

## SAN DIEGO AIR POLLUTION CONTROL DISTRICT

### ALTERNATIVE MOBILE SOURCE EMISSION REDUCTION PROGRAM FOR REPLACING MEDIUM AND HEAVY HEAVY-DUTY DIESEL POWERED VEHICLES AND REPOWERING OF MARINE VESSELS UNDER RULE 27 (c)(1)(vi)

Except as provided for below all relevant provisions of Rule 27 are applicable to MERCs applied for and granted under this alternative program.

#### (a) **Applicability**

Mobile source emission reduction credits (MERCs) may be created under this alternative mobile source emission reduction program only if all of the following conditions are satisfied:

- (1) Application for the credit is made by the owner of the mobile source that generates the credit;
- (2) Credit is only granted for oxides of nitrogen (NO<sub>x</sub>);
- (3) The credit is generated by mobile sources that operate solely in San Diego County or Near-Shore San Diego Coastal Waters; and
- (4) The credit is generated by one of the following mobile source emission reduction projects:
  - (i) Replacement of existing medium heavy-duty (MHD) vehicles that are powered with diesel-fueled compression-ignition engines with new MHD vehicles powered with spark-ignition or compression-ignition engines that are fueled with gaseous fuel;
  - (ii) Replacement of existing heavy heavy-duty (HHD) vehicles in refuse collection applications that are powered with diesel-fueled compression-ignition engines with new HHD vehicles powered with spark-ignition or compression-ignition engines that are dual fueled or fueled with gaseous fuel; or
  - (iii) Repowering of marine vessels that are powered with diesel-fueled compression-ignition engines with new compression-ignition engines that are fueled with diesel or an alternative clean fuel.

#### (b) **Limitations on Use**

MERCs granted under this alternative program may only be used to provide offsets for NO<sub>x</sub> emission increases pursuant to Rule 20.3 (d)(5). These credits shall not be used as interpollutant offsets.

#### (c) **Definitions**

(1) "**Activity Metric**" means a parameter that is representative of the extent of a mobile source's use and, in conjunction with an emission factor, used to quantify emission reductions

during a period of time. Activity metrics are vehicle miles traveled (VMT), volume or mass of fuel burned, or time of operation.

(2) **"Average Ongoing Emission Reductions"** means the average emission reductions generated during a period of time within the District or Near-Shore San Diego County Waters by a mobile source during its use in an existing MERC Project.

(3) **"Baseline Activity Level"** means the quantity of an activity metric used to quantify annual emissions generated within the District or Near-Shore San Diego County Waters by a baseline mobile source.

(4) **"Baseline Emission Factor"** means the emission factor used to quantify annual emissions generated within the District or Near-Shore San Diego County Waters by a baseline mobile source.

(5) **"Baseline Mobile Source"** means, for marine vessels, the existing marine vessel powered with the existing diesel-fueled compression-ignition engine or, for MHD and HHD vehicles, a new vehicle powered with a new diesel-fueled compression-ignition engine.

(6) **"Beginning of the MERC Activity Averaging Period"** means the first day of the MERC activity monitoring period unless the owners or operators of a stationary source that have surrendered the MERC, or a portion thereof, to provide new source review offsets elect to begin the activity averaging period on a later alternative date. To elect a later alternative beginning date, the stationary source owners or operators must notify the District in writing before the end of the first stationary source ongoing emission reduction monitoring year. Any alternative beginning date elected must be the first day of a calendar quarter following the beginning of the activity monitoring period and not later than the earlier of the beginning of the stationary source ongoing emission reduction monitoring period or two years after the beginning of the MERC activity monitoring period.

(7) **"Compression-Ignition"** means relating to a type of engine with operating characteristics that are significantly similar to the theoretical Diesel combustion cycle. The absence of a throttle to regulate intake air flow for controlling power during normal operation is indicative of a compression-ignition engine.

(8) **"Diesel Fuel"** means any fuel that is commonly or commercially known, sold, or represented as diesel fuel No. 1-D or No. 2-D.

(9) **"Dual-Fuel Vehicle"** means a vehicle designed to be operated simultaneously on gaseous fuel and diesel fuel or diesel fuel alone.

(10) **"Equivalent Mobile Sources"** means mobile sources owned by the same person or persons and having identical emission factors; full value credit discount factors; extended credit lifetimes; ongoing emission reduction monitoring periods; and baseline, projected, and ongoing activity metrics. Mobile sources with different emission factors and full value credit discount factors may be considered equivalent mobile sources if the Air Pollution Control Officer can determine an average full value credit for the group of mobile sources that is equivalent to the sum of the full value credit for the individual mobile sources.

(11) **"Equivalent-use–MERC Mobile Sources"** means mobile sources owned by the same person or persons and having identical emission factors; full value credit discount factors; and baseline, projected, and ongoing activity metrics and that form the initial basis of one or more MERCs. Mobile sources that form the initial basis of a MERC with different emission factors and full value credit discount factors may be considered equivalent-use–MERC mobile sources if the Air Pollution Control Officer can determine an average full value credit for the group of mobile sources that is equivalent to the sum of the full value credit for the individual mobile sources.

(12) **"Equivalent-use Mobile Sources"** means mobile sources owned by the same person or persons and that are used in the same or closely similar types of operations.

(13) **"Gaseous Fuel"** means fuel existing as a gas at standard conditions including, but not limited to, natural gas, methane, ethane, propane, butane, and gases stored as a liquid at high pressure such as liquefied petroleum gas.

(14) **Heavy-Duty Vehicle"** means any motor vehicle having a manufacturer's gross weight rating greater than 6000 pounds, except passenger cars.

(15) **"Heavy Heavy-Duty Vehicle"** means a heavy-duty vehicle that is propelled by a heavy heavy-duty engine as defined in 40 CFR § 86.085-2, as amended November 16, 1983.

(16) **"Last Stationary Source Ongoing Emission Reduction Monitoring Year"** means the stationary source activity monitoring year after which no MERCs that were surrendered to offset the source's emissions are subject to activity monitoring.

(17) **"Low NOx Rebuild Engine"** means a Low NOx Rebuild Engine as defined in the applicable Settlement Agreement.

(18) **"Low NOx Rebuild Kit"** means a Low NOx Rebuild Kit as defined in the applicable Settlement Agreement.

(19) **"Low NOx Rebuild Program"** means the Low NOx Rebuild Program as described in the applicable Settlement Agreement except that the date by which a vehicle must be equipped with a Low NOx Rebuild Kit is modified under this alternative program to the sooner of the date an engine is deployed outside of San Diego County or the date the accumulated mileage or service event criteria specified in the applicable Settlement Agreement is satisfied.

(20) **"Maximum Number of Calendar Quarters in the Ongoing Emission Reduction Average"** means 40 less the number of calendar quarters from the beginning of the MERC activity monitoring period to the beginning of the MERC activity averaging period.

(21) **"Medium Heavy-Duty Vehicle"** means a heavy-duty vehicle that is propelled by a medium heavy-duty engine as defined in 40 CFR § 86.085-2, as amended November 16, 1983.

(22) **"MERC Activity Monitoring Period"** means the ten year period that a MERC is subject to activity monitoring. The MERC activity monitoring period begins on the first day of the first calendar quarter following the date the MERC is granted by the District.

(23) **"MERC Creation Date"** means the date on which the action is taken to create the emission reductions on which the MERC is based. For replacement of medium or heavy heavy-duty diesel powered vehicles, the MERC creation date is the date that the replacement vehicle is delivered to the owner of the vehicle that is being replaced. For repowering of marine vessels, the MERC creation date is the date that the vessel first takes to sea under the power of the replacement engine.

(24) **"MERC Fractional Employment"** means the fraction of the mobile sources that form the initial basis of a MERC that are employed during a calendar year. The MERC fractional employment is identical for one or more MERCs if the mobile sources that initially form the basis of each of those MERCs belong to a group of equivalent-use-MERC mobile sources.

(25) **"MERC Fractional Employment in Primary Service"** means the fraction of the mobile sources that form the initial basis of a MERC that are used in primary service during a calendar year. The MERC fractional employment in primary service is identical for one or more MERCs if the mobile sources that initially form the basis of each of those MERCs belong to a group of equivalent-use-MERC mobile sources.

(26) **"MERC Project"** means one or more MERCs that are based on equivalent mobile sources.

(27) **"MERC Employment Monitoring Period"** means the time period a MERC is subject to employment monitoring. The MERC employment monitoring period begins on the first day of the first calendar year following the date the MERC is granted by the District and lasts until the end of the calendar year in which the MERC's unextended lifetime ends.

(28) **"Mobile Source Employment Monitoring Period"** means the time period that a mobile source owner must monitor the employment of mobile sources that form the initial basis of one or more MERCs. The mobile source employment monitoring period begins when the earliest MERC employment monitoring period begins and ends on the latest date that a MERC employment monitoring period ends.

(29) **"Mobile Sources that Form the Basis of the MERC "** means the mobile source, or group of equivalent mobile sources, that generates the emission reductions that are represented by the MERC, including all subsequent replacements or repowerings of those mobile sources.

(30) **"Mobile Sources that Form the Initial Basis of the MERC "** means the mobile source, or group of equivalent mobile sources, that generates the emission reductions that are represented by the MERC, not including any subsequent replacements or repowerings of those mobile sources unless the replacement or repowering is due to accident.

(31) **"Near-Shore San Diego Coastal Waters"** means the area water lying within all harbors, bays, inlets, and estuaries in the jurisdiction of the San Diego County Air Pollution Control District and the area of water bounded by latitude N 33° 20' 10" on the north and by the oceanward extension of the United States-Mexico International Boundary on the south and lying within 25 English statute miles oceanward of lines drawn in front of all harbors along the outermost works and installations thereof; 25 English statute miles oceanward of lines drawn from headland to headland across the mouth of each bay, inlet, and estuary, regardless of the

length of lines; and, where there are no harbors, bays, estuaries, or inlets, 25 miles oceanward of the lowest low-water mark on the shore.

(32) **"Ongoing Activity Level"** means the quantity of an ongoing activity level metric used to quantify ongoing annual emissions by a mobile source during its use in an existing MERC Project.

(33) **"Ongoing Activity Metric"** means an activity metric that is not expected to change in magnitude between baseline operations and projected operations in a MERC Project, if the nature and operational mode of a mobile source's use does not change. Ongoing activity metrics include hours of operation and vehicle miles traveled.

(34) **"Primary Service"** means that a vehicle is dispatched on a daily basis unless unavailable for service due to scheduled and unscheduled maintenance.

(35) **"Projected Activity Level"** means the quantity of an activity metric that is used to quantify forecast annual emissions generated within the District or Near-Shore San Diego County Waters by a mobile source during its use in a proposed MERC Project.

(36) **"Projected Emission Factor"** means the emission factor used to quantify forecast annual emissions generated within the District or Near Shore San Diego County Waters by a mobile source during its use in a proposed MERC Project.

(37) **"Reserve Service"** means that a vehicle is normally active and available for service, but is only used in the event a primary service vehicle is unavailable.

(38) **"Settlement Agreement"** means one of the following, as applicable: Settlement Agreement Between the California Air Resources Board and Caterpillar Inc., as signed on December 15, 1998; Settlement Agreement Between the California Air Resources Board and Cummins Engine Company, Inc., as signed on December 15, 1998; Settlement Agreement Between the California Air Resources Board and Detroit Diesel Corporation, as signed on December 15, 1998; Settlement Agreement Between the California Air Resources Board and Mack Truck Inc. & Renault V. I., s. a., as signed on December 15, 1998; Settlement Agreement Between the California Air Resources Board and Volvo Truck Corporation, as signed on December 15, 1998; or Settlement Agreement Between the California Air Resources Board and Navistar International Transportation Company, as signed on October 22, 1998.

(39) **"Stationary Source Ongoing Emission Reduction Monitoring Period"** means the period of time beginning on the first day of the first calendar quarter after the stationary source commences operations and ending on the last day of the last stationary source activity monitoring year.

(40) **"Stationary Source Ongoing Emission Reduction Monitoring Year"** means one of the successive yearly periods beginning the first day of the stationary source ongoing emission reduction monitoring period and ending on the last day of the last stationary source ongoing emission reduction monitoring year.

**(d) MERC Quantification**

(1) Full Value Credit Quantification

For each mobile source or group of equivalent mobile sources, the full value credit amount is calculated from the following equation:

$$C_f = kD_f(A_b F_b - A_p F_p)$$

where:

$C_f$  = the full value credit amount, in tons per year;

$k = 1.1023 \times 10^{-6}$ , the conversion factor for converting grams to tons;

$D_f$  = a full value credit discount factor, equal to 0.7 for the replacement of HHD vehicles in refuse collection applications with dual-fueled HHD vehicles and equal to 1.0 in all other cases;

$A_b$  = the annual average baseline activity level, in appropriate units;

$A_p$  = the annual average projected activity level, in appropriate units;

$F_b$  = the emission factor for the baseline mobile source as specified in Section (e), in grams per unit activity level; and

$F_p$  = the projected emission factor for the replacement mobile source, in grams per unit activity level.

(2) Baseline Activity Level Quantification

Average baseline activity levels shall be determined as specified in (d)(2)(i)–(d)(2)(ii). In addition, for HHD and MHD vehicles, the average baseline activity level shall be adjusted to account for decreases, but not increases, in the activity level that would have occurred for the baseline vehicles over the vehicles' useful life, considering both primary and reserve service operational categories.

(i) Unless an alternative representative period is determined by the Air Pollution Control Officer with the concurrence of the Air Resources Board, the average baseline activity level shall be determined from the average activity level of the most representative two consecutive year period during the five year period preceding the application for a MERC.

(ii) If insufficient information is available to determine a representative activity level from a two year average in accordance with Subsection (d)(2)(i), the Air Pollution Control

Officer with the concurrence of the Air Resources Board may specify a shorter period, but not less than one year.

(3) Projected Activity Level Quantification

Projected activity levels shall be forecast from average baseline activity levels as specified in (d)(3)(i)–(d)(3)(iii). In addition, for HHD and MHD vehicles, the average projected activity level shall be adjusted to account for decreases, but not increases, in the activity level that would have occurred for the baseline vehicles over the vehicles’ useful life considering both primary and reserve service operational categories.

(i) For baseline activity levels quantified in volume or mass of diesel fuel burned, the corresponding projected activity level shall be quantified by the volume or mass of fuel burned and determined by equating the work represented by lower heating value of the baseline activity level combined with the baseline engine efficiency and the lower heating value of the projected activity level combined with the projected engine efficiency.

(ii) For baseline activity levels quantified in vehicle miles traveled or hours of operation, the projected activity level shall be the same as the baseline activity level.

(e) Emission Factors

(1) Medium and Heavy Heavy-Duty Vehicles Emission Factors

(i) Baseline Emission Factors

(A) For MERC creation dates before October 1, 2002, the baseline emission factors used for the replacement of medium and heavy heavy-duty vehicles shall be the applicable emission factor in Table 1 or an emission factor obtained by converting the applicable emission factor to alternate emission factor units in accordance with Subsection (e)(1)(iii). The baseline emission factor for HHD vehicles with standard maintenance shall be used for replacement of HHD diesel powered vehicles unless an enhanced maintenance program for the replacement vehicles has been approved by the Air Pollution Control Officer, the Air Resources Board, and the U.S. Environmental Protection Agency for the MERC Project. Enhanced maintenance programs are not applicable to MHD vehicles.

**Table 1. Medium and Heavy Heavy-Duty Vehicle Baseline Emission Factors.**

Engine Type and Maintenance	Emission Factor		
	Emission Factor, g/(bhp hr)	Emission Factor, g/gallon	Emission Factor, g/(VMT)
Heavy Heavy-Duty Vehicles in Refuse Collection Applications with Standard Maintenance	4.4	81.4	Not applicable

Heavy Heavy-Duty Vehicles in Refuse Collection Applications with Enhanced Maintenance	5.4	99.9	Not applicable
Medium Heavy-Duty Vehicles with Standard Maintenance	4.0	74	10.4

(B) Notwithstanding Subsection (e)(1)(i)(A), the Air Pollution Control Officer with the concurrence of the Air Resources Board and the U. S. Environmental Protection Agency, may require use of alternative emission factors on a case-by-case basis, but not to exceed the values in Subsection (e)(1)(i)(A), Table 1.

(C) For MERC creation dates on or after October 1, 2002, the baseline emission factors used for the replacement of medium and heavy heavy-duty vehicles shall be determined on a case-by-case basis by the Air Pollution Control Officer with the concurrence of the Air Resources Board and U. S. Environmental Protection Agency, but not to exceed the values in Subsection (e)(1)(i)(A), Table 1.

(ii) Projected Emission Factors

For replacement of medium and heavy heavy-duty vehicles, the projected emission factors used shall be the applicable certified emission factors for the engine powering the replacement vehicle expressed in grams per brake horsepower hour or an emission factor obtained by converting the certified emission factor to alternate emission factor units in accordance with Subsection (e)(1)(iii).

(iii) Conversion of Emission Factor Units

Unless an alternative conversion factor is determined by the Air Pollution Control Officer with the concurrence of the Air Resources Board and U.S. Environmental Protection Agency to be more representative for a mobile source, the applicable certified emission factor expressed in grams of NOx emitted per brake horsepower hour shall be converted to emission factors expressed in the alternate units listed in Table 2 by multiplying by the applicable conversion factor.

**Table 2. Conversion Factors for Heavy- Duty Vehicle Emission Factors.**

Alternate Emission Factor Units	Conversion Factor: Multiply the Emission Factor in Grams of NOx Emitted per Brake Horsepower Hour by the Conversion Factor to Obtain the Emission Factor in Alternate Units
Grams of NOx Emitted per Gallon of Diesel Fuel Combusted	18.5
Grams of NOx Emitted per Standard Cubic Feet of Natural Gas Combusted	0.1342

Grams of NOx Emitted per Gallon of Liquefied Natural Gas Combusted	11.07
Grams of NOx Emitted per Vehicle Mile Traveled	2.6

The conversion factor to obtain emission factors expressed in units other than those in Table 2 shall be determined on a case-by-case basis by the Air Pollution Control Officer with the concurrence of the Air Resources Board and the U. S. Environmental Protection Agency.

(2) Marine Vessel Repowering

(i) Baseline Emission Factors

For repowering marine vessels, the baseline emission factor shall be the emission factor expressed in grams per gallon of fuel combusted determined for each engine in the MERC Project by a source test conducted in accordance with a protocol approved by the Air Pollution Control Officer, but not to exceed 370 grams per gallon of fuel combusted.

(ii) Projected Emission Factors Without Clean Fuel Credit

For repowering marine vessels without clean fuel credit, the projected emission factors expressed in grams per gallon of fuel combusted shall be:

(A) Determined from the information submitted to the U. S. Environmental Protection Agency and used to obtain certification for that model engine(s) powering the vessel;

(B) If the engine(s) have not been certified, determined from the information for that model engine submitted to the U. S. Environmental Protection Agency to obtain certification; or

(C) Determined from a source test of a representative number of engines conducted in accordance with a protocol approved by the Air Pollution Control Officer.

(iii) Emission Factors With Clean Fuel Credit

An applicant for a MERC under this alternative program may request additional credit based on the use of an alternative clean fuel. A clean fuel credit shall only apply if the MERC contains practicably enforceable conditions to ensure that only the clean fuel will be used in the marine engines participating in the MERC Project.

For repowering marine vessels with a clean fuel credit, the projected emission factors expressed in grams per gallon of fuel combusted shall be determined from a source test of a representative number of engines conducted in accordance with a protocol approved by the Air Pollution Control Officer, the Air Resources Board, and the U. S. Environmental

Protection Agency. In addition, the applicant must submit a plan with the written approval by the Air Pollution Control Officer, the Air Resources Board, and the U. S. Environmental Protection Agency that at a minimum:

- (A) Demonstrates, based on historical records, the fuel properties of the baseline fuel (the fuel currently being used);
- (B) Establishes the properties of the proposed fuel;
- (C) Quantifies the amount of fuel used;
- (D) Identifies source test protocols to quantify the emission reductions from using the clean fuel;
- (E) Identifies source data to be used to quantify the emission reductions from using clean fuel; and
- (F) Provides any other information necessary to determine that the emission reductions are real and surplus.

**(f) Credit Lifetime**

**(1) Unextended Credit Lifetime for Medium and Heavy Heavy-Duty Vehicles**

(i) For replacement of MHD and HHD diesel-fueled compression-ignition engine powered vehicles, the unextended credit lifetime equals the useful lifetime of a new diesel-fueled compression-ignition engine powered vehicle in similar service. Except as provided in Subsection (f)(1)(ii) the useful lifetime for MHD and HHD diesel-fueled compression-ignition engines powered vehicles are eight and ten years, respectively.

(ii) A longer useful lifetime for MHD and HHD diesel-fueled compression-ignition engine powered vehicles than that allowed in Subsection (f)(1)(i) may be allowed provided that the Air Pollution Control Officer determines that, based on historical records of similar vehicles in similar applications, including, but not limited to, records of vehicle sales and purchases, maintenance, annual fuel use, and annual miles traveled, a longer useful lifetime is more representative of the vehicle fleet for which the MERC Project is proposed.

**(2) Unextended Credit Lifetime for Marine Vessels**

For repowering of marine vessels, the unextended credit lifetime equals 30 years.

**(3) Extended Credit Lifetime For Initial Credit**

(i) The unextended credit lifetime may be extended to a longer lifetime provided that:

(A) The unextended credit life is at least 7.5 years; and

(B) The credit is discounted from the full credit value by application of the following equations:

$$C_d = D_l \times C_f$$

$$D_l = T_l/T_e$$

where:

$C_d$  = the discounted credit value for an extended lifetime, in tons per year;

$D_l$  = the lifetime discount factor, not to exceed one;

$C_f$  = the full value credit amount, in tons per year;

$T_l$  = the unextended credit lifetime, in years; and

$T_e$  = the extended credit lifetime factor, not to exceed 30, in years.

(ii) If all the requirements of Subsection (f)(3)(i) are satisfied the credit lifetime shall be:

(A) Equal to the extended lifetime factor ( $T_e$ ) if the extended lifetime factor is less than 30 years; or

(B) Unlimited and permanent if the extended lifetime factor is equal to 30 years.

Once a MERC for a mobile source has been granted the credit lifetime shall not be changed except by application of the credit owner as described in Subsection (f)(4).

#### (4) Change of Credit Lifetime After Credit is Granted

A MERC's existing credit lifetime may be changed to a new credit lifetime after the credit is granted by application of the credit owner.

(i) For credits with an existing extended credit lifetime less than 30 years, the discounted credit value shall be further discounted by the following equation:

$$C_{dn} = D_l \times C_{de}$$

$$D_l = (T_{ee} - T_u)/T_{en}$$

where:

$C_{dn}$  = the new discounted credit value for an extended lifetime, in tons per year;

$C_{de}$  = the existing discounted credit value for an extended lifetime, in tons per year;

$D_l$  = the new lifetime discount factor, not to exceed the value of the full credit value,  $C_f$ , calculated pursuant to Subsection (d)(1) divided by the original discounted credit value,  $C_{de}$ ;

$T_u$  = the time elapsed since the beginning of the credit lifetime, in years;

$T_{ee}$  = the existing extended credit lifetime in years, not to exceed 30, in years; and

$T_{en}$  = the new extended credit lifetime factor, not to exceed 30, in years.

(ii) For credits with an existing lifetime equal to the unextended credit lifetime, the procedure in Subsection (f)(4)(i) is applicable with the existing extended credit lifetime set equal to the unextended credit lifetime.

(iii) For credits with an existing credit lifetime that is unlimited and permanent, the procedure in Subsection (f)(4)(i) is applicable with the existing extended credit lifetime set equal to 30 years.

(iv) For all credits with lifetimes changed pursuant to Subsection (f)(4) (i)–(iii), if the new credit lifetime is an extended credit lifetime that is longer than the unextended credit lifetime, all the requirements of Subsection (f)(3) must be satisfied.

(v) If the new extended credit lifetime factor is equal to 30 years, the credit lifetime shall be deemed unlimited and permanent.

#### (5) Lifetime of Refunded Credits

Any MERCs refunded pursuant to Subsection (m) shall retain their original lifetime except that MERCs with a pre-surrender lifetime that was extended pursuant to Subsection (f)(3) or (f)(4) to be unlimited and permanent shall be deemed to be a MERC with a lifetime equal to thirty years less the number of days elapsed between the beginning of the original MERC lifetime and the date the application required pursuant to Subsection (m) is deemed complete. The lifetime of refunded MERCs shall begin on one of the following dates, as applicable:

(i) For refunded MERCs with a pre-surrender lifetime that was not extended pursuant to Subsection (f)(3) or (f)(4) to be unlimited and permanent and for which the lifetime began less than one calendar year from the first day of the first calendar quarter following the MERC creation date, the refunded MERCs lifetime shall begin on the same date as the pre-surrender lifetime.

(ii) For refunded MERCs with a pre-surrender lifetime that was not extended pursuant to Subsection (f)(3) or (f)(4) to be unlimited and permanent and for which the lifetime began more than one calendar year from the first day of the first calendar quarter following the MERC creation date, the refunded MERCs lifetime shall begin one calendar year from the first day of the first calendar quarter following the MERC creation date.

(iii) For refunded MERCs with a pre-surrender lifetime that was extended pursuant to Subsection (f)(3) or (f)(4) to be unlimited and permanent, the refunded MERCs lifetime shall begin on the date the application for refund was deemed complete.

The applicant may apply to have any refunded MERCs' lifetime changed pursuant to Subsection (f)(4).

#### (6) Start of Credit Lifetime

For credits with an unlimited lifetime, the lifetime begins on the date the credit is issued to the mobile source owner. For credits with a limited lifetime, the credit lifetime shall begin the sooner of:

- (i) Two calendar years from the first day of the first calendar quarter following the MERC creation date; or
- (ii) The date the credit is surrendered to provide offsets for a stationary source.

**(g) Disposal of Original Engines**

In all cases, the original engine of a mobile source that is repowered or replaced shall not be operated in San Diego County and shall be permanently removed from San Diego County or destroyed. For engines that are destroyed, the engines must be destroyed and disposed of in a manner that complies with all applicable federal, state, and local laws. For engines that are not destroyed, the engine shall be disposed of as specified in Subsections (g)(1)–(g)(2).

(1) For an original engine that is a Low NOx Rebuild Engine, the engine shall be sold and/or permanently relocated, separately or as part of a mobile source, to a location:

- (i) Outside of California and Baja California;
- (ii) Within California but outside the boundaries of the South Coast Air Basin provided that, prior to beginning operations outside of San Diego County, the engine is equipped with a Low NOx Rebuild Kit in accordance with the applicable Low NOx Rebuild Program; or
- (iii) Within the boundaries of the South Coast Air Basin provided that, prior to beginning operations outside of San Diego County, the engine is equipped with a Low NOx Rebuild Kit in accordance with the applicable Low NOx Rebuild Program and the mobile source's owner provides a demonstration approved by the Air Pollution Control Officer, the Air Resources Board, and the U. S. Environmental Protection Agency that the air quality of the South Coast Air Basin will not be degraded from the relocation and operation of the mobile source.

(2) For an original engine that is not a Low NOx Rebuild Engine, the engine shall be sold and/or permanently relocated, separately or as part of a mobile source, to a location:

- (i) Outside of California and Baja California;
- (ii) Within California but outside the boundaries of the South Coast Air Basin; or
- (iii) Within the boundaries of the South Coast Air Basin provided that, the engine was manufactured after October 1, 2002, and is certified to be in compliance with all applicable South Coast Air Quality Management District, state, and federal emission standards and the mobile source's owner provides a demonstration approved by the Air Pollution Control Officer, the Air Resources Board, and the U. S. Environmental Protection Agency that the air quality of the

South Coast Air Basin will not be degraded from the relocation and operation of the mobile source.

**(h) Ongoing Emission Reduction Monitoring and Correction**

**(1) Average Ongoing Emission Reductions**

For each MERC, or portion thereof, that is surrendered to provide offsets for a stationary source, the average ongoing emission reduction for the stationary source ongoing emission reduction monitoring year shall be calculated from the following equation:

$$E_o = \frac{4C_{ms}}{nD_l A_{of}} \sum_{i=1}^n A_{oi}$$

where:

$E_o$  = the average ongoing emission reduction, in tons per year;

$C_{ms}$  = the value of the MERC, or portion thereof, in tons per year;

$i$  = an index that labels individual calendar quarters in the MERC activity averaging period;

$n$  = the lesser of the maximum number of calendar quarters in the ongoing emission reduction average or the number of quarters that have elapsed from the beginning of the MERC activity averaging period to the end of the stationary source ongoing emission reduction monitoring year;

$D_l$  = the lifetime discount factor for the MERC determined in accordance with Subsection (f)(3) or (f)(4);

$A_{of}$  = the forecast annual average ongoing activity level of the mobile sources that form the basis of the MERC, in appropriate units; and

$A_{oi}$  = the  $i$ 'th quarter's ongoing activity level of the mobile sources that form the basis of the MERC, in the same units as the forecast annual average ongoing activity level.

Using an appropriate ongoing activity metric, the forecast annual average ongoing activity level shall be determined in the same manner as an annual average baseline activity level is determined pursuant to Subsection (d)(2).

**(2) Aggregate Average Ongoing Emission Reductions**

For each stationary source ongoing emission reduction monitoring year, the aggregate average ongoing emission reductions shall be calculated by the following equation:

$$E_{Oa} = \sum_{i=1}^m E_{Oi}$$

where:

$E_{Oa}$  = the aggregate average ongoing emission reductions, in tons per year;

$i$  = an index labeling individual MERCs;

$m$  = the total number of individual MERCs surrendered by a stationary source to provide new source review offsets;

$E_{Oi}$  = the average ongoing emission reductions for  $i$ 'th MERC, calculated in accordance with Subsection (h)(1).

### (3) MERC Emission Reduction Deficit

For each stationary source ongoing emission reduction monitoring year, the MERC emission reduction deficit, if any, shall be calculated by the following equation:

$$EM_d = a(1.2E_{pte} - C_{ssa}) - E_{Oa}$$

where:

$EM_d$  = the annual emission reduction deficit, in tons per year;

$a$  = the ongoing activity level compliance factor given in Table 3;

$E_{pte}$  = the stationary source's potential to emit determined pursuant to Rule 20.1 (c); and

$C_{ssa}$  = the aggregate value of the stationary source credits already surrendered to provide offsets for the stationary source, in tons per year.

**Table 3. Ongoing Activity Level Compliance Factor**

Number of years that have elapsed since the start of a stationary source's activity level monitoring period	Compliance factor
1	0.0
2	0.8
3	0.9
4 or more	1.0

(4) **MERC Emission Reduction Deficit Correction**

From the end of the ongoing emission reduction monitoring year in which a deficit occurs, the owner or operator of a stationary source that has a positive emission reduction deficit shall comply with the following schedule to correct the deficit:

(i) Within 6 calendar months submit an application to the District to sufficiently limit the stationary source's potential to emit to reduce the deficit in the ongoing emission reduction monitoring year to zero; and

(ii) Within 12 calendar months accept practicably enforceable permit conditions that limit the stationary source's potential to emit or surrender sufficient additional stationary source emission reduction credits granted under Rules 26.1–26.10 or sufficient MERCs that have a permanent and unlimited lifetime to reduce the deficit in the ongoing emission reduction monitoring year to zero.

For the sole purpose of determining if a deficit for a stationary source ongoing emission reduction monitoring year has been corrected, MERCs that are surrendered to the District before the end of the subsequent stationary source ongoing emission reduction monitoring year and that have an ongoing activity level monitoring period that begins after the end of the year in which the deficit occurred shall be treated as stationary source credits surrendered with a value equal to the credit value divided by the lifetime discount factor for the MERC when determining an annual emission reduction deficit in accordance with Subsection (h)(3).

**(i) Reserved**

**(j) Mobile Source Employment Monitoring**

The requirements of this Section shall apply to all MERC Projects based on HHD and MHD vehicles and shall not apply to MERC Projects based on marine vessels.

(1) **MERC Fractional Employment**

For each calendar year and for each group of equivalent-use–MERC mobile sources, the MERC fractional employment for each MERC that is represented by those mobile sources is calculated by:

$$f_e = \frac{\sum_{i=1}^m N_{ei}}{\sum_{i=1}^m N_{eci}}$$

where:

$f_e$  = the MERC fractional employment;

$i$  = an index labeling individual MERCs;

$m$  = the number of individual MERCs that are subject to employment monitoring with mobile sources and that are initially based on any mobile source in the group;

$N_{ei}$  = the number of equivalent-use-MERC mobile sources that form the initial basis of the  $i$ 'th MERC that are employed in a calendar year.

$N_{eci}$  = the number of equivalent-use-MERC mobile sources that form the initial basis of the  $i$ 'th MERC that were projected to be employed in the calendar year to calculate the full credit value.

In determining  $N_{ei}$  or  $N_{eci}$ , mobile sources employed for less than an entire calendar year shall be counted as a fraction. The fraction shall be determined by the dividing the sum of the number of calendar months the mobile source is in primary service status and the number of calendar months the mobile source is in reserve service status by 12.

## (2) MERC Fractional Employment in Primary Service

For each calendar year and for each group of equivalent-use-MERC mobile sources, the MERC fractional employment in primary service for each MERC that is represented by those mobile sources is calculated by:

$$f_p = \frac{\sum_{i=1}^m N_{pi}}{\sum_{i=1}^m N_{pci}}$$

where:

$f_p$  = the MERC fractional employment in primary service;

$i$  = an index labeling individual MERCs;

$m$  = the number of individual MERCs that are subject to employment monitoring and that are initially based on any mobile source in the group;

$N_{pi}$  = the number of equivalent-use-MERC mobile sources that form the initial basis of the  $i$ 'th MERC that are employed in primary service in a calendar year.

$N_{pci}$  = the number of equivalent-use-MERC mobile sources that form the initial basis of the  $i$ 'th MERC that were projected to be employed in primary service in the calendar year to calculate the full credit value.

In determining  $N_{pi}$  or  $N_{pci}$ , mobile sources employed in primary service for less than an entire calendar year shall be counted as a fraction. The fraction shall be determined by the dividing the number of calendar months the mobile source is in primary service status by 12.

(3) MERC Shortfall

In each calendar year during the mobile source employment monitoring period, for each group of equivalent-use-MERC mobile sources, a MERC shortfall occurs if:

- (i) The MERC fractional employment,  $f_e$ , is less than 0.8; or
- (ii) The MERC fractional employment in primary service,  $f_p$ , is less than 0.8.

(4) MERC Shortfall Correction

From the end of the calendar year in which a MERC shortfall occurs for any group of equivalent-use-MERC mobile sources that form the initial basis of a MERC(s) that has been surrendered to provide new source review offsets for a stationary source, the owner or operator of the stationary source shall:

- (i) Within 3 calendar months, estimate the resulting MERC shortfall, and submit supporting documentation for the estimate to the district;
- (ii) Within 6 calendar months submit an application to the District to limit the stationary source's potential to emit to reduce the MERC shortfall to zero; and
- (iii) Within 12 calendar months accept practicably enforceable permit conditions that limit the stationary source's potential to emit or surrender additional stationary source emission reductions credits granted under Rule 26.1–26.10 or sufficient MERCs to reduce the MERC shortfall to zero.

**(k) Subsequent Replacement or Repowering of Mobile Sources that Form the Basis of MERC**

If a mobile source that forms the basis of a MERC granted under this alternative program is itself replaced or repowered at any time during the credit lifetime, the replacement or repowered mobile source must have an emission factor that is less than or equal to the smaller of the following two emission factors:

- (1) The emission factor derived from any federal or state standard applicable to a new engine powering the replacement or repowered mobile source; or
- (2) The emission factor of the mobile source that is replaced or repowered.

**(l) Transference of MERCs**

MERCs granted under this emission reduction alternative program may be transferred in whole or in part by any means of written conveyance permitted by state law as specified in Rule 27 (c)(5) provided that the MERCs, under new ownership, meet all applicable criteria as set forth in this emission reduction alternative program and any applicable criteria of Rule 27. For purposes of this alternative program, the term "vehicle" in Rule 27 (c)(5) shall mean the same as the term "mobile source" as used in this alternative program. In addition to the information required by Rule 27 (c)(5), the baseline ongoing activity level and the lifetime discount factor

shall be included on the portion of the credit transferred and portion retained, if any, by a credit owner.

**(m) Refunding Credits for Innovative Emission Controls**

MERCs surrendered to provide new source review offsets may be refunded to the stationary source owner provided that the following requirements are satisfied:

(1) The Air Pollution Control Officer, with the concurrence of the U. S. Environmental Protection Agency, determines that the project requiring new source review offsets has the potential to demonstrate innovative emission control technology that is a significant advance in emission control for a category of stationary sources;

(2) Within three calendar years after the facility commences operation, the owner or operator of the stationary source that surrendered the MERCs applies to the District for a refund of some or all of the MERCs, or portions thereof, used as offsets;

(3) The owner or operator of the stationary source demonstrates that the stationary source can achieve a permanent lower potential to emit such that offsets would not have been necessary if that lower potential to emit could have been demonstrated at the time the credits were surrendered;

(4) The owner or operator of the stationary source accepts practicably enforceable permit conditions that limit the source's potential to emit to the lower level; and

(5) The authority to construct granted for the project or the final determination of compliance for the project under Rule 20.5 contains conditions allowing a refund of MERCs in accordance with this Section.

**(n) Recordkeeping and Reporting**

(1) For all replacement or repowered mobile sources that form the basis of a MERC, for the lesser of the credit lifetime or 20 years, the owner of the mobile source shall maintain calendar quarterly records of:

(i) Location where the mobile source is parked, garaged, or docked when not in operation.

(ii) Mobile source and mobile source engine identifications such as Vehicle Identification Number or Hull Number, engine manufacturer model designation, and engine serial number;

(iii) Identification of key engine components such as turbocharger, injectors, fuel pump, and electronic control program version;

(iv) Engine modifications;

(v) Sale, lease, accidental loss, repowering, or replacement, including the identity of the mobile source and mobile source engine involved and the identity of any mobile source and mobile source engine replacing or repowering the mobile source;

(vi) Source testing results and supporting information; and

(vii) Engine maintenance.

Except for engine maintenance records, on or before the last day of the month following each calendar quarter, the owner of the mobile source shall provide copies of these records for the preceding calendar quarter to the District and any owner of the MERC, or portion thereof, and any owner or operator of any stationary source for which the MERC, or a portion thereof, has been surrendered to provide a new source review offset. In addition, for any mobile sources that are subject to an approved enhanced maintenance program, the owner of the mobile source shall provide copies of these records in the manner specified in the enhanced maintenance program.

(2) For all replacement or repowered mobile sources that form the basis of a MERC, beginning at the start of the MERC activity monitoring period and for each of the succeeding ten years, the owner of the mobile source or group of equivalent mobile sources shall maintain calendar quarterly records of:

(i) Activity level in a metric specified in the MERC approval by the Air Pollution Control Officer;

(ii) Fuel use;

(iii) Hours of operation for each mobile source in San Diego County; and

(iv) Number, duration, and nature of any trips outside of San Diego County and Near Shore San Diego Coastal Waters for each mobile source.

On or before the last day of the month following each calendar quarter, the owner of the mobile source shall provide copies of these records for the preceding calendar quarter to the District and any owner of the MERC, or portion thereof, and the owner or operator of any stationary source for which the MERC, or a portion thereof, has been surrendered to provide a new source review offset.

(3) Beginning with the start of the ongoing emission reduction monitoring period, the owner or operator of a stationary source that surrenders a MERC to provide new source review offsets shall, on or before the last day of the second calendar month following each stationary source ongoing emission reduction monitoring year:

(i) For each ongoing emission reduction monitoring year, based on the quarterly activity levels submitted by the mobile source owners and the applicable calculation method specified in the alternative program, perform a calculation of the annual average and annual aggregate ongoing emission reductions and the ongoing emission reduction deficit for the MERCs used to offset the facility's emissions;

(ii) Provide an annual report to the District that summarizes the annual average ongoing emission reductions for each MERC; aggregate ongoing emission reductions; and the ongoing emission reduction deficit and provides supporting calculations and documentation; and

(iii) Notify the District if the calculated annual ongoing emission reduction deficit is positive and provide a compliance schedule to correct the ongoing emission reduction deficit in accordance with Subsection (h)(4).

(4) During the mobile source owner employment monitoring period, excluding marine vessels, for each mobile source that forms the initial basis of a MERC, the owner or operator shall maintain records of the nature and dates of changes in mobile source status from primary to reserve service or from reserve to primary service and the date any mobile source is sold, leased, replaced, repowered, lost by accident, or otherwise removed from the owner's fleet. In addition, the owner or operator shall maintain the following calendar year records:

(i) For each mobile source in a group of equivalent-use-MERC mobile sources, records of the number of calendar months, or portions thereof, the mobile source was in primary service status and the number calendar months, or portions thereof, the mobile source was in reserve service status;

(ii) For each group of equivalent-use-MERC mobile sources, records of the total number of mobile sources employed;

(iii) For each group of equivalent-use-MERC mobile sources, the total number of mobile sources employed in primary service;

(iv) For each MERC, records of the MERC fractional employment; and

(v) For each MERC, records of the MERC fractional employment in primary service.

On or before January 31 of the following calendar year, the owner of the mobile source shall provide copies of these records for the preceding calendar year to the District and any owner of the MERC, or portion thereof, and the owner or operator of any stationary source for which the MERC, or a portion thereof, has been surrendered to provide a new source review offset.

(5) Beginning with the second calendar year following the calendar year that the facility commences operations, the owner or operator of a stationary source that surrenders a MERC to provide new source review offsets shall, on or before March 1 of each calendar year:

(i) Based on information supplied by the mobile source owners for each MERC surrendered to the District to provide new source review offsets, notify the District if the MERC fractional employment is less than 0.8;

(ii) Based on information supplied by the mobile source owners for each MERC surrendered to the District to provide new source review offsets, notify the District if the MERC fractional employment in primary service is less than 0.8; and

(iii) If MERC fractional employment or fractional employment in primary service for any MERC is less than 0.8, provide a compliance schedule to correct the MERC(s) shortfall in accordance with Subsection (j)(4).

(6) For the duration of the credit lifetime, beginning with the MERC creation date, the owner or operator of any mobile source that forms the basis of a MERC granted under this alternative program shall make the mobile source available for source testing upon written request of the District, the Air Resources Board, or the U. S Environmental Protection Agency.

(7) Each mobile source that forms the basis of a MERC shall be equipped with a nonresettable totalizing clock hour meter, nonresettable totalizing odometer, or any other device specified by the Air Pollution Control Officer that is necessary to monitor ongoing emission reductions or mobile source employment.

(8) All records shall be maintained on-site or, with the advanced written approval of the Air Pollution Control Officer, an alternative location for a period of five years from the date of the record.

(9) The provisions of Rule 27 (d)(1) shall not apply to MERCs created under this alternative program.

**(o) Public Notice and Comment Period**

After receipt of a completed application for a MERC and after completing an evaluation of the application for compliance with applicable District rules and prior to approving granting of a MERC, the Air Pollution Control Officer shall cause to be published in at least one newspaper of general circulation within the District, and be sent to any individual submitting a written request to the Air Pollution Control Officer for notification, a notice stating the preliminary decision of the Air Pollution Control Officer to approve the creation of emission reduction credits and inviting written public comment for a thirty-day period following the date of publication. During or following this period, the Air Pollution Control Officer may elect to hold a public meeting to receive oral comments from the public.

The notice shall describe generally the nature and areas of operation of the mobile source that are the basis for the MERC and shall identify the location(s) where copies of the District evaluation, the MERC application, and related documents may be viewed. A copy of the notice, the District evaluation and the proposed MERC documents shall be provided to the U. S. Environmental Projection Agency and the Air Resources Board on or before commencement of the 30-day public comment period.

After considering all comments received, the Air Pollution Control Officer shall make a final decision within thirty days following the close of the comment period, or following a scheduled public meeting, if later.

## Alternative Program Approval

The Director of the San Diego County Air Pollution Control District has delegated to the Assistant Director the responsibility of approving this alternative mobile source emission reduction program. Pursuant to District Rule 27 Subsection (c)(1)(vi) and after considering the certified Final Environmental Impact Report for this program, as Assistant Director, I approve this alternative mobile source emission reduction program for the San Diego County Air Pollution Control District.

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RICHARD J. SMITH

Title: Assistant Director  
San Diego County Air Pollution Control District

Date: \_\_\_\_\_