| California Environmental Protection Agency | | EXECUTIVE ORDER A-006-176 | | | | | |
|--|--------------------|---------------------------------------|--|--|--|--|--|
| AIR RESOURCES BOARD | GENERAL MOTORS LLC | New Passenger Cars, Light-Duty Trucks | | | | | |
| | | and Medium-Duty Vehicles | | | | | |

Pursuant to the authority vested in the Air Resources Board by Health and Safety Code (HSC), Div. 26, Part 5, Chap. 2; and pursuant to the authority vested in the undersigned by HSC Sections 39515 & 39516 and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED:

That the following exhaust and evaporative emission control systems produced by the manufacturer are certified as described below. Production vehicles shall be in all material respects the same as those for which certification is granted.

| MODEL YEAR | TEST GROUP | VEHICLE TYPE | EXHAUST EMISSION STANDARD CATEGORY | USEFU (mil | | IN- COMP (*=N/A or A/E=ex | MEDIATE USE LIANCE full in-use; h. / evap. iate in-use) | FUEL TYPE |
|---------------|---------------------------------------|---------------------------|--|------------------|---------|------------------------------------|--|------------------|
| 2012 | CGMXV03.6048 Passenger Car | | "LEV II" Super Ultra Low Emission Vehicle (LEV II | EXH / ORVR | EVAP | EXH | EVAP | Gasoline (Tier 2 |
| | | • | SULEV) | 150K | 150K | * | * | Unleaded) |
| No. | | SPECIAL FEATURES | EVAPORATIVE | DISPLACEMENT (L) | | | | |
| 1 | 2TWC, TWC, 2 | HO2S(2), DGI, AIR, OBD(P) | CGMXR | | <u></u> | | | |
| • | · · · · · · · · · · · · · · · · · · · | * | | 3.6 | | | | |
| • | | * | * | • | | | | |

See the Attachment for Vehicle Models, Evaporative Family, Engine Displacement, Emission Control Systems, Phase-In Standards, OBD Compliance, Emission Standards and Certification Levels, and Abbreviations.

BE IT FURTHER RESOLVED:

That the exhaust, the evaporative emission standards, and the certification emission levels for the listed vehicles are as listed on the Attachment. Compliance with the 50[°] Fahrenheit testing requirement may have been met based on the manufacturer's submitted compliance plan in lieu of testing. Any debit in the manufacturer's "NMOG Fleet Average" (PC or LDT) or "Vehicle Equivalent Credit" (MDV) compliance plan shall be equalized as required.

BE IT FURTHER RESOLVED:

That for the listed vehicle models, the manufacturer has attested to compliance with Title 13, California Code of Regulations, (13 CCR) Sections 1965 [emission control labels], 1968.2 [on-board diagnostic, full or partial compliance], 2035 et seq. [emission control warranty], 2235 [fuel tank fill pipes and openings] (gasoline and alcohol fueled vehicles only), and "High-Altitude Requirements" and "Inspection and Maintenance Emission Standards" (California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model PC, LDT and MDV).

BE IT FURTHER RESOLVED:

The test group listed in this Executive Order is certified conditionally on the manufacturer providing test data to determine the greenhouse gas (GHG) emissions for the listed test group, expressed in grams per mile of carbon dioxide-equivalent (g/mi CO2-e), as required in section E.2.5.2 of the California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, as amended August 4, 2005 (the Test Procedures). Manufacturer shall provide the required data within 45 days after the date of the Executive Order unless (a) an extension is granted by the Executive Officer, or (b) the manufacturer demonstrates to the satisfaction of the Executive Officer that it is exempt from determining GHG emissions for the listed test group under section E.2.5.3 (Intermediate Volume Manufacturers) or E.2.5.4 (Small Volume Manufacturers) of the Test Procedures. Failure to comply with the certification requirement to determine the GHG emissions for the listed test group may be cause for the Executive Officer to revoke the Executive Order. Vehicles in the revoked Executive Order shall be deemed uncertified and subject to penalties authorized under California law. Notwithstanding the requirement therein, the manufacturer is not required to determine GHG emissions for any medium-duty vehicles in the listed test group that are not medium-duty passenger vehicles.

BE IT FURTHER RESOLVED:

That the listed vehicle models are granted a partial zero-emission-vehicle (PZEV) allowance of 0.2 pursuant to 13 CCR Section 1962.1 (c)(2).

Vehicles certified under this Executive Order shall conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

Executed at El Monte, California on this ______day of June 2011.

Annette Hebert, Chief Mobile Source Operations Division



ATTACHMENT

EXHAUST AND EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS

(For bi-, dual- or flexible-fueled vehicles, the STD and CERT in parentheses are those applicable to testing on gasoline test fuel.)

| | | D RAF=* AF = * | NMOG or NMHC | HCHO=for | maldehyde; F | M=particul | ate matter; RVR (g/ga) | RAF=react | ivity adjust vadi=on-bo | ment fac ard refu | tor; 2/3 D [g/ alino vapor r | test]=2/3 da acovary: q= | ; NOx=oxides o ny diumai+ =gram; mg=mili | | | |
|--|--|----------------------------|---------------------------------------|---|---|--|---|-------------------------------------|----------------------------|-------------------------------------|---------------------------------|---|--|------------------------------|--------------------|--|
| CERT | STD | NMOG | NMHC | STD | mi=mile; K | (=1000 miles; | F=degrees | Fahrenhei | t; SFTP=su | ppiementa | l federal | test procedu | re | | | |
| 0.028 | 0.035 | CERT | CERT [g/ml] | [g/m]] | | [g/ml] | | c [g/m]] | | | mg/ml] | CERT | g/ml] STD | | Ox [g/ml] STD | |
| U.U.L.U | | [g/mi] | (g/m) * | | CERT | STD | CERT | STD | CEF | | | CERI | 310 | VERI * | 310 | |
| 经济资 | @ 50K | | * | L | 0.2 | 1.0 | 0.01 | 0.02 | | | 4. | * | 0.01 | 0.002 | 0.03 | |
| <u></u> | @ UL | 0.007 | • | 0.010 | · 0.1 | 1.0 | 0.01 | 0.02 | | | 8. | * | * | * | * | |
| | @ 50°F & 4K | 0.010 | | 0.020 | | | | | | | | | | | | |
| CO [g/m] @ 20°F & 50K | | | NMHC+N (comp | | | | | | [g/mi] \$06] | | | | | | | |
| | | e al scatte | | CERT | STD | CERT | STD | CERT | STD | CERT | STD | CERI | r STD | CERT | ST | |
| ERT | 0.7 | SFTP @ 4 | 000 miles | • | * | | * | 0.06 | 0.14 | 1.2 | 8.0 | 0.004 | 0.20 | 0.2 | 2.7 | |
| TD | 10.0 | | @* miles | * | ٠ | + | * | * | * | * | | * | * | * | * | |
| | | | urnal + Hot s/test) @ L | | | | | Running Loss (grams/mile) @ UL | | | F | On-Board Refueling Vapor Recovery (grams/gallon) @ U | | | | |
| | | | CERT | S | TD | CERT | ŚTD | | CERT STI | | STD | | CERT | | STD | |
| CGMXR0123702 | | 2 | 0.26 | 0. | 35 | 0.22 | 0.35 | | 0.000 | | 0.05 | | | 0.20 | | |
| * | | * | | * | * | * | | * | | * | * | | * | | | |
| * | | | * | | * | | | * | * | | * | | * | | * | |
| | * | | * | | * * | | | * | | * | | | * | * | | |
| = not ap | pplicable; UL=u aded vehicle wei C=adsorbing TW | ght; ALVW= ∕C: Will=wan | adjusted LVV m-up catalyst | V; LEV=low ; OC=oxidizi R=pulsed Al | emission ve ng catalyst; P: MEI= mi | hicle; TLEV ; O2S=oxyge uttinoct fuel in | -transition en sensor; niection: Si | al LEV; UL HO2S=hea Fi=sequen | EV=uttra | LEV; SUL AFS/HAF Bl=throttle | EV=sup S=air- fu body in | er ULEV; T iel ratio sen iection: TC/ | wc=3-way sor / heate /sc= turbo | d AFS; EGR= /super charge | exhaust | |
| DSTWC as recirc AC=cha | culation; AIR=se arge air cooler; (uefied petroleum |)BD (F)/(P)= | full/partial or 85%" Ethano | -board diagr I Fuel | nostic; DOF | R=direct ozo | ne reducin | g; prefix 2: | =parallel; (| 2) suffix=9 | ieries; (| CNG/LNG= | compresse | | tural gas | |
| DSTWC as recirc AC=cha | arge air cooler; (|)BD (F)/(P)= | full/partial or 85%" Ethano | -board diagr I Fuel | nostic; DOF | R=direct ozo | ne reducin | g; prefix 2: | =parallel; (| 2) suffix=9 | | CNG/LNG= | | | turai gas | |
| DSTWC as recirc AC=cha .PG=liqu | arge air cooler; (|)BD (F)/(P)= | full/partial or 85%" Ethano | -board diagr Fuel 12 MOD | nostic; DOF | R=direct ozo | ne reducin | g; prefix 2: | ELS IN | 2) suffix=9 | | DN | ATE CE -use; ap. | PHASE-IN STD. | oBD | |
| DSTWC as recirc AC=cha PG=liqu | arge air cooler; (uefied petroleum |)BD (F)/(P)= | -full/partial or 85%" Ethano 20 | -board diagr Fuel 12 MOD | nostic; DOF | R=direct ozo | | g; prefix 2: MOD | ELS IN | 2) suffix= FORN NGINE SIZE | | N TERMEDIA IN-USE OMPLIAN(/A or full in- E=exh. / evi rmediate in- | ATE CE -use; ap. | PHASE-IN | iurai gas | |