

Application for Certification

Model Year: 2019
Manufacturer Name: BMW

Test Group: KBMXJ04.4N63
Test Group Description: V8, 4-stroke, 4.4 Liter, gasoline

Durability Group: KBMXGPGNNV33
Durability Group Description: 4-Stroke Otto Cycle
gasoline
direct fuel injection
ceramic, monolith
Palladium, Rhodium
Three-Way Catalyst

Evaporative Group: KBMXR0130N54
KBMXR0150G1X
KBMXR0170N63
KBMXR0180G05

Vehicle Class:	EPA	CARB
	LDT 4	LDT (6001-8500 GVWR; 5751-8500 ALVW)
	LDV	PC

Applicable Standards:	EPA	CARB
FTP Standard:	Tier 3 - Bin 125	LEV III - ULEV 125
SFTP Standard:	Tier 3 composite - 0.120	LEV III composite - 0.120
EVAP Standard:	Tier 2	LEV II
	Tier 3 - 400	LEV III - 500
	Tier 3 - 500	LEV III - 400

Carlines Covered: M850i xDrive Convertible, 650i Gran Coupe, 650i xDrive Gran Coupe, 750i, 750i xDrive, 750i xDrive (SWB), Alpina B6 xDrive Gran Coupe, Alpina B7 xDrive, M550i xDrive, M850i xDrive Coupe, X5 xDrive50i, X6 xDrive50i, X7 xDrive50i

Test EDV:

VID	CFG	Fuel	FTP	HWY	US06	SC03	Cold CO	FTP 50°F
LB39405	00	T3E10	KBMX10055346	KBMX10055347	KBMX10055350	KBMX10055349	KBMX10055351	KBMX10055348
LB39405	00	T2E0	KBMX10055352	--	--	--	--	--

Test EDV EVAP:

Family	VID	CFG	Fuel	3-day	RL	2-day	ORVR	BTP	Leak
R0130N54	KS33736	00	T2E0	9BMX01071568	9BMX10000612	not applicable	9BMX01071518	not applicable	not applicable
R0150G1X	G463617	00	T3E10	JBMX10046019	JBMX10046020	JBMX10046029	JBMX10046036	JBMX10046037	JBMX10046038
R0170N63	CY33005	00	T2E0	9BMX10000807	9BMX10000808	not applicable	9BMX10000837	not applicable	not applicable
R0180G05	LB15156	00	T3E10	KBMX10053877	KBMX10053878	KBMX91003985	KBMX10053565	KBMX10053515	KBMX10053514

For questions, Contact: Thomas Hofmann, 201 / 571 - 5195

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Table of Changes

Revision / Running Change No.	Date	Part	Section	Page	Description of Change
19-J04.4N63-01	25.05.2018	1	--	--	M850i xDrive Coupe, M850i xDrive Convertible and X5 xDrive50i added
					Oil pump calibration changed
19-J04.4N63-02	21.08.2019	1	--	--	X7 xDrive50i added

1. Correspondence and Communications

- 1.1. Authorized Persons Refer to Common Section, Section 1, Item 1.1
- 1.2. Certificate Information Refer to Common Section, Section 1, Item 1.2
- 1.3. Primary certification contact:

Name: Thomas Hofmann
Phone Number: 201 / 571 - 5195
Fax Number: 201 / 571 - 5479
E-Mail-Address: Thomas.Hofmann@bmwna.com

2. Durability Group Description

2.1.	Durability Group Name	KBMXGPGNNV33
2.2.	Combustion Cycle	4-Stroke Otto Cycle
2.3.	Engine type	piston, water cooled
2.4.	Fuel used	gasoline
2.5.	Basic fuel metering system	direct fuel injection
2.6.	Catalyst construction	ceramic monolith, closed coupled
2.7.	Precious Metals in Catalyst	Palladium Rhodium
2.8.	Diesel Particulate Filter Construction	not applicable
2.9.	Precious Metals in Diesel Particulate Filter	not applicable
2.10.	Precious Metal Loading	Refer to Section 16, Confidential Information
2.11.	Range of Catalyst Grouping Statistics	4.6 - 3.4

3. Evaporative / Refueling Family Description

- 3.1. Evaporative / Refueling Family Name KBMXR0130N54
KBMXR0150G1X
KBMXR0170N63
KBMXR0180G05
- 3.2. Evaporative / Refueling Family Parameters specified in 40 CFR § 86.1821-01:
- 3.2.1. Type of vapor storage device canister
- 3.2.2. Basic canister design
Working capacity: 130 g
150 g
170 g
180 g
System configuration: 1 canister
Canister Construction: active charcoal granulate
closed bottom
Canister Materials: plastic
- 3.2.3. Fuel system time-contr. DI
- 3.2.4. Type of refueling emission control system integrated system
- 3.2.5. Fillpipe seal mechanism Liquid seal
- 3.2.6. Vapor control system passive mechanical system with liquid seal
- 3.2.7. Purge control system controlled by Engine Control Module
electric purge valve
- 3.2.8. Vapor hose material polyamid
- 3.2.9. Fuel tank material hdpe
- 3.3. Leak Family Description no Leak-Standard
same Leak-Standard in between the
evaporative family

3.4. ORVR Statement

Evaporative Family KBMXR0130N54, KBMXR0150G1X, KBMXR0170N63,

ORVR safety application is carried over from previous model year.

This evaporative / refueling family was first certified for model year 2009, 2018.

During this time period we had no in-use problems or defects related to the ORVR system that required action by BMW.

There have been no service notifications, campaigns, instructions or bulletins to dealers or field personal or changes in production procedures or components.

No safety-related defect campaigns have been conducted related to the ORVR system.

Therefore no EPA/NHTSA review of this evaporative / refueling family was required.

Evaporative Family KBMXR0180G05

1. ORVR safety application is carried over from previously certified evaporative/ORVR family KBMXR0130AHY that was first certified for the 2012 model year.
2. There have been no substantial changes from KBMXR0130AHY
3. The differences between the KBMXR0180G05 and KBMXR0130AHY are that the KBMXR0180G05 has a n increased fuel tank volume and a higher canister working capacity.
4. There have been no in-use problems or defects related to the ORVR system that required action by BMW. There have been no service notifications, campaigns, instructions or bulletins to dealers or field personal or changes in production procedures or com No safety-related defect campaigns have been conducted related to the ORVR system.

4. Durability Procedure Description

4.1. Description of used durability process

4.1.1. Alternative Durability Program for Exhaust Emissions:

The durability data vehicle was aged according to the bench aging process described in §86.1823-08. Following parameters were used to age the catalyst of the durability data vehicle:

	Exhaust branch 1. line	Exhaust branch 2. line
Tref [°C] =	830	831
calculated tref [h] =	167.9	184.7
effective tref [h] =	220	220

Statement:

Based on BMW's good engineering judgment, all the vehicles described in this Application for Certification comply with all applicable intermediate and full useful life standards.

4.1.2. Durability Program for Evaporative/Refueling Emissions:

Confidential Information:
Refer to Common Section, Section 4, Item 4.3.

4.2. Determination of certification Levels

4.2.1. Exhaust Emissions:

additive deterioration factor:

For Deterioration Factors refer to Summary Sheet enclosed in Chapter 7 of this application.

4.2.2. Evaporative/Refueling Emissions:

additive deterioration factor:

For Deterioration Factors refer to Summary Sheet enclosed in Chapter 7 of this application.

5. Test Group Description

5.1.	Test Group Name	KBMXJ04.4N63	
5.2.	Engine information		
5.2.1.	Engine displacement	4395 cm ³	
5.2.2.	Arrangement of cylinders	in V-configuration	
5.2.3.	Number of cylinders	8	
5.3.	Vehicle class	EPA	CARB
		LDT 4	LDT (6001-8500 GVWR; 5751-8500 ALVW)
		LDV	PC
5.4.	Emission standards class	Tier 3 - Bin 125	LEV III - ULEV 125
5.5.	Participation in NLEV	not applicable	
5.6.	Applicable emission standards	Refer to Summary Sheet enclosed in Section 7 of this application.	

6. Test Vehicle Description

6.1. Test Vehicle Description EDV, FEDV, DDV

VID	CFG	Carline	Model	ETW	Trans Type	Type	Fuel	ESS	Road Load CFG	TRLH P	Gear	Mode	eDrive
LB39405	00	--	X7 xDrive50i	6000	AT-8	EDV	T3E10	ON	10	18.4	S	S-Sport	not applicable
0C02938	07	95	X6 xDrive50i	5500	AT-8	FEDV	T2E0	ON	11	18.2	D	default mode	not applicable
0C02938	08	95	X6 xDrive50i	5500	AT-8	FEDV	T2E0	OFF	11	18.2	D	default mode	not applicable
0J77228	02	95	X6 xDrive50i	5500	AT-8	FEDV	T2E0	ON	11	18.2	D	default mode	not applicable
0J77228	03	95	X6 xDrive50i	5500	AT-8	FEDV	T2E0	OFF	11	18.2	D	default mode	not applicable
0S99700	00	95	X6 xDrive50i	5500	AT-8	FEDV	T3E10	OFF	11	18.2	D	default mode	not applicable
BJ35436	00	249	M850i xDrive Coupe	4750	AT-8	FEDV	T2E0	ON	11	14.4	D	default mode	not applicable
BJ35436	01	259	M850i xDrive Convertible	5000	AT-8	FEDV	T2E0	ON	11	14.5	D	default mode	not applicable
DS17300	03	163	Alpina B6 xDrive Gran Coupe	5000	AT-8	FEDV	T2E0	OFF	11	14.6	D	default mode	not applicable
DW20000	04	113	650i Gran Coupe	4750	AT-8	FEDV	T2E0	ON	11	13.5	D	default mode	not applicable
DW20000	05	113	650i Gran Coupe	4750	AT-8	FEDV	T2E0	OFF	11	13.5	D	default mode	not applicable
DW20000	06	114	650i xDrive Gran Coupe	4750	AT-8	FEDV	T2E0	ON	11	13.8	D	default mode	not applicable
DW20000	07	114	650i xDrive Gran Coupe	4750	AT-8	FEDV	T2E0	OFF	11	13.8	D	default mode	not applicable
G463614	00	230	M550i xDrive	4750	AT-8	FEDV	T2E0	ON	11	14.2	D	default mode	not applicable
G463614	01	230	M550i xDrive	4750	AT-8	FEDV	T2E0	OFF	11	14.2	D	default mode	not applicable
GE12213	00	86	750i xDrive	5000	AT-8	FEDV	T2E0	ON	11	14.3	D	default mode	not applicable
GE12213	01	86	750i xDrive	5000	AT-8	FEDV	T2E0	OFF	11	14.3	D	default mode	not applicable
GE12213	02	85	750i xDrive (SWB)	4750	AT-8	FEDV	T2E0	ON	11	14.2	D	default mode	not applicable
GE12213	03	85	750i xDrive (SWB)	4750	AT-8	FEDV	T2E0	OFF	11	14.2	D	default mode	not applicable
GE12213	04	80	750i	4750	AT-8	FEDV	T2E0	ON	11	13.6	D	default mode	not applicable
GE12213	05	80	750i	4750	AT-8	FEDV	T2E0	OFF	11	13.6	D	default mode	not applicable
GE12364	00	212	Alpina B7 xDrive	5000	AT-8	FEDV	T2E0	OFF	11	16.1	D	default mode	not applicable
LB15155	00	247	X5 xDrive50i	5500	AT-8	FEDV	T2E0	ON	21	17.1	D	default mode	not applicable
LB15155	01	247	X5 xDrive50i	5500	AT-8	FEDV	T2E0	ON	22	17.7	D	default mode	not applicable
LB39405	01	248	X7 xDrive50i	6000	AT-8	FEDV	T2E0	ON	11	18.1	D	default mode	not applicable

U108012	--	--	Cullinan	6500	AT-8	DDV	T3E10	--	--	--	--	--	--
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Road Load Configuration Description

X_ means number of FEDV tire groups used for this model
 10 Road Load for EDV (worst case)
 11 Road Load for FEDV configuration
 21 Road Load for first FEDV configuration
 22 Road Load for second FEDV configuration

6.2. Test Vehicle Description EVAP EDV, EVAP DDV

VID	CFG	Model	ETW	Trans Type	Type	Fuel	Family
CY33005	00	750Li	5000	AT-6	EDV EVAP	T2E0	R0170N63
G463617	00	M550i xDrive	4750	AT-8	EDV EVAP	T3E10	R0150G1X
KS33736	00	335xi	4250	AT-6	EDV EVAP	T2E0	R0130N54
LB15156	00	X5 xDrive50i	5500	AT-8	EDV EVAP	T3E10	R0180G05
CY33005	--	750Li	5000	AT-6	DDV EVAP	T2E0	R0170N63
G457600	--	530i xDrive	4250	AT-8	DDV EVAP	T3E10	R0150G1X
H013462	--	X5 xDrive50i	5500	AT-8	DDV EVAP	T3E10	R0180G05
KR72057	--	335xi	4250	AT-6	DDV EVAP	T2E0	R0130N54

For complete vehicle description, refer to Certification Summary Information Report Sheet, enclosed in Section 7 of this application.
 Selection of vehicles carried out according to 40 CFR §86.1828-01(a).

7. Test results (Cover page)

For requested information refer to attached Certification Summary Information Report submitted to Verify:

Certification Summary Information Report

Date: 28.08.2018

Enclosure to Certification Summary Information Report

Litmus Calculation

Test	Test Number	Test Procedure	Man FE	FE Bag 1	FE Bag2	FE Bag3
FTP75	KBMX10055346	31	14.2	14.3	13.3	16.5
HWFET	KBMX10055347	3	23.6			
US06	KBMX10055350	90		10.4	19.2	
SC03	KBMX10055349	95		12.8		
Cold CO	KBMX10055351	11		11.4	12.4	15

Model Specific Calculation (5 Cycle)

City	[mi/gallon]
Start FC	0.0035
Start Fuel 75	0.0336
Start Fuel 20	0.0758
Running FC	0.0736
Label City (5 Cycle)	11.7

Highway	[mi/gallon]
Start FC	0.0002
Start Fuel 75	0.0336
Start Fuel 20	0.0758
Running FC	0.0510
Label Highway (5 Cycle)	17.7

Derived Calculation (2 Cycle)

Label City (2 Cycle)	11.7
Threshold (96% Derived MPG - 2 Cycle)	11.2

Label Highway (2 Cycle)	17.2
Threshold (95% Derived MPG - 2 Cycle)	16.3

Model Specific Calculation Label City (5 Cycle)	Threshold City (96% Derived MPG - 2 Cycle)	Model Specific Calculation Label Highway (5 Cycle)	Threshold HWY (95% Derived MPG - 2 Cycle)
11.7	11.2	17.7	16.3

Certification Summary Information Report

Manufacturer	BMW	Manufacturer Code	BMX
Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Certificate Number	--	CARB Executive Order #	--
Certificate Issue Date	--	Certificate Revision Date	--
Certificate Effective Date	--	Conditional Certificate	--
CSI Revision #	--	CSI Submission/Revision Date	08/28/2018 08:37:29 AM
Model Year	2019		

Test Group Information

CSI Type	Running Change	Running Change Reference Number	19-J04.4N63-02
GHG Exempt Status	Not Exempt		

Drive Sources and Fuel(s)

Drive Source #1: Combustion Engine

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Gasoline	Spark Ignition Direct fuel injection	No

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	LDV, LDT4
Federal Clean Fuel Vehicle	No	Federal Clean Fuel Vehicle Standard	--
Federal Clean Fuel Vehicle ILEV	No	California Partial Zero Emissions Vehicle Indicator	--
Durability Group Name	KBMXGPGNNV33	Durability Group Equivalency Factor	1
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA
Complies with HD GHG 2b/3 regulations?	No		
Introduction into Commerce Date	08/01/2018	CAP2000 Conditional Certificate?	N/A
Independent Commercial Importer?	--	Alternative Fuel Converter Certificate?	--
SFTP Federal Composite Compliance Identifier	Tier 3	SFTP Tier 2 Composite CO Option	--
SFTP LEV-III Composite Compliance Indicator	Yes		
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	KBMXJ04.4N63
Test Group OBD Compliance Level	Partial - with deficiencies	Number of Test Group OBD Deficiencies	3
OBD Deficiencies Comments	E-17-323 (2 Test Group OBD Deficiencies) / E-17-269 (2 Test Group OBD Deficiencies) / E-18-091 (3 Test Group OBD Deficiencies)		
Mfr Test Group Comments	--		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	05/15/2018 07:35:14 AM				
Integrated ORVR?	Yes	Fuel(s)	Gasoline				
Multiple Fuel Storage	--						
Bladder Fuel Tank?	Yes						
Fuel Tank Material	Plastic	Fuel Tank Material Description	PE-HD / COEX				
Fill Pipe Seal Type	Liquid seal						
Air Intake System Vapor Storage Device?	No	Air Intake System Vapor Storage Device Description	--				
Fuel System Vapor Storage Canister?	Yes	Other Vapor Storage	--				
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	180	Number of Primary Canisters	1				
Number of Bleed Canisters	0	Bleed Canister Total Working Capacity (grams)	--				
Mfr Evaporative/Refueling Family Comments	--						
Leak Family Details							
Leak Family Indicator	No						
Canister Bleed Test Indicator	Yes	Applicability of Evaporative Canister Bleed Test	50 State				
Evaporative Canister Bleed Test Comments	--						
CARB Fuel Only (Rig) Test Indicator	No	Applicability of CARB Fuel Only (Rig) Test	--				
CARB Fuel Only (Rig) Test Comments	--						
Models Covered by this Certificate							
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
BMW	1 - BMW	247 - X5 xDrive50i	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	248 - X7 xDrive50i	Federal	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	247 - X5 xDrive50i	Federal	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	248 - X7 xDrive50i	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
Engine Description							
Hybrid Type	--	Hybrid Description	--				
Engine Type	4-Stroke Spark Ignition	Mfr Engine Description	--				
Engine Block Arrangement	V-shaped engine	Mfr Engine Block Arrangement Description	--				
Camless Valvetrain Indicator	No	Oil Viscosity/Classification	5W30				
Number of Cylinders/Rotors	8	Mechanically Variable Compression Ratio Indicator	N				

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
After Treatment Device(s) (ATD)			
ATD Number	ATD Type	ATD Precious Metal	Substrate Material
1	Three-way catalyst	Palladium + Rhodium	Ceramic
2	Three-way catalyst	Palladium + Rhodium	Ceramic
Substrate Construction			
Monolith			
Mfr After Treatment Device (ATD) Comments			
--			
Direct Ozone Reduction (DOR) Device			
Not Equipped			
Mfr Emission Control Device Comments			
--			
Engine Configuration Number 1			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	443
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Engine Configuration Number 2			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	599
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Engine Configuration Number 3			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	456
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Engine Configuration Number 4			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	591
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05								
Engine Configuration Number 5											
Engine Displacement (liters)	4.4	Engine Rated Horsepower	523								
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2								
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2								
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid								
Air Aspiration Drive Method(s)	Mechanical										
Cylinder Deactivation	No										
Cylinder Deactivation Description	--										
Variable Valve Timing	Yes										
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves										
Variable Valve Lift?	Yes										
Variable Valve Lift System Description	Variable Valve Lift at inlet valves										
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4								
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--								
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--								
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--								
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--								
Mfr Air/Fuel Sensor Comments	--										
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No								
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--								
Closed Loop Air Injection System	No										
Air Injection Type	--	Air Injection Type if 'Other'	--								
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
Gasoline	KBMX10055346	KBMX10055350	KBMX10055349	KBMX10055351	KBMX10055347	13.7	228.2	23.6	286.1	--	
SFTP LEV-III Official Test Numbers											
Test Group	Fuel	FTP	US06	SC03							
Gasoline	KBMX10055346	KBMX10055350	KBMX10055349								

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05					
Emission Data Vehicle Information								
Vehicle ID / Configuration	LB15156 / 0	Manufacturer Vehicle Configuration Number	0					
Original Test Group Name	KBMXJ04.4N63	Original Evaporative/Refueling Family	KBMXR0180G05					
Original Test Vehicle Model Year	2019							
Vehicle Model								
Represented Test Vehicle Make	BMW	Represented Test Vehicle Model	X5 xDrive50i					
Leak Family Details								
Leak Family Identifier	--	Leak Family Name	--					
Drive Sources and Fuel System Details								
	<table border="1"> <tr> <th>Drive Source and Fuel#</th> <th>Drive Source</th> <th>Fuel</th> </tr> <tr> <td>1</td> <td>Combustion Engine</td> <td>Gasoline</td> </tr> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline	
Drive Source and Fuel#	Drive Source	Fuel						
1	Combustion Engine	Gasoline						
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					
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor							
Odometer Correction Units	Miles							
Engine Code	4.4-N63-G05X	Rated Horsepower	456					
Displacement (liters)	4.4							
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'						
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel					
Charge Air Cooler Type	Air	Drive Mode While Testing	4-Wheel Drive					
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)					
Curb Weight (lbs)	5170	Equivalent Test Weight (pounds)	5500					
GVWR (lbs)	6460	N/V Ratio	24.1					
Axle Ratio	3.15							
Transmission Type	Semi-Automatic	# of Transmission Gears	8					
Transmission Lockup	Yes	Creep Gear	No					

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
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Dynamometer Coefficients:

Coefficient Category	Target Coefficients			Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	
City/Highway/Evap	65.7	-0.369	0.03462	2	0.123	0.02773	17.8
Cold CO	0	0	0	0	0	0	N/A
US06	65.7	-0.369	0.03462	2	0.123	0.02773	N/A

Emission Control Device Comments --

Manufacturer Test Vehicle Comments EVAP EDV X5 xDrive50i, AT

Test #	KBMX10053877	Test Procedure	34 - Federal fuel 3-day evap
Exhaust Test # for this Evap Test	KBMX10053876	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	05/04/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	BMW Engineering and Emission Test Center		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	5120	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL (Total Hydrocarbon)	0.407289	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.439872	--

Manufacturer Test Comments EVAP EDV - 3Day, X5 xDrive50i

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.4399	0.0000	0.440	0.500	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.4399	0.0000	0.440	0.500	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Test #	KBMX91003985	Test Procedure	23 - 2-day evap
Exhaust Test # for this Evap Test	KBMX91003984	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/27/2018	Fuel	Gasoline
Fuel Batch ID	26781	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	3272.1	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.27238	--

Manufacturer Test Comments

Hot_Soak_HC_(g) = 0.036641, Diurnal (gHC) = 0.235739

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.2724	0.0297	0.302	0.500	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.2724	0.0297	0.302	0.500	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05					
Test #	KBMX10053565	Test Procedure	24 - Federal fuel refueling test (ORVR)					
Exhaust Test # for this Evap Test	KBMX10053564	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)					
Test Date	04/19/2017	Fuel	Gasoline					
Fuel Batch ID	T10/87	Fuel Calibration Number	9					
Vehicle Class	N/A	DF Type	Mfr. Determined					
Verify Test Lab ID	BMW Engineering and Emission Test Center							
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)							
Test Start Odometer Reading	4991	Odometer Units	K					
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--					
State of Charge Delta	No							
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes					
Test Results								
Test Result Name		Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)					
HC (Hydrocarbon for Running Loss and ORVR)		0.0301	--					
Manufacturer Test Comments EVAP EDV, ORVR, X5 xDrive 50i								
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC	0.030	0.006	0.04	0.20	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC	0.030	0.006	0.04	0.20	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Test #	KBMX10053878	Test Procedure	32 - Federal Fuel Running Loss
Exhaust Test # for this Evap Test	KBMX10053876	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	05/04/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	BMW Engineering and Emission Test Center		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	5120	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC (Hydrocarbon for Running Loss and ORVR)	0.009059	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.009784	--

Manufacturer Test Comments

EVAP EDV - RL, X5 xDrive50i

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.010	0.000	0.01	0.05	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.010	0.000	0.01	0.05	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Test #	KBMX10053515	Test Procedure	65 - Evap Canister Bleed Test
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	02/09/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	BMW Engineering and Emission Test Center		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4000	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL (Total Hydrocarbon)	0.00444	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.004795	--

Manufacturer Test Comments EVAP EDV, Bleed, X5 xDrive50i, Stickcar

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.0048	0.0000	0.005	0.020	Pass
CA	4,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.0048	0.0000	0.005	0.020	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05						
Test #	KBMX10053514	Test Procedure	67 - Leak Test - Port Near Canister						
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)						
Test Date	04/18/2018	Fuel	Gasoline						
Fuel Batch ID	T10/87	Fuel Calibration Number	9						
Vehicle Class	N/A	DF Type	Mfr. Determined						
Verify Test Lab ID	BMW Engineering and Emission Test Center								
E10 Evaporative Test Measurement Method	--								
Test Start Odometer Reading	0	Odometer Units	M						
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--						
State of Charge Delta	--								
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes						
Test Results									
<table border="1"> <tr> <td>Test Result Name</td> <td>Unrounded Test Result</td> <td>Verify Calculated FE Equivalent Value</td> </tr> <tr> <td>LEAK-DIA (Effective Leak Diameter (inches))</td> <td>0.0086</td> <td>--</td> </tr> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value	LEAK-DIA (Effective Leak Diameter (inches))	0.0086	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value							
LEAK-DIA (Effective Leak Diameter (inches))	0.0086	--							
Manufacturer Test Comments									
EDV Evap Leak Test X5 xDrive50i									
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	
Fed	150,000 miles	Federal Tier 3 Evap	LEAK-DIA	0.009	0.000	0.01	0.02	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	LEAK-DIA	0.009	0.000	0.01	0.02	Pass	

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05						
Emission Data Vehicle Information									
Vehicle ID / Configuration	LB39405 / 0	Manufacturer Vehicle Configuration Number	0						
Original Test Group Name	KBMXJ04.4N63	Original Evaporative/Refueling Family	KBMXR0180G05						
Original Test Vehicle Model Year	2019								
Vehicle Model									
Represented Test Vehicle Make	BMW	Represented Test Vehicle Model	X7 xDrive50i						
Leak Family Details									
Leak Family Identifier	--	Leak Family Name	--						
Drive Sources and Fuel System Details									
	<table border="1"> <tr> <th>Drive Source and Fuel#</th><th>Drive Source</th><th>Fuel</th></tr> <tr> <td>1</td><td>Combustion Engine</td><td>Gasoline</td></tr> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline		
Drive Source and Fuel#	Drive Source	Fuel							
1	Combustion Engine	Gasoline							
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						
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor								
Odometer Correction Units	Miles								
Engine Code	4.4-N63-G07X	Rated Horsepower	456						
Displacement (liters)	4.4								
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'							
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel						
Charge Air Cooler Type	Air	Drive Mode While Testing	4-Wheel Drive						
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)						
Curb Weight (lbs)	5617	Equivalent Test Weight (pounds)	6000						
GVWR (lbs)	7253	N/V Ratio	24.2						
Axle Ratio	3.39								
Transmission Type	Semi-Automatic	# of Transmission Gears	8						
Transmission Lockup	Yes	Creep Gear	No						

Certification Summary Information Report

Test Group	KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0180G05
Dynamometer Coefficients:							
Target Coefficients				Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	
City/Highway/Evap	70.2	-0.483	0.03684	1.8	0.139	0.02838	18.4
Cold CO	78	-0.537	0.04094	-2.7	-0.093	0.03227	N/A
US06	70.2	-0.483	0.03684	1.8	0.139	0.02838	N/A
Emission Control Device Comments	--						
Manufacturer Test Vehicle Comments	EDV X7 xDrive50i, AT, E10,RG10, s-sport						

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Test #	KBMX10055346	Test Procedure	31 - Federal fuel 3-day exhaust
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5462	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	601.3567	--
FE BAG 1 (Bag 1 Fuel Economy)	14.3	14.3
CO2 BAG 2 (Bag 2 Carbon Dioxide)	646.587	--
FE BAG 2 (Bag 2 Fuel Economy)	13.3	13.3
CO2 BAG 3 (Bag 3 Carbon Dioxide)	520.4947	--
FE BAG 3 (Bag 3 Fuel Economy)	16.5	16.5
METHANE (CH4 - Methane)	0.00225	--
CO (Carbon Monoxide)	0.1706	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.574	--
DT-EER (Drive Trace Energy Economy Rating)	-0.858	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.905	--
MFR FE (Manufacturer Fuel Economy)	14.2	14.2
NOX (Nitrogen Oxide)	0.0432	--
N2O (Nitrous Oxide)	0.0008	--
HC-NM (Non-methane Hydrocarbon)	0.01065	--
NMOG (Non-methane organic gas)	0.011715	--
PM (Particulate Matter)	0.000313	--
HC-TOTAL (Total Hydrocarbon)	0.01286	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	603	999

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family				KBMXR0180G05			
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		602.7004			--					
Manufacturer Test Comments		EDV RG10, S, Sport,										
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
Fed	120,000 miles	Federal Tier 3 Bin 125	CREE	999	--	--	--	0.0000	--	999	--	--
Fed	120,000 miles	Federal Tier 3 Bin 125	METHANE	0.0022	--	--	--	0.0024	--	0.005	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	N2O	0.0008	--	--	--	0.0000	--	0.001	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO	0.17	--	--	--	0.0000	--	0.2	2.1	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO-COMP	0.61	--	--	--	--	--	0.6	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0117	--	1.10	--	0.0000	--	0.012	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0549	--	--	--	--	--	0.055	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX-COMP	0.0523	--	--	--	--	--	0.052	0.120	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0432	--	--	--	0.0000	--	0.043	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	PM	0.0003	--	--	--	0.0000	--	0.000	0.003	Pass
CA	150,000 miles	California LEV-III ULEV125	CO	0.17	--	--	--	0.0000	--	0.2	2.1	Pass
CA	150,000 miles	California LEV-III ULEV125	CO-COMP	0.61	--	--	--	--	--	0.6	4.2	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG	0.0117	--	1.10	--	0.0000	--	0.012	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0549	--	--	--	--	--	0.055	0.125	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX-COMP	0.0523	--	--	--	--	--	0.052	0.120	Pass
CA	150,000 miles	California LEV-III ULEV125	NOX	0.0432	--	--	--	0.0000	--	0.043	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	PM	0.0003	--	--	--	0.0000	--	0.000	0.003	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Test #	KBMX10055348	Test Procedure	52 - Fed. fuel 50 F exh.
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/18/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5387	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.00471	--
CO (Carbon Monoxide)	0.4166	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.187	--
DT-EER (Drive Trace Energy Economy Rating)	-0.21	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.252	--
NOX (Nitrogen Oxide)	0.0468	--
HC-NM (Non-methane Hydrocarbon)	0.02709	--
NMOG (Non-methane organic gas)	0.029799	--
HC-TOTAL (Total Hydrocarbon)	0.03166	--

Manufacturer Test Comments EDV RG10, S, Sport

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	4,000 miles	California LEV-III ULEV125	CO	0.42	--	--	--	--	--	0.4	2.1	Pass
CA	4,000 miles	California LEV-III ULEV125	NMOG	0.0298	--	1.10	--	--	--	0.030	99.999	Pass
CA	4,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0766	--	--	--	--	--	0.077	0.250	Pass
CA	4,000 miles	California LEV-III ULEV125	NOX	0.0468	--	--	--	--	--	0.047	99.999	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Test #	KBMX10055351	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	08/04/2018	Fuel	Gasoline
Fuel Batch ID	COE10	Fuel Calibration Number	4
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5810	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	744.9158	--
FE BAG 1 (Bag 1 Fuel Economy)	11.4	11.4
CO2 BAG 2 (Bag 2 Carbon Dioxide)	689.7535	--
FE BAG 2 (Bag 2 Fuel Economy)	12.4	12.4
CO2 BAG 3 (Bag 3 Carbon Dioxide)	570.7932	--
FE BAG 3 (Bag 3 Fuel Economy)	15	15
METHANE (CH4 - Methane)	0.01435	--
CO (Carbon Monoxide)	0.8584	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.558	--
DT-EER (Drive Trace Energy Economy Rating)	-1.771	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.815	--
MFR FE (Manufacturer Fuel Economy)	12.8	12.8
HC-NM (Non-methane Hydrocarbon)	0.09251	--
HC-TOTAL (Total Hydrocarbon)	0.10622	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	668.5366	--

Manufacturer Test Comments

EDV RG10, S, Sport, Cold CO

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0180G05		
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
Fed	50,000 miles	Federal Tier 3 Bin 125	CO	0.86	--	--	--	0.0000	--	0.9	10.0	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	HC-NM	0.09	--	--	--	0.0000	--	0.1	0.3	Pass
CA	50,000 miles	California LEV-III ULEV125	CO	0.86	--	--	--	0.0000	--	0.9	10.0	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Test #	KBMX10055347	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5480	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.00283	--
CO (Carbon Monoxide)	0.201	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	12.747	--
DT-EER (Drive Trace Energy Economy Rating)	-0.824	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	15.579	--
MFR FE (Manufacturer Fuel Economy)	23.6	23.6
NOX (Nitrogen Oxide)	0.0554	--
HC-NM (Non-methane Hydrocarbon)	0.00444	--
NMOG (Non-methane organic gas)	0.0045732	--
HC-TOTAL (Total Hydrocarbon)	0.00722	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	364	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	364.388	--

Manufacturer Test Comments EDV RG10, S, Sport, HWY

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0180G05		
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
Fed	120,000 miles	Federal Tier 3 Bin 125	CREE	999	--	--	--	0.0000	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0046	--	1.03	--	0.0000	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0600	--	--	--	--	--	0.060	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0554	--	--	--	0.0000	--	0.055	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG	0.0046	--	1.03	--	0.0000	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0600	--	--	--	--	--	0.060	0.125	Pass
CA	150,000 miles	California LEV-III ULEV125	NOX	0.0554	--	--	--	0.0000	--	0.055	99.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Test #	KBMX10055350	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5512	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	819.4088	--
FE BAG 1 (Bag 1 Fuel Economy)	10.4	10.4
CO2 BAG 2 (Bag 2 Carbon Dioxide)	445.8565	--
FE BAG 2 (Bag 2 Fuel Economy)	19.2	19.2
METHANE (CH4 - Methane)	0.00565	--
CO (Carbon Monoxide)	1.0956	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.234	--
DT-EER (Drive Trace Energy Economy Rating)	1.037	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.752	--
MFR FE (Manufacturer Fuel Economy)	16.2	16.2
NOX (Nitrogen Oxide)	0.048	--
HC-NM (Non-methane Hydrocarbon)	0.02354	--
PM (Particulate Matter)	0.001519	--
HC-TOTAL (Total Hydrocarbon)	0.02911	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	528.4246	--

Manufacturer Test Comments EDV RG10, S, Sport,

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0180G05		
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
Fed	150,000 miles	Federal Tier 3 Bin 125	PM	0.0015	--	--	--	0.0000	--	0.002	0.006	Pass
CA	150,000 miles	California LEV-III ULEV125	PM	0.0015	--	--	--	0.0000	--	0.002	0.006	Pass

Test #	KBMX10055349	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/23/2018	Fuel	N/A
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5538	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.00082	--
CO (Carbon Monoxide)	0.6465	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.511	--
DT-EER (Drive Trace Energy Economy Rating)	-0.688	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.131	--
MFR FE (Manufacturer Fuel Economy)	12.8	12.8
NOX (Nitrogen Oxide)	0.0287	--
HC-NM (Non-methane Hydrocarbon)	0.00443	--
HC-TOTAL (Total Hydrocarbon)	0.00522	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	670.8886	--

Manufacturer Test Comments EDV RG10, S, Sport,

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05					
Emission Data Vehicle Information								
Vehicle ID / Configuration	LB39405 / 1	Manufacturer Vehicle Configuration Number	0					
Original Test Group Name	KBMXJ04.4N63	Original Evaporative/Refueling Family	KBMXR0180G05					
Original Test Vehicle Model Year	2019							
Vehicle Model								
Represented Test Vehicle Make	BMW	Represented Test Vehicle Model	X7 xDrive50i					
Leak Family Details								
Leak Family Identifier	--	Leak Family Name	--					
Drive Sources and Fuel System Details								
	<table border="1"> <tr> <th>Drive Source and Fuel#</th> <th>Drive Source</th> <th>Fuel</th> </tr> <tr> <td>1</td> <td>Combustion Engine</td> <td>Gasoline</td> </tr> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline	
Drive Source and Fuel#	Drive Source	Fuel						
1	Combustion Engine	Gasoline						
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					
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor							
Odometer Correction Units	Miles							
Engine Code	4.4-N63-G07X	Rated Horsepower	456					
Displacement (liters)	4.4							
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'						
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel					
Charge Air Cooler Type	Air	Drive Mode While Testing	4-Wheel Drive					
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)					
Curb Weight (lbs)	5617	Equivalent Test Weight (pounds)	6000					
GVWR (lbs)	7253	N/V Ratio	24.2					
Axle Ratio	3.39							
Transmission Type	Semi-Automatic	# of Transmission Gears	8					
Transmission Lockup	Yes	Creep Gear	No					

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family		KBMXR0180G05	
Dynamometer Coefficients:								
Target Coefficients				Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients	
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)		
City/Highway/Evap	70.2	-0.483	0.03597	2.2	0.189	0.02684	18.1	
Cold CO	0	0	0	0	0	0	N/A	
US06	70.2	-0.483	0.03597	2.2	0.189	0.02684	N/A	
Emission Control Device Comments		--						
Manufacturer Test Vehicle Comments		FEDV X7 xDrive50i, AT, E0, 11, d-comfort						

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Test #	KBMX10055352	Test Procedure	31 - Federal fuel 3-day exhaust
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	08/01/2018	Fuel	Gasoline
Fuel Batch ID	T2/E0	Fuel Calibration Number	8
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5686	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	492.2462	--
FE BAG 1 (Bag 1 Fuel Economy)	17.9	17.9
CO2 BAG 2 (Bag 2 Carbon Dioxide)	472.7827	--
FE BAG 2 (Bag 2 Fuel Economy)	18.7	18.7
CO2 BAG 3 (Bag 3 Carbon Dioxide)	421.9465	--
FE BAG 3 (Bag 3 Fuel Economy)	20.9	20.9
METHANE (CH4 - Methane)	0.00256	--
CO (Carbon Monoxide)	0.3731	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.469	--
DT-EER (Drive Trace Energy Economy Rating)	-0.026	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.737	--
MFR FE (Manufacturer Fuel Economy)	19.1	19.1
NOX (Nitrogen Oxide)	0.0241	--
N2O (Nitrous Oxide)	0.0004	--
HC-NM (Non-methane Hydrocarbon)	0.01494	--
NMOG (Non-methane organic gas)	0.0155376	--
HC-TOTAL (Total Hydrocarbon)	0.01739	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	464	464

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0180G05		
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		462.838			--					
Manufacturer Test Comments		FEDV, RG11										
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
Fed	120,000 miles	Federal Tier 3 Bin 125	CREE	464	--	--	--	0.0000	--	464	--	--
Fed	120,000 miles	Federal Tier 3 Bin 125	METHANE	0.0026	--	--	--	0.0024	--	0.005	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	N2O	0.0004	--	--	--	0.0000	--	0.000	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO	0.37	--	--	--	0.0000	--	0.4	2.1	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0155	--	1.10	--	0.0000	--	0.016	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0396	--	--	--	--	--	0.040	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0241	--	--	--	0.0000	--	0.024	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	CO	0.37	--	--	--	0.0000	--	0.4	2.1	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG	0.0155	--	1.10	--	0.0000	--	0.016	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0396	--	--	--	--	--	0.040	0.125	Pass
CA	150,000 miles	California LEV-III ULEV125	NOX	0.0241	--	--	--	0.0000	--	0.024	99.999	Pass
NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.												

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0180G05
Fuel Properties			
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	02/01/2018
Fuel Batch Calibration Effective Date	02/01/2018	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.828	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.749
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value (BTU / lb)	17793
Fuel Blend Carbon Weight Fraction	0.828	Weight Fraction CO2	--
Fuel Batch ID	COE10	Fuel Calibration Number	4
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	07/25/2018
Fuel Batch Calibration Effective Date	07/25/2018	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.825	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.743
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value (BTU / lb)	18143
Fuel Blend Carbon Weight Fraction	0.825	Weight Fraction CO2	--
Fuel Batch ID	26781	Fuel Calibration Number	1
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	09/26/2017
Fuel Batch Calibration Effective Date	09/26/2017	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.744
Fuel Ethanol Volume Percent (%)	9.7	Fuel Net Heating Value (BTU / lb)	18037
Fuel Blend Carbon Weight Fraction	0.83	Weight Fraction CO2	--
Fuel Batch ID	T2/E0	Fuel Calibration Number	8
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	08/22/2017
Fuel Batch Calibration Effective Date	08/22/2017	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.864	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.737
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value (BTU / lb)	18505
Fuel Blend Carbon Weight Fraction	0.865	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family		KBMXR0180G05		
Consolidated List of Standards									
Exhaust Standards									
Cert Region		California + CAA Section 177 states			Cert/In-Use Code		Cert		
Vehicle Class		LDV/Passenger Car			Standard Level		California LEV-III ULEV125		
Fuel		Gasoline			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
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.125
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
Cert Region		Federal			Cert/In-Use Code		Cert		
Vehicle Class		LDV/Passenger Car			Standard Level		Federal Tier 3 Bin 125		
Fuel		Gasoline			Test Procedure		Federal fuel 3-day exhaust		
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	CREE	--	--	--	--	--	--	0.0000	999.999
120,000 miles	METHANE	--	--	--	--	--	--	0.0024	0.030
120,000 miles	N2O	--	--	--	--	--	--	0.0000	0.010
150,000 miles	CO	--	--	--	--	--	--	0.0000	2.1
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.10	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.125
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.120
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.003

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0180G05	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			Federal fuel 3-day exhaust	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.0000	2.1
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.10	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.125
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.120
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.003
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			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	CREE	--	--	--	--	--	--	0.0000	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0000	0.125
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			Test Procedure			Cold CO	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	--	--	--	--	--	0.0000	10.0
120,000 miles	HC-NM	--	--	--	--	--	--	0.0000	0.3

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0180G05	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			US06	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.006

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			Fed. fuel 50 F exh.	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
4,000 miles	CO	--	--	--	--	--	--	--	2.1
4,000 miles	HCHO	--	--	--	--	--	--	--	0.016
4,000 miles	NMOG	--	--	1.10	--	--	--	--	99.999
4,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.250
4,000 miles	NOX	--	--	--	--	--	--	--	99.999

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			Cold CO	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	--	--	--	--	--	0.0000	10.0

Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			Test Procedure			US06	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.006

Evaporative/Refueling Standards

Certification Summary Information Report

Test Group		KBMXJ04.4N63		Evaporative/Refueling Family		KBMXR0180G05	
Evaporative/Refueling Family		KBMXR0180G05		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC	--	0.20	0.006		
Evaporative/Refueling Family		KBMXR0180G05		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0.000		
Evaporative/Refueling Family		KBMXR0180G05		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.500	0.0297		
Evaporative/Refueling Family		KBMXR0180G05		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC	--	0.20	0.006		
Evaporative/Refueling Family		KBMXR0180G05		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Evap Canister Bleed Test					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	4,000 miles	HC-TOTAL-EQUIV	--	0.020	0.0000		

Certification Summary Information Report

Test Group	KBMXJ04.4N63		Evaporative/Refueling Family	KBMXR0180G05	
Evaporative/Refueling Family	KBMXR0180G05		Cert Region	Federal	
Cert/In-Use Code	Cert		Standard Level	Federal Tier 3 Evap	
Test Procedure	2-day evap				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.500	0.0297
Evaporative/Refueling Family	KBMXR0180G05		Cert Region	California + CAA Section 177 states California LEV-III Zero Evap (Option 2)	
Cert/In-Use Code	Cert		Standard Level		
Test Procedure	Federal Fuel Running Loss				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0.000
Evaporative/Refueling Family	KBMXR0180G05		Cert Region	Federal	
Cert/In-Use Code	Cert		Standard Level	Federal Tier 3 Evap	
Test Procedure	Evap Canister Bleed Test				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.020	0.0000
Evaporative/Refueling Family	KBMXR0180G05		Cert Region	California + CAA Section 177 states California LEV-III Zero Evap (Option 2)	
Cert/In-Use Code	Cert		Standard Level		
Test Procedure	Federal fuel 3-day evap				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.500	0.0000
Evaporative/Refueling Family	KBMXR0180G05		Cert Region	California + CAA Section 177 states California LEV-III Zero Evap (Option 2)	
Cert/In-Use Code	Cert		Standard Level		
Test Procedure	Leak Test - Port Near Canister				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	LEAK-DIA	--	0.02	0.000

Certification Summary Information Report

Test Group		KBMXJ04.4N63		Evaporative/Refueling Family		KBMXR0180G05	
Evaporative/Refueling Family		KBMXR0180G05		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.500	0.0000		
Evaporative/Refueling Family		KBMXR0180G05		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Leak Test - Port Near Canister					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	LEAK-DIA	--	0.02	0.000		

Certification Summary Information Report

Test Group		KBMXJ04.4N63	Evaporative/Refueling Family		KBMXR0180G05
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		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		CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only	
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		KBMXJ04.4N63	Evaporative/Refueling Family		KBMXR0180G05
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		KBMXJ04.4N63		Evaporative/Refueling Family		KBMXR0180G05	
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		

Certification Summary Information Report

Manufacturer	BMW	Manufacturer Code	BMX
Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Certificate Number	--	CARB Executive Order #	--
Certificate Issue Date	--	Certificate Revision Date	--
Certificate Effective Date	--	Conditional Certificate	--
CSI Revision #	--	CSI Submission/Revision Date	08/28/2018 08:37:29 AM
Model Year	2019		

Test Group Information

CSI Type	Running Change	Running Change Reference Number	19-J04.4N63-02
GHG Exempt Status	Not Exempt		

Drive Sources and Fuel(s)

Drive Source #1: Combustion Engine

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Gasoline	Spark Ignition Direct fuel injection	No

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	LDV, LDT4
Federal Clean Fuel Vehicle	No	Federal Clean Fuel Vehicle Standard	--
Federal Clean Fuel Vehicle ILEV	No	California Partial Zero Emissions Vehicle Indicator	--
Durability Group Name	KBMXGPGNNV33	Durability Group Equivalency Factor	1
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA
Complies with HD GHG 2b/3 regulations?	No		
Introduction into Commerce Date	08/01/2018	CAP2000 Conditional Certificate?	N/A
Independent Commercial Importer?	--	Alternative Fuel Converter Certificate?	--
SFTP Federal Composite Compliance Identifier	Tier 3	SFTP Tier 2 Composite CO Option	--
SFTP LEV-III Composite Compliance Indicator	Yes		
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	KBMXJ04.4N63
Test Group OBD Compliance Level	Partial - with deficiencies	Number of Test Group OBD Deficiencies	3
OBD Deficiencies Comments	E-17-323 (2 Test Group OBD Deficiencies) / E-17-269 (2 Test Group OBD Deficiencies) / E-18-091 (3 Test Group OBD Deficiencies)		
Mfr Test Group Comments	--		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	11/03/2017 09:26:05 AM				
Integrated ORVR?	Yes	Fuel(s)	Gasoline				
Multiple Fuel Storage	--						
Bladder Fuel Tank?	Yes						
Fuel Tank Material	Plastic	Fuel Tank Material Description	PE-HD / COEX				
Fill Pipe Seal Type	Liquid seal						
Air Intake System Vapor Storage Device?	No	Air Intake System Vapor Storage Device Description	--				
Fuel System Vapor Storage Canister?	Yes	Other Vapor Storage	--				
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	170	Number of Primary Canisters	1				
Number of Bleed Canisters	0	Bleed Canister Total Working Capacity (grams)	--				
Mfr Evaporative/Refueling Family Comments	--						
Leak Family Details							
Leak Family Indicator	No						
Canister Bleed Test Indicator	No	Applicability of Evaporative Canister Bleed Test	--				
Evaporative Canister Bleed Test Comments	--						
CARB Fuel Only (Rig) Test Indicator	No	Applicability of CARB Fuel Only (Rig) Test	--				
CARB Fuel Only (Rig) Test Comments	--						
Models Covered by this Certificate							
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
BMW	1 - BMW	86 - 750i xDrive	Federal	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	212 - Alpina B7 xDrive	Federal	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	95 - X6 xDrive50i	Federal	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	95 - X6 xDrive50i	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	212 - Alpina B7 xDrive	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	86 - 750i xDrive	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	85 - 750i xDrive (SWB)	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	80 - 750i	Federal	2-Wheel Drive, Rear	Semi-Automatic	8	Yes
BMW	1 - BMW	85 - 750i xDrive (SWB)	Federal	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	80 - 750i	California + CAA Section 177 states	2-Wheel Drive, Rear	Semi-Automatic	8	Yes

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63	
Engine Description				
Hybrid Type	--	Hybrid Description	--	
Engine Type	4-Stroke Spark Ignition	Mfr Engine Description	--	
Engine Block Arrangement	V-shaped engine	Mfr Engine Block Arrangement Description	--	
Camless Valvetrain Indicator	No	Oil Viscosity/Classification	5W30	
Number of Cylinders/Rotors	8	Mechanically Variable Compression Ratio Indicator	N	
After Treatment Device(s) (ATD)				
ATD Number	ATD Type	ATD Precious Metal	Substrate Material	Substrate Construction
1	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
2	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
Mfr After Treatment Device (ATD) Comments				
--				
Direct Ozone Reduction (DOR) Device				
Not Equipped				
Mfr Emission Control Device Comments				
--				
Engine Configuration Number 1				
Engine Displacement (liters)	4.4	Engine Rated Horsepower	443	
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2	
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2	
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid	
Air Aspiration Drive Method(s)	Mechanical			
Cylinder Deactivation	No			
Cylinder Deactivation Description	--			
Variable Valve Timing	Yes			
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves			
Variable Valve Lift?	Yes			
Variable Valve Lift System Description	Variable Valve Lift at inlet valves			
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4	
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--	
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--	
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--	
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--	
Mfr Air/Fuel Sensor Comments	--			
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No	
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--	
Closed Loop Air Injection System	No			
Air Injection Type	--	Air Injection Type if 'Other'	--	
Mfr Engine Configuration Comments	--			

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Engine Configuration Number 2			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	599
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Engine Configuration Number 3			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	456
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Engine Configuration Number 4			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	591
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63								
Engine Configuration Number 5											
Engine Displacement (liters)	4.4	Engine Rated Horsepower	523								
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2								
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2								
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid								
Air Aspiration Drive Method(s)	Mechanical										
Cylinder Deactivation	No										
Cylinder Deactivation Description	--										
Variable Valve Timing	Yes										
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves										
Variable Valve Lift?	Yes										
Variable Valve Lift System Description	Variable Valve Lift at inlet valves										
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4								
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--								
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--								
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--								
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--								
Mfr Air/Fuel Sensor Comments	--										
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No								
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--								
Closed Loop Air Injection System	No										
Air Injection Type	--	Air Injection Type if 'Other'	--								
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
Gasoline	KBMX10055346	KBMX10055350	KBMX10055349	KBMX10055351	KBMX10055347	13.7	228.2	23.6	286.1	--	
SFTP LEV-III Official Test Numbers											
Test Group	Fuel	FTP	US06	SC03							
Gasoline	KBMX10055346	KBMX10055350	KBMX10055349								

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63					
Emission Data Vehicle Information								
Vehicle ID / Configuration	CY33005 / 0	Manufacturer Vehicle Configuration Number	0					
Original Test Group Name	9BMXV04.4N63	Original Evaporative/Refueling Family	9BMXR0170LE2					
Original Test Vehicle Model Year	2009							
Vehicle Model								
Represented Test Vehicle Make	BMW	Represented Test Vehicle Model	750i					
Leak Family Details								
Leak Family Identifier	--	Leak Family Name	--					
Drive Sources and Fuel System Details								
	<table border="1"> <thead> <tr> <th>Drive Source and Fuel#</th> <th>Drive Source</th> <th>Fuel</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Combustion Engine</td> <td>Gasoline</td> </tr> </tbody> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline	
Drive Source and Fuel#	Drive Source	Fuel						
1	Combustion Engine	Gasoline						
Hybrid Indicator	No	Multiple Fuel Combustion	--					
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	No					
Fuel Cell Indicator	No	Rechargeable Energy Storage System, if 'Other'	--					
Rechargeable Energy Storage System	--							
Off-board charge Capable Indicator	--							
Odometer Correction -- Initial	86	Odometer Correction Factor	0.99					
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor							
Odometer Correction Units	Miles							
Engine Code	4.4-N63-F02	Rated Horsepower	400					
Displacement (liters)	4.4							
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'						
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel					
Charge Air Cooler Type	Air	Drive Mode While Testing	2-Wheel Drive, Rear					
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)					
Curb Weight (lbs)	4641	Equivalent Test Weight (pounds)	5000					
GVWR (lbs)	5788	N/V Ratio	29.9					
Axle Ratio	3.46							
Transmission Type	Semi-Automatic	# of Transmission Gears	6					
Transmission Lockup	Yes	Creep Gear	No					

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
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Dynamometer Coefficients:

Coefficient Category	Target Coefficients			Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	
City/Highway/Evap	50.3	0.245	0.01789	26.6	-0.017	0.0193	14.3
Cold CO	55.8	0.272	0.01987	24.1	-0.063	0.0224	N/A
US06	50.3	0.245	0.01789	26.6	-0.017	0.0193	N/A

Emission Control Device Comments	--		
Manufacturer Test Vehicle Comments	EDV - 750Li AT AFS sport tires		

Test #	9BMX10000807	Test Procedure	34 - Federal fuel 3-day evap
Exhaust Test # for this Evap Test	9BMX10000803	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	10/16/2008	Fuel	Gasoline
Fuel Batch ID	Tank 4	Fuel Calibration Number	40
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	UPZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4392	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
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
HC-TOTAL (Total Hydrocarbon)	0.4	--

Manufacturer Test Comments	Evap 3d - 750Li		
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Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal LEV-II Evap	HC-TOTAL	0.400	0.027	0.43	0.50	Pass
CA	150,000 miles	California LEV-II Evap	HC-TOTAL	0.400	0.027	0.43	0.50	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Test #	9BMX10000808	Test Procedure	32 - Federal Fuel Running Loss
Exhaust Test # for this Evap Test	9BMX10000803	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	10/16/2008	Fuel	Gasoline
Fuel Batch ID	Tank 4	Fuel Calibration Number	40
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	UPZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4392	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
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
HC (Hydrocarbon for Running Loss and ORVR)	0.028	--

Manufacturer Test Comments

Evap Running Loss - 750Li

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal Tier 2 Evap	HC	0.028	0.000	0.03	0.05	Pass
CA	150,000 miles	California LEV-II Evap	HC	0.028	0.000	0.03	0.05	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Test #	9BMX10000837	Test Procedure	24 - Federal fuel refueling test (ORVR)
Exhaust Test # for this Evap Test	9BMX10000836	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	09/25/2008	Fuel	Gasoline
Fuel Batch ID	Tank 4	Fuel Calibration Number	40
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	UPZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4342	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
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
HC (Hydrocarbon for Running Loss and ORVR)	0.01	--

Manufacturer Test Comments

Evap - ORVR 750Li

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal Tier 2 Evap	HC	0.010	0.008	0.02	0.20	Pass
CA	150,000 miles	California LEV-II Evap	HC	0.010	0.008	0.02	0.20	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63						
Emission Data Vehicle Information									
Vehicle ID / Configuration	LB39405 / 0	Manufacturer Vehicle Configuration Number	0						
Original Test Group Name	KBMXJ04.4N63	Original Evaporative/Refueling Family	KBMXR0180G05						
Original Test Vehicle Model Year	2019								
Vehicle Model									
Represented Test Vehicle Make	BMW	Represented Test Vehicle Model	X7 xDrive50i						
Leak Family Details									
Leak Family Identifier	--	Leak Family Name	--						
Drive Sources and Fuel System Details									
	<table border="1"> <tr> <th>Drive Source and Fuel#</th><th>Drive Source</th><th>Fuel</th></tr> <tr> <td>1</td><td>Combustion Engine</td><td>Gasoline</td></tr> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline		
Drive Source and Fuel#	Drive Source	Fuel							
1	Combustion Engine	Gasoline							
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						
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor								
Odometer Correction Units	Miles								
Engine Code	4.4-N63-G07X	Rated Horsepower	456						
Displacement (liters)	4.4								
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'							
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel						
Charge Air Cooler Type	Air	Drive Mode While Testing	4-Wheel Drive						
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)						
Curb Weight (lbs)	5617	Equivalent Test Weight (pounds)	6000						
GVWR (lbs)	7253	N/V Ratio	24.2						
Axle Ratio	3.39								
Transmission Type	Semi-Automatic	# of Transmission Gears	8						
Transmission Lockup	Yes	Creep Gear	No						

Certification Summary Information Report

Test Group	KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0170N63
Dynamometer Coefficients:							
Target Coefficients				Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	
City/Highway/Evap	70.2	-0.483	0.03684	1.8	0.139	0.02838	18.4
Cold CO	78	-0.537	0.04094	-2.7	-0.093	0.03227	N/A
US06	70.2	-0.483	0.03684	1.8	0.139	0.02838	N/A
Emission Control Device Comments	--						
Manufacturer Test Vehicle Comments	EDV X7 xDrive50i, AT, E10,RG10, s-sport						

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Test #	KBMX10055346	Test Procedure	31 - Federal fuel 3-day exhaust
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5462	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	601.3567	--
FE BAG 1 (Bag 1 Fuel Economy)	14.3	14.3
CO2 BAG 2 (Bag 2 Carbon Dioxide)	646.587	--
FE BAG 2 (Bag 2 Fuel Economy)	13.3	13.3
CO2 BAG 3 (Bag 3 Carbon Dioxide)	520.4947	--
FE BAG 3 (Bag 3 Fuel Economy)	16.5	16.5
METHANE (CH4 - Methane)	0.00225	--
CO (Carbon Monoxide)	0.1706	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.574	--
DT-EER (Drive Trace Energy Economy Rating)	-0.858	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.905	--
MFR FE (Manufacturer Fuel Economy)	14.2	14.2
NOX (Nitrogen Oxide)	0.0432	--
N2O (Nitrous Oxide)	0.0008	--
HC-NM (Non-methane Hydrocarbon)	0.01065	--
NMOG (Non-methane organic gas)	0.011715	--
PM (Particulate Matter)	0.000313	--
HC-TOTAL (Total Hydrocarbon)	0.01286	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	603	999

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0170N63		
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		602.7004			--					
Manufacturer Test Comments		EDV RG10, S, Sport,										
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
Fed	120,000 miles	Federal Tier 3 Bin 125	CREE	999	--	--	--	0.0000	--	999	--	--
Fed	120,000 miles	Federal Tier 3 Bin 125	METHANE	0.0022	--	--	--	0.0024	--	0.005	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	N2O	0.0008	--	--	--	0.0000	--	0.001	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO	0.17	--	--	--	0.0000	--	0.2	2.1	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO-COMP	0.61	--	--	--	--	--	0.6	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0117	--	1.10	--	0.0000	--	0.012	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0549	--	--	--	--	--	0.055	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX-COMP	0.0523	--	--	--	--	--	0.052	0.120	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0432	--	--	--	0.0000	--	0.043	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	PM	0.0003	--	--	--	0.0000	--	0.000	0.003	Pass
CA	150,000 miles	California LEV-III ULEV125	CO	0.17	--	--	--	0.0000	--	0.2	2.1	Pass
CA	150,000 miles	California LEV-III ULEV125	CO-COMP	0.61	--	--	--	--	--	0.6	4.2	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG	0.0117	--	1.10	--	0.0000	--	0.012	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0549	--	--	--	--	--	0.055	0.125	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX-COMP	0.0523	--	--	--	--	--	0.052	0.120	Pass
CA	150,000 miles	California LEV-III ULEV125	NOX	0.0432	--	--	--	0.0000	--	0.043	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	PM	0.0003	--	--	--	0.0000	--	0.000	0.003	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Test #	KBMX10055348	Test Procedure	52 - Fed. fuel 50 F exh.
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/18/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5387	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.00471	--
CO (Carbon Monoxide)	0.4166	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.187	--
DT-EER (Drive Trace Energy Economy Rating)	-0.21	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.252	--
NOX (Nitrogen Oxide)	0.0468	--
HC-NM (Non-methane Hydrocarbon)	0.02709	--
NMOG (Non-methane organic gas)	0.029799	--
HC-TOTAL (Total Hydrocarbon)	0.03166	--

Manufacturer Test Comments EDV RG10, S, Sport

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	4,000 miles	California LEV-III ULEV125	CO	0.42	--	--	--	--	--	0.4	2.1	Pass
CA	4,000 miles	California LEV-III ULEV125	NMOG	0.0298	--	1.10	--	--	--	0.030	99.999	Pass
CA	4,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0766	--	--	--	--	--	0.077	0.250	Pass
CA	4,000 miles	California LEV-III ULEV125	NOX	0.0468	--	--	--	--	--	0.047	99.999	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Test #	KBMX10055351	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	08/04/2018	Fuel	Gasoline
Fuel Batch ID	COE10	Fuel Calibration Number	4
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5810	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	744.9158	--
FE BAG 1 (Bag 1 Fuel Economy)	11.4	11.4
CO2 BAG 2 (Bag 2 Carbon Dioxide)	689.7535	--
FE BAG 2 (Bag 2 Fuel Economy)	12.4	12.4
CO2 BAG 3 (Bag 3 Carbon Dioxide)	570.7932	--
FE BAG 3 (Bag 3 Fuel Economy)	15	15
METHANE (CH4 - Methane)	0.01435	--
CO (Carbon Monoxide)	0.8584	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.558	--
DT-EER (Drive Trace Energy Economy Rating)	-1.771	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.815	--
MFR FE (Manufacturer Fuel Economy)	12.8	12.8
HC-NM (Non-methane Hydrocarbon)	0.09251	--
HC-TOTAL (Total Hydrocarbon)	0.10622	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	668.5366	--

Manufacturer Test Comments

EDV RG10, S, Sport, Cold CO

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0170N63		
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
Fed	50,000 miles	Federal Tier 3 Bin 125	CO	0.86	--	--	--	0.0000	--	0.9	10.0	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	HC-NM	0.09	--	--	--	0.0000	--	0.1	0.3	Pass
CA	50,000 miles	California LEV-III ULEV125	CO	0.86	--	--	--	0.0000	--	0.9	10.0	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Test #	KBMX10055347	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5480	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.00283	--
CO (Carbon Monoxide)	0.201	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	12.747	--
DT-EER (Drive Trace Energy Economy Rating)	-0.824	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	15.579	--
MFR FE (Manufacturer Fuel Economy)	23.6	23.6
NOX (Nitrogen Oxide)	0.0554	--
HC-NM (Non-methane Hydrocarbon)	0.00444	--
NMOG (Non-methane organic gas)	0.0045732	--
HC-TOTAL (Total Hydrocarbon)	0.00722	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	364	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	364.388	--

Manufacturer Test Comments EDV RG10, S, Sport, HWY

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family					KBMXR0170N63		
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
Fed	120,000 miles	Federal Tier 3 Bin 125	CREE	999	--	--	--	0.0000	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0046	--	1.03	--	0.0000	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0600	--	--	--	--	--	0.060	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0554	--	--	--	0.0000	--	0.055	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG	0.0046	--	1.03	--	0.0000	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0600	--	--	--	--	--	0.060	0.125	Pass
CA	150,000 miles	California LEV-III ULEV125	NOX	0.0554	--	--	--	0.0000	--	0.055	99.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Test #	KBMX10055350	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5512	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	819.4088	--
FE BAG 1 (Bag 1 Fuel Economy)	10.4	10.4
CO2 BAG 2 (Bag 2 Carbon Dioxide)	445.8565	--
FE BAG 2 (Bag 2 Fuel Economy)	19.2	19.2
METHANE (CH4 - Methane)	0.00565	--
CO (Carbon Monoxide)	1.0956	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.234	--
DT-EER (Drive Trace Energy Economy Rating)	1.037	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.752	--
MFR FE (Manufacturer Fuel Economy)	16.2	16.2
NOX (Nitrogen Oxide)	0.048	--
HC-NM (Non-methane Hydrocarbon)	0.02354	--
PM (Particulate Matter)	0.001519	--
HC-TOTAL (Total Hydrocarbon)	0.02911	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	528.4246	--

Manufacturer Test Comments EDV RG10, S, Sport,

Certification Summary Information Report

Test Group		KBMXJ04.4N63		Evaporative/Refueling Family				KBMXR0170N63				
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
Fed	150,000 miles	Federal Tier 3 Bin 125	PM	0.0015	--	--	--	0.0000	--	0.002	0.006	Pass
CA	150,000 miles	California LEV-III ULEV125	PM	0.0015	--	--	--	0.0000	--	0.002	0.006	Pass

Test #	KBMX10055349	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/23/2018	Fuel	N/A
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5538	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.00082	--
CO (Carbon Monoxide)	0.6465	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.511	--
DT-EER (Drive Trace Energy Economy Rating)	-0.688	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.131	--
MFR FE (Manufacturer Fuel Economy)	12.8	12.8
NOX (Nitrogen Oxide)	0.0287	--
HC-NM (Non-methane Hydrocarbon)	0.00443	--
HC-TOTAL (Total Hydrocarbon)	0.00522	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	670.8886	--

Manufacturer Test Comments EDV RG10, S, Sport,

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63					
Emission Data Vehicle Information								
Vehicle ID / Configuration	LB39405 / 1	Manufacturer Vehicle Configuration Number	0					
Original Test Group Name	KBMXJ04.4N63	Original Evaporative/Refueling Family	KBMXR0180G05					
Original Test Vehicle Model Year	2019							
Vehicle Model								
Represented Test Vehicle Make	BMW	Represented Test Vehicle Model	X7 xDrive50i					
Leak Family Details								
Leak Family Identifier	--	Leak Family Name	--					
Drive Sources and Fuel System Details								
	<table border="1"> <thead> <tr> <th>Drive Source and Fuel#</th> <th>Drive Source</th> <th>Fuel</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Combustion Engine</td> <td>Gasoline</td> </tr> </tbody> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline	
Drive Source and Fuel#	Drive Source	Fuel						
1	Combustion Engine	Gasoline						
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					
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor							
Odometer Correction Units	Miles							
Engine Code	4.4-N63-G07X	Rated Horsepower	456					
Displacement (liters)	4.4							
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'						
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel					
Charge Air Cooler Type	Air	Drive Mode While Testing	4-Wheel Drive					
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)					
Curb Weight (lbs)	5617	Equivalent Test Weight (pounds)	6000					
GVWR (lbs)	7253	N/V Ratio	24.2					
Axle Ratio	3.39							
Transmission Type	Semi-Automatic	# of Transmission Gears	8					
Transmission Lockup	Yes	Creep Gear	No					

Certification Summary Information Report

Test Group	KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0170N63
Dynamometer Coefficients:							
Target Coefficients				Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	
City/Highway/Evap	70.2	-0.483	0.03597	2.2	0.189	0.02684	18.1
Cold CO	0	0	0	0	0	0	N/A
US06	70.2	-0.483	0.03597	2.2	0.189	0.02684	N/A
Emission Control Device Comments	--						
Manufacturer Test Vehicle Comments	FEDV X7 xDrive50i, AT, E0, 11, d-comfort						

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Test #	KBMX10055352	Test Procedure	31 - Federal fuel 3-day exhaust
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	08/01/2018	Fuel	Gasoline
Fuel Batch ID	T2/E0	Fuel Calibration Number	8
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5686	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	492.2462	--
FE BAG 1 (Bag 1 Fuel Economy)	17.9	17.9
CO2 BAG 2 (Bag 2 Carbon Dioxide)	472.7827	--
FE BAG 2 (Bag 2 Fuel Economy)	18.7	18.7
CO2 BAG 3 (Bag 3 Carbon Dioxide)	421.9465	--
FE BAG 3 (Bag 3 Fuel Economy)	20.9	20.9
METHANE (CH4 - Methane)	0.00256	--
CO (Carbon Monoxide)	0.3731	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.469	--
DT-EER (Drive Trace Energy Economy Rating)	-0.026	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.737	--
MFR FE (Manufacturer Fuel Economy)	19.1	19.1
NOX (Nitrogen Oxide)	0.0241	--
N2O (Nitrous Oxide)	0.0004	--
HC-NM (Non-methane Hydrocarbon)	0.01494	--
NMOG (Non-methane organic gas)	0.0155376	--
HC-TOTAL (Total Hydrocarbon)	0.01739	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	464	464

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0170N63		
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		462.838			--					
Manufacturer Test Comments		FEDV, RG11										
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
Fed	120,000 miles	Federal Tier 3 Bin 125	CREE	464	--	--	--	0.0000	--	464	--	--
Fed	120,000 miles	Federal Tier 3 Bin 125	METHANE	0.0026	--	--	--	0.0024	--	0.005	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	N2O	0.0004	--	--	--	0.0000	--	0.000	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO	0.37	--	--	--	0.0000	--	0.4	2.1	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0155	--	1.10	--	0.0000	--	0.016	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0396	--	--	--	--	--	0.040	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0241	--	--	--	0.0000	--	0.024	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	CO	0.37	--	--	--	0.0000	--	0.4	2.1	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG	0.0155	--	1.10	--	0.0000	--	0.016	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0396	--	--	--	--	--	0.040	0.125	Pass
CA	150,000 miles	California LEV-III ULEV125	NOX	0.0241	--	--	--	0.0000	--	0.024	99.999	Pass
NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.												

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0170N63
Fuel Properties			
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	02/01/2018
Fuel Batch Calibration Effective Date	02/01/2018	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.828	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.749
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value (BTU / lb)	17793
Fuel Blend Carbon Weight Fraction	0.828	Weight Fraction CO2	--
Fuel Batch ID	Tank 4	Fuel Calibration Number	40
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	06/16/2008
Fuel Batch Calibration Effective Date	06/16/2008	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.865	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.736
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value (BTU / lb)	18490
Fuel Blend Carbon Weight Fraction	0.865	Weight Fraction CO2	--
Fuel Batch ID	COE10	Fuel Calibration Number	4
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	07/25/2018
Fuel Batch Calibration Effective Date	07/25/2018	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.825	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.743
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value (BTU / lb)	18143
Fuel Blend Carbon Weight Fraction	0.825	Weight Fraction CO2	--
Fuel Batch ID	T2/E0	Fuel Calibration Number	8
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	08/22/2017
Fuel Batch Calibration Effective Date	08/22/2017	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.864	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.737
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value (BTU / lb)	18505
Fuel Blend Carbon Weight Fraction	0.865	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0170N63	
Consolidated List of Standards									
Exhaust Standards									
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			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
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.125
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			Test Procedure			Federal fuel 3-day exhaust	
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	CREE	--	--	--	--	--	--	0.0000	999.999
120,000 miles	METHANE	--	--	--	--	--	--	0.0024	0.030
120,000 miles	N2O	--	--	--	--	--	--	0.0000	0.010
150,000 miles	CO	--	--	--	--	--	--	0.0000	2.1
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.10	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.125
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.120
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.003

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0170N63	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			Federal fuel 3-day exhaust	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.0000	2.1
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.10	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.125
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.120
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.003
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			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	CREE	--	--	--	--	--	--	0.0000	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0000	0.125
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			Test Procedure			Cold CO	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	--	--	--	--	--	0.0000	10.0
120,000 miles	HC-NM	--	--	--	--	--	--	0.0000	0.3

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0170N63	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			US06	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.006

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			Fed. fuel 50 F exh.	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
4,000 miles	CO	--	--	--	--	--	--	--	2.1
4,000 miles	HCHO	--	--	--	--	--	--	--	0.016
4,000 miles	NMOG	--	--	1.10	--	--	--	--	99.999
4,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.250
4,000 miles	NOX	--	--	--	--	--	--	--	99.999

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			Cold CO	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	--	--	--	--	--	0.0000	10.0

Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			Test Procedure			US06	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.006

Evaporative/Refueling Standards

Certification Summary Information Report

Test Group		KBMXJ04.4N63		Evaporative/Refueling Family		KBMXR0170N63	
Evaporative/Refueling Family		KBMXR0170N63		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-II Evap	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC	--	0.20	0.008		
Evaporative/Refueling Family		KBMXR0170N63		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 2 Evap	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	120,000 miles	HC	--	0.20	0.008		
Evaporative/Refueling Family		KBMXR0170N63		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 2 Evap	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	120,000 miles	HC	--	0.05	0.000		
Evaporative/Refueling Family		KBMXR0170N63		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-II Evap	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL	--	0.50	0.027		
Evaporative/Refueling Family		KBMXR0170N63		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal LEV-II Evap	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	120,000 miles	HC-TOTAL	--	0.50	0.027		
Evaporative/Refueling Family		KBMXR0170N63		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-II Evap	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC	--	0.05	0.000		

Certification Summary Information Report

Test Group		KBMXJ04.4N63	Evaporative/Refueling Family		KBMXR0170N63
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		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		CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only	
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		KBMXJ04.4N63	Evaporative/Refueling Family		KBMXR0170N63
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		KBMXJ04.4N63	Evaporative/Refueling Family		KBMXR0170N63
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	

Certification Summary Information Report

Manufacturer	BMW	Manufacturer Code	BMX
Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Certificate Number	--	CARB Executive Order #	--
Certificate Issue Date	--	Certificate Revision Date	--
Certificate Effective Date	--	Conditional Certificate	--
CSI Revision #	--	CSI Submission/Revision Date	08/28/2018 08:37:29 AM
Model Year	2019		

Test Group Information

CSI Type	Running Change	Running Change Reference Number	19-J04.4N63-02
GHG Exempt Status	Not Exempt		

Drive Sources and Fuel(s)

Drive Source #1: Combustion Engine

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Gasoline	Spark Ignition Direct fuel injection	No

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	LDV, LDT4
Federal Clean Fuel Vehicle	No	Federal Clean Fuel Vehicle Standard	--
Federal Clean Fuel Vehicle ILEV	No	California Partial Zero Emissions Vehicle Indicator	--
Durability Group Name	KBMXGPGNNV33	Durability Group Equivalency Factor	1
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA
Complies with HD GHG 2b/3 regulations?	No		
Introduction into Commerce Date	08/01/2018	CAP2000 Conditional Certificate?	N/A
Independent Commercial Importer?	--	Alternative Fuel Converter Certificate?	--
SFTP Federal Composite Compliance Identifier	Tier 3	SFTP Tier 2 Composite CO Option	--
SFTP LEV-III Composite Compliance Indicator	Yes		
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	KBMXJ04.4N63
Test Group OBD Compliance Level	Partial - with deficiencies	Number of Test Group OBD Deficiencies	3
OBD Deficiencies Comments	E-17-323 (2 Test Group OBD Deficiencies) / E-17-269 (2 Test Group OBD Deficiencies) / E-18-091 (3 Test Group OBD Deficiencies)		
Mfr Test Group Comments	--		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	11/03/2017 09:33:39 AM				
Integrated ORVR?	Yes	Fuel(s)	Gasoline				
Multiple Fuel Storage	--						
Bladder Fuel Tank?	Yes						
Fuel Tank Material	Plastic	Fuel Tank Material Description	PE-HD / COEX				
Fill Pipe Seal Type	Liquid seal						
Air Intake System Vapor Storage Device?	Yes	Air Intake System Vapor Storage Device Description	Fleece				
Fuel System Vapor Storage Canister?	Yes	Other Vapor Storage	--				
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	150	Number of Primary Canisters	1				
Number of Bleed Canisters	0	Bleed Canister Total Working Capacity (grams)	--				
Mfr Evaporative/Refueling Family Comments	--						
Leak Family Details							
Leak Family Indicator	No						
Canister Bleed Test Indicator	Yes	Applicability of Evaporative Canister Bleed Test	50 State				
Evaporative Canister Bleed Test Comments	--						
CARB Fuel Only (Rig) Test Indicator	No	Applicability of CARB Fuel Only (Rig) Test	--				
CARB Fuel Only (Rig) Test Comments	--						
Models Covered by this Certificate							
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
BMW	1 - BMW	249 - M850i xDrive Coupe	Federal	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	259 - M850i xDrive Convertible	Federal	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	230 - M550i xDrive	Federal	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	230 - M550i xDrive	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	249 - M850i xDrive Coupe	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	259 - M850i xDrive Convertible	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
Engine Description							
Hybrid Type	--	Hybrid Description	--				
Engine Type	4-Stroke Spark Ignition	Mfr Engine Description	--				
Engine Block Arrangement	V-shaped engine	Mfr Engine Block Arrangement Description	--				
Camless Valvetrain Indicator	No	Oil Viscosity/Classification	5W30				
Number of Cylinders/Rotors	8	Mechanically Variable Compression Ratio Indicator	N				

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
After Treatment Device(s) (ATD)			
ATD Number	ATD Type	ATD Precious Metal	Substrate Material
1	Three-way catalyst	Palladium + Rhodium	Ceramic
2	Three-way catalyst	Palladium + Rhodium	Ceramic
Substrate Construction			
Monolith			
Mfr After Treatment Device (ATD) Comments			
--			
Direct Ozone Reduction (DOR) Device			
Not Equipped			
Mfr Emission Control Device Comments			
--			
Engine Configuration Number 1			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	443
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Engine Configuration Number 2			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	599
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Engine Configuration Number 3			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	456
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Engine Configuration Number 4			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	591
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X								
Engine Configuration Number 5											
Engine Displacement (liters)	4.4	Engine Rated Horsepower	523								
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2								
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2								
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid								
Air Aspiration Drive Method(s)	Mechanical										
Cylinder Deactivation	No										
Cylinder Deactivation Description	--										
Variable Valve Timing	Yes										
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves										
Variable Valve Lift?	Yes										
Variable Valve Lift System Description	Variable Valve Lift at inlet valves										
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4								
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--								
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--								
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--								
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--								
Mfr Air/Fuel Sensor Comments	--										
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No								
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--								
Closed Loop Air Injection System	No										
Air Injection Type	--	Air Injection Type if 'Other'	--								
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
Gasoline	KBMX10055346	KBMX10055350	KBMX10055349	KBMX10055351	KBMX10055347	13.7	228.2	23.6	286.1	--	
SFTP LEV-III Official Test Numbers											
Test Group	Fuel	FTP	US06	SC03							
Gasoline	KBMX10055346	KBMX10055350	KBMX10055349								

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X					
Emission Data Vehicle Information								
Vehicle ID / Configuration	G463617 / 0	Manufacturer Vehicle Configuration Number	0					
Original Test Group Name	JBMXJ04.4N63	Original Evaporative/Refueling Family	JBMXR0150G1X					
Original Test Vehicle Model Year	2018							
Vehicle Model								
Represented Test Vehicle Make	BMW	Represented Test Vehicle Model	M550i xDrive					
Leak Family Details								
Leak Family Identifier	--	Leak Family Name	--					
Drive Sources and Fuel System Details								
	<table border="1"> <tr> <th>Drive Source and Fuel#</th> <th>Drive Source</th> <th>Fuel</th> </tr> <tr> <td>1</td> <td>Combustion Engine</td> <td>Gasoline</td> </tr> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline	
Drive Source and Fuel#	Drive Source	Fuel						
1	Combustion Engine	Gasoline						
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					
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor							
Odometer Correction Units	Miles							
Engine Code	4.4-N63-G30X	Rated Horsepower	455					
Displacement (liters)	4.4							
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'						
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel					
Charge Air Cooler Type	Liquid	Drive Mode While Testing	All Wheel Drive					
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)					
Curb Weight (lbs)	4372	Equivalent Test Weight (pounds)	4750					
GVWR (lbs)	5430	N/V Ratio	23.3					
Axle Ratio	2.81							
Transmission Type	Semi-Automatic	# of Transmission Gears	8					
Transmission Lockup	Yes	Creep Gear	No					
Dynamometer Coefficients:								
	Target Coefficients							
	Set Coefficients							
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)					
City/Highway/Evap	A (lbf)	B (lbf/mph)	C (lbf/mph**2)					
EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients								
City/Highway/Evap	62.8	-0.258	0.02258					
US06	62.8	-0.258	0.02258					

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Emission Control Device Comments	--		
Manufacturer Test Vehicle Comments	EVAP EDV - M550i xDrive		
Test #	JBMX10046019	Test Procedure	34 - Federal fuel 3-day evap
Exhaust Test # for this Evap Test	JBMX10046018	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	11/24/2016	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	4
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	BMW Engineering and Emission Test Center		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	5258	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL (Total Hydrocarbon)	0.2730461	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.2948898	--

Manufacturer Test Comments EVAP EDV FTP75, M550i xDrive

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.2949	0.0237	0.319	0.400	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.2949	0.0237	0.319	0.400	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Test #	JBMX10046029	Test Procedure	23 - 2-day evap
Exhaust Test # for this Evap Test	JBMX10046028	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	10/27/2016	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	4
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	BMW Engineering and Emission Test Center		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	5258	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL (Total Hydrocarbon)	0.3119584	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.3369151	--

Manufacturer Test Comments

EVAP EDV 2-Day, M550i xDrive

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.3369	0.0081	0.345	0.400	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.3369	0.0081	0.345	0.400	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Test #	JBMX10046020	Test Procedure	32 - Federal Fuel Running Loss
Exhaust Test # for this Evap Test	JBMX10046018	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	11/24/2016	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	4
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	BMW Engineering and Emission Test Center		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	5258	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC (Hydrocarbon for Running Loss and ORVR)	0.0124514	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0134475	--

Manufacturer Test Comments

EVAP EDV FTP75, M550i xDrive

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.013	0.000	0.01	0.05	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.013	0.000	0.01	0.05	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Test #	JBMX10046036	Test Procedure	24 - Federal fuel refueling test (ORVR)
Exhaust Test # for this Evap Test	JBMX10046034	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	11/08/2016	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	4
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	BMW Engineering and Emission Test Center		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	5067	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC (Hydrocarbon for Running Loss and ORVR)	0.0434	--

Manufacturer Test Comments

EVAP EDV, ORVR, M550i xDrive

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC	0.043	0.000	0.04	0.20	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC	0.043	0.000	0.04	0.20	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Test #	JBMX10046037	Test Procedure	65 - Evap Canister Bleed Test
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	08/25/2016	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	4
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	BMW Engineering and Emission Test Center		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4000	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL (Total Hydrocarbon)	0.00321	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.00347	--

Manufacturer Test Comments EVAP EDV, Bleed, M550i xDrive

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.0035	0.0000	0.004	0.020	Pass
CA	4,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.0035	0.0000	0.004	0.020	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X						
Test #	JBMX10046038	Test Procedure	67 - Leak Test - Port Near Canister						
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)						
Test Date	11/16/2016	Fuel	Gasoline						
Fuel Batch ID	T10/87	Fuel Calibration Number	4						
Vehicle Class	N/A	DF Type	Mfr. Determined						
Verify Test Lab ID	BMW Engineering and Emission Test Center								
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)								
Test Start Odometer Reading	5167	Odometer Units	K						
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--						
State of Charge Delta	No								
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes						
Test Results									
<table border="1"> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> <tr> <td>LEAK-DIA (Effective Leak Diameter (inches))</td> <td>0.0087</td> <td>--</td> </tr> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	LEAK-DIA (Effective Leak Diameter (inches))	0.0087	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
LEAK-DIA (Effective Leak Diameter (inches))	0.0087	--							
Manufacturer Test Comments EVAP EDV, Leak Test, M550i xDrive									
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	
Fed	150,000 miles	Federal Tier 3 Evap	LEAK-DIA	0.009	0.000	0.01	0.02	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	LEAK-DIA	0.009	0.000	0.01	0.02	Pass	

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X						
Emission Data Vehicle Information									
Vehicle ID / Configuration	LB39405 / 0	Manufacturer Vehicle Configuration Number	0						
Original Test Group Name	KBMXJ04.4N63	Original Evaporative/Refueling Family	KBMXR0180G05						
Original Test Vehicle Model Year	2019								
Vehicle Model									
Represented Test Vehicle Make	BMW	Represented Test Vehicle Model	X7 xDrive50i						
Leak Family Details									
Leak Family Identifier	--	Leak Family Name	--						
Drive Sources and Fuel System Details									
	<table border="1"> <tr> <th>Drive Source and Fuel#</th><th>Drive Source</th><th>Fuel</th></tr> <tr> <td>1</td><td>Combustion Engine</td><td>Gasoline</td></tr> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline		
Drive Source and Fuel#	Drive Source	Fuel							
1	Combustion Engine	Gasoline							
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						
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor								
Odometer Correction Units	Miles								
Engine Code	4.4-N63-G07X	Rated Horsepower	456						
Displacement (liters)	4.4								
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'							
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel						
Charge Air Cooler Type	Air	Drive Mode While Testing	4-Wheel Drive						
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)						
Curb Weight (lbs)	5617	Equivalent Test Weight (pounds)	6000						
GVWR (lbs)	7253	N/V Ratio	24.2						
Axle Ratio	3.39								
Transmission Type	Semi-Automatic	# of Transmission Gears	8						
Transmission Lockup	Yes	Creep Gear	No						

Certification Summary Information Report

Test Group	KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0150G1X
Dynamometer Coefficients:							
Target Coefficients				Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	
City/Highway/Evap	70.2	-0.483	0.03684	1.8	0.139	0.02838	18.4
Cold CO	78	-0.537	0.04094	-2.7	-0.093	0.03227	N/A
US06	70.2	-0.483	0.03684	1.8	0.139	0.02838	N/A
Emission Control Device Comments	--						
Manufacturer Test Vehicle Comments	EDV X7 xDrive50i, AT, E10,RG10, s-sport						

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Test #	KBMX10055346	Test Procedure	31 - Federal fuel 3-day exhaust
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5462	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	601.3567	--
FE BAG 1 (Bag 1 Fuel Economy)	14.3	14.3
CO2 BAG 2 (Bag 2 Carbon Dioxide)	646.587	--
FE BAG 2 (Bag 2 Fuel Economy)	13.3	13.3
CO2 BAG 3 (Bag 3 Carbon Dioxide)	520.4947	--
FE BAG 3 (Bag 3 Fuel Economy)	16.5	16.5
METHANE (CH4 - Methane)	0.00225	--
CO (Carbon Monoxide)	0.1706	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.574	--
DT-EER (Drive Trace Energy Economy Rating)	-0.858	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.905	--
MFR FE (Manufacturer Fuel Economy)	14.2	14.2
NOX (Nitrogen Oxide)	0.0432	--
N2O (Nitrous Oxide)	0.0008	--
HC-NM (Non-methane Hydrocarbon)	0.01065	--
NMOG (Non-methane organic gas)	0.011715	--
PM (Particulate Matter)	0.000313	--
HC-TOTAL (Total Hydrocarbon)	0.01286	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	603	999

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0150G1X		
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		602.7004			--					
Manufacturer Test Comments		EDV RG10, S, Sport,										
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
Fed	120,000 miles	Federal Tier 3 Bin 125	CREE	999	--	--	--	0.0000	--	999	--	--
Fed	120,000 miles	Federal Tier 3 Bin 125	METHANE	0.0022	--	--	--	0.0024	--	0.005	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	N2O	0.0008	--	--	--	0.0000	--	0.001	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO	0.17	--	--	--	0.0000	--	0.2	2.1	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO-COMP	0.61	--	--	--	--	--	0.6	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0117	--	1.10	--	0.0000	--	0.012	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0549	--	--	--	--	--	0.055	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX-COMP	0.0523	--	--	--	--	--	0.052	0.120	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0432	--	--	--	0.0000	--	0.043	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	PM	0.0003	--	--	--	0.0000	--	0.000	0.003	Pass
CA	150,000 miles	California LEV-III ULEV125	CO	0.17	--	--	--	0.0000	--	0.2	2.1	Pass
CA	150,000 miles	California LEV-III ULEV125	CO-COMP	0.61	--	--	--	--	--	0.6	4.2	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG	0.0117	--	1.10	--	0.0000	--	0.012	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0549	--	--	--	--	--	0.055	0.125	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX-COMP	0.0523	--	--	--	--	--	0.052	0.120	Pass
CA	150,000 miles	California LEV-III ULEV125	NOX	0.0432	--	--	--	0.0000	--	0.043	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	PM	0.0003	--	--	--	0.0000	--	0.000	0.003	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Test #	KBMX10055348	Test Procedure	52 - Fed. fuel 50 F exh.
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/18/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5387	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.00471	--
CO (Carbon Monoxide)	0.4166	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.187	--
DT-EER (Drive Trace Energy Economy Rating)	-0.21	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.252	--
NOX (Nitrogen Oxide)	0.0468	--
HC-NM (Non-methane Hydrocarbon)	0.02709	--
NMOG (Non-methane organic gas)	0.029799	--
HC-TOTAL (Total Hydrocarbon)	0.03166	--

Manufacturer Test Comments EDV RG10, S, Sport

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	4,000 miles	California LEV-III ULEV125	CO	0.42	--	--	--	--	--	0.4	2.1	Pass
CA	4,000 miles	California LEV-III ULEV125	NMOG	0.0298	--	1.10	--	--	--	0.030	99.999	Pass
CA	4,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0766	--	--	--	--	--	0.077	0.250	Pass
CA	4,000 miles	California LEV-III ULEV125	NOX	0.0468	--	--	--	--	--	0.047	99.999	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Test #	KBMX10055351	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	08/04/2018	Fuel	Gasoline
Fuel Batch ID	COE10	Fuel Calibration Number	4
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5810	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	744.9158	--
FE BAG 1 (Bag 1 Fuel Economy)	11.4	11.4
CO2 BAG 2 (Bag 2 Carbon Dioxide)	689.7535	--
FE BAG 2 (Bag 2 Fuel Economy)	12.4	12.4
CO2 BAG 3 (Bag 3 Carbon Dioxide)	570.7932	--
FE BAG 3 (Bag 3 Fuel Economy)	15	15
METHANE (CH4 - Methane)	0.01435	--
CO (Carbon Monoxide)	0.8584	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.558	--
DT-EER (Drive Trace Energy Economy Rating)	-1.771	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.815	--
MFR FE (Manufacturer Fuel Economy)	12.8	12.8
HC-NM (Non-methane Hydrocarbon)	0.09251	--
HC-TOTAL (Total Hydrocarbon)	0.10622	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	668.5366	--

Manufacturer Test Comments

EDV RG10, S, Sport, Cold CO

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0150G1X		
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
Fed	50,000 miles	Federal Tier 3 Bin 125	CO	0.86	--	--	--	0.0000	--	0.9	10.0	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	HC-NM	0.09	--	--	--	0.0000	--	0.1	0.3	Pass
CA	50,000 miles	California LEV-III ULEV125	CO	0.86	--	--	--	0.0000	--	0.9	10.0	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Test #	KBMX10055347	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5480	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.00283	--
CO (Carbon Monoxide)	0.201	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	12.747	--
DT-EER (Drive Trace Energy Economy Rating)	-0.824	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	15.579	--
MFR FE (Manufacturer Fuel Economy)	23.6	23.6
NOX (Nitrogen Oxide)	0.0554	--
HC-NM (Non-methane Hydrocarbon)	0.00444	--
NMOG (Non-methane organic gas)	0.0045732	--
HC-TOTAL (Total Hydrocarbon)	0.00722	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	364	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	364.388	--

Manufacturer Test Comments EDV RG10, S, Sport, HWY

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family					KBMXR0150G1X		
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
Fed	120,000 miles	Federal Tier 3 Bin 125	CREE	999	--	--	--	0.0000	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0046	--	1.03	--	0.0000	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0600	--	--	--	--	--	0.060	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0554	--	--	--	0.0000	--	0.055	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG	0.0046	--	1.03	--	0.0000	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0600	--	--	--	--	--	0.060	0.125	Pass
CA	150,000 miles	California LEV-III ULEV125	NOX	0.0554	--	--	--	0.0000	--	0.055	99.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Test #	KBMX10055350	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5512	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	819.4088	--
FE BAG 1 (Bag 1 Fuel Economy)	10.4	10.4
CO2 BAG 2 (Bag 2 Carbon Dioxide)	445.8565	--
FE BAG 2 (Bag 2 Fuel Economy)	19.2	19.2
METHANE (CH4 - Methane)	0.00565	--
CO (Carbon Monoxide)	1.0956	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.234	--
DT-EER (Drive Trace Energy Economy Rating)	1.037	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.752	--
MFR FE (Manufacturer Fuel Economy)	16.2	16.2
NOX (Nitrogen Oxide)	0.048	--
HC-NM (Non-methane Hydrocarbon)	0.02354	--
PM (Particulate Matter)	0.001519	--
HC-TOTAL (Total Hydrocarbon)	0.02911	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	528.4246	--

Manufacturer Test Comments EDV RG10, S, Sport,

Certification Summary Information Report

Test Group		KBMXJ04.4N63		Evaporative/Refueling Family				KBMXR0150G1X				
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
Fed	150,000 miles	Federal Tier 3 Bin 125	PM	0.0015	--	--	--	0.0000	--	0.002	0.006	Pass
CA	150,000 miles	California LEV-III ULEV125	PM	0.0015	--	--	--	0.0000	--	0.002	0.006	Pass

Test #	KBMX10055349	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/23/2018	Fuel	N/A
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5538	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.00082	--
CO (Carbon Monoxide)	0.6465	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.511	--
DT-EER (Drive Trace Energy Economy Rating)	-0.688	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.131	--
MFR FE (Manufacturer Fuel Economy)	12.8	12.8
NOX (Nitrogen Oxide)	0.0287	--
HC-NM (Non-methane Hydrocarbon)	0.00443	--
HC-TOTAL (Total Hydrocarbon)	0.00522	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	670.8886	--

Manufacturer Test Comments EDV RG10, S, Sport,

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X						
Emission Data Vehicle Information									
Vehicle ID / Configuration	LB39405 / 1	Manufacturer Vehicle Configuration Number	0						
Original Test Group Name	KBMXJ04.4N63	Original Evaporative/Refueling Family	KBMXR0180G05						
Original Test Vehicle Model Year	2019								
Vehicle Model									
Represented Test Vehicle Make	BMW	Represented Test Vehicle Model	X7 xDrive50i						
Leak Family Details									
Leak Family Identifier	--	Leak Family Name	--						
Drive Sources and Fuel System Details									
	<table border="1"> <tr> <th>Drive Source and Fuel#</th><th>Drive Source</th><th>Fuel</th></tr> <tr> <td>1</td><td>Combustion Engine</td><td>Gasoline</td></tr> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline		
Drive Source and Fuel#	Drive Source	Fuel							
1	Combustion Engine	Gasoline							
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						
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor								
Odometer Correction Units	Miles								
Engine Code	4.4-N63-G07X	Rated Horsepower	456						
Displacement (liters)	4.4								
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'							
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel						
Charge Air Cooler Type	Air	Drive Mode While Testing	4-Wheel Drive						
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)						
Curb Weight (lbs)	5617	Equivalent Test Weight (pounds)	6000						
GVWR (lbs)	7253	N/V Ratio	24.2						
Axle Ratio	3.39								
Transmission Type	Semi-Automatic	# of Transmission Gears	8						
Transmission Lockup	Yes	Creep Gear	No						

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family		KBMXR0150G1X	
Dynamometer Coefficients:								
Target Coefficients				Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients	
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)		
City/Highway/Evap	70.2	-0.483	0.03597	2.2	0.189	0.02684	18.1	
Cold CO	0	0	0	0	0	0	N/A	
US06	70.2	-0.483	0.03597	2.2	0.189	0.02684	N/A	
Emission Control Device Comments		--						
Manufacturer Test Vehicle Comments		FEDV X7 xDrive50i, AT, E0, 11, d-comfort						

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Test #	KBMX10055352	Test Procedure	31 - Federal fuel 3-day exhaust
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	08/01/2018	Fuel	Gasoline
Fuel Batch ID	T2/E0	Fuel Calibration Number	8
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5686	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	492.2462	--
FE BAG 1 (Bag 1 Fuel Economy)	17.9	17.9
CO2 BAG 2 (Bag 2 Carbon Dioxide)	472.7827	--
FE BAG 2 (Bag 2 Fuel Economy)	18.7	18.7
CO2 BAG 3 (Bag 3 Carbon Dioxide)	421.9465	--
FE BAG 3 (Bag 3 Fuel Economy)	20.9	20.9
METHANE (CH4 - Methane)	0.00256	--
CO (Carbon Monoxide)	0.3731	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.469	--
DT-EER (Drive Trace Energy Economy Rating)	-0.026	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.737	--
MFR FE (Manufacturer Fuel Economy)	19.1	19.1
NOX (Nitrogen Oxide)	0.0241	--
N2O (Nitrous Oxide)	0.0004	--
HC-NM (Non-methane Hydrocarbon)	0.01494	--
NMOG (Non-methane organic gas)	0.0155376	--
HC-TOTAL (Total Hydrocarbon)	0.01739	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	464	464

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0150G1X		
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		462.838			--					
Manufacturer Test Comments		FEDV, RG11										
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
Fed	120,000 miles	Federal Tier 3 Bin 125	CREE	464	--	--	--	0.0000	--	464	--	--
Fed	120,000 miles	Federal Tier 3 Bin 125	METHANE	0.0026	--	--	--	0.0024	--	0.005	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	N2O	0.0004	--	--	--	0.0000	--	0.000	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO	0.37	--	--	--	0.0000	--	0.4	2.1	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0155	--	1.10	--	0.0000	--	0.016	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0396	--	--	--	--	--	0.040	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0241	--	--	--	0.0000	--	0.024	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	CO	0.37	--	--	--	0.0000	--	0.4	2.1	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG	0.0155	--	1.10	--	0.0000	--	0.016	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0396	--	--	--	--	--	0.040	0.125	Pass
CA	150,000 miles	California LEV-III ULEV125	NOX	0.0241	--	--	--	0.0000	--	0.024	99.999	Pass
NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.												

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0150G1X
Fuel Properties			
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	02/01/2018
Fuel Batch Calibration Effective Date	02/01/2018	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.828	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.749
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value (BTU / lb)	17793
Fuel Blend Carbon Weight Fraction	0.828	Weight Fraction CO2	--
Fuel Batch ID	T10/87	Fuel Calibration Number	4
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	07/21/2016
Fuel Batch Calibration Effective Date	07/21/2016	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.828	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.747
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value (BTU / lb)	17812
Fuel Blend Carbon Weight Fraction	0.828	Weight Fraction CO2	--
Fuel Batch ID	COE10	Fuel Calibration Number	4
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	07/25/2018
Fuel Batch Calibration Effective Date	07/25/2018	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.825	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.743
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value (BTU / lb)	18143
Fuel Blend Carbon Weight Fraction	0.825	Weight Fraction CO2	--
Fuel Batch ID	T2/E0	Fuel Calibration Number	8
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	08/22/2017
Fuel Batch Calibration Effective Date	08/22/2017	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.864	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.737
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value (BTU / lb)	18505
Fuel Blend Carbon Weight Fraction	0.865	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family		KBMXR0150G1X		
Consolidated List of Standards									
Exhaust Standards									
Cert Region		California + CAA Section 177 states			Cert/In-Use Code		Cert		
Vehicle Class		LDV/Passenger Car			Standard Level		California LEV-III ULEV125		
Fuel		Gasoline			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
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.125
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
Cert Region		Federal			Cert/In-Use Code		Cert		
Vehicle Class		LDV/Passenger Car			Standard Level		Federal Tier 3 Bin 125		
Fuel		Gasoline			Test Procedure		Federal fuel 3-day exhaust		
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	CREE	--	--	--	--	--	--	0.0000	999.999
120,000 miles	METHANE	--	--	--	--	--	--	0.0024	0.030
120,000 miles	N2O	--	--	--	--	--	--	0.0000	0.010
150,000 miles	CO	--	--	--	--	--	--	0.0000	2.1
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.10	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.125
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.120
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.003

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0150G1X	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			Federal fuel 3-day exhaust	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.0000	2.1
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.10	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.125
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.120
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.003
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			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	CREE	--	--	--	--	--	--	0.0000	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0000	0.125
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			Test Procedure			Cold CO	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	--	--	--	--	--	0.0000	10.0
120,000 miles	HC-NM	--	--	--	--	--	--	0.0000	0.3

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0150G1X	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			US06	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.006

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			Fed. fuel 50 F exh.	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
4,000 miles	CO	--	--	--	--	--	--	--	2.1
4,000 miles	HCHO	--	--	--	--	--	--	--	0.016
4,000 miles	NMOG	--	--	1.10	--	--	--	--	99.999
4,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.250
4,000 miles	NOX	--	--	--	--	--	--	--	99.999

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			Cold CO	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	--	--	--	--	--	0.0000	10.0

Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			Test Procedure			US06	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.006

Evaporative/Refueling Standards

Certification Summary Information Report

Test Group		KBMXJ04.4N63		Evaporative/Refueling Family		KBMXR0150G1X	
Evaporative/Refueling Family		KBMXR0150G1X		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.400	0.0237		
Evaporative/Refueling Family		KBMXR0150G1X		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Leak Test - Port Near Canister					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	LEAK-DIA	--	0.02	0.000		
Evaporative/Refueling Family		KBMXR0150G1X		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.400	0.0081		
Evaporative/Refueling Family		KBMXR0150G1X		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC	--	0.20	0.000		
Evaporative/Refueling Family		KBMXR0150G1X		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Evap Canister Bleed Test					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	4,000 miles	HC-TOTAL-EQUIV	--	0.020	0.0000		

Certification Summary Information Report

Test Group		KBMXJ04.4N63		Evaporative/Refueling Family		KBMXR0150G1X	
Evaporative/Refueling Family		KBMXR0150G1X		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0.000		
Evaporative/Refueling Family		KBMXR0150G1X		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0.000		
Evaporative/Refueling Family		KBMXR0150G1X		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Leak Test - Port Near Canister					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	LEAK-DIA	--	0.02	0.000		
Evaporative/Refueling Family		KBMXR0150G1X		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.400	0.0237		
Evaporative/Refueling Family		KBMXR0150G1X		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC	--	0.20	0.000		

Certification Summary Information Report

Test Group		KBMXJ04.4N63		Evaporative/Refueling Family		KBMXR0150G1X	
Evaporative/Refueling Family		KBMXR0150G1X		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.400	0.0081		
Evaporative/Refueling Family		KBMXR0150G1X		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Evap Canister Bleed Test					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.020	0.0000		

Certification Summary Information Report

Test Group		KBMXJ04.4N63	Evaporative/Refueling Family		KBMXR0150G1X
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		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		CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only	
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		KBMXJ04.4N63	Evaporative/Refueling Family		KBMXR0150G1X
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		KBMXJ04.4N63	Evaporative/Refueling Family		KBMXR0150G1X
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	

Certification Summary Information Report

Manufacturer	BMW	Manufacturer Code	BMX
Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Certificate Number	--	CARB Executive Order #	--
Certificate Issue Date	--	Certificate Revision Date	--
Certificate Effective Date	--	Conditional Certificate	--
CSI Revision #	--	CSI Submission/Revision Date	08/28/2018 08:37:29 AM
Model Year	2019		

Test Group Information

CSI Type	Running Change	Running Change Reference Number	19-J04.4N63-02
GHG Exempt Status	Not Exempt		

Drive Sources and Fuel(s)

Drive Source #1: Combustion Engine

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Gasoline	Spark Ignition Direct fuel injection	No

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	LDV, LDT4
Federal Clean Fuel Vehicle	No	Federal Clean Fuel Vehicle Standard	--
Federal Clean Fuel Vehicle ILEV	No	California Partial Zero Emissions Vehicle Indicator	--
Durability Group Name	KBMXGPGNNV33	Durability Group Equivalency Factor	1
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA
Complies with HD GHG 2b/3 regulations?	No		
Introduction into Commerce Date	08/01/2018	CAP2000 Conditional Certificate?	N/A
Independent Commercial Importer?	--	Alternative Fuel Converter Certificate?	--
SFTP Federal Composite Compliance Identifier	Tier 3	SFTP Tier 2 Composite CO Option	--
SFTP LEV-III Composite Compliance Indicator	Yes		
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	KBMXJ04.4N63
Test Group OBD Compliance Level	Partial - with deficiencies	Number of Test Group OBD Deficiencies	3
OBD Deficiencies Comments	E-17-323 (2 Test Group OBD Deficiencies) / E-17-269 (2 Test Group OBD Deficiencies) / E-18-091 (3 Test Group OBD Deficiencies)		
Mfr Test Group Comments	--		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	11/03/2017 09:31:48 AM				
Integrated ORVR?	Yes	Fuel(s)	Gasoline				
Multiple Fuel Storage	--						
Bladder Fuel Tank?	Yes						
Fuel Tank Material	Plastic	Fuel Tank Material Description	PE-HD / COEX				
Fill Pipe Seal Type	Liquid seal						
Air Intake System Vapor Storage Device?	Yes	Air Intake System Vapor Storage Device Description	Fleece				
Fuel System Vapor Storage Canister?	Yes	Other Vapor Storage	--				
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	130	Number of Primary Canisters	1				
Number of Bleed Canisters	0	Bleed Canister Total Working Capacity (grams)	--				
Mfr Evaporative/Refueling Family Comments	--						
Leak Family Details							
Leak Family Indicator	No						
Canister Bleed Test Indicator	No	Applicability of Evaporative Canister Bleed Test	--				
Evaporative Canister Bleed Test Comments	--						
CARB Fuel Only (Rig) Test Indicator	No	Applicability of CARB Fuel Only (Rig) Test	--				
CARB Fuel Only (Rig) Test Comments	--						
Models Covered by this Certificate							
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
BMW	1 - BMW	163 - Alpina B6 xDrive Gran Coupe	Federal	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	114 - 650i xDrive Gran Coupe	Federal	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	113 - 650i Gran Coupe	Federal	2-Wheel Drive, Rear	Semi-Automatic	8	Yes
BMW	1 - BMW	163 - Alpina B6 xDrive Gran Coupe	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	114 - 650i xDrive Gran Coupe	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
BMW	1 - BMW	113 - 650i Gran Coupe	California + CAA Section 177 states	2-Wheel Drive, Rear	Semi-Automatic	8	Yes
Engine Description							
Hybrid Type	--	Hybrid Description	--				
Engine Type	4-Stroke Spark Ignition	Mfr Engine Description	--				
Engine Block Arrangement	V-shaped engine	Mfr Engine Block Arrangement Description	--				
Camless Valvetrain Indicator	No	Oil Viscosity/Classification	5W30				
Number of Cylinders/Rotors	8	Mechanically Variable Compression Ratio Indicator	N				

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
After Treatment Device(s) (ATD)			
ATD Number	ATD Type	ATD Precious Metal	Substrate Material
1	Three-way catalyst	Palladium + Rhodium	Ceramic
2	Three-way catalyst	Palladium + Rhodium	Ceramic
Substrate Construction			
Monolith			
Mfr After Treatment Device (ATD) Comments			
--			
Direct Ozone Reduction (DOR) Device			
Not Equipped			
Mfr Emission Control Device Comments			
--			
Engine Configuration Number 1			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	443
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Engine Configuration Number 2			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	599
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Engine Configuration Number 3			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	456
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Engine Configuration Number 4			
Engine Displacement (liters)	4.4	Engine Rated Horsepower	591
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves		
Variable Valve Lift?	Yes		
Variable Valve Lift System Description	Variable Valve Lift at inlet valves		
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	No		
Air Injection Type	--	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54								
Engine Configuration Number 5											
Engine Displacement (liters)	4.4	Engine Rated Horsepower	523								
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2								
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2								
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid								
Air Aspiration Drive Method(s)	Mechanical										
Cylinder Deactivation	No										
Cylinder Deactivation Description	--										
Variable Valve Timing	Yes										
Variable Valve Timing System Description	Variable Valve Timing at inlet and outlet valves										
Variable Valve Lift?	Yes										
Variable Valve Lift System Description	Variable Valve Lift at inlet valves										
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4								
Air/Fuel Sensor # 1 Type	Air fuel	Air/Fuel Sensor # 1 Description	--								
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--								
Air/Fuel Sensor # 3 Type	Air fuel	Air/Fuel Sensor # 3 Description	--								
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--								
Mfr Air/Fuel Sensor Comments	--										
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No								
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--								
Closed Loop Air Injection System	No										
Air Injection Type	--	Air Injection Type if 'Other'	--								
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
Gasoline	KBMX10055346	KBMX10055350	KBMX10055349	KBMX10055351	KBMX10055347	13.7	228.2	23.6	286.1	--	
SFTP LEV-III Official Test Numbers											
Test Group	Fuel	FTP	US06	SC03							
Gasoline	KBMX10055346	KBMX10055350	KBMX10055349								

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54					
Emission Data Vehicle Information								
Vehicle ID / Configuration	KS33736 / 0	Manufacturer Vehicle Configuration Number	0					
Original Test Group Name	9BMXV03.0ULR	Original Evaporative/Refueling Family	9BMXR0130N54					
Original Test Vehicle Model Year	2009							
Vehicle Model								
Represented Test Vehicle Make	BMW	Represented Test Vehicle Model	335i xDrive					
Leak Family Details								
Leak Family Identifier	--	Leak Family Name	--					
Drive Sources and Fuel System Details								
	<table border="1"> <tr> <th>Drive Source and Fuel#</th> <th>Drive Source</th> <th>Fuel</th> </tr> <tr> <td>1</td> <td>Combustion Engine</td> <td>Gasoline</td> </tr> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline	
Drive Source and Fuel#	Drive Source	Fuel						
1	Combustion Engine	Gasoline						
Hybrid Indicator	No							
Multiple Fuel Storage	--	Multiple Fuel Combustion	--					
Fuel Cell Indicator	No	Rechargeable Energy Storage System Indicator	No					
Rechargeable Energy Storage System	--	Rechargeable Energy Storage System, if 'Other'	--					
Off-board charge Capable Indicator	--							
Odometer Correction -- Initial	3	Odometer Correction Factor	1.003					
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor							
Odometer Correction Units	Miles							
Engine Code	3.0-N54-X90U2	Rated Horsepower	300					
Displacement (liters)	3							
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'						
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel					
Charge Air Cooler Type	Air	Drive Mode While Testing	2-Wheel Drive, Rear					
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)					
Curb Weight (lbs)	3825	Equivalent Test Weight (pounds)	4250					
GVWR (lbs)	4883	N/V Ratio	33.1					
Axle Ratio	3.46							
Transmission Type	Semi-Automatic	# of Transmission Gears	6					
Transmission Lockup	Yes	Creep Gear	No					
Dynamometer Coefficients:								
	Target Coefficients							
	Set Coefficients							
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)					
City/Highway/Evap	A (lbf)	B (lbf/mph)	C (lbf/mph**2)					
EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients								
City/Highway/Evap	45.9	0.17	0.01974					
US06	45.9	0.17	0.01974					
	19.6	-0.003	0.02003					
	19.6	-0.003	0.02003					
			13.8					
			N/A					

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54						
Emission Control Device Comments	--								
Manufacturer Test Vehicle Comments	EDV 335iA xDrive, sport tires, with AFS								
Test #	9BMX01071568	Test Procedure	34 - Federal fuel 3-day evap						
Exhaust Test # for this Evap Test	9BMX01071567	Test Fuel Type	61 - Tier 2 Cert Gasoline						
Test Date	07/19/2006	Fuel	Gasoline						
Fuel Batch ID	Tank 4	Fuel Calibration Number	32						
Vehicle Class	N/A	DF Type	Mfr. Determined						
Verify Test Lab ID	UPZ								
E10 Evaporative Test Measurement Method	--								
Test Start Odometer Reading	4339	Odometer Units	M						
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--						
State of Charge Delta	--								
Drive Cycle Speed Tolerance Criteria	--	Road Speed Fan Usage	--						
Test Results									
<table border="1"> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value</th> </tr> <tr> <td>HC-TOTAL (Total Hydrocarbon)</td> <td>0.308</td> <td>--</td> </tr> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value	HC-TOTAL (Total Hydrocarbon)	0.308	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value							
HC-TOTAL (Total Hydrocarbon)	0.308	--							
Manufacturer Test Comments									
3d EVAP- 335i xDrive sport tires with AFS									
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	
Fed	120,000 miles	Federal Tier 2 Evap	HC-TOTAL	0.308	0.006	0.31	0.50	Pass	
CA	150,000 miles	California LEV-II Evap	HC-TOTAL	0.308	0.006	0.31	0.50	Pass	

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Test #	9BMX01071518	Test Procedure	24 - Federal fuel refueling test (ORVR)
Exhaust Test # for this Evap Test	9BMX01071517	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	06/07/2006	Fuel	Gasoline
Fuel Batch ID	Tank 4	Fuel Calibration Number	32
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	UPZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4263	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
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
HC (Hydrocarbon for Running Loss and ORVR)	0.005	--

Manufacturer Test Comments

ORVR EVAP- 335i xDrive sport tires with AFS

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal Tier 2 Evap	HC	0.005	0.004	0.01	0.20	Pass
CA	150,000 miles	California LEV-II Evap	HC	0.005	0.004	0.01	0.20	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Test #	9BMX10000612	Test Procedure	32 - Federal Fuel Running Loss
Exhaust Test # for this Evap Test	9BMX01071567	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	07/19/2006	Fuel	Gasoline
Fuel Batch ID	Tank 4	Fuel Calibration Number	32
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	UPZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4339	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
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
HC (Hydrocarbon for Running Loss and ORVR)	0.012	--

Manufacturer Test Comments

RL - 335i xDrive sport tires with AFS

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal Tier 2 Evap	HC	0.012	0.002	0.01	0.05	Pass
CA	150,000 miles	California LEV-II Evap	HC	0.012	0.002	0.01	0.05	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54						
Emission Data Vehicle Information									
Vehicle ID / Configuration	LB39405 / 0	Manufacturer Vehicle Configuration Number	0						
Original Test Group Name	KBMXJ04.4N63	Original Evaporative/Refueling Family	KBMXR0180G05						
Original Test Vehicle Model Year	2019								
Vehicle Model									
Represented Test Vehicle Make	BMW	Represented Test Vehicle Model	X7 xDrive50i						
Leak Family Details									
Leak Family Identifier	--	Leak Family Name	--						
Drive Sources and Fuel System Details									
	<table border="1"> <tr> <th>Drive Source and Fuel#</th><th>Drive Source</th><th>Fuel</th></tr> <tr> <td>1</td><td>Combustion Engine</td><td>Gasoline</td></tr> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline		
Drive Source and Fuel#	Drive Source	Fuel							
1	Combustion Engine	Gasoline							
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						
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor								
Odometer Correction Units	Miles								
Engine Code	4.4-N63-G07X	Rated Horsepower	456						
Displacement (liters)	4.4								
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'							
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel						
Charge Air Cooler Type	Air	Drive Mode While Testing	4-Wheel Drive						
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)						
Curb Weight (lbs)	5617	Equivalent Test Weight (pounds)	6000						
GVWR (lbs)	7253	N/V Ratio	24.2						
Axle Ratio	3.39								
Transmission Type	Semi-Automatic	# of Transmission Gears	8						
Transmission Lockup	Yes	Creep Gear	No						

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family		KBMXR0130N54	
Dynamometer Coefficients:								
Target Coefficients				Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients	
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)		
City/Highway/Evap	70.2	-0.483	0.03684	1.8	0.139	0.02838	18.4	
Cold CO	78	-0.537	0.04094	-2.7	-0.093	0.03227	N/A	
US06	70.2	-0.483	0.03684	1.8	0.139	0.02838	N/A	
Emission Control Device Comments		--						
Manufacturer Test Vehicle Comments		EDV X7 xDrive50i, AT, E10,RG10, s-sport						

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Test #	KBMX10055346	Test Procedure	31 - Federal fuel 3-day exhaust
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5462	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	601.3567	--
FE BAG 1 (Bag 1 Fuel Economy)	14.3	14.3
CO2 BAG 2 (Bag 2 Carbon Dioxide)	646.587	--
FE BAG 2 (Bag 2 Fuel Economy)	13.3	13.3
CO2 BAG 3 (Bag 3 Carbon Dioxide)	520.4947	--
FE BAG 3 (Bag 3 Fuel Economy)	16.5	16.5
METHANE (CH4 - Methane)	0.00225	--
CO (Carbon Monoxide)	0.1706	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.574	--
DT-EER (Drive Trace Energy Economy Rating)	-0.858	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.905	--
MFR FE (Manufacturer Fuel Economy)	14.2	14.2
NOX (Nitrogen Oxide)	0.0432	--
N2O (Nitrous Oxide)	0.0008	--
HC-NM (Non-methane Hydrocarbon)	0.01065	--
NMOG (Non-methane organic gas)	0.011715	--
PM (Particulate Matter)	0.000313	--
HC-TOTAL (Total Hydrocarbon)	0.01286	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	603	999

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family					KBMXR0130N54		
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		602.7004			--					
Manufacturer Test Comments		EDV RG10, S, Sport,										
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
Fed	120,000 miles	Federal Tier 3 Bin 125	CREE	999	--	--	--	0.0000	--	999	--	--
Fed	120,000 miles	Federal Tier 3 Bin 125	METHANE	0.0022	--	--	--	0.0024	--	0.005	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	N2O	0.0008	--	--	--	0.0000	--	0.001	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO	0.17	--	--	--	0.0000	--	0.2	2.1	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO-COMP	0.61	--	--	--	--	--	0.6	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0117	--	1.10	--	0.0000	--	0.012	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0549	--	--	--	--	--	0.055	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX-COMP	0.0523	--	--	--	--	--	0.052	0.120	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0432	--	--	--	0.0000	--	0.043	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	PM	0.0003	--	--	--	0.0000	--	0.000	0.003	Pass
CA	150,000 miles	California LEV-III ULEV125	CO	0.17	--	--	--	0.0000	--	0.2	2.1	Pass
CA	150,000 miles	California LEV-III ULEV125	CO-COMP	0.61	--	--	--	--	--	0.6	4.2	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG	0.0117	--	1.10	--	0.0000	--	0.012	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0549	--	--	--	--	--	0.055	0.125	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX-COMP	0.0523	--	--	--	--	--	0.052	0.120	Pass
CA	150,000 miles	California LEV-III ULEV125	NOX	0.0432	--	--	--	0.0000	--	0.043	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	PM	0.0003	--	--	--	0.0000	--	0.000	0.003	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Test #	KBMX10055348	Test Procedure	52 - Fed. fuel 50 F exh.
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/18/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5387	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.00471	--
CO (Carbon Monoxide)	0.4166	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.187	--
DT-EER (Drive Trace Energy Economy Rating)	-0.21	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.252	--
NOX (Nitrogen Oxide)	0.0468	--
HC-NM (Non-methane Hydrocarbon)	0.02709	--
NMOG (Non-methane organic gas)	0.029799	--
HC-TOTAL (Total Hydrocarbon)	0.03166	--

Manufacturer Test Comments EDV RG10, S, Sport

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	4,000 miles	California LEV-III ULEV125	CO	0.42	--	--	--	--	--	0.4	2.1	Pass
CA	4,000 miles	California LEV-III ULEV125	NMOG	0.0298	--	1.10	--	--	--	0.030	99.999	Pass
CA	4,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0766	--	--	--	--	--	0.077	0.250	Pass
CA	4,000 miles	California LEV-III ULEV125	NOX	0.0468	--	--	--	--	--	0.047	99.999	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Test #	KBMX10055351	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	08/04/2018	Fuel	Gasoline
Fuel Batch ID	COE10	Fuel Calibration Number	4
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5810	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	744.9158	--
FE BAG 1 (Bag 1 Fuel Economy)	11.4	11.4
CO2 BAG 2 (Bag 2 Carbon Dioxide)	689.7535	--
FE BAG 2 (Bag 2 Fuel Economy)	12.4	12.4
CO2 BAG 3 (Bag 3 Carbon Dioxide)	570.7932	--
FE BAG 3 (Bag 3 Fuel Economy)	15	15
METHANE (CH4 - Methane)	0.01435	--
CO (Carbon Monoxide)	0.8584	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.558	--
DT-EER (Drive Trace Energy Economy Rating)	-1.771	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.815	--
MFR FE (Manufacturer Fuel Economy)	12.8	12.8
HC-NM (Non-methane Hydrocarbon)	0.09251	--
HC-TOTAL (Total Hydrocarbon)	0.10622	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	668.5366	--

Manufacturer Test Comments

EDV RG10, S, Sport, Cold CO

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0130N54		
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
Fed	50,000 miles	Federal Tier 3 Bin 125	CO	0.86	--	--	--	0.0000	--	0.9	10.0	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	HC-NM	0.09	--	--	--	0.0000	--	0.1	0.3	Pass
CA	50,000 miles	California LEV-III ULEV125	CO	0.86	--	--	--	0.0000	--	0.9	10.0	Pass

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Test #	KBMX10055347	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5480	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.00283	--
CO (Carbon Monoxide)	0.201	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	12.747	--
DT-EER (Drive Trace Energy Economy Rating)	-0.824	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	15.579	--
MFR FE (Manufacturer Fuel Economy)	23.6	23.6
NOX (Nitrogen Oxide)	0.0554	--
HC-NM (Non-methane Hydrocarbon)	0.00444	--
NMOG (Non-methane organic gas)	0.0045732	--
HC-TOTAL (Total Hydrocarbon)	0.00722	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	364	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	364.388	--

Manufacturer Test Comments EDV RG10, S, Sport, HWY

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0130N54		
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
Fed	120,000 miles	Federal Tier 3 Bin 125	CREE	999	--	--	--	0.0000	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0046	--	1.03	--	0.0000	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0600	--	--	--	--	--	0.060	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0554	--	--	--	0.0000	--	0.055	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG	0.0046	--	1.03	--	0.0000	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0600	--	--	--	--	--	0.060	0.125	Pass
CA	150,000 miles	California LEV-III ULEV125	NOX	0.0554	--	--	--	0.0000	--	0.055	99.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Test #	KBMX10055350	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/20/2018	Fuel	Gasoline
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5512	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	819.4088	--
FE BAG 1 (Bag 1 Fuel Economy)	10.4	10.4
CO2 BAG 2 (Bag 2 Carbon Dioxide)	445.8565	--
FE BAG 2 (Bag 2 Fuel Economy)	19.2	19.2
METHANE (CH4 - Methane)	0.00565	--
CO (Carbon Monoxide)	1.0956	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.234	--
DT-EER (Drive Trace Energy Economy Rating)	1.037	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.752	--
MFR FE (Manufacturer Fuel Economy)	16.2	16.2
NOX (Nitrogen Oxide)	0.048	--
HC-NM (Non-methane Hydrocarbon)	0.02354	--
PM (Particulate Matter)	0.001519	--
HC-TOTAL (Total Hydrocarbon)	0.02911	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	528.4246	--

Manufacturer Test Comments EDV RG10, S, Sport,

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0130N54		
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
Fed	150,000 miles	Federal Tier 3 Bin 125	PM	0.0015	--	--	--	0.0000	--	0.002	0.006	Pass
CA	150,000 miles	California LEV-III ULEV125	PM	0.0015	--	--	--	0.0000	--	0.002	0.006	Pass

Test #	KBMX10055349	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/23/2018	Fuel	N/A
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5538	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.00082	--
CO (Carbon Monoxide)	0.6465	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.511	--
DT-EER (Drive Trace Energy Economy Rating)	-0.688	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.131	--
MFR FE (Manufacturer Fuel Economy)	12.8	12.8
NOX (Nitrogen Oxide)	0.0287	--
HC-NM (Non-methane Hydrocarbon)	0.00443	--
HC-TOTAL (Total Hydrocarbon)	0.00522	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	670.8886	--

Manufacturer Test Comments EDV RG10, S, Sport,

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54						
Emission Data Vehicle Information									
Vehicle ID / Configuration	LB39405 / 1	Manufacturer Vehicle Configuration Number	0						
Original Test Group Name	KBMXJ04.4N63	Original Evaporative/Refueling Family	KBMXR0180G05						
Original Test Vehicle Model Year	2019								
Vehicle Model									
Represented Test Vehicle Make	BMW	Represented Test Vehicle Model	X7 xDrive50i						
Leak Family Details									
Leak Family Identifier	--	Leak Family Name	--						
Drive Sources and Fuel System Details									
	<table border="1"> <tr> <th>Drive Source and Fuel#</th><th>Drive Source</th><th>Fuel</th></tr> <tr> <td>1</td><td>Combustion Engine</td><td>Gasoline</td></tr> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline		
Drive Source and Fuel#	Drive Source	Fuel							
1	Combustion Engine	Gasoline							
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						
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor								
Odometer Correction Units	Miles								
Engine Code	4.4-N63-G07X	Rated Horsepower	456						
Displacement (liters)	4.4								
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'							
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel						
Charge Air Cooler Type	Air	Drive Mode While Testing	4-Wheel Drive						
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)						
Curb Weight (lbs)	5617	Equivalent Test Weight (pounds)	6000						
GVWR (lbs)	7253	N/V Ratio	24.2						
Axle Ratio	3.39								
Transmission Type	Semi-Automatic	# of Transmission Gears	8						
Transmission Lockup	Yes	Creep Gear	No						

Certification Summary Information Report

Test Group	KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0130N54
Dynamometer Coefficients:							
Target Coefficients				Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	
City/Highway/Evap	70.2	-0.483	0.03597	2.2	0.189	0.02684	
Cold CO	0	0	0	0	0	0	
US06	70.2	-0.483	0.03597	2.2	0.189	0.02684	
Emission Control Device Comments	--						
Manufacturer Test Vehicle Comments	FEDV X7 xDrive50i, AT, E0, 11, d-comfort						

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Test #	KBMX10055352	Test Procedure	31 - Federal fuel 3-day exhaust
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	08/01/2018	Fuel	Gasoline
Fuel Batch ID	T2/E0	Fuel Calibration Number	8
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	EETZ		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5686	Odometer Units	K
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	492.2462	--
FE BAG 1 (Bag 1 Fuel Economy)	17.9	17.9
CO2 BAG 2 (Bag 2 Carbon Dioxide)	472.7827	--
FE BAG 2 (Bag 2 Fuel Economy)	18.7	18.7
CO2 BAG 3 (Bag 3 Carbon Dioxide)	421.9465	--
FE BAG 3 (Bag 3 Fuel Economy)	20.9	20.9
METHANE (CH4 - Methane)	0.00256	--
CO (Carbon Monoxide)	0.3731	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.469	--
DT-EER (Drive Trace Energy Economy Rating)	-0.026	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.737	--
MFR FE (Manufacturer Fuel Economy)	19.1	19.1
NOX (Nitrogen Oxide)	0.0241	--
N2O (Nitrous Oxide)	0.0004	--
HC-NM (Non-methane Hydrocarbon)	0.01494	--
NMOG (Non-methane organic gas)	0.0155376	--
HC-TOTAL (Total Hydrocarbon)	0.01739	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	464	464

Certification Summary Information Report

Test Group		KBMXJ04.4N63				Evaporative/Refueling Family				KBMXR0130N54		
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		462.838			--					
Manufacturer Test Comments		FEDV, RG11										
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
Fed	120,000 miles	Federal Tier 3 Bin 125	CREE	464	--	--	--	0.0000	--	464	--	--
Fed	120,000 miles	Federal Tier 3 Bin 125	METHANE	0.0026	--	--	--	0.0024	--	0.005	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 125	N2O	0.0004	--	--	--	0.0000	--	0.000	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	CO	0.37	--	--	--	0.0000	--	0.4	2.1	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG	0.0155	--	1.10	--	0.0000	--	0.016	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NMOG+NOX	0.0396	--	--	--	--	--	0.040	0.125	Pass
Fed	150,000 miles	Federal Tier 3 Bin 125	NOX	0.0241	--	--	--	0.0000	--	0.024	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	CO	0.37	--	--	--	0.0000	--	0.4	2.1	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG	0.0155	--	1.10	--	0.0000	--	0.016	99.999	Pass
CA	150,000 miles	California LEV-III ULEV125	NMOG+NOX	0.0396	--	--	--	--	--	0.040	0.125	Pass
CA	150,000 miles	California LEV-III ULEV125	NOX	0.0241	--	--	--	0.0000	--	0.024	99.999	Pass
NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.												

Certification Summary Information Report

Test Group	KBMXJ04.4N63	Evaporative/Refueling Family	KBMXR0130N54
Fuel Properties			
Fuel Batch ID	T10/87	Fuel Calibration Number	9
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	02/01/2018
Fuel Batch Calibration Effective Date	02/01/2018	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.828	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.749
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value (BTU / lb)	17793
Fuel Blend Carbon Weight Fraction	0.828	Weight Fraction CO2	--
Fuel Batch ID	Tank 4	Fuel Calibration Number	32
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	04/21/2006
Fuel Batch Calibration Effective Date	04/21/2006	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.868	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.737
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value (BTU / lb)	18410
Fuel Blend Carbon Weight Fraction	0.868	Weight Fraction CO2	--
Fuel Batch ID	COE10	Fuel Calibration Number	4
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	07/25/2018
Fuel Batch Calibration Effective Date	07/25/2018	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.825	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.743
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value (BTU / lb)	18143
Fuel Blend Carbon Weight Fraction	0.825	Weight Fraction CO2	--
Fuel Batch ID	T2/E0	Fuel Calibration Number	8
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	08/22/2017
Fuel Batch Calibration Effective Date	08/22/2017	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	0.864	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.737
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value (BTU / lb)	18505
Fuel Blend Carbon Weight Fraction	0.865	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family		KBMXR0130N54		
Consolidated List of Standards									
Exhaust Standards									
Cert Region		California + CAA Section 177 states			Cert/In-Use Code		Cert		
Vehicle Class		LDV/Passenger Car			Standard Level		California LEV-III ULEV125		
Fuel		Gasoline			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
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.125
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
Cert Region		Federal			Cert/In-Use Code		Cert		
Vehicle Class		LDV/Passenger Car			Standard Level		Federal Tier 3 Bin 125		
Fuel		Gasoline			Test Procedure		Federal fuel 3-day exhaust		
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	CREE	--	--	--	--	--	--	0.0000	999.999
120,000 miles	METHANE	--	--	--	--	--	--	0.0024	0.030
120,000 miles	N2O	--	--	--	--	--	--	0.0000	0.010
150,000 miles	CO	--	--	--	--	--	--	0.0000	2.1
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.10	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.125
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.120
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.003

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0130N54	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			Federal fuel 3-day exhaust	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.0000	2.1
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.10	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.125
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.120
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.003
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			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	CREE	--	--	--	--	--	--	0.0000	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0000	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0000	0.125
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			Test Procedure			Cold CO	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	--	--	--	--	--	0.0000	10.0
120,000 miles	HC-NM	--	--	--	--	--	--	0.0000	0.3

Certification Summary Information Report

Test Group		KBMXJ04.4N63			Evaporative/Refueling Family			KBMXR0130N54	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			US06	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.006

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			Fed. fuel 50 F exh.	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
4,000 miles	CO	--	--	--	--	--	--	--	2.1
4,000 miles	HCHO	--	--	--	--	--	--	--	0.016
4,000 miles	NMOG	--	--	1.10	--	--	--	--	99.999
4,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.250
4,000 miles	NOX	--	--	--	--	--	--	--	99.999

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-III ULEV125	
Fuel		Gasoline			Test Procedure			Cold CO	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	--	--	--	--	--	0.0000	10.0

Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 125	
Fuel		Gasoline			Test Procedure			US06	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.006

Evaporative/Refueling Standards

Certification Summary Information Report

Test Group		KBMXJ04.4N63		Evaporative/Refueling Family		KBMXR0130N54	
Evaporative/Refueling Family		KBMXR0130N54		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-II Evap	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL	--	0.50	0.006		
Evaporative/Refueling Family		KBMXR0130N54		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 2 Evap	
Test Procedure		2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	120,000 miles	HC-TOTAL	--	0.65	0.030		
Evaporative/Refueling Family		KBMXR0130N54		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-II Evap	
Test Procedure		Federal fuel 3-day exhaust					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL	--	0.65	0.030		
Evaporative/Refueling Family		KBMXR0130N54		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-II Evap	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC	--	0.20	0.004		
Evaporative/Refueling Family		KBMXR0130N54		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 2 Evap	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	120,000 miles	HC	--	0.05	0.002		
Evaporative/Refueling Family		KBMXR0130N54		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-II Evap	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC	--	0.05	0.002		

Certification Summary Information Report

Test Group		KBMXJ04.4N63		Evaporative/Refueling Family		KBMXR0130N54	
Evaporative/Refueling Family		KBMXR0130N54		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 2 Evap	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	120,000 miles	HC	--	0.20	0.004		
Evaporative/Refueling Family		KBMXR0130N54		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 2 Evap	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	120,000 miles	HC-TOTAL	--	0.50	0.006		

Certification Summary Information Report

Test Group		KBMXJ04.4N63	Evaporative/Refueling Family		KBMXR0130N54
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		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		CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only	
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		KBMXJ04.4N63	Evaporative/Refueling Family		KBMXR0130N54
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		KBMXJ04.4N63		Evaporative/Refueling Family		KBMXR0130N54	
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		

8. Statements**8.1 Emission Testing Waiver Statements**

All applicable vehicles will conform with the emission standards for which emission data is not being provided, as allowed under §86.1829-01. The statements below identify the standards for which emission testing was not performed.

Data submittal waiver for HCHO emission compliance

Based on our engineering evaluation of appropriate HCHO emissions we state, that all light-duty vehicles included in the respective applications comply with the applicable HCHO emission standards.

According to 40 CFR §86.1829-01 (b) (iii) (E), for Tier 3 / LEV III vehicles according to 40 CFR §86.1829-15 (d) (4), we waive the data submittal on the basis of this statement.

Data submittal waiver for high-altitude exhaust and evaporative emissions compliance

Based on our engineering evaluation of appropriate high-altitude emission testing we state as the manufacturer, that all vehicles included in this application comply with the applicable exhaust and evaporative emissions standards at high altitude.

According to 40 CFR §86.1829-01 (b)(1)(ii)(B), 40 CFR §86.1829-01 (b)(2)(ii)(B) and according to §86.1829-15 (c) for Tier 3 / LEV III vehicles, we waive the data submittal on the basis of this statement.

According to 40 CFR §86.1810-09 (f)(2), we state as the manufacturer, that all vehicles included in this application utilize common calibration approaches at high altitude in terms of cold temperature NMHC, CO₂, N₂O and CH₄ exhaust emissions.

Data submittal waiver for Idle CO Testing

Based on our engineering evaluation of appropriate Idle CO emissions we state as the manufacturer, that all light-duty trucks included in this application comply with the applicable idle CO emission standards.

According to 40 CFR §86.1829-01 (b)(5) we waive the data submittal on the basis of this statement.

Data submittal waiver for the supplemental two-diurnal test sequence emission compliance

Based on our good engineering judgment, we state as the manufacturer that all applicable vehicles included in this application comply with the evaporative emission standard for the supplemental two-diurnal test sequence. According to §86.1829-01 (b)(2)(iii) (6), we waive the data submittal on the basis of this statement.

Spitback Testing Waiver

According to 40 CFR §86.1810-01 (I), for Tier 3 / LEV III vehicles according to 40 CFR §86.1829-15 (e) (5), BMW certifies, that all ORVR equipped vehicles inherently meet the fuel dispensing spitback standard as part of the compliance with the refueling emission standard over the full useful life.

8.2 Compliance Statements

"Lean-on-cruise" calibration strategies

There are no "Lean-on-cruise" calibration strategies according to 40 CFR §86.1811-17 (d)(4) incorporated into the vehicle design of this Test Group.

91RON-Statement

According to VPCD 97-01 we confirm that city and highway fuel economy test result differences between comparing 91 RON operation and 96 RON operation is within 3%. Emission standards are met at 91 RON operation and 96 RON operation as demonstrated by certification testing. Hereby EDV testing is done using Tier 3 E10 fuel with 91 RON, FEDV testing is using Tier 2 E0 fuel with 96 RON.

A/C-on specific calibrations-Statement

There are neither A/C-on specific calibrations nor A/C-on specific "open-loop" or "commanded" air fuel enrichment strategies according to 40 CFR §86.1811-17(d)(3) incorporated into the vehicle design of this Test Group.

Cold Temperature Emission Control-Statement

According to 40 CFR §86.1809-12 (c) and based on engineering evaluations of emission testing between 25°F and 68°F, the guideline for CO and NMHC emission congruity in the intermediate temperature range is fulfilled by this test group.

Corporate Average Fuel Economy Calculation-Statement

Since the 2007 model year and in accordance with Dear Manufacturer letter CISC-09-19, BMW performs customer vehicle surveys that downloaded select-shift transmission usage data during service at authorized BMW dealers.

BMW has determined that the automatic BMW models equipped with select-shift transmissions will be operated predominantly in the economy mode.

Using good engineering judgment, BMW has concluded that it is appropriate to carry-forward and carry-across the results of the earlier surveys.

Accordingly, BMW will use only economy-mode fuel economy test results for calculating fuel economy label values and Corporate Average Fuel Economy (CAFE).

Emission Control System Continuity-Statement

According to 40 CFR §86.1809-12 (e) and based on engineering evaluations of emission testing between 20°F discontinuity in emission performance of NMOG, CO, CO₂, NO_x, N₂O, CH₄, HCHO, and in case of diesel vehicles also particulate emissions as measured on the Federal Test Procedure in the temperature range of 20°F to 86°F for vehicles in this test group.

Enrichment Limit-Statement

According to 40 CFR §86.1811-17(d)(1) we confirm that the nominal air-fuel ratio throughout the US06 cycle at any speed and load point is not richer than the leanest air fuel mixture required to obtain maximum torque plus a tolerance of four percent.

For the engine covered by this application enrichment takes place at high engine loads (full load) resulting in high exhaust temperatures. Fixing spark advance at this condition allows very little Lambda variation without damaging either the engine (knocking) or the catalyst (over temperature). Therefore BMW does not fix spark advance for LBT investigations at these full load engine operation conditions. The enrichment limit is fulfilled at any engine operation point.

Leak free exhaust system

Based on our engineering analysis of the complete exhaust system we state as the manufacturer, that the exhaust system installed on any vehicles included in this application comply with the requirements of § 86.1844-01(d)(16).

In accordance with this regulation exhaust systems are designed:

- to facilitate leak free assembly, installation and operation for the full useful life of the vehicle and
- facilitate repairs to maintain leak-free operation.

NMOG Compliance-Statement

According to 40 CFR §86.1810-01 (o) NMOG emissions are measured using the procedures described in 40 CFR 1065.635. Hereby equotation 1066.635-2 is used for hot-start and hot running test cycles other than the FTP to determine NMOG based on the NMHC emission rate. For FTP testing equotation 1066.635-3 is used to determine NMOG based on the NMHC emission rate.

9. OBD System Description

The OBD System Description of this Test Group, MY 2019 has been uploaded separately to Verify.

10. Description of Alternate-fueled Vehicles

not applicable

11. Auxiliary Emission Control Devices (AECD) descriptions

Confidential Information: Refer to Section 16

12. Description of vehicles and test parameters covered by certificate

12.1. Vehicle Parameters

12.1.1. Vehicle Information

Model Name	Carline	Trans	# Gears	Vehicle Class	VCW [lbs]	ETW [lbs]	GVW [lbs]	Axle ratio	Tank [L]	Canister Working Capacity	Canister Bed Volume
M850i xDrive Convertible	259	AT	8	LDV / PC	4736	5000	5545	2.813	68	150	2600
650i Gran Coupe	113	AT	8	LDV / PC	4420	4750	5434	2.813	70	130	2570
650i xDrive Gran Coupe	114	AT	8	LDV / PC	4570	4750	5620	2.813	70	130	2570
750i	80	AT	8	LDV / PC	4502	4750	5714	2.813	78	170	3150
750i xDrive	86	AT	8	LDV / PC	4623	5000	5871	2.813	78	170	3150
750i xDrive (SWB)	85	AT	8	LDV / PC	4522	4750	5706	2.813	78	170	3150
Alpina B6 xDrive Gran Coupe	163	AT	8	LDV / PC	4780	5000	5620	2.813	70	130	2570
Alpina B7 xDrive	212	AT	8	LDV / PC	4820	5000	5925	2.813	78	170	3150
M550i xDrive	230	AT	8	LDV / PC	4372	4750	5430	2.813	68	150	2600
M850i xDrive Coupe	249	AT	8	LDV / PC	4478	4750	5280	2.813	68	150	2600
X5 xDrive50i	247	AT	8	LDT 4 / LDT (6001-8500 GVWR; 5751-8500 ALVW)	5170	5500	6460	3.154	83	180	3250
X6 xDrive50i	95	AT	8	LDT 4 / LDT (6001-8500 GVWR; 5751-8500 ALVW)	5080	5500	6430	3.154	85	170	2900
X7 xDrive50i	248	AT	8	LDT 4 / LDT (6001-8500 GVWR; 5751-8500 ALVW)	5617	6000	7253	3.385	83	180	3250

12.1.2. Engine Code and Engine Output Data

Model Name	Carline	Trans	Engine Code	hp / rpm	Nm / rpm
M850i xDrive Convertible	259	AT	4.4-N63-G14X	523 / 5500	750 / 1800 - 4600
650i Gran Coupe	113	AT	4.4-N63T-F13	443 / 5500	650 / 2000 - 4500
650i xDrive Gran Coupe	114	AT	4.4-N63T-X13	443 / 5500	650 / 2000 - 4500
750i	80	AT	4.4-N63-G12	443 / 5500	650 / 1800-4500
750i xDrive	86	AT	4.4-N63-G12X	443 / 5500	650 / 1800-4500
750i xDrive (SWB)	85	AT	4.4-N63-G12X	443 / 5500	650 / 1800-4500
Alpina B6 xDrive Gran Coupe	163	AT	4.4-B6X	591 / 6000	800 / 3500 - 4500
Alpina B7 xDrive	212	AT	4.4-N63-B7	599 / 5750	800 / 3000 - 5000
M550i xDrive	230	AT	4.4-N63-G30X	456 / 5500	650 / 1800 - 4750
M850i xDrive Coupe	249	AT	4.4-N63-G15X	523 / 5500	750 / 1800 - 4600
X5 xDrive50i	247	AT	4.4-N63-G05X	456 / 5250	650 / 1500 - 4750
X6 xDrive50i	95	AT	4.4-N63-F16	443 / 5500	650 / 2000 - 4500
X7 xDrive50i	248	AT	4.4-N63-G07X	456 / 5250	650 / 1500 - 4750

12.1.2. Emission control system description:

12.1.2.1. Catalyst 2TWC

 12.1.2.2. EGR / EGRC EGR: no
EGRC: no

12.1.2.2. EGR / EGRC EGR: no

	EGRC: not applicable
12.1.2.3. Air pump type	not applicable
12.1.2.4. Fuel system type	Direct injection
12.1.2.5. Intake air aspiration method	exhaust gas turbo charger with charge pressure control via wastegate and intercooler
12.1.2.6. Other	Charged Air Cooler
12.1.3. Number of valves per cylinder	4
12.1.4. Engine displacement	4395 cm ³
12.1.5. Sales area	CA, FA
12.1.6. Shift Indicator Light	not applicable
12.2.1. Test Parameters	
12.2.1.1. Engine Starting Procedures	Refer to Common Section, Section 3
12.2.1.2. Shift Schedules	not applicable
12.2.3. Dynamometer loading information	
12.2.3.1. Sort of dynamometer	all wheel roll
12.2.3.2. Electric Dynamometer Coefficients and Tires	

Modell	Carline	Trans	Road Load CFG	N/V	A [lbf]	B [lbf/mph]	C [lbf/mph ²]	TRL HP	a [lbf]	b [lbf/mph]	c [lbf/mph ²]	Tire Front	Tire Rear	Grill Shutter
M850i xDrive Convertible	259	AT	11	23.5	67.7	-0.568	0.02786	14.5	0.7	0.013	0.01979	245/35 R20	275/30 R20	Yes
650i Gran Coupe	113	AT	11	23.5	50.1	-0.071	0.02175	13.5	15.6	0.119	0.01767	245/35 R20 245/40 R19	245/40 R19 275/30 R20	not applicable
650i xDrive Gran Coupe	114	AT	11	23.5	62.2	-0.401	0.02461	13.8	27.1	-0.118	0.02016	245/35 R20 245/40 R19	245/40 R19 275/30 R20	not applicable
750i	80	AT	11	22.4	53.2	-0.100	0.02146	13.6	9.7	0.300	0.01626	245/40 R20 245/45 R19 245/50 R18	245/45 R19 245/50 R18 275/35 R20 275/40 R19	Yes
750i xDrive	86	AT	11	22.4	56.6	-0.049	0.02135	14.3	19.9	0.252	0.01640	245/40 R20 245/45 R19 245/50 R18	245/45 R19 245/50 R18 275/35 R20 275/40 R19	Yes
750i xDrive (SWB)	85	AT	11	22.4	55.4	-0.049	0.02131	14.2	16.5	0.219	0.01669	245/40 R20 245/45 R19 245/50 R18	245/45 R19 245/50 R18 275/35 R20 275/40 R19	Yes
Alpina B6 xDrive Gran Coupe	163	AT	11	23.5	58.1	-0.350	0.02745	14.6	-9.2	-0.056	0.02163	245/35 R20	275/30 R20	not applicable
Alpina B7 xDrive	212	AT	11	22.6	65.8	-0.005	0.02198	16.1	27.2	0.019	0.01899	245/35 R21 245/40 ZR20	275/30 R21 275/35 ZR20	Yes
M550i xDrive	230	AT	11	23.3	62.8	-0.258	0.02258	14.2	-1.7	-0.030	0.01869	245/35 R20 245/40 R19	275/30 R20 275/35 R19	Yes
M850i xDrive Coupe	249	AT	11	23.5	66.5	-0.571	0.02803	14.4	-5.8	0.137	0.01855	245/35 R20	275/30 R20	Yes
X5 xDrive50i	247	AT	21	23.6	65.2	-0.374	0.03262	17.1	6.4	0.181	0.02464	265/50 R19 275/45 R20	265/50 R19 275/45 R20	Yes
X5 xDrive50i	247	AT	22	23.6	65.7	-0.369	0.03423	17.7	6.3	0.094	0.02762	255/55 R18 275/35 R22 275/40 R21	255/55 R18 315/30 R22 315/35 R21	Yes
X6 xDrive50i	95	AT	11	24.1	63.8	-0.508	0.03932	18.2	26.8	-0.508	0.03932	255/50 R19	255/50 R19	not

												275/40 R20	315/35 R20	appli cable
X7 xDrive50i	248	AT	10	24.2	70.2	-0.483	0.03684	18.4	1.8	0.139	0.02838	275/40 R22 275/50 R20 285/45 R21	275/50 R20 285/45 R21 315/35 R22	Yes
X7 xDrive50i	248	AT	11	24.2	70.2	-0.483	0.03597	18.1	2.2	0.189	0.02684	275/40 R22 275/50 R20 285/45 R21	275/50 R20 285/45 R21 315/35 R22	Yes

Road Load Configuration Description

X_ means number of FEDV tire groups used for this model
 10 Road Load for EDV (worst case)
 11 Road Load for FEDV configuration
 21 Road Load for first FEDV configuration
 22 Road Load for second FEDV configuration

12.2.4. Evaporative testing parameters Refer to Section 17

13. Projected Sales

Refer to Common Section for Model Year 2019, Section 4.

14. Request for certification

We herewith apply for the Federal Certificate of conformity and the ARB Executive Order for the Test Group KBMXJ04.4N63.

The mentioned Test Group complies with all applicable regulations contained in 40 Code of Federal Regulations Part 86 and the California Code of Regulations.



Andreas Eder

15. Other Information

- 15.1. Label according to 40 CFR § 86.1807-01 and according to California Motor Vehicle Emission Control Specifications.

DRAFT - Inverted Representation

 Bayerische Motoren Werke AG VEHICLE EMISSION CONTROL INFORMATION		
Conforms to regulations:		2019 MY
U.S. EPA:	Tier3 Bin125 LDV	CA OBD II Fuel: gasoline
EVAP:	Tier2 LDV	
California:	LEVIII - ULEV125 PC	CA OBD II Fuel: gasoline
EVAP:	LEVII PC	
No adjustments needed.	2TWC, 2WR-HO2S, 2HO2S, DFI, 2TC, 2CAC	
Group: KBMXJ04.4N63 Evap: KBMXR0130N54		9 487 425

6 series

 Bayerische Motoren Werke AG VEHICLE EMISSION CONTROL INFORMATION		
Conforms to regulations:		2019 MY
U.S. EPA:	Tier3 - Bin125 LDV	CA OBD II Fuel: gasoline
EVAP:	Tier3 LDV	
California:	LEVIII - ULEV125 PC	CA OBD II Fuel: gasoline
EVAP:	LEVIII PC	
No adjustments needed.	2TWC, 2WR-HO2S, 2HO2S, DFI, 2TC, 2CAC	
Group: KBMXJ04.4N63 Evap: KBMXR0150G1X		9 488 768

M550i xDrive, 8 series

 Bayerische Motoren Werke AG VEHICLE EMISSION CONTROL INFORMATION		
Conforms to regulations:		2019 MY
U.S. EPA:	Tier3 Bin125 LDV	CA OBD II Fuel: gasoline
EVAP:	Tier2 LDV	
California:	LEVIII - ULEV125 PC	CA OBD II Fuel: gasoline
EVAP:	LEVII PC	
No adjustments needed.	2TWC, 2WR-HO2S, 2HO2S, DFI, 2TC, 2CAC	
Group: KBMXJ04.4N63 Evap: KBMXR0170N63		9 487 426

7 series

 Bayerische Motoren Werke AG VEHICLE EMISSION CONTROL INFORMATION		
Conforms to regulations:		2019 MY
U.S. EPA:	Tier3 - Bin125 LDT	CA OBD II Fuel: gasoline
EVAP:	Tier2 LDT	
California:	LEVIII - ULEV125 LDT	CA OBD II Fuel: gasoline
EVAP:	LEVII LDT	
No adjustments needed.	2TWC, 2WR-HO2S, 2HO2S, DFI, 2TC, 2CAC	
Group: KBMXJ04.4N63 Evap: KBMXR0170N63		9 488 769

X6 xDrive50i

 Bayerische Motoren Werke AG VEHICLE EMISSION CONTROL INFORMATION		
Conforms to regulations:		2019 MY
U.S. EPA: Tier3 - Bin125 LDT	CA OBD II	Fuel: gasoline
EVAP: Tier3 LDT		
California: LEVIII - ULEV125 LDT	CA OBD II	Fuel: gasoline
EVAP: LEVIII LDT		
No adjustments needed.	2TWC, 2WR-H02S, 2H02S, DFI, 2TC, 2CAC	
Group: KBMXJ04.4N63		
Evap: KBMXR0180G05		9 470 942

X5 xDrive50i, X7 xDrive50i

Original representation

Base: Black
Characters: Silver

17. California ARB Information

- | | | |
|-----------|--|--|
| 17.1. | Statements | Refer to Common Section, Section 5 |
| 17.1.1. | Driveability | Refer to Common Section, Section 5 |
| 17.1.2. | Label Durability | Refer to Common Section, Section 5 |
| 17.1.3. | Fill Pipe | Refer to separate document upload in EDMS |
| 17.1.4. | Production Vehicles versus Test Vehicles | Refer to Common Section, Section 5 |
| 17.1.5. | Continuity of Emissions | Refer to Common Section, Section 5 |
| 17.1.6. | I/M Test Procedure Statement | Refer to Common Section, Section 5 |
| 17.1.7. | High Altitude Requirements | Refer to Common Section, Section 5 |
| 17.1.8. | Test and Service Accumulation Fuel | Refer to Common Section, Section 5 |
| 17.1.9. | Lubricants | Refer to Common Section, Section 5 |
| 17.1.10. | Projected Sales | Confidential Information: Refer to Common Section, Section 4 |
| 17.2. | Evaporative Emission Deterioration | |
| 17.2.1. | Bench Test Procedure | |
| 17.2.1.1. | Description of Bench Test Procedure | Confidential Information, Refer to Common Section, Section 4.3 |
| 17.2.1.2. | Fuel Tank Temperature and Pressure Profile | Refer to Section 19, Attachment |
| 17.2.1.3. | EPA Profile and Ambient Conditions | |

The temperature correction was conducted in accordance with the Federal Evaporative Emission Standards and Test Procedures after the following equation:

$$T_{i, \text{profile}} = T_i - T_o$$

T_i is the series of observed liquid fuel temperature during the drive (°F) where i is the incremental measurement in time

T_o is the liquid fuel temperature observed at the start of the specified driving schedule (°F).

T_i profile is the series of temperatures that comprise the relative temperature profile.

18. High Priced Parts List

M850i xDrive Convertible	AIR CLEANER [INTAKE MUFFLER] AIR FLAPS, UPPER BRAKE SYSTEM CONTROL MODULE [CONTROL UNIT DSC] CATALYTIC CONVERTER (CYL. 1-4) CATALYTIC CONVERTER (CYL. 5-8) CHARGE AIR COOLER (CYL. 1-4) CHARGE AIR COOLER (CYL. 5-8) CHARGE AIR DUCT (CYL.1-4) (TURBOCHARGER TO CAC) CHARGE AIR DUCT (CYL.5-8) (TURBOCHARGER TO CAC) CHARGE AIR DUCT GASKET (CAC TO THROTTLE) COUPLING FITTING (CAC TO THROTTLE) COUPLING RING (CAC TO THROTTLE) EVAPORATIVE EMISSION CANISTER [ACTIVATED CHARCOAL FILTER] EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT EXHAUST MANIFOLD EXHAUST MANIFOLD GASKET (CYL. 1-4) EXHAUST MANIFOLD GASKET (CYL. 5-8) EXHAUST MANIFOLD GASKET (TO CYLINDER HEAD) EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) FRONT SCAVENGE AIR LINE FUEL INJECTOR (CYL. 1-4) FUEL INJECTOR (CYL. 5-8) FUEL INJECTOR O-RING FUEL LINE TO HIGH PRESSURE FUEL PUMP FUEL PUMP [DELIVERY MODULE] FUEL RAIL (CYL. 1-4) FUEL RAIL (CYL. 5-8) FUEL RAIL SENSOR [SENSOR, HIGH-PRESSURE] HIGH-PRESSURE FUEL PUMP (CYL. 1-4) HIGH-PRESSURE FUEL PUMP (CYL. 5-8) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT INTAKE MANIFOLD (CYL. 1-4) INTAKE MANIFOLD (CYL. 5-8) INTAKE MANIFOLD GASKET KNOCK SENSOR (CYL. 5-8) MALFUNCTION INDICATOR LAMP (MIL) MIDDLE FUEL HOSE POSITIVE CRANKCASE VENTILATION PIPE REAR PART REAR FUEL LINE REAR SCAVENGE AIR LINE THERMOSTAT THROTTLE BODY GASKET (FROM CAC) THROTTLE BODY GASKET (TO INTAKE MANIFOLD) TIMING CHAIN (CYL. 1-4) TIMING CHAIN (CYL. 5-8) TORQUE CONVERTER TRANSMISSION CONTROL MODULE [MECHATRONIC] TROTTLE BODY TURBOCHARGER TURBOCHARGER CLAMP (AT EXHAUST MANIFOLD) TURBOCHARGER GASKET (TO CATALYTIC CONVERTER) (CYL. 1-4) TURBOCHARGER GASKET (TO CATALYTIC CONVERTER) (CYL. 5-8) VALVE COVER GASKETS (CYL. 1-4) [GASKET SET,
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650i Gran Coupe

CYLINDER HEAD COVER]
VALVE COVER GASKETS (CYL. 5-8) [GASKET SET,
CYLINDER HEAD COVER]
VALVETRONIC ACTUATOR GASKET
VALVETRONIC ACTUATOR [ECCENTRIC SHAFT
ACTUATOR]
VANOS VVT ACTUATOR
VANOS VVT CENTRAL VALVE

AIR CLEANER [INTAKE SILENCER]
BRAKE SYSTEM CONTROL MODULE [CONTROL UNIT
DSC]
CATALYTIC CONVERTER (CYL. 1-4)
CATALYTIC CONVERTER (CYL. 5-8)
CHARGE AIR COOLER (CYL. 1-4)
CHARGE AIR COOLER (CYL. 5-8)
ENGINE CONTROL MODULE (ECM)
EVAPORATIVE EMISSION CANISTER [ACTIVATED
CHARCOAL FILTER]
EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT (CYL.
1-4)
EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT (CYL.
5-8)
EXHAUST MANIFOLD
EXHAUST MANIFOLD CLAMP (TO TURBOCHARGER)
EXHAUST MANIFOLD GASKET
FUEL LINE TO HIGH PRESSURE FUEL PUMP
FUEL PUMP [DELIVERY MODULE]
FUEL RAIL (CYL. 1-4)
FUEL RAIL (CYL. 5-8)
INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT (CYL.
1-4)
INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT (CYL.
5-8)
INTAKE MANIFOLD (CYL. 1-4)
INTAKE MANIFOLD (CYL. 5-8)
INTAKE MANIFOLD GASKET(S) (CYL. 1-4)
INTAKE MANIFOLD GASKET(S) (CYL. 5-8)
KNOCK SENSOR (CYL. 1-4)
KNOCK SENSOR (CYL. 5-8)
LEFT EXHAUST MANIFOLD GASKET (TO
TURBOCHARGER)
MALFUNCTION INDICATOR LAMP (MIL)
RIGHT EXHAUST MANIFOLD GASKET (TO
TURBOCHARGER)
THROTTLE BODY
TIMING CHAIN
TORQUE CONVERTER
TRANSMISSION CONTROL MODULE [MECHATRONIC]
TURBOCHARGER
VALVE COVER GASKETS (CYL. 1-4) [GASKET SET,
CYLINDER HEAD COVER]
VALVE COVER GASKETS (CYL. 5-8) [GASKET SET,
CYLINDER HEAD COVER]
VALVETRONIC ACTUATOR (CYL. 1-4) [ECCENTRIC SHAFT
ACTUATOR]
VALVETRONIC ACTUATOR (CYL. 5-8) [ECCENTRIC SHAFT
ACTUATOR]
VALVETRONIC ACTUATOR GASKET (CYL. 1-4)
[ECCENTRIC SHAFT ACTUATOR GASKET]
VALVETRONIC ACTUATOR GASKET (CYL. 5-8)
[ECCENTRIC SHAFT ACTUATOR GASKET]

	VANOS VVT ACTUATOR (CYL. 1-4)
650i xDrive Gran Coupe	AIR CLEANER [INTAKE SILENCER] BRAKE SYSTEM CONTROL MODULE [CONTROL UNIT DSC] CATALYTIC CONVERTER (CYL. 1-4) CATALYTIC CONVERTER (CYL. 5-8) CHARGE AIR COOLER (CYL. 1-4) CHARGE AIR COOLER (CYL. 5-8) ENGINE CONTROL MODULE (ECM) EVAPORATIVE EMISSION CANISTER [ACTIVATED CHARCOAL FILTER] EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT (CYL. 1-4) EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT (CYL. 5-8) EXHAUST MANIFOLD EXHAUST MANIFOLD CLAMP (TO TURBOCHARGER) EXHAUST MANIFOLD GASKET FUEL LINE TO HIGH PRESSURE FUEL PUMP FUEL PUMP [DELIVERY MODULE] FUEL RAIL (CYL. 1-4) FUEL RAIL (CYL. 5-8) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT (CYL. 1-4) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT (CYL. 5-8) INTAKE MANIFOLD (CYL. 1-4) INTAKE MANIFOLD (CYL. 5-8) INTAKE MANIFOLD GASKET(S) (CYL. 1-4) INTAKE MANIFOLD GASKET(S) (CYL. 5-8) KNOCK SENSOR (CYL. 1-4) KNOCK SENSOR (CYL. 5-8) LEFT EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) MALFUNCTION INDICATOR LAMP (MIL) RIGHT EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) THROTTLE BODY TIMING CHAIN TORQUE CONVERTER TRANSMISSION CONTROL MODULE [MECHATRONIC] TURBOCHARGER VALVE COVER GASKETS (CYL. 1-4) [GASKET SET, CYLINDER HEAD COVER] VALVE COVER GASKETS (CYL. 5-8) [GASKET SET, CYLINDER HEAD COVER] VALVETRONIC ACTUATOR (CYL. 1-4) [ECCENTRIC SHAFT ACTUATOR] VALVETRONIC ACTUATOR (CYL. 5-8) [ECCENTRIC SHAFT ACTUATOR] VALVETRONIC ACTUATOR GASKET (CYL. 1-4) [ECCENTRIC SHAFT ACTUATOR GASKET] VALVETRONIC ACTUATOR GASKET (CYL. 5-8) [ECCENTRIC SHAFT ACTUATOR GASKET] VANOS VVT ACTUATOR (CYL. 1-4)
750i	AIR CLEANER [INTAKE MUFFLER] BRAKE SYSTEM CONTROL MODULE [CONTROL UNIT DSC] CATALYTIC CONVERTER (CYL. 1-4) CATALYTIC CONVERTER (CYL. 5-8) CHARGE AIR COOLER (CYL. 1-4)

	CHARGE AIR COOLER (CYL. 5-8) CHARGE AIR DUCT COUPLING RING (CAC TO THROTTLE) ENGINE CONTROL MODULE (ECM) EVAPORATIVE EMISSION CANISTER [ACTIVATED CHARCOAL FILTER] EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT EXHAUST MANIFOLD EXHAUST MANIFOLD CLAMP (TO TURBOCHARGER) EXHAUST MANIFOLD GASKET (CYL. 5-8) EXHAUST MANIFOLD GASKET (TO CYLINDER HEAD) EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) FUEL INJECTOR (CYL. 1-4) FUEL INJECTOR (CYL. 5-8) FUEL LINE TO HIGH PRESSURE FUEL PUMP FUEL PUMP [SUPPLY MODULE] FUEL RAIL (CYL. 1-4) FUEL RAIL (CYL. 5-8) FUEL RAIL SENSOR [SENSOR, HIGH-PRESSURE] FUEL TANK HIGH-PRESSURE FUEL PUMP (CYL. 1-4) HIGH-PRESSURE FUEL PUMP (CYL. 5-8) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT INTAKE MANIFOLD (CYL. 1-4) INTAKE MANIFOLD (CYL. 5-8) INTAKE MANIFOLD GASKET KNOCK SENSOR (CYL. 5-8) MALFUNCTION INDICATOR LAMP (MIL) MIDDLE FUEL HOSE THERMOSTAT THROTTLE BODY TIMING CHAIN (CYL. 1-4) TIMING CHAIN (CYL. 5-8) TORQUE CONVERTER TRANSMISSION CONTROL MODULE [MECHATRONIC] TURBOCHARGER TURBOCHARGER GASKET (TO CATALYTIC CONVERTER) (CYL. 1-4) TURBOCHARGER GASKET (TO CATALYTIC CONVERTER) (CYL. 5-8) VALVE COVER GASKETS (CYL. 1-4) [GASKET SET, CYLINDER HEAD COVER] VALVE COVER GASKETS (CYL. 5-8) [GASKET SET, CYLINDER HEAD COVER] VALVETRONIC ACTUATOR GASKET VALVETRONIC ACTUATOR [ECCENTRIC SHAFT ACTUATOR] VANOS VVT CENTRAL VALVE
750i xDrive	AIR CLEANER [INTAKE MUFFLER] BRAKE SYSTEM CONTROL MODULE [CONTROL UNIT DSC] CATALYTIC CONVERTER (CYL. 1-4) CATALYTIC CONVERTER (CYL. 5-8) CHARGE AIR COOLER (CYL. 1-4) CHARGE AIR COOLER (CYL. 5-8) CHARGE AIR DUCT COUPLING RING (CAC TO THROTTLE) ENGINE CONTROL MODULE (ECM) EVAPORATIVE EMISSION CANISTER [ACTIVATED CHARCOAL FILTER] EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT

	EXHAUST MANIFOLD EXHAUST MANIFOLD CLAMP (TO TURBOCHARGER) EXHAUST MANIFOLD GASKET (CYL. 5-8) EXHAUST MANIFOLD GASKET (TO CYLINDER HEAD) EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) FUEL INJECTOR (CYL. 1-4) FUEL INJECTOR (CYL. 5-8) FUEL LINE TO HIGH PRESSURE FUEL PUMP FUEL PUMP [SUPPLY MODULE] FUEL RAIL (CYL. 1-4) FUEL RAIL (CYL. 5-8) FUEL RAIL SENSOR [SENSOR, HIGH-PRESSURE] FUEL TANK HIGH-PRESSURE FUEL PUMP (CYL. 1-4) HIGH-PRESSURE FUEL PUMP (CYL. 5-8) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT INTAKE MANIFOLD (CYL. 1-4) INTAKE MANIFOLD (CYL. 5-8) INTAKE MANIFOLD GASKET KNOCK SENSOR (CYL. 5-8) MALFUNCTION INDICATOR LAMP (MIL) MIDDLE FUEL HOSE THERMOSTAT THROTTLE BODY TIMING CHAIN (CYL. 1-4) TIMING CHAIN (CYL. 5-8) TORQUE CONVERTER TRANSMISSION CONTROL MODULE [MECHATRONIC] TURBOCHARGER TURBOCHARGER GASKET (TO CATALYTIC CONVERTER) (CYL. 1-4) TURBOCHARGER GASKET (TO CATALYTIC CONVERTER) (CYL. 5-8) VALVE COVER GASKETS (CYL. 1-4) [GASKET SET, CYLINDER HEAD COVER] VALVE COVER GASKETS (CYL. 5-8) [GASKET SET, CYLINDER HEAD COVER] VALVETRONIC ACTUATOR GASKET VALVETRONIC ACTUATOR [ECCENTRIC SHAFT ACTUATOR] VANOS VVT CENTRAL VALVE
750i xDrive (SWB)	AIR CLEANER [INTAKE MUFFLER] BRAKE SYSTEM CONTROL MODULE [CONTROL UNIT DSC] CATALYTIC CONVERTER (CYL. 1-4) CATALYTIC CONVERTER (CYL. 5-8) CHARGE AIR COOLER (CYL. 1-4) CHARGE AIR COOLER (CYL. 5-8) CHARGE AIR DUCT COUPLING RING (CAC TO THROTTLE) ENGINE CONTROL MODULE (ECM) EVAPORATIVE EMISSION CANISTER [ACTIVATED CHARCOAL FILTER] EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT EXHAUST MANIFOLD EXHAUST MANIFOLD CLAMP (TO TURBOCHARGER) EXHAUST MANIFOLD GASKET (CYL. 5-8) EXHAUST MANIFOLD GASKET (TO CYLINDER HEAD) EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) FUEL INJECTOR (CYL. 1-4) FUEL INJECTOR (CYL. 5-8)

	FUEL LINE TO HIGH PRESSURE FUEL PUMP FUEL PUMP [SUPPLY MODULE] FUEL RAIL (CYL. 1-4) FUEL RAIL (CYL. 5-8) FUEL RAIL SENSOR [SENSOR, HIGH-PRESSURE] FUEL TANK HIGH-PRESSURE FUEL PUMP (CYL. 1-4) HIGH-PRESSURE FUEL PUMP (CYL. 5-8) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT INTAKE MANIFOLD (CYL. 1-4) INTAKE MANIFOLD (CYL. 5-8) INTAKE MANIFOLD GASKET KNOCK SENSOR (CYL. 5-8) MALFUNCTION INDICATOR LAMP (MIL) MIDDLE FUEL HOSE THERMOSTAT THROTTLE BODY TIMING CHAIN (CYL. 1-4) TIMING CHAIN (CYL. 5-8) TORQUE CONVERTER TRANSMISSION CONTROL MODULE [MECHATRONIC] TURBOCHARGER TURBOCHARGER GASKET (TO CATALYTIC CONVERTER) (CYL. 1-4) TURBOCHARGER GASKET (TO CATALYTIC CONVERTER) (CYL. 5-8) VALVE COVER GASKETS (CYL. 1-4) [GASKET SET, CYLINDER HEAD COVER] VALVE COVER GASKETS (CYL. 5-8) [GASKET SET, CYLINDER HEAD COVER] VALVETRONIC ACTUATOR GASKET VALVETRONIC ACTUATOR [ECCENTRIC SHAFT ACTUATOR] VANOS VVT CENTRAL VALVE
Alpina B6 xDrive Gran Coupe	AIR CLEANER [INTAKE SILENCER] BRAKE SYSTEM CONTROL MODULE [CONTROL UNIT DSC] CATALYTIC CONVERTER (CYL. 1-4) CATALYTIC CONVERTER (CYL. 5-8) CHARGE AIR COOLER (CYL. 1-4) CHARGE AIR COOLER (CYL. 5-8) ENGINE CONTROL MODULE (ECM) EVAPORATIVE EMISSION CANISTER [ACTIVATED CHARCOAL FILTER] EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT (CYL. 1-4) EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT (CYL. 5-8) EXHAUST MANIFOLD EXHAUST MANIFOLD CLAMP (TO TURBOCHARGER) EXHAUST MANIFOLD GASKET FUEL LINE TO HIGH PRESSURE FUEL PUMP FUEL PUMP [DELIVERY MODULE] FUEL RAIL (CYL. 1-4) FUEL RAIL (CYL. 5-8) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT (CYL. 1-4) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT (CYL. 5-8) INTAKE MANIFOLD (CYL. 1-4) INTAKE MANIFOLD (CYL. 5-8)

	INTAKE MANIFOLD GASKET(S) (CYL. 1-4) INTAKE MANIFOLD GASKET(S) (CYL. 5-8) KNOCK SENSOR (CYL. 1-4) KNOCK SENSOR (CYL. 5-8) LEFT EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) MALFUNCTION INDICATOR LAMP (MIL) RIGHT EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) THROTTLE BODY TIMING CHAIN TORQUE CONVERTER TRANSMISSION CONTROL MODULE [MECHATRONIC] TURBOCHARGER VALVE COVER GASKETS (CYL. 1-4) [GASKET SET, CYLINDER HEAD COVER] VALVE COVER GASKETS (CYL. 5-8) [GASKET SET, CYLINDER HEAD COVER] VALVETRONIC ACTUATOR (CYL. 1-4) [ECCENTRIC SHAFT ACTUATOR] VALVETRONIC ACTUATOR (CYL. 5-8) [ECCENTRIC SHAFT ACTUATOR] VALVETRONIC ACTUATOR GASKET (CYL. 1-4) [ECCENTRIC SHAFT ACTUATOR GASKET] VALVETRONIC ACTUATOR GASKET (CYL. 5-8) [ECCENTRIC SHAFT ACTUATOR GASKET] VANOS VVT ACTUATOR (CYL. 1-4)
Alpina B7 xDrive	CATALYTIC CONVERTER CHARGE AIR COOLER ENGINE CONTROL MODULE (ECM) EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT EXHAUST MANIFOLD EXHAUST MANIFOLD GASKET FUEL INJECTOR FUEL INJECTOR GASKET RING (CYL. 1-4) FUEL PUMP [DELIVERY MODULE] FUEL RAIL SENSOR [SENSOR, HIGH-PRESSURE] FUEL RAIL [HIGH-PRESSURE RAIL] FUEL TANK HIGH PRESSURE FUEL PUMP INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT INTAKE MANIFOLD INTAKE MANIFOLD GASKET KNOCK SENSOR THROTTLE BODY TORQUE CONVERTER TRANSMISSION CONTROL MODULE TURBOCHARGER TURBOCHARGER GASKET VALVE COVER GASKETS [GASKET SET, CYLINDER HEAD COVER]
M550i xDrive	AIR CLEANER [INTAKE MUFFLER] BRAKE SYSTEM CONTROL MODULE [CONTROL UNIT DSC] CATALYTIC CONVERTER (CYL. 1-4) CATALYTIC CONVERTER (CYL. 5-8) CHARGE AIR COOLER (CYL. 1-4) CHARGE AIR COOLER (CYL. 5-8) CHARGE AIR DUCT (CYL.1-4) (TURBOCHARGER TO CAC) CHARGE AIR DUCT (CYL.5-8) (TURBOCHARGER TO CAC) ENGINE CONTROL MODULE (ECM)

	EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT EXHAUST MANIFOLD GASKET (CYL. 1-4) EXHAUST MANIFOLD GASKET (CYL. 5-8) EXHAUST MANIFOLD GASKET (TO CYLINDER HEAD) EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) FUEL INJECTOR (CYL. 1-4) FUEL INJECTOR (CYL. 5-8) FUEL INJECTOR O-RING FUEL LINE TO HIGH PRESSURE FUEL PUMP FUEL PUMP [DELIVERY MODULE] FUEL RAIL (CYL. 1-4) FUEL RAIL (CYL. 5-8) FUEL RAIL SENSOR [SENSOR, HIGH-PRESSURE] FUEL TANK HIGH-PRESSURE FUEL PUMP (CYL. 1-4) HIGH-PRESSURE FUEL PUMP (CYL. 5-8) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT INTAKE MANIFOLD (CYL. 1-4) INTAKE MANIFOLD (CYL. 5-8) INTAKE MANIFOLD GASKET KNOCK SENSOR (CYL. 5-8) MALFUNCTION INDICATOR LAMP (MIL) MIDDLE FUEL LINE [FUEL HOSE] THERMOSTAT THROTTLE BODY TIMING CHAIN (CYL. 1-4) TIMING CHAIN (CYL. 5-8) TORQUE CONVERTER TRANSMISSION CONTROL MODULE TURBOCHARGER TURBOCHARGER CLAMP (TO EXHAUST MANIFOLD) TURBOCHARGER GASKET (TO CATALYTIC CONVERTER) (CYL. 1-4) TURBOCHARGER GASKET (TO CATALYTIC CONVERTER) (CYL. 5-8) VALVE COVER GASKETS (CYL. 1-4) [GASKET SET CYLINDER HEAD COVER] VALVE COVER GASKETS (CYL. 5-8) [GASKET SET, CYLINDER HEAD COVER] VALVETRONIC ACTUATOR GASKET VALVETRONIC ACTUATOR [ECCENTRIC SHAFT ACTUATOR] VANOS VVT CENTRAL VALVE
M850i xDrive Coupe	AIR CLEANER [INTAKE MUFFLER] AIR FLAPS, UPPER BRAKE SYSTEM CONTROL MODULE [CONTROL UNIT DSC] CATALYTIC CONVERTER (CYL. 1-4) CATALYTIC CONVERTER (CYL. 5-8) CHARGE AIR COOLER (CYL. 1-4) CHARGE AIR COOLER (CYL. 5-8) CHARGE AIR DUCT (CYL.1-4) (TURBOCHARGER TO CAC) CHARGE AIR DUCT (CYL.5-8) (TURBOCHARGER TO CAC) CHARGE AIR DUCT GASKET (CAC TO THROTTLE) COUPLING FITTING (CAC TO THROTTLE) COUPLING RING (CAC TO THROTTLE) EVAPORATIVE EMISSION CANISTER [ACTIVATED CHARCOAL FILTER] EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT EXHAUST MANIFOLD EXHAUST MANIFOLD GASKET (CYL. 1-4)

	EXHAUST MANIFOLD GASKET (CYL. 5-8) EXHAUST MANIFOLD GASKET (TO CYLINDER HEAD) EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) FRONT SCAVENGE AIR LINE FUEL INJECTOR (CYL. 1-4) FUEL INJECTOR (CYL. 5-8) FUEL INJECTOR O-RING FUEL LINE TO HIGH PRESSURE FUEL PUMP FUEL PUMP [DELIVERY MODULE] FUEL RAIL (CYL. 1-4) FUEL RAIL (CYL. 5-8) FUEL RAIL SENSOR [SENSOR, HIGH-PRESSURE] HIGH-PRESSURE FUEL PUMP (CYL. 1-4) HIGH-PRESSURE FUEL PUMP (CYL. 5-8) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT INTAKE MANIFOLD (CYL. 1-4) INTAKE MANIFOLD (CYL. 5-8) INTAKE MANIFOLD GASKET KNOCK SENSOR (CYL. 5-8) MALFUNCTION INDICATOR LAMP (MIL) MIDDLE FUEL HOSE POSITIVE CRANKCASE VENTILATION PIPE REAR PART REAR FUEL LINE REAR SCAVENGE AIR LINE THERMOSTAT THROTTLE BODY GASKET (FROM CAC) THROTTLE BODY GASKET (TO INTAKE MANIFOLD) TIMING CHAIN (CYL. 1-4) TIMING CHAIN (CYL. 5-8) TORQUE CONVERTER TRANSMISSION CONTROL MODULE [MECHATRONIC] TROTTLER BODY TURBOCHARGER TURBOCHARGER CLAMP (AT EXHAUST MANIFOLD) TURBOCHARGER GASKET (TO CATALYTIC CONVERTER) (CYL. 1-4) TURBOCHARGER GASKET (TO CATALYTIC CONVERTER) (CYL. 5-8) VALVE COVER GASKETS (CYL. 1-4) [GASKET SET, CYLINDER HEAD COVER] VALVE COVER GASKETS (CYL. 5-8) [GASKET SET, CYLINDER HEAD COVER] VALVETRONIC ACTUATOR GASKET VALVETRONIC ACTUATOR [ECCENTRIC SHAFT ACTUATOR] VANOS VVT ACTUATOR VANOS VVT CENTRAL VALVE
X5 xDrive50i	AIR CLEANER [INTAKE MUFFLER] BRAKE SYSTEM CONTROL MODULE [CONTROL UNIT DSC] CATALYTIC CONVERTER (CYL. 1-4) CATALYTIC CONVERTER GASKET (CYL. 5-8) CHARGE AIR COOLER (CYL. 1-4) CHARGE AIR COOLER (CYL. 5-8) CHARGE AIR DUCT (CYL.1-4) (TURBOCHARGER TO CAC) CHARGE AIR DUCT (CYL.5-8) (TURBOCHARGER TO CAC) COUPLING RING (CAC TO THROTTLE) ENGINE CONTROL MODULE (ECM) EVAPORATIVE EMISSION CANISTER [ACTIVATED CHARCOAL FILTER] EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT

	EXHAUST MANIFOLD EXHAUST MANIFOLD GASKET EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) FUEL INJECTOR (CYL. 1-4) FUEL INJECTOR (CYL. 5-8) FUEL INJECTOR O-RING FUEL LINE TO HIGH PRESSURE FUEL PUMP FUEL PUMP [DELIVERY MODULE] FUEL RAIL (CYL. 1-4) FUEL RAIL (CYL. 5-8) FUEL RAIL SENSOR [SENSOR, HIGH-PRESSURE] FUEL TANK HIGH-PRESSURE FUEL PUMP (CYL. 1-4) HIGH-PRESSURE FUEL PUMP (CYL. 5-8) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT INTAKE MANIFOLD (CYL. 1-4) INTAKE MANIFOLD (CYL. 5-8) INTAKE MANIFOLD GASKET KNOCK SENSOR (CYL. 5-8) MALFUNCTION INDICATOR LAMP (MIL) MIDDLE FUEL LINE [FUEL HOSE] THERMOSTAT THROTTLE BODY TIMING CHAIN (CYL. 1-4) TIMING CHAIN (CYL. 5-8) TORQUE CONVERTER TRANSMISSION CONTROL MODULE [MECHATRONIC] TURBOCHARGER TURBOCHARGER CLAMP (TO EXHAUST MANIFOLD) VALVE COVER GASKETS (CYL. 1-4) [GASKET SET CYLINDER HEAD COVER] VALVE COVER GASKETS (CYL. 5-8) [GASKET SET CYLINDER HEAD COVER] VALVETRONIC ACTUATOR GASKET VALVETRONIC ACTUATOR [ECCENTRIC SHAFT ACTUATOR] VANOS VVT CENTRAL VALVE
X6 xDrive50i	AIR CLEANER [INTAKE SILENCER] BRAKE SYSTEM CONTROL MODULE [CONTROL UNIT DSC] CATALYTIC CONVERTER (CYL. 1-4) CATALYTIC CONVERTER (CYL. 5-8) CATALYTIC CONVERTER GASKET (CYL. 1-4) CATALYTIC CONVERTER GASKET (CYL. 5-8) CHARGE AIR COOLER (CYL. 1-4) CHARGE AIR COOLER (CYL. 5-8) ENGINE CONTROL MODULE (ECM) EVAPORATIVE EMISSION CANISTER [ACTIVATED CHARCOAL FILTER] EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT (CYL. 1-4) EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT (CYL. 5-8) EXHAUST MANIFOLD EXHAUST MANIFOLD CLAMP (TO TURBOCHARGER) EXHAUST MANIFOLD GASKET FUEL LINE TO HIGH PRESSURE FUEL PUMP FUEL PUMP [DELIVERY MODULE] FUEL RAIL (CYL. 1-4) FUEL RAIL (CYL. 5-8) FUEL TANK

	HIGH-PRESSURE FUEL PUMP (CYL. 1-4) HIGH-PRESSURE FUEL PUMP (CYL. 5-8) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT (CYL. 1-4) INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT (CYL. 5-8) INTAKE MANIFOLD GASKET(S) (CYL. 1-4) INTAKE MANIFOLD GASKET(S) (CYL. 5-8) KNOCK SENSOR (CYL. 1-4) KNOCK SENSOR (CYL. 5-8) LEFT EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) MALFUNCTION INDICATOR LAMP (MIL) RIGHT EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) THROTTLE BODY TIMING CHAIN (CYL. 1-4) TIMING CHAIN (CYL. 5-8) TORQUE CONVERTER TRANSMISSION CONTROL MODULE [MECHATRONIC] TURBOCHARGER VALVE COVER GASKETS (CYL. 1-4) [GASKET SET, CYLINDER HEAD COVER] VALVE COVER GASKETS (CYL. 5-8) [GASKET SET, CYLINDER HEAD COVER] VALVETRONIC ACTUATOR (CYL. 1-4) [ECCENTRIC SHAFT ACTUATOR] VALVETRONIC ACTUATOR (CYL. 5-8) [ECCENTRIC SHAFT ACTUATOR] VALVETRONIC ACTUATOR GASKET (CYL. 1-4) [ECCENTRIC SHAFT ACTUATOR GASKET] VALVETRONIC ACTUATOR GASKET (CYL. 5-8) [ECCENTRIC SHAFT ACTUATOR GASKET] VANOS VVT ACTUATOR (CYL. 1-4)
X7 xDrive50i	AIR CLEANER [INTAKE MUFFLER] BRAKE SYSTEM CONTROL MODULE [CONTROL UNIT DSC] CATALYTIC CONVERTER (CYL. 1-4) CATALYTIC CONVERTER GASKET (CYL. 5-8) CHARGE AIR COOLER (CYL. 1-4) CHARGE AIR COOLER (CYL. 5-8) CHARGE AIR DUCT (CYL.1-4) (TURBOCHARGER TO CAC) CHARGE AIR DUCT (CYL.5-8) (TURBOCHARGER TO CAC) COUPLING RING (CAC TO THROTTLE) ENGINE CONTROL MODULE (ECM) EVAPORATIVE EMISSION CANISTER [ACTIVATED CHARCOAL FILTER] EXHAUST CAMSHAFT POSITION ADJUSTMENT UNIT EXHAUST MANIFOLD EXHAUST MANIFOLD GASKET EXHAUST MANIFOLD GASKET (TO TURBOCHARGER) FUEL INJECTOR (CYL. 1-4) FUEL INJECTOR (CYL. 5-8) FUEL INJECTOR O-RING FUEL LINE TO HIGH PRESSURE FUEL PUMP FUEL PUMP [DELIVERY MODULE] FUEL RAIL (CYL. 1-4) FUEL RAIL (CYL. 5-8) FUEL RAIL SENSOR [SENSOR, HIGH-PRESSURE] FUEL TANK HIGH-PRESSURE FUEL PUMP (CYL. 1-4)

HIGH-PRESSURE FUEL PUMP (CYL. 5-8)
INTAKE CAMSHAFT POSITION ADJUSTMENT UNIT
INTAKE MANIFOLD (CYL. 1-4)
INTAKE MANIFOLD (CYL. 5-8)
INTAKE MANIFOLD GASKET
KNOCK SENSOR (CYL. 5-8)
MALFUNCTION INDICATOR LAMP (MIL)
MIDDLE FUEL LINE [FUEL HOSE]
THERMOSTAT
THROTTLE BODY
TIMING CHAIN (CYL. 1-4)
TIMING CHAIN (CYL. 5-8)
TORQUE CONVERTER
TRANSMISSION CONTROL MODULE [MECHATRONIC]
TURBOCHARGER
TURBOCHARGER CLAMP (TO EXHAUST MANIFOLD)
VALVE COVER GASKETS (CYL. 1-4) [GASKET SET
CYLINDER HEAD COVER]
VALVE COVER GASKETS (CYL. 5-8) [GASKET SET
CYLINDER HEAD COVER]
VALVETRONIC ACTUATOR GASKET
VALVETRONIC ACTUATOR [ECCENTRIC SHAFT
ACTUATOR]
VANOS VVT CENTRAL VALVE

19. Attachment

- 19.1 Fuel Tank Temperature and Pressure Profile see attachment: FTTP-0G05-01
see attachment: FTTP-0G1X-01
see attachment: FTTP-0N54-01
see attachment: FTTP-0N63-01

_BMXR0170N63

Fuel Tank Temperature and Pressure Profile

Test Vehicle Data

Vehicle Type: 750Li
 Mileage: 2713
 Fuel tank volume: 81 L
 Fuel volume: 32.5 L

Ambient Conditions

Weather: sunny
 clouds < 25 %
 Wind speed: < 15 mph
 Ambient temp:
 Start: 105.1 °F
 End: 106.2 °F
 Surface temp.:
 Start: 106.7 °F
 End: 108.3 °F

Test Data

Date of test: 08/29/2007
 Engine start: 12:39
 Measure start: 12:40
 Measure stop: 13:53
 Test track: FFA Exponent Phoenix USA

Time [s]	Fuel Temp 1 [°F]	Fuel Temp 2 [°F]	Fuel Temp Average [°F]	Fuel Temp Average Corrected (to 95°F) [°F]	Vapor Temp [°F]	Tank pressure [in H ₂ O]
0	102.79	102.55	102.67	95.00	104.87	0.28
30	102.87	102.79	102.83	95.16	104.75	0.30
60	103.30	102.98	103.14	95.47	104.99	0.41
90	103.42	103.18	103.30	95.63	104.87	-0.08
120	103.49	103.30	103.40	95.73	105.07	-0.48
150	103.81	103.49	103.65	95.98	105.07	0.30
180	103.73	103.49	103.61	95.94	105.18	-0.62
210	103.81	103.73	103.77	96.10	105.18	-1.63
240	103.93	103.73	103.83	96.16	105.30	-1.53
270	104.24	104.04	104.14	96.47	105.38	0.88
300	104.36	104.04	104.20	96.53	105.81	0.25
330	104.44	104.44	104.44	96.77	106.24	0.42
360	104.75	104.56	104.65	96.98	106.44	0.39
390	104.99	104.75	104.87	97.20	106.87	0.41
420	105.30	105.07	105.18	97.51	106.95	0.17
450	105.38	105.30	105.34	97.67	107.19	0.39
480	105.62	105.38	105.50	97.83	107.19	0.49
510	105.93	105.81	105.87	98.20	107.19	0.48
540	106.01	105.81	105.91	98.24	107.19	0.43
570	106.24	106.01	106.13	98.46	107.27	0.20
600	106.32	106.24	106.28	98.61	107.58	0.28
630	106.64	106.32	106.48	98.81	107.82	0.50
660	106.87	106.64	106.75	99.08	107.82	-0.46
690	107.19	107.07	107.13	99.46	108.01	0.51
720	107.19	107.07	107.13	99.46	107.89	-1.18
750	107.50	107.38	107.44	99.77	108.01	-1.92
780	107.70	107.70	107.70	100.03	108.01	-1.22
810	107.82	107.58	107.70	100.03	108.21	-2.81
840	108.01	107.82	107.91	100.24	108.95	-1.58
870	108.21	108.13	108.17	100.50	109.07	-0.81
900	108.52	108.44	108.48	100.81	109.15	-0.25
930	108.52	108.52	108.52	100.85	109.15	0.46
960	108.76	108.64	108.70	101.03	109.07	0.47
990	108.84	108.95	108.90	101.23	108.52	0.48
1020	109.15	109.07	109.11	101.44	108.44	0.46
1050	109.39	109.27	109.33	101.66	108.13	0.45
1080	109.46	109.46	109.46	101.79	108.64	0.42

1110	109.70	109.58	109.64	101.97	108.84	0.42
1140	109.78	109.70	109.74	102.07	109.46	0.38
1170	110.01	109.90	109.96	102.29	109.70	0.44
1200	110.09	110.09	110.09	102.42	109.70	0.44
1230	110.41	110.33	110.37	102.70	110.21	0.44
1260	110.53	110.33	110.43	102.76	110.53	0.44
1290	110.64	110.53	110.58	102.91	110.41	0.27
1320	110.84	110.84	110.84	103.17	110.09	0.53
1350	110.96	110.96	110.96	103.29	110.01	-0.71
1380	111.04	110.96	111.00	103.33	110.41	0.39
1410	111.15	111.15	111.15	103.48	111.27	0.16
1440	111.35	111.15	111.25	103.58	111.47	0.44
1470	111.66	111.47	111.57	103.90	111.90	0.43
1500	111.90	111.78	111.84	104.17	111.98	0.34
1530	111.66	111.78	111.72	104.05	112.21	-0.12
1560	111.98	111.98	111.98	104.31	112.53	-0.17
1590	112.29	112.21	112.25	104.58	112.29	0.73
1620	112.29	112.10	112.19	104.52	112.72	0.44
1650	112.61	112.41	112.51	104.84	113.98	0.45
1680	112.72	112.53	112.63	104.96	113.75	0.74
1710	112.92	112.84	112.88	105.21	113.47	0.62
1740	112.92	112.92	112.92	105.25	113.04	0.51
1770	113.16	113.16	113.16	105.49	111.59	0.48
1800	113.47	113.55	113.51	105.84	113.16	0.44
1830	113.75	113.67	113.71	106.04	114.49	0.46
1860	113.86	113.75	113.80	106.13	114.49	0.46
1890	113.98	113.86	113.92	106.25	115.32	0.20
1920	114.06	113.98	114.02	106.35	115.24	0.44
1950	114.37	114.30	114.34	106.67	115.75	0.45
1980	114.49	114.30	114.39	106.72	114.92	0.20
2010	114.61	114.49	114.55	106.88	115.12	-0.76
2040	114.69	114.49	114.59	106.92	115.63	0.45
2070	114.81	114.69	114.75	107.08	116.14	0.56
2100	114.92	114.81	114.87	107.20	116.57	0.15
2130	115.00	115.00	115.00	107.33	117.40	0.18
2160	115.12	115.24	115.18	107.51	117.32	-0.11
2190	115.32	115.32	115.32	107.65	117.40	0.35
2220	115.55	115.55	115.55	107.88	117.63	0.35
2250	115.63	115.75	115.69	108.02	118.26	-0.03
2280	115.87	115.87	115.87	108.20	118.66	0.43
2310	115.95	115.87	115.91	108.24	115.43	0.56
2340	116.14	116.06	116.10	108.43	115.12	0.53
2370	116.38	116.26	116.32	108.65	113.16	0.48
2400	116.57	116.46	116.52	108.85	113.67	0.49
2430	116.77	116.69	116.73	109.06	114.37	0.46
2460	117.01	116.89	116.95	109.28	116.06	0.44
2490	117.20	117.08	117.14	109.47	117.83	0.26
2520	117.52	117.32	117.42	109.75	117.95	0.21
2550	117.63	117.52	117.58	109.91	117.52	0.33
2580	117.52	117.52	117.52	109.85	117.83	0.22
2610	117.83	117.83	117.83	110.16	118.54	-0.30
2640	117.83	117.83	117.83	110.16	118.97	0.48
2670	117.95	117.95	117.95	110.28	118.97	0.45
2700	118.34	118.15	118.24	110.57	120.23	0.42
2730	118.34	118.34	118.34	110.67	120.03	-0.21
2760	118.66	118.66	118.66	110.99	120.34	0.19
2790	118.77	118.77	118.77	111.10	120.74	0.03

2820	118.97	118.85	118.91	111.24	120.86	-0.11
2850	119.09	118.97	119.03	111.36	120.74	-1.82
2880	119.28	119.40	119.34	111.67	120.93	0.46
2910	119.28	119.09	119.19	111.52	120.54	0.40
2940	119.48	119.40	119.44	111.77	120.93	0.53
2970	119.72	119.48	119.60	111.93	119.79	-0.46
3000	120.03	119.91	119.97	112.30	120.34	0.36
3030	120.03	120.03	120.03	112.36	121.56	-2.49
3060	120.03	120.03	120.03	112.36	121.99	-2.50
3090	120.11	120.23	120.17	112.50	122.43	-1.75
3120	120.34	120.23	120.29	112.62	121.88	0.24
3150	120.42	120.42	120.42	112.75	121.99	0.54
3180	120.66	120.54	120.60	112.93	121.17	-2.71
3210	120.66	120.54	120.60	112.93	121.56	0.45
3240	120.93	120.74	120.84	113.17	120.74	0.47
3270	121.05	120.74	120.89	113.22	120.74	0.43
3300	121.05	120.93	120.99	113.32	121.05	0.42
3330	121.17	120.93	121.05	113.38	121.48	0.46
3360	121.25	121.05	121.15	113.48	121.99	0.46
3390	121.37	121.37	121.37	113.70	120.34	0.47
3420	121.56	121.56	121.56	113.89	121.17	0.42
3450	121.48	121.48	121.48	113.81	121.37	0.47
3480	121.80	121.88	121.84	114.17	121.48	-0.86
3510	121.88	121.68	121.78	114.11	119.60	0.49
3540	122.11	121.99	122.05	114.38	120.66	0.50
3570	122.43	122.31	122.37	114.70	121.05	0.30
3600	122.43	122.19	122.31	114.64	121.99	-1.62
3630	122.31	122.31	122.31	114.64	122.31	-2.19
3660	122.70	122.62	122.66	114.99	121.68	0.47
3690	122.62	122.50	122.56	114.89	120.66	0.47
3720	122.94	122.70	122.82	115.15	121.37	-0.02
3750	123.02	122.82	122.92	115.25	119.17	0.10
3780	123.02	123.02	123.02	115.35	120.23	0.17
3810	123.13	122.94	123.04	115.36	122.43	0.45
3840	123.33	123.25	123.29	115.62	122.31	0.52
3870	123.45	123.33	123.39	115.72	121.88	0.52
3900	123.45	123.45	123.45	115.78	122.43	0.49
3930	123.64	123.64	123.64	115.97	122.82	0.17
3960	123.88	123.57	123.72	116.05	123.25	0.38
3990	123.88	123.64	123.76	116.09	122.94	-0.54
4020	123.96	123.96	123.96	116.29	123.25	-0.43
4050	123.96	123.88	123.92	116.25	123.57	-0.08
4080	124.27	124.15	124.21	116.54	123.33	-0.24
4110	124.27	124.27	124.27	116.60	123.57	0.47
4140	124.27	124.27	124.27	116.60	122.43	0.49
4170	124.59	124.70	124.65	116.98	122.70	0.28
4200	124.59	124.59	124.59	116.92	124.08	0.35
4230	124.59	124.59	124.59	116.92	124.47	0.47
4260	124.70	124.70	124.70	117.03	124.47	0.47
4290	124.78	124.78	124.78	117.11	124.47	0.27

Test Vehicle Data

Vehicle Type: 335i
 Mileage: 4015
 Fuel tank volume: 61 L
 Fuel volume: 24.4 L

Ambient Conditions

Weather: sunny
 clouds < 10 %
 Wind speed: < 4 mph
 Ambient temp:
 Start: 100.4 °F
 End: 102.2 °F
 Surface temp.:
 Start: 145.7 °F
 End: 147.9 °F

Test Data

Date of test: 07/27/2005
 Engine start: 12:36
 Measure start: 12:37
 Measure stop: 13:49
 Test track: FFA Exponent, Phonix USA

Time [s]	Fuel Temp 1 [°F]	Fuel Temp 2 [°F]	Fuel Temp Average [°F]	Fuel Temp Average Correctet (to95°F) [°F]	Vapor Temp [°F]	Tank pressure [in H ₂ O]
0	96.20	96.09	96.14	95.00	99.11	-0.21
30	96.20	96.14	96.17	95.03	99.11	-0.20
60	96.36	96.14	96.25	95.11	99.16	-0.21
90	96.36	96.31	96.33	95.19	99.22	-0.09
120	96.47	96.47	96.47	95.33	99.27	-0.10
150	96.63	96.63	96.63	95.49	99.27	-0.49
180	96.74	96.69	96.72	95.58	99.27	-0.43
210	96.69	96.63	96.66	95.52	99.55	-0.07
240	97.02	96.85	96.94	95.80	99.71	-0.04
270	97.07	97.02	97.05	95.91	99.88	-0.04
300	97.29	97.02	97.16	96.02	100.10	0.26
330	97.24	97.24	97.24	96.10	100.37	-0.13
360	97.57	97.46	97.51	96.37	100.75	-1.08
390	97.57	97.51	97.54	96.40	100.92	-1.32
420	97.79	97.68	97.73	96.59	101.36	-0.22
450	98.06	98.01	98.04	96.90	101.69	-0.23
480	98.23	98.23	98.23	97.09	101.91	-0.14
510	98.23	98.23	98.23	97.09	102.02	-0.22
540	98.50	98.50	98.50	97.36	101.47	-0.76
570	98.56	98.50	98.53	97.39	101.80	-1.23
600	98.94	98.78	98.86	97.72	102.18	-0.40
630	99.05	98.83	98.94	97.80	102.18	-0.74
660	99.11	99.11	99.11	97.97	102.40	-0.24
690	99.49	99.33	99.41	98.27	101.91	-1.00
720	99.71	99.49	99.60	98.46	102.40	-0.17
750	99.77	99.71	99.74	98.60	102.73	-1.32
780	99.99	99.93	99.96	98.82	103.01	-0.26
810	100.10	99.99	100.04	98.90	103.23	-1.66
840	100.37	100.26	100.32	99.17	103.39	-0.45
870	100.64	100.54	100.59	99.45	103.78	-0.93
900	100.70	100.59	100.64	99.50	104.00	-0.12
930	100.75	100.70	100.73	99.59	104.44	-0.38
960	101.03	100.97	101.00	99.86	104.55	-0.17
990	101.25	101.19	101.22	100.08	104.71	-0.92
1020	101.52	101.47	101.50	100.36	104.98	-0.16
1050	101.85	101.58	101.72	100.58	103.50	-1.17
1080	101.91	101.91	101.91	100.77	103.83	-1.14

1110	102.07	102.02	102.05	100.91	104.44	-1.41
1140	102.51	102.24	102.38	101.23	104.82	-1.93
1170	102.57	102.51	102.54	101.40	105.48	-1.23
1200	102.95	102.90	102.92	101.78	105.59	-1.48
1230	103.06	102.73	102.90	101.76	106.08	-0.53
1260	103.23	103.23	103.23	102.09	106.30	-1.33
1290	103.34	103.23	103.28	102.14	106.41	-0.24
1320	103.45	103.34	103.39	102.25	106.69	-0.20
1350	103.50	103.45	103.47	102.33	106.63	-0.73
1380	103.72	103.67	103.69	102.55	106.96	-0.14
1410	103.94	103.94	103.94	102.80	107.07	-0.20
1440	104.16	104.00	104.08	102.94	107.46	-0.19
1470	104.11	104.11	104.11	102.97	107.95	-0.18
1500	104.27	104.27	104.27	103.13	108.23	-0.34
1530	104.44	104.44	104.44	103.29	108.94	-0.19
1560	104.44	104.44	104.44	103.29	108.99	-0.20
1590	104.87	104.82	104.85	103.71	108.56	-0.17
1620	105.20	105.04	105.12	103.98	109.10	-0.20
1650	105.31	105.31	105.31	104.17	109.54	-0.29
1680	105.37	105.37	105.37	104.23	110.04	-0.15
1710	105.42	105.37	105.40	104.26	110.26	-0.11
1740	105.64	105.59	105.62	104.48	109.87	-0.10
1770	105.92	105.86	105.89	104.75	110.26	-0.24
1800	106.03	105.92	105.97	104.83	110.15	-0.09
1830	106.41	106.25	106.33	105.19	110.64	-0.54
1860	106.47	106.47	106.47	105.33	111.14	-0.20
1890	106.80	106.74	106.77	105.63	111.52	-0.47
1920	106.85	106.80	106.82	105.68	111.25	-0.21
1950	107.13	107.07	107.10	105.96	111.36	-0.18
1980	107.13	107.07	107.10	105.96	112.07	-0.20
2010	107.29	107.24	107.26	106.12	112.68	-0.16
2040	107.40	107.35	107.37	106.23	112.62	-0.22
2070	107.46	107.46	107.46	106.32	112.78	-0.19
2100	107.68	107.57	107.62	106.48	113.50	-0.41
2130	107.84	107.62	107.73	106.59	114.21	-0.19
2160	107.84	107.68	107.76	106.62	114.65	-0.27
2190	108.23	108.12	108.17	107.03	114.93	-0.18
2220	108.45	108.23	108.34	107.20	114.98	-0.54
2250	108.67	108.50	108.58	107.44	115.15	-0.22
2280	108.83	108.72	108.77	107.63	115.37	-0.19
2310	108.72	108.72	108.72	107.58	115.86	-0.09
2340	109.21	109.10	109.16	108.02	115.59	-0.10
2370	109.32	109.27	109.30	108.16	115.42	-0.14
2400	109.32	109.32	109.32	108.18	115.75	-0.22
2430	109.60	109.43	109.52	108.38	115.86	-0.17
2460	109.82	109.76	109.79	108.65	116.25	-0.42
2490	109.65	109.71	109.68	108.54	116.19	-0.20
2520	110.04	110.09	110.07	108.93	117.12	-0.41
2550	110.09	110.15	110.12	108.98	117.56	-0.19
2580	110.48	110.53	110.51	109.36	117.23	-0.17
2610	110.81	110.53	110.67	109.53	117.62	-0.28
2640	110.75	110.70	110.73	109.58	117.56	-0.17
2670	111.08	110.92	111.00	109.86	117.45	-0.60
2700	111.03	111.03	111.03	109.89	117.89	-0.16
2730	111.25	111.19	111.22	110.08	118.61	-0.32
2760	111.19	111.19	111.19	110.05	119.16	-0.17
2790	111.41	111.19	111.30	110.16	119.43	-0.14

2820	111.52	111.58	111.55	110.41	118.94	-0.22
2850	111.63	111.63	111.63	110.49	119.76	-0.14
2880	111.91	111.63	111.77	110.63	119.60	-0.11
2910	111.96	111.91	111.93	110.79	119.54	-0.02
2940	112.40	112.29	112.35	111.21	119.76	-0.06
2970	112.57	112.46	112.51	111.37	120.15	-0.57
3000	112.89	112.68	112.78	111.64	120.20	-0.13
3030	112.89	112.89	112.89	111.75	120.31	0.07
3060	113.06	113.06	113.06	111.92	120.53	0.32
3090	113.28	113.22	113.25	112.11	120.26	0.08
3120	113.55	113.50	113.53	112.39	120.04	0.32
3150	113.72	113.50	113.61	112.47	120.09	-0.25
3180	114.05	113.83	113.94	112.80	120.15	-0.09
3210	114.27	114.05	114.16	113.02	120.48	-0.07
3240	114.49	114.27	114.38	113.24	120.53	-0.05
3270	114.65	114.43	114.54	113.40	120.48	-0.16
3300	114.76	114.54	114.65	113.51	120.59	-0.08
3330	114.98	114.82	114.90	113.76	120.70	-0.39
3360	115.31	114.98	115.15	114.01	120.70	-0.32
3390	115.37	115.37	115.37	114.23	120.59	-1.05
3420	115.59	115.48	115.53	114.39	120.97	-0.05
3450	115.70	115.70	115.70	114.56	121.02	-0.62
3480	115.75	115.75	115.75	114.61	121.02	-0.11
3510	115.97	115.97	115.97	114.83	120.81	-0.59
3540	116.08	116.03	116.05	114.91	121.02	-0.11
3570	116.19	116.14	116.16	115.02	120.37	0.07
3600	116.52	116.30	116.41	115.27	120.26	-0.85
3630	116.63	116.63	116.63	115.49	121.13	-0.02
3660	116.69	116.69	116.69	115.54	121.19	-0.12
3690	117.07	116.85	116.96	115.82	121.13	-0.05
3720	117.07	117.12	117.10	115.96	121.41	-0.05
3750	117.23	117.23	117.23	116.09	121.35	-0.61
3780	117.51	117.34	117.43	116.29	120.92	-0.16
3810	117.56	117.56	117.56	116.42	120.75	-0.28
3840	117.78	117.67	117.73	116.59	120.75	-0.16
3870	118.00	117.78	117.89	116.75	120.37	-0.17
3900	118.17	118.00	118.09	116.95	121.02	-0.10
3930	118.39	118.33	118.36	117.22	120.64	-0.62
3960	118.72	118.50	118.61	117.47	121.63	-0.07
3990	118.77	118.72	118.75	117.60	121.13	-0.88
4020	118.83	118.83	118.83	117.69	121.46	-0.12
4050	119.16	119.05	119.10	117.96	121.63	-0.15
4080	119.38	119.32	119.35	118.21	121.68	-0.13
4110	119.32	119.38	119.35	118.21	121.63	-0.49
4140	119.60	119.60	119.60	118.46	121.46	-0.34
4170	119.71	119.71	119.71	118.57	121.57	-0.08
4200	119.93	119.71	119.82	118.68	122.07	-0.23
4230	119.93	119.82	119.87	118.73	122.12	-0.14
4260	120.15	119.87	120.01	118.87	122.56	-0.13
4290	120.15	120.15	120.15	118.90	122.62	-0.12

Test Vehicle Data

Vehicle Type: X5 xDrive50i
 Mileage: 2713 mi
 Fuel tank volume: 83.0 L
 Fuel volume: 33.2 L

Ambient Conditions

Weather: sunny
 clouds: < 25 %
 Wind speed: < 15 mph
 Ambient temp:
 Start: 108 °F
 delta: 1 °F

Test Data

Date of test: 09/26/2017
 Engine start: 12:21
 Measure start: 12:21
 Measure stop: 13:33
 Test track: Dubai Bab Al shams

Surface temperature: 100 %

Time [s]	Fuel Temp 1 [°F]	Fuel Temp 2 [°F]	Fuel Temp Average [°F]	Fuel Temp Average Correctet (to95°F) [°F]	Vapor Temp [°F]	Tank pressure [in H ₂ O]
0	91,77	91,79	91,78	95,00	92,57	-0,13
30	91,93	91,97	91,95	95,17	92,65	-0,13
60	92,09	92,15	92,12	95,34	92,73	-1,29
90	92,23	92,30	92,26	95,48	92,81	-0,41
120	92,34	92,42	92,38	95,60	92,86	-0,16
150	92,45	92,54	92,49	95,71	92,91	-0,11
180	92,57	92,66	92,61	95,83	93,00	-0,19
210	92,70	92,78	92,74	95,96	93,10	-1,48
240	92,82	92,89	92,86	96,08	93,21	-0,80
270	92,94	93,02	92,98	96,20	93,32	-0,20
300	93,05	93,14	93,09	96,31	93,44	-0,20
330	93,15	93,25	93,20	96,42	93,55	-0,49
360	93,26	93,35	93,31	96,53	93,67	-1,67
390	93,39	93,48	93,43	96,65	93,81	-0,20
420	93,53	93,61	93,57	96,79	93,95	-0,37
450	93,68	93,76	93,72	96,94	94,08	-0,91
480	93,82	93,90	93,86	97,08	94,22	-1,43
510	93,95	94,04	93,99	97,21	94,37	-1,48
540	94,06	94,17	94,12	97,34	94,52	-0,91
570	94,19	94,31	94,25	97,47	94,68	-2,17
600	94,33	94,44	94,38	97,60	94,86	-1,10
630	94,48	94,58	94,53	97,75	95,02	-0,87
660	94,63	94,72	94,67	97,89	95,20	-1,88
690	94,77	94,86	94,81	98,03	95,40	-0,49
720	94,92	95,00	94,96	98,18	95,59	-0,46
750	95,09	95,18	95,13	98,35	95,75	-0,68
780	95,28	95,38	95,33	98,55	95,94	-2,25
810	95,49	95,60	95,55	98,77	96,18	-1,33
840	95,72	95,81	95,77	98,99	96,43	-1,67
870	95,93	96,01	95,97	99,19	96,67	-1,30
900	96,11	96,19	96,15	99,37	96,90	-3,60
930	96,26	96,33	96,30	99,52	97,14	-3,52
960	96,41	96,47	96,44	99,66	97,39	-2,29
990	96,55	96,61	96,58	99,80	97,65	-1,65
1020	96,71	96,76	96,74	99,96	97,87	-0,89
1050	96,87	96,94	96,91	100,13	98,07	-0,94
1080	97,03	97,13	97,08	100,30	98,32	-0,83

1110	97,19	97,29	97,24	100,46	98,60	-1,09
1140	97,36	97,45	97,40	100,62	98,78	-0,93
1170	97,54	97,62	97,58	100,80	98,88	-1,72
1200	97,74	97,81	97,78	101,00	99,06	-1,08
1230	97,95	98,02	97,98	101,20	99,32	-0,99
1260	98,14	98,22	98,18	101,40	99,59	-1,00
1290	98,30	98,38	98,34	101,56	99,86	-2,69
1320	98,46	98,53	98,49	101,71	100,15	-1,00
1350	98,63	98,70	98,66	101,88	100,50	-2,44
1380	98,81	98,89	98,85	102,07	100,90	-0,94
1410	99,00	99,07	99,04	102,26	101,28	-0,95
1440	99,19	99,25	99,22	102,44	101,56	-0,94
1470	99,36	99,43	99,40	102,62	101,76	-0,94
1500	99,54	99,61	99,57	102,79	101,88	-1,20
1530	99,72	99,79	99,76	102,98	101,85	-1,29
1560	99,93	99,99	99,96	103,18	101,75	-1,31
1590	100,15	100,21	100,18	103,40	101,79	-2,11
1620	100,39	100,45	100,42	103,64	101,98	-0,89
1650	100,61	100,70	100,66	103,88	102,19	-2,92
1680	100,86	100,95	100,90	104,12	102,40	-1,30
1710	101,14	101,24	101,19	104,41	102,66	-1,39
1740	101,45	101,56	101,51	104,73	103,01	-1,34
1770	101,75	101,87	101,81	105,03	103,32	-1,00
1800	102,01	102,14	102,08	105,30	103,60	-2,12
1830	102,25	102,39	102,32	105,54	103,90	-2,12
1860	102,47	102,61	102,54	105,76	104,15	-1,42
1890	102,69	102,81	102,75	105,97	104,30	-1,86
1920	102,91	102,99	102,95	106,17	104,48	-0,96
1950	103,14	103,18	103,16	106,38	104,75	-1,41
1980	103,36	103,40	103,38	106,60	104,97	-1,44
2010	103,57	103,63	103,60	106,82	105,16	-1,30
2040	103,78	103,86	103,82	107,04	105,41	-1,87
2070	103,97	104,07	104,02	107,24	105,64	-1,06
2100	104,17	104,25	104,21	107,43	105,79	-1,46
2130	104,36	104,43	104,40	107,62	105,94	-1,45
2160	104,54	104,62	104,58	107,80	106,16	-1,61
2190	104,74	104,82	104,78	108,00	106,38	-2,36
2220	104,93	105,02	104,98	108,20	106,56	-1,25
2250	105,11	105,21	105,16	108,38	106,73	-3,22
2280	105,31	105,41	105,36	108,58	106,92	-1,66
2310	105,55	105,64	105,60	108,82	107,14	-1,09
2340	105,82	105,90	105,86	109,08	107,37	-1,22
2370	106,08	106,12	106,10	109,32	107,58	-2,02
2400	106,30	106,31	106,31	109,53	107,83	-2,34
2430	106,48	106,49	106,48	109,70	108,10	-2,63
2460	106,64	106,68	106,66	109,88	108,33	-1,59
2490	106,81	106,89	106,85	110,07	108,55	-1,21
2520	106,99	107,10	107,04	110,26	108,81	-3,00
2550	107,18	107,30	107,24	110,46	109,04	-1,74
2580	107,39	107,49	107,44	110,66	109,18	-1,75
2610	107,61	107,69	107,65	110,87	109,36	-1,45
2640	107,84	107,90	107,87	111,09	109,65	-1,28
2670	108,08	108,12	108,10	111,32	109,96	-1,51
2700	108,31	108,37	108,34	111,56	110,22	-1,70
2730	108,54	108,60	108,57	111,79	110,40	-1,59
2760	108,74	108,81	108,77	111,99	110,57	-1,63
2790	108,91	108,98	108,94	112,16	110,75	-1,27

2820	109,05	109,13	109,09	112,31	110,94	-1,67
2850	109,20	109,27	109,23	112,45	111,17	-1,97
2880	109,35	109,41	109,38	112,60	111,46	-3,25
2910	109,51	109,59	109,55	112,77	111,76	-4,02
2940	109,67	109,79	109,73	112,95	111,99	-1,37
2970	109,84	109,98	109,91	113,13	112,05	-1,89
3000	110,03	110,17	110,10	113,32	112,04	-1,76
3030	110,25	110,36	110,31	113,53	112,26	-1,83
3060	110,49	110,57	110,53	113,75	112,70	-3,20
3090	110,70	110,75	110,72	113,94	113,15	-2,31
3120	110,86	110,90	110,88	114,10	113,45	-1,40
3150	110,98	111,02	111,00	114,22	113,62	-1,44
3180	111,11	111,15	111,13	114,35	113,79	-3,18
3210	111,26	111,30	111,28	114,50	114,01	-2,11
3240	111,41	111,47	111,44	114,66	114,19	-2,08
3270	111,56	111,63	111,60	114,82	114,35	-2,22
3300	111,73	111,80	111,77	114,99	114,57	-1,38
3330	111,91	111,99	111,95	115,17	114,83	-3,31
3360	112,10	112,16	112,13	115,35	115,04	-1,58
3390	112,27	112,34	112,30	115,52	115,18	-2,41
3420	112,44	112,50	112,47	115,69	115,35	-3,01
3450	112,62	112,67	112,65	115,87	115,60	-1,38
3480	112,80	112,84	112,82	116,04	115,84	-2,03
3510	112,97	113,00	112,99	116,21	116,05	-3,11
3540	113,11	113,15	113,13	116,35	116,24	-2,44
3570	113,26	113,30	113,28	116,50	116,41	-1,59
3600	113,41	113,46	113,43	116,65	116,58	-1,39
3630	113,59	113,63	113,61	116,83	116,84	-2,04
3660	113,76	113,80	113,78	117,00	117,20	-3,42
3690	113,92	113,95	113,94	117,16	117,54	-3,90
3720	114,05	114,09	114,07	117,29	117,82	-3,44
3750	114,17	114,23	114,20	117,42	118,04	-2,32
3780	114,31	114,37	114,34	117,56	118,21	-3,16
3810	114,46	114,53	114,49	117,71	118,36	-3,74
3840	114,60	114,68	114,64	117,86	118,41	-1,73
3870	114,74	114,84	114,79	118,01	118,42	-2,54
3900	114,88	114,99	114,93	118,15	118,51	-1,36
3930	115,02	115,13	115,08	118,30	118,63	-3,67
3960	115,18	115,27	115,22	118,44	118,68	-1,60
3990	115,33	115,41	115,37	118,59	118,65	-1,94
4020	115,47	115,55	115,51	118,73	118,72	-3,56
4050	115,60	115,66	115,63	118,85	118,90	-1,38
4080	115,72	115,78	115,75	118,97	119,06	-3,35
4110	115,86	115,93	115,90	119,12	119,25	-3,84
4140	116,01	116,08	116,05	119,27	119,52	-1,78
4170	116,15	116,21	116,18	119,40	119,79	-2,53
4200	116,27	116,32	116,29	119,52	120,07	-1,64
4230	116,41	116,44	116,43	119,65	120,34	-1,87
4260	116,57	116,59	116,58	119,80	120,59	-1,84
4290	116,72	116,74	116,73	119,95	120,84	-1,83
4320	116,88	116,89	116,88	120,10	121,08	-1,82

Test Vehicle Data

Vehicle Type: M550i xDrive
Mileage: 8422 mi
Fuel tank volume: 68 L
Fuel volume: 27.2 L

Ambient Conditions

Weather: sunny
clouds: 11 %
Wind speed: 0 mph
Ambient temp: 106 °F
Start: 106 °F
delta: 2 °F

Surface temperature: 100 %

Test Data

Date of test: 05/25/2016
Engine start: 11:39
Measure start: 11:40
Measure stop: 12:05
Test track: Dubai Bab Al shams

Time [s]	Fuel Temp 1 [°F]	Fuel Temp 2 [°F]	Fuel Temp Average [°F]	Fuel Temp Average Correctet (to95°F) [°F]	Vapor Temp [°F]	Tank pressure [in H ₂ O]
0	97,63	97,70	97,67	95,00	103,71	-0,13
30	97,72	97,78	97,75	95,08	103,66	-0,13
60	97,81	97,87	97,84	95,17	103,62	-0,17
90	97,90	97,95	97,93	95,26	103,61	-2,71
120	97,98	98,02	98,00	95,33	103,59	-0,26
150	98,03	98,06	98,05	95,38	103,53	-0,39
180	98,09	98,11	98,10	95,43	103,39	-0,97
210	98,17	98,18	98,17	95,50	103,16	-1,96
240	98,26	98,28	98,27	95,60	102,74	-4,30
270	98,39	98,42	98,41	95,74	101,93	-2,68
300	98,56	98,59	98,57	95,91	100,88	-2,29
330	98,75	98,77	98,76	96,09	100,11	-0,49
360	98,93	98,95	98,94	96,27	99,82	-2,92
390	99,08	99,10	99,09	96,42	99,81	-0,29
420	99,23	99,24	99,24	96,57	99,93	-0,52
450	99,38	99,39	99,38	96,72	100,09	-0,35
480	99,52	99,53	99,53	96,86	100,20	-0,31
510	99,66	99,65	99,65	96,99	100,27	-3,28
540	99,78	99,78	99,78	97,12	100,38	-2,19
570	99,92	99,93	99,92	97,26	100,54	-0,96
600	100,06	100,08	100,07	97,40	100,68	-0,15
630	100,20	100,22	100,21	97,54	100,78	-0,16
660	100,35	100,36	100,35	97,68	100,90	-3,71
690	100,49	100,49	100,49	97,82	101,05	-1,47
720	100,63	100,64	100,64	97,97	101,22	-0,58
750	100,79	100,79	100,79	98,12	101,42	-1,90
780	100,94	100,95	100,94	98,28	101,64	-0,17
810	101,09	101,09	101,09	98,42	101,82	-0,18
840	101,23	101,23	101,23	98,56	101,91	-1,77
870	101,37	101,36	101,37	98,70	101,96	-2,35
900	101,51	101,50	101,51	98,84	102,03	-4,13
930	101,65	101,64	101,65	98,98	102,15	-4,44
960	101,79	101,79	101,79	99,12	102,37	-3,05
990	101,94	101,94	101,94	99,27	102,63	-2,44
1020	102,10	102,10	102,10	99,43	102,87	-0,58
1050	102,28	102,28	102,28	99,61	103,06	-1,83
1080	102,46	102,46	102,46	99,80	103,20	-0,27

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Fuel Tank Temperature and Pressure Profile

1110	102,64	102,64	102,64	99,97	103,33	-3,24
1140	102,80	102,80	102,80	100,13	103,48	-1,91
1170	102,96	102,96	102,96	100,29	103,66	-1,71
1200	103,12	103,13	103,12	100,45	103,86	-2,51
1230	103,28	103,28	103,28	100,61	104,04	-2,35
1260	103,44	103,44	103,44	100,77	104,19	-2,54
1290	103,59	103,60	103,59	100,93	104,31	-4,73
1320	103,74	103,74	103,74	101,07	104,46	-0,75
1350	103,88	103,89	103,88	101,21	104,64	-2,99
1380	104,01	104,03	104,02	101,35	104,80	-0,59
1410	104,15	104,16	104,15	101,48	104,92	-0,60
1440	104,28	104,28	104,28	101,61	105,02	-0,61
1470	104,41	104,41	104,41	101,74	105,13	-0,60
1500	104,54	104,54	104,54	101,87	105,23	-0,60
1530	104,65	104,65	104,65	101,98	105,33	-0,60
1560	104,77	104,77	104,77	102,10	105,45	-1,00
1590	104,90	104,91	104,91	102,24	105,59	-0,39
1620	105,06	105,07	105,06	102,40	105,72	-2,69
1650	105,21	105,22	105,21	102,55	105,85	-3,75
1680	105,35	105,36	105,35	102,69	106,01	-0,98
1710	105,50	105,50	105,50	102,83	106,17	-0,69
1740	105,66	105,66	105,66	102,99	106,31	-0,76
1770	105,81	105,82	105,81	103,15	106,43	-1,22
1800	105,96	105,97	105,96	103,29	106,54	-1,57
1830	106,10	106,11	106,10	103,44	106,66	-1,40
1860	106,23	106,24	106,24	103,57	106,78	-0,67
1890	106,35	106,36	106,36	103,69	106,89	-1,19
1920	106,46	106,47	106,47	103,80	107,00	-3,53
1950	106,57	106,58	106,57	103,90	107,09	-0,74
1980	106,68	106,68	106,68	104,01	107,19	-0,81
2010	106,79	106,80	106,79	104,12	107,32	-1,00
2040	106,90	106,91	106,91	104,24	107,49	-1,03
2070	107,00	107,02	107,01	104,34	107,63	-0,58
2100	107,11	107,12	107,11	104,44	107,73	-0,60
2130	107,22	107,23	107,22	104,56	107,82	-0,61
2160	107,34	107,36	107,35	104,68	107,95	-0,83
2190	107,45	107,48	107,47	104,80	108,11	-1,47
2220	107,57	107,59	107,58	104,91	108,25	-0,26
2250	107,68	107,69	107,68	105,01	108,35	-2,18
2280	107,79	107,80	107,79	105,12	108,46	-0,72
2310	107,90	107,91	107,91	105,24	108,58	-0,35
2340	108,01	108,04	108,03	105,36	108,71	-0,77
2370	108,13	108,17	108,15	105,48	108,85	-1,35
2400	108,25	108,29	108,27	105,60	109,01	-0,66
2430	108,37	108,40	108,39	105,72	109,16	-1,88
2460	108,49	108,51	108,50	105,83	109,29	-0,79
2490	108,60	108,62	108,61	105,94	109,45	-1,55
2520	108,71	108,73	108,72	106,05	109,64	-3,67
2550	108,82	108,84	108,83	106,16	109,82	-0,76
2580	108,94	108,96	108,95	106,28	109,95	-0,85
2610	109,05	109,08	109,06	106,39	110,07	-1,08
2640	109,16	109,19	109,17	106,50	110,24	-2,05
2670	109,27	109,29	109,28	106,61	110,50	-0,93
2700	109,39	109,41	109,40	106,73	110,83	-0,94
2730	109,51	109,52	109,51	106,85	111,18	-0,94
2760	109,62	109,63	109,63	106,96	111,51	-0,97
2790	109,73	109,74	109,74	107,07	111,80	-1,06

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Fuel Tank Temperature and Pressure Profile

2820	109,85	109,86	109,85	107,18	112,03	-1,06
2850	109,97	109,98	109,97	107,30	112,22	-2,07
2880	110,08	110,09	110,09	107,42	112,35	-4,51
2910	110,20	110,20	110,20	107,53	112,40	-4,72
2940	110,33	110,33	110,33	107,66	112,46	-0,92
2970	110,47	110,47	110,47	107,80	112,55	-1,19
3000	110,60	110,60	110,60	107,93	112,63	-1,17
3030	110,73	110,74	110,73	108,06	112,71	-3,10
3060	110,86	110,86	110,86	108,19	112,88	-2,65
3090	110,99	110,99	110,99	108,32	113,17	-4,04
3120	111,12	111,13	111,12	108,45	113,51	-0,47
3150	111,26	111,27	111,26	108,60	113,76	-0,97
3180	111,41	111,43	111,42	108,75	113,83	-3,32
3210	111,57	111,59	111,58	108,91	113,86	-1,43
3240	111,73	111,74	111,74	109,07	113,97	-0,68
3270	111,88	111,88	111,88	109,21	114,13	-3,60
3300	112,03	112,03	112,03	109,36	114,28	-3,16
3330	112,18	112,18	112,18	109,51	114,44	-4,24
3360	112,30	112,31	112,30	109,64	114,60	-0,77
3390	112,41	112,42	112,42	109,75	114,70	-1,98
3420	112,54	112,54	112,54	109,87	114,72	-2,80
3450	112,67	112,66	112,67	110,00	114,72	-0,87
3480	112,80	112,79	112,80	110,13	114,76	-1,77
3510	112,91	112,91	112,91	110,24	114,87	-3,86
3540	113,02	113,03	113,02	110,36	114,98	-2,08
3570	113,14	113,15	113,15	110,48	115,08	-0,76
3600	113,27	113,27	113,27	110,60	115,17	-4,13
3630	113,38	113,37	113,38	110,71	115,29	-1,44
3660	113,47	113,46	113,46	110,80	115,39	-4,47
3690	113,56	113,55	113,56	110,89	115,44	-3,94
3720	113,67	113,66	113,67	111,00	115,50	-4,49
3750	113,79	113,79	113,79	111,12	115,61	-4,50
3780	113,90	113,90	113,90	111,23	115,74	-3,85
3810	114,02	114,01	114,02	111,35	115,84	-4,33
3840	114,15	114,13	114,14	111,47	115,90	-0,75
3870	114,28	114,25	114,27	111,60	115,95	-2,99
3900	114,39	114,37	114,38	111,71	116,05	-0,96
3930	114,49	114,47	114,48	111,81	116,13	-1,15
3960	114,58	114,57	114,58	111,91	116,15	-0,59
3990	114,67	114,67	114,67	112,00	116,15	-0,71
4020	114,77	114,77	114,77	112,10	116,16	-3,70
4050	114,86	114,85	114,86	112,19	116,23	-0,67
4080	114,96	114,94	114,95	112,28	116,32	-2,17
4110	115,06	115,05	115,05	112,38	116,36	-2,87
4140	115,16	115,14	115,15	112,48	116,37	-0,82
4170	115,26	115,23	115,25	112,58	116,38	-2,14
4200	115,37	115,34	115,36	112,69	116,38	-1,00
4230	115,49	115,47	115,48	112,81	116,38	-1,03
4260	115,60	115,59	115,60	112,93	116,39	-1,07
4290	115,69	115,69	115,69	113,02	116,42	-1,07
4320	115,78	115,79	115,79	113,12	116,45	-1,08

BMW**Notification of Running Change according
to 40 CFR §86.1844-01 (f)**

Issued: 08/21/2018

Manufacturer
Running Change No.:
Test Group:**BMW**
19-J04.4N63-02
KBMXJ04.4N63**0. Common**

Manufacturer: **BMW**
Test Group: **KBMXJ04.4N63**
Running Change No.: **19-J04.4N63-02**

1. Description of Change

Addition of new model X7 xDrive50i

2. Reason of Change

Model flexibility

3. Portion of Product Line affected by the change

n.a.

4. Effect of change on emissions

none

5. Test data to demonstrate compliance with applicable emission standards

Emission and fuel economy tests have been performed

6. Summary report of all running changes incorporated since certification

Running change no	Dated	Product application	Change
19-J04.4N63-01	05/25/18	08/01/18	M850i xDrive Coupe, M850i xDrive Convertible and X5 xDrive50i added
19-J04.4N63-02	08/21/18	12/01/18	Oil pump calibration changed X7 xDrive50i added



Notification of Technical Change

Manufacturer: **BMW**
Test Group: **KBMXJ04.4N63**

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0. Common

Manufacturer: **BMW**
Test Group: **KBMXJ04.4N63**

1. Description of Change

Change of the calibration of the map-controlled oil pump to enlarge the area of piston cooling jet activation. There is no change to the emission reduction strategy.

2. Reason for Change

Improvement of tribological situation in piston / liner contact to avoid severe friction and wear.

3. Portion of Product Line affected by the change

This change affects 750i, 750i xDrive and 750i xDrive (SWB) carry over models. The new models 850i xDrive Coupe, 850i xDrive Convertible and X5 xDrive 50i have already been tested for Fuel Economy with this technical measure. These models have an August 2018 start-of-production.

4. Effect of change on emissions

FTP and Highway tests have been performed. Our overall assessment is that the 750i models will continue to comply with all applicable emissions standards. The changed oil pump calibration will have no measureable effect on exhaust emissions, the effect is smaller than the usual test to test variation.

5. Test data to demonstrate compliance with applicable emission standards

The table below shows the results for the FTP and Highway tests performed with the new oil pump calibration along with data for the existing EDV. Useful life cert levels are shown for comparison.



Notification of Technical Change

Manufacturer
Test Group:

BMW
KBMXJ04.4N63

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Manufacturer: BMW
Test Group: KBMX04.4N63
CARB / EPA FTP Standard: LEV III - ULEV 125 / I-T3 Bin 125

Target Coefficients X6 xDrive 50i				Set Coefficients X6 xDrive 50i				ETW (lbs)
A (lb/ft)	B (lb/ft/mph)	C (lb/ft/mph ²)		a (lb/ft)	b (lb/ft/mph)	c (lb/ft/mph ²)		
City/Highway US06	61.2	-0.384		22.4	-0.005	0.03292		5500
	61.2	0.03791		22.4	-0.005	0.03292		5500

Cycle	Test No. Or Date	Comment	Useful Life	Standard level	Emission Name	Test Result	Rounded Result	HC Ratio	UAF	Add DF	Cert Level	Standard
FTP	GBMX10035515 Comfort, D ESS on	LEV3 E10 Regular X6 xDrive 50i	Fed 120,000 mi	Tier 3 Bin 125	Methan	0.00202	0.0020		0.000	0.0008	0.003	0.030
			Fed/CA 150,000 mi	Bin125 / ULEV125	N2O	0.00114	0.0011		0.000	0.0000	0.001	0.010
			Fed/CA 150,000 mi	Bin125 / ULEV125	NMOG	0.01238	0.0124	1.10	0.000	0.0006	0.013	
			Fed/CA 150,000 mi	Bin125 / ULEV125	Ndx	0.05003	0.0503		0.000	0.010	0.040	
FTP	R72004133 May, 9th, 2018 Comfort, D ESS on	T3 E10 Regular X5 xDrive50i	Fed/CA 150,000 mi	Bin125 / ULEV125	NMOG+Ndx						0.053	0.125
			Fed/CA 150,000 mi	Bin125 / ULEV125	CO	0.2514	0.25		0.000	0.00	0.20	2.1
			Fed/CA 150,000 mi	Bin125 / ULEV125	PM	0.00114	0.001		0.000	0.0000	0.001	0.003
			Fed 120,000 mi	Tier 3 Bin 125	Methan	0.00299	0.0030		0.000	0.0008	0.004	0.030
FTP	R72004149 May, 15th, 2018 Comfort, D ESS on	T3 E10 Regular X5 xDrive50i	Fed/CA 150,000 mi	Bin125 / ULEV125	N2O	0.00039	0.0004		0.000	0.0000	0.004	0.010
			Fed/CA 150,000 mi	Bin125 / ULEV125	NMOG	0.01023	0.0102	1.10	0.000	0.0006	0.011	
			Fed/CA 150,000 mi	Bin125 / ULEV125	Ndx	0.0282	0.0282		0.000	0.010	0.038	
			Fed/CA 150,000 mi	Bin125 / ULEV125	NMOG+Ndx						0.049	0.125
FTP	R72004149 May, 15th, 2018 Comfort, D ESS on	T3 E10 Regular X5 xDrive50i	Fed/CA 150,000 mi	Bin125 / ULEV125	CO	0.17651	0.18		0.000	0.00	0.20	2.1
			Fed/CA 150,000 mi	Bin125 / ULEV125	PM	0.000879	0.001		0.000	0.0000	0.001	0.003
			Fed 120,000 mi	Tier 3 Bin 125	Methan	0.00373	0.0037		0.000	0.0008	0.004	0.030
			Fed/CA 150,000 mi	Bin125 / ULEV125	N2O	0.000129	0.0001		0.000	0.0000	0.000	0.010
Highway	GBMX10035516 Comfort, D ESS on	LEV3 E10 Regular X6 xDrive 50i	Fed/CA 150,000 mi	Bin125 / ULEV125	NMOG	0.014377	0.0144	1.10	0.000	0.0006	0.015	
			Fed/CA 150,000 mi	Bin125 / ULEV125	Ndx	0.01786	0.0179		0.000	0.010	0.028	
			Fed/CA 150,000 mi	Bin125 / ULEV125	NMOG+Ndx						0.043	0.125
			Fed/CA 150,000 mi	Bin125 / ULEV125	CO	0.24559	0.25		0.000	0.00	0.20	2.1
Highway	R72004134 May, 9th, 2018 Comfort, D, ESS on	T3 E10 Regular X5 xDrive 50i	Fed/CA 150,000 mi	Bin125 / ULEV125	PM	0.000625	0.001		0.000	0.0000	0.001	0.003
			Fed/CA 150,000 mi	Bin125 / ULEV125	NMOG	0.00183	0.0018	1.03	0.000	0.0006	0.002	
			Fed/CA 150,000 mi	Bin125 / ULEV125	Ndx	0.00335	0.0033		0.000	0.010	0.015	
			Fed/CA 150,000 mi	Bin125 / ULEV125	NMOG+Ndx						0.016	0.125
Highway	R72004134 May, 9th, 2018 Comfort, D, ESS on	T3 E10 Regular X5 xDrive 50i	Fed/CA 150,000 mi	Bin125 / ULEV125	NMOG	0.0009476	0.0009	1.03	0.000	0.0006	0.002	
			Fed/CA 150,000 mi	Bin125 / ULEV125	Ndx	0.00724	0.0072		0.000	0.010	0.017	
			Fed/CA 150,000 mi	Bin125 / ULEV125	NMOG+Ndx						0.019	0.125
			Fed/CA 150,000 mi	Bin125 / ULEV125	NMOG	0.0006489	0.0006	1.03	0.000	0.0006	0.001	
Highway	R72004150 May, 15th, 2018 Comfort, D, ESS on	T3 E10 Regular X5 xDrive 50i	Fed/CA 150,000 mi	Bin125 / ULEV125	Ndx	0.00668	0.0067		0.000	0.010	0.017	
			Fed/CA 150,000 mi	Bin125 / ULEV125	NMOG+Ndx						0.018	0.125



Notification of Technical Change

Manufacturer: **BMW**
Test Group: **KBMXJ04.4N63**

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Emission values in percent of the standard:

