113-94__ E85__ Other(specify):X (40 CFR 86.113-07)

Evaporative Emission Test Procedure: California_____ Federal

Evaporative Emission Standard: LEV_____ LEV2____ Federal_____

Service Accumulation: Std AMA_____ Mod AMA___ Mfr Bench_____ Other Standard Road Cycle (SRC)

NMOG Test Procedure: N/A___ Std X Equiv___ R/L Test Procedure: SHED ____N/A____

Engine Configuration V-8 Displacement: 6.7 Liters 409 Cubic inches

Exhaust Control System and Special Features: TC / DFI / CAC / EGR / EGR-C / OC / PTOX / SCRC / NOXS
(Use abbreviations per SAE J1930 OCT2008)

EPA Certificate:

NOTE: >10,000 lb GVWR diesel vehicles are exempt for evaporative and refueling emissions requirements

Test Vehicle Information	Durability Vehicle	Emission Data Vehicle
C/O MY or C/A MY & ID	2015 FE41-6.7-444	2015 FFA1-6.7-J-598
Vehicle Log Page(s)	n/a	n/a
Zero Mile Books	n/a	n/a
Maint. Logs & Engr. Eval.	n/a	n/a

2017 AIR RESOURCES BOARD CERTIFICATION REVIEW SHEET

PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES E.O.#

Manufacturer: Ford Motor Company Test Group: HFMXD06.771D Evaporative Family: N/A

Emission Data Vehicle ID	Engine Code & Disp.	Test Location	Trans	ETW	DPA		MPG City/Hwy	PROJECTED EMISSIONS (grams/mile, except, grams/test for evaporative tests)[1] NMOG*	CO	NOx	HCHO	PM	Hwy NOx	City / Hwy CO_2	3-DAY D+HS	EVAPORATIVE R/L	2-DAY D+HS	ORVR
FFA1-6.7-J-598	FFA17C0505	FORD	A	11500	---	(120K)	n/a / n/a	0.043	0.7	0.3	0.007	0.01	0.1	778 / 509	n/a	n/a	n/a	n/a
(1) The EDV' above complies with standards at 120K:								0.167	7.3	0.4	0.021	0.06	0.8	n/a	n/a	n/a	n/a	n/a
NMOG values include RAF(s) of:							Not Applicable X		NMOG		Methane (CNG or LNG only)							
Emissions include additive DFs (with applicable RAF) for 120K of:								0.0295	0.38	0.06	0.0024	0.000	0.06	n/a	n/a	n/a	n/a	n/a
Emissions include regenerative upward adjustment factors (UAFs)** of:								0.0006	-0.01	0.05	0.0000	-0.001	0.05	n/a	n/a	n/a	n/a	n/a

* NMOG = NMHC for diesel vehicles.

**DPF regeneration upward adjustment factors based on 4K base and regeneration emissions testing at Ford.

Remarks:

Application
Processed by _____ Date _____ Reviewed by _____ Date _____

Test Group: HFMXD06.771D
Issued: 5/31/2016
Revised:

E.O.#

2017 MODEL-YEAR AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES

Manufacturer Ford Motor Company Exh. Test Group: _HFMXD06.771D_ Evap. Fam.: _n/a_____

Engine Code Types: CA____ 49S___ 50S_X_ ORVR: Yes___ No_X__

Exhaust Std: LEV2___ ULEV2_X__ SULEV2 ___ SULEV2+PZEV ___ U.S. EPA: _____

Vehicle Class(es) Select all that apply: PC_____ T1L2 (< 6,000 GVW;0-3750 LVW) _____
T2L2 (<6,000 GVW, 3751-5750 LVW)_____ T3L2 (6,001-8,500 GVW; 3751-5750 ALVW) _____
T4L2 (6,001-8,500 GVW; 5751-8,500 ALVW) _____ M4L2 (8,500 – 10,000 GVW) ___
M5L2 (10,001 – 14,000 GVW) __X___

Single Cert Std for Multi-Class Eng Fam: ___ specify: N/A, PC, T1L2, T2L2, T3L2, T4L2, M4L2, M5L2)
Exhaust Useful life: 100K ___ 120K _X_ 150K ___ Evap Useful life: 100K ___ 120K ___ 150K ___

Exhaust In-Use Standard: Full _X__ Alternative ____ Evap In-Use Standard: Full ____ Alternative___

Fuel Type(s): Dedicated_X__ Dual-Fuel___ Flex-Fuel___ Bi-Fuel____ Gasoline___ Diesel_X__
CNG____ LNG____ LPG_____ M85_____ E85 _____ Other (specify): _____

Exh Emiss Test Fuel(s): Tier 2 Unleaded _X__ Indo___ CBG___ CNG___ LPG___ M85_____

Diesel: 13 CCR 2282__ 40 CFR 86.113-90_ 40 CFR 86.113-94 E85__Other(specify):X (40 CFR 86.113-07)
Evaporative Emission Test Procedure: California_____ Federal
Evaporative Emission Standard: LEV2_____ Federal_____

Service Accumulation: Std AMA_____ Mod AMA___ Mfr Bench_____ Other Standard Road Cycle (SRC)

NMOG Test Procedure: N/A___ Std_X_ Equiv___ R/L Test Procedure: SHED___ Pt.Source___
Engine Configuration __V-8___ Displacement: _6.7 Liters 409 Cubic inches

Valves/Cyl: __4___ Rated HP: 440 @2800___ RPM

Engine: Front_X__ Mid_____ Rear_____ Drive: Fwd_____ RWD_X__ 4WD-FT____ 4WD-PT_X

Exhaust Control System and Special Features: TC / DFI / CAC / EGR / EGR-C / OC / PTOX / SCRC / NOXS
(Use abbreviations per SAE J1930 OCT2008)

Engine Code	Vehicle Models	Trans. A-Auto M-Man	ETW	DPA
HFE17C0501	F350 Pickup 4x2/4x4 SRW	A	*	*
HFE17C0502	F350 Pickup 4x2/4x4 SRW	A	*	*
HFE17C0505	F350 Pickup 4x2/4x4 SRW	A	*	*
HFE17C0506	F350 Pickup 4x2/4x4 SRW	A	*	*
HFE17D0501	F350 Pickup 4x2/4x4 DRW	A	*	*
HFE17D0502	F350 Pickup 4x2/4x4 DRW	A	*	*
HFE17D0505	F350 Pickup 4x2/4x4 DRW	A	*	*
HFE17D0506	F350 Pickup 4x2/4x4 DRW	A	*	*
HFE17R0501	F450 Pickup Crew Cab 4x2/4x4 DRW	A	*	*
HFE17R0502	F450 Pickup Crew Cab 4x2/4x4 DRW	A	*	*
HFE17R0505	F450 Pickup Crew Cab 4x2/4x4 DRW	A	*	*
HFE17R0506	F450 Pickup Crew Cab 4x2/4x4 DRW	A	*	*

Test Group: HFMXD06.771D
Issued: 5/31/2016
Revised:

Test Group: HFMXD06.771D
Issued: 5/31/2016
Revised:

SECTION 18

Revisions

APPLICATION REVISIONS

HFMXD06.771D

NO.	DATE	PAGE(S)	DESCRIPTION
Init Cert Application	5/31/2016	All	Initial Application.

Application for Certification

Part 2