

AIR QUALITY

MANAGEMENT DISTRICT

AUTHORITY TO CONSTRUCT EVALUATION

APPLICATION NO.:	A/C 26098
REVIEW STARTING DATE:	2/19/19
ISSUING ENGINEER:	Felix Trujillo, Jr.

I. PROJECT DESCRIPTION:

FACILITY NAME: Kiefer Landfill, Department of Waste Management and Recycling, County of Sacramento

LOCATION: 12701 Kiefer Blvd., Sloughouse, CA 95683

PROPOSAL: Authority to Construct and Permit to Operate to modify existing Permit to Operate 25438 to renew expiring Emission Reduction Credits (ERCs).

INTRODUCTION: Kiefer Landfill, Department of Waste Management and Recycling, County of Sacramento operates Kiefer Landfill, a municipal solid waste landfill. Kiefer Landfill, Department of Waste Management and Recycling, County of Sacramento is seeking an Authority to Construct and a Permit to Operate for the modification of existing Permit to Operate 25438 to renew expiring NOx, VOC, SOx and PM10 ERCs. The applicant is proposing to lease the ERCs from the SMAQMD Priority Reserve Bank - Essential Public Services Account.

The existing ERCs for P/O 25438 expire on 4/1/19. The applicant is proposing to renew the ERCs for a 5 year term, which would expire on 4/1/24.

EQUIPMENT DESCRIPTION:

A/C 26098 (Previous P/O 25438): Auxiliary IC engine on a Street Sweeper

Model:	4045HFC04
Serial No.:	PE4045U053337
EPA Family No.:	GJDXL04.5315
EPA Emission Category:	Tier 4Final
Date of Manufacture:	2016
Engine Type:	4-cycle
Aspiration:	Turbocharged
Engine BHP:	99 hp at 2200 rpm
Displacement:	4.5 liter
Fuel:	CARB diesel/Renewable diesel
Equipment Driven:	Vacuum system and sweeper brushes on a street sweeper

PROCESS RATE/FUEL USAGE:

Equipment	Diesel Fuel Usage		
	Gallons/Hour (A)	Gallons/Day	Gallons/Quarter
Engine – 4045HFC04 - 99 HP	4.25	102	2,210

(A) Hourly rate is based on CARB Executive Order U-R-004-0523-1, 24 hours/day and 520 hour/quarter of operation.

OPERATING SCHEDULE: The IC engine will be permitted to operate 24 hours/day and 520 hours/calendar quarter. The street sweeper is used to comply with the stormwater and dust control regulations that govern the operation of the solid waste management system. In order to avoid restricting the engine to a level that may conflict with other solid waste management regulations, the engine will be allowed to operate 24 hours/day.

CONTROL EQUIPMENT EVALUATION: The engine is certified to the Tier 4 Final non-road emission standards.

II. EMISSIONS CALCULATIONS:

- HISTORIC POTENTIAL EMISSIONS:** Pursuant to Rules 202 and 214, Section 229, the renewing of ERCs is not considered to be a modification, as explained in the NSR Compliance section of this evaluation on Page 3. Therefore, this section is not applicable. Although not applicable, the Historic Potential Emissions are equal to the Proposed Potential to Emit.
- PROPOSED POTENTIAL TO EMIT:** This permitting action does not result in a change of operation or emissions. The purpose of this permitting action is to only renew expiring NOx, VOC, SOx and PM10 ERCs.

Pollutant	Emission Factor g/hp-hr (A)	Proposed Potential to Emit (B)					
		lb/day	Quarter 1 lb/quarter	Quarter 2 lb/quarter	Quarter 3 lb/quarter	Quarter 4 lb/quarter	lb/year
VOC	0.14	0.7	16	16	16	16	64
NOx	0.30	1.6	34	34	34	34	136
SOx	0.005	0.0	1	1	1	1	4
PM10	0.01	0.1	1	1	1	1	4
PM2.5	0.01	0.1	1	1	1	1	4
CO	0.67	3.5	76	76	76	76	304
GHG	519	1.4 ton/day	29 ton/quarter	29 ton/quarter	29 ton/quarter	29 ton/quarter	116 ton/year
Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A

- (A) Emission factors for NOx, VOC and PM10 are based on the EPA non-road Tier 4 Final standard. The CO emission factor is based on the certified emission of CARB Executive Order U-R-004-0315. PM10 and PM2.5 emission factors include both the condensable portion and the filterable portion of the particulates. The filterable portion is based on the certification standard and the condensable portion is derived using the condensable to filterable fraction, taken from AP-42, Table 3.4-2 (10/96), multiplied by the certification standard $((0.01 \text{ g/hp-hr} + 0.01 \text{ g/hp-hr} * 0.0077/0.0496) = 0.01 \text{ g/hp-hr})$ and assuming that all PM is PM10 and PM2.5. SOx emission factor is based on AP-42, Table 3.3-1 (10/96) using a fuel sulfur content of 15 ppm. GHG emission factor is expressed as CO2e and is from EPA's Mandatory Reporting of Greenhouse Gases Rule (78 FR 71948, Nov. 29, 2013), Tables C-1 & C-2.
- (B) Emissions are based on 99 bhp, 24 hours/day, 520 hours/quarter. The yearly emissions are equal to the cumulative of the quarterly emissions.

III. COMPLIANCE WITH RULES AND REGULATIONS:

1. H&S § 42301.6 (AB 3205) COMPLIANCE: The equipment only operates within the boundaries of the landfill. The landfill is not located within 1,000 feet from the outer boundary of a school site. Therefore the school public noticing requirements of H&S Code § 42301.6 do not apply.

2. NSR COMPLIANCE:

Rule 202 - New Source Review

Pursuant to Section 229 of SMAQMD Rule 202, New Source Review, the renewal of ERCs is not considered a modification because the project is not a physical change, change in method of operation, or addition. Therefore, the project does not meet the criteria of a modification under District Rule 202 and this permitting action is not subject to Federal New Source Review.

Rule 214 – Federal New Source Review

Pursuant to Section 229 of SMAQMD Rule 214, Federal New Source Review, the renewal of ERCs is not considered a modification because the project is not a physical change, change in method of operation, or addition. Therefore, the project does not meet the criteria of a modification under District Rule 214 and this permitting action is not subject to Federal New Source Review.

Rule 203 – Prevention of Significant Deterioration

A source or modification triggers PSD if:

- Its potential to emit any one pollutant is greater than or equal to 100 tons/year if it is one of the 28 selected industrial categories in 42 U.S.C. Section 7479 (1), or greater than or equal to 250 tons/year for all other categories; or
- It is part of a major stationary source and the project's net emissions increase for any pollutant will be greater than the significance levels listed below:

Pollutant	Level of Significance (Tons/Yr)
CO	100
NOx	40
SOx	40
PM	25

Pollutant	Level of Significance (Tons/Yr)
PM10	15
PM2.5	10 (PM2.5) or 40 (SO2) or 40 (NO)
Ozone	40 of NOx or VOCs
Lead	0.6
Fluorides	3
Sulfuric acid mist	7
H ₂ S	10
Total reduced sulfur (including H ₂ S)	10
Reduced sulfur compounds (including H ₂ S)	10
Greenhouse Gases (CO ₂ e)	75,000

Pursuant to SMAQMD Rule 203, Section 205.1, the renewal of ERCs is not considered a major modification because the project does not result in a physical change or change in method of operation and does not result in any increase in emissions. Therefore, this permit action is not subject to Rule 203.

Rule 204 – Emission Reduction Credits

The applicant is proposing to provide NOx, VOC, SOx and PM10 ERCs consisting of leased ERCs from the Essential Public Services Account of the SMAQMD Priority Reserve Bank.

This street sweeper (P/O 25438) was permitted as a replacement of the street sweeper under P/O 24897. This street sweeper was allowed to operate under the credits that were originally issued to the previous street sweeper engine (P/O 24897), as the credits were still valid until 4/1/19. This street sweeper engine is a Tier 4, which replaced a Tier 3 engine (P/O 24897). Therefore, the credits issued to the Tier 3 engine were higher due to the higher emissions. The District included a condition on the permit (P/O 25438) that stated the District would recalculate the credits to accurately reflect the emissions from the Tier 4 engine upon renewal of the credits. This permitting action does not result in an increase in emissions or credits. Therefore, this permitting action will recalculate and renew the NOx, VOC, SOx and PM10 credits for the Tier 4 engine.

ERC Net Change (lb/quarter)				
	NOx	VOC	SOx	PM10
Post-Project ERCs	34	16	1	1
Pre-Project ERCs	339	129	6	28
Net Change	-305	-113	-5	-27

The street sweeper engine is eligible to obtain ERCs from the Essential Public Services Account of the SMAQMD Priority Reserve Bank. SMAQMD Rule 205 Section 204 considers "solid waste management systems, including landfill gas control or processing systems" as essential public services. Kiefer Landfill states that the use of street sweepers is required in order for them to comply with stormwater and dust control regulations that govern the operation of their solid waste management system.

The following ERCs will be renewed at a 1:1 offset ratio, as established during the initial permitting of the equipment, but will be recalculated based on the Tier 4 emissions of this engine:

A/C 26098: IC Engine

Equipment	Amount of Project Emissions for which ERCs are to be provided lb/quarter			
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
IC Engine				
NOx	34	34	34	34
VOC	16	16	16	16
PM10	1	1	1	1
SOx	1	1	1	1

Rule 207 – Title V – Federal Operating Permit Program

Pursuant to Section 202, a permit revision that is not a modification as defined in by the District's new source review rule is defined as an administrative amendment. As shown in the NSR Compliance Section of District Rules 202 New Source Review and 214 Federal New Source Review, the renewal of ERCs is not considered a modification. Therefore, this permitting action is considered an administrative Title V permit amendment. The facility will be required to submit an administrative Title V amendment application in order to incorporate these changes into the Facility's Title V permit.

Rule 217 – Public Notice Requirements for Permits

Sections 401-402 – CARB, EPA, and Public Notification: In general this project would not trigger noticing requirements as the project would not result in an increase above the levels specified below. However, the original ERC project was only noticed for a 3 year lease. Since the original project required noticing, the SMAQMD will also subject the renewal of the ERCs to public notice.

<u>Pollutant</u>	<u>lb/qtr</u>
VOC	5,000
NOx	5,000
SOx	9,200
PM10	7,300
PM2.5	10 TPY
CO	49,500

Pursuant to Sections 401 and 402, the following noticing procedures will be followed:

- a. Publish a public notice in the Sacramento Bee newspaper and request comments within the 30 day review period regarding the use of ERCs for the project.
- b. Transmit to the U.S. EPA Region 9 and CARB the proposed Engineering Evaluation and Authority to Construct and request comments within the 30 day review period.

3. PROHIBITORY RULE COMPLIANCE:

Rule 401 - Ringelmann Chart

The permit will include conditions requiring that the IC engine comply with the Ringelmann No. 1 or 20% opacity standard and in the District's experience, a properly maintained engine is able to meet the requirement. The equipment will be inspected prior to the issuance of the permit to operate and on a regular basis thereafter to ensure continuous compliance. Therefore, this unit will be in compliance with the requirements of this rule.

Rule 402 – Nuisance

The equipment was previously reviewed for Toxics and nuisance. The applicant is not proposing any changes or increases under this permitting action. Therefore, the facility is in compliance with the requirements of this rule.

Rule 406 - Specific Contaminants

The proposed engine is not expected to exceed the emissions limit of 0.2% by volume sulfur compound as SO₂ and 0.1 gr/dscf for combustion contaminants calculated to 12% CO₂.

Diesel Fuel F-Factor	=	9190 dscf/mmBTU
Molar Volume	=	385.3 ft ³ /mol
Diesel HHV	=	19,300 BTU/lb
Conversion Factor	=	15.432 gr/g
PM10 Emission Factor	=	0.01 g/hp-hr
SO ₂ Emission Factor	=	0.005 g/hp-hr
BSFC	=	7000 BTU/hp-hr
Weight % C in Diesel	=	87 % or 0.87 lb C/lb fuel
C to CO ₂ Conversion Efficiency	=	0.99

PM10 Concentration (combustion contaminants):

- A. Calculate uncorrected grain loading
 = (0.01 g/hp-hr) x (15.432 gr/g) x (hp-hr/7000 BTU) x (1E6 BTU/mmBTU) x (mmBTU/9190 dscf)
 = 0.0024 gr/dscf
- B. Calculate CO₂ emission factor (lb CO₂/mmbtu) assuming 100% C to CO₂ conversion
 = (0.87 lb C/lb fuel) x (mol C/12 lb C) x (mol CO₂/mol C) x (44 lb CO₂/mol CO₂) x
 (lb fuel/19300 BTU) x (1E6 BTU/mmBTU)
 = 165.2849741 lb CO₂/mmBTU
- C. Calculate lb CO₂/mmBTU at 99% Conversion
 = 165.2849741 lb CO₂/mmBTU x 99%
 = 163.6321244 lb CO₂/mmBTU
- D. Calculate volume % of CO₂ in Exhaust Gas
 = % CO₂
 = mol CO₂/mol exhaust
 = (163.6321244 lb CO₂/mmBTU) x (mol CO₂/44 lb CO₂) x (mmBTU/9190 dscf) x
 (385.3 dscf/mol exhaust)
 = 0.155919125 mol CO₂/mol exhaust or 15.5919125 % CO₂

- E. Calculate corrected grain loading
= (0.04078097 gr/dscf) x (12% CO₂/15.5919125% CO₂)
= 0.031 gr/dscf corrected to 12% CO₂

OR

Simplified Equation

$$\begin{aligned} &= (0.01 \text{ g/hp-hr}) \times (15.432 \text{ gr/g}) \times (\text{hp-hr}/7000 \text{ BTU}) \times (0.12 \text{ mol CO}_2/\text{mol exhaust}) \times \\ &\quad (\text{lb fuel}/0.87 \text{ lb C}) \times (12 \text{ lb C/mol C}) \times (\text{mol C/mol CO}_2) \times (19300 \text{ BTU/lb fuel}) / (0.99) \times \\ &\quad (\text{mol exhaust}/385.3 \text{ dscf}) \\ &= 0.0002 \text{ gr/dscf corrected to 12\% CO}_2 \end{aligned}$$

SO₂ Concentration (% SO₂ by volume):

The following calculation is at 0% excess air which represents worst case.

$$\begin{aligned} &= (0.005 \text{ g/hp-hr}) \times (\text{lb SO}_2/453.6 \text{ g}) \times (\text{hp-hr}/7000 \text{ BTU}) \times (1\text{E}6 \text{ BTU/mmBTU}) \times (\text{mmBTU}/9190 \text{ dscf}) \\ &\quad \times (\text{mol SO}_2/64 \text{ lb SO}_2) \times (385.3 \text{ dscf/mol exhaust}) \\ &= 0.000001032 \text{ mol SO}_2/\text{mol exhaust or } 0.0001032 \text{ \% SO}_2 \end{aligned}$$

The rule emission limits for SO₂ and PM are 0.2% SO₂ by volume and 0.1 grains/cf at 12% CO₂, respectively. Therefore, the emissions from the engines comply with Rule 406.

Rule 420 - Sulfur Content of Fuels

This rule limits the sulfur content of fuel. It was last amended in 1981, and CARB has subsequently adopted more stringent standards, which limit the sulfur content of diesel no. 2 motor fuel @ <0.0015%S. The engine permits will include conditions limiting the use of fuel to CARB-approved fuels or alternative fuels that comply with the CARB regulations, which will ensure compliance with this Rule.

4. NSPS COMPLIANCE:

The list of all adopted New Source Performance Standards as listed in 40 CFR 60 (<https://www.epa.gov/stationary-sources-air-pollution/new-source-performance-standards>) were reviewed to determine if the proposed project is subject to one or more of these regulations. One applicable provision was identified:

SUBPART IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines are applicable to any of the following:

- A. Engines with a displacement of less than 30 liters per cylinder where the model year is 2007 or later for non-fire pump engines and the model year listed in Table 3 of this subpart for fire pump engines.
- B. Owners or operators of engines that commence construction after July 11, 2005 where the engine is manufactured after April 1, 2006 for a non-fire pump engine or for engines manufactured as a certified National Fire Protection Association (NFPA) fire pump after July 1, 2006.
- C. Owners and operators of engines that modify or reconstruct their engine after July 11, 2005.

This subpart is applicable to stationary compression ignition IC engines. Pursuant to Section 60.219 of this regulation, non-road engines are not considered stationary IC engines. Therefore, this subpart is not applicable to this engine.

5. NESHAP COMPLIANCE:

NESHAPs under 40 CFR, Part 61: The list of all adopted National Emission Standards for Hazardous Air Pollutants (<https://www.epa.gov/stationary-sources-air-pollution/national-emission-standards-hazardous-air-pollutants-neshap-9>) were reviewed to determine if the proposed project is subject to one or more of these regulations. There are currently no 40 CFR, Part 61 NESHAPs applicable to this source category.

NESHAPs under 40 CFR, Part 63: Due to the District not being delegated for the Part 63 NESHAPs, all Part 63 NESHAPs are enforced as Air Toxics Control Measures (ATCMs). The list of all adopted National Emission Standards for Hazardous Air Pollutants (<https://www.epa.gov/stationary-sources-air-pollution/national-emission-standards-hazardous-air-pollutants-neshap-9>) were reviewed to determine if the proposed project is subject to one or more of these regulations. One applicable provision was identified:

Subpart ZZZZ – National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at both major and area sources of HAP emissions.

This subpart is applicable to stationary compression ignition IC engines. Pursuant to Section 63.6675 of this regulation, non-road engines are not considered stationary IC engines. Therefore, this subpart is not applicable to this engine.

- 6. ATCM COMPLIANCE:** The list of all adopted Airborne Toxic Control Measures (<http://www.arb.ca.gov/toxics/atcm/atcm.htm>) was reviewed to determine if the proposed project is subject to one or more of these regulations.

Airborne Toxic Control Measure For Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater (Title 17, CCR Sections 93116-93116.5 (Effective November 30, 2018):

Per section 93116.1(b)(9) of the Portable ATCM, engines used exclusively on street sweepers that are not subject to Title 13, CCR, Section 2022, shall meet all applicable requirements in Title 13, CCR, Section 2025.

Even though this engine is not subject to the Portable ATCM requirements, the engine would meet all of the Portable ATCM requirements since it is certified to the Tier 4 Final standards (CARB Executive Order U-R0004-0523-1).

- 7. REGULATION TO REDUCE EMISSIONS OF DIESEL PARTICULATE MATTER, OXIDES OF NITROGEN AND OTHER CRITERIA POLLUTANTS FROM IN-USE HEAVY-DUTY DIESEL-FUELED VEHICLES (TITLE 13, CCR SECTION 2025):**

The purpose of this regulation is to reduce emissions of diesel particulate matter (PM), oxides of nitrogen (NOx) and other criteria pollutant emissions from in-use diesel-fueled vehicles. This rule applies to vehicles that operate on diesel-fuel, dual-fuel or alternative diesel fuel.


Section 2025(e) sets general requirements and options for fleet owners in order to get their fleets into compliance with the requirements of this regulation. The Air Resources Board is the agency that is responsible for the enforcement of this regulation. Therefore, ARB will be responsible to determine how a facilities' fleet will comply with the requirements of this regulation.

Section 2025(n)(1) requires the auxiliary engine to either meet PM BACT or be upgraded to a

2010 model year emissions equivalent engine. Section 2025(d)(47) defines PM BACT as an engine that is equipped with an original equipment manufacturer (OEM) diesel particulate filter and certified to meet the 0.01 g/bhp-hr certification standard. The engine has been manufactured with a diesel particulate that meets the 0.01 b/bhp-hr standard. Section 2025(d)(3)(F) includes under the definition of "2010 Model Year Emissions Equivalent Engine" as an off-road engine certified to the Tier 4 Final engine emissions standards. The street sweeper auxiliary engine is certified to the Tier 4 Final standards. Therefore, the auxiliary engine is in compliance with the requirements of this regulation. A condition will be placed on the permit requiring the engine to meet the requirements of this Regulation.

IV. RECOMMENDATION: This equipment will comply with all applicable District rules and regulations. An authority to construct to renew expiring ERCs should be issued to Kiefer Landfill, Department of Waste Management and Recycling, County of Sacramento with the following conditions.

Refer to conditions in Authorities to Construct Nos. 26098

REVIEWED BY:  DATE: 2-25-19

APPROVED BY:  DATE: 3/29/19

ATTACHMENT A
Previous P/O – 25438

ATTACHMENT A
Previous P/O – 25438



AIR QUALITY
MANAGEMENT DISTRICT

PERMIT TO OPERATE

ISSUED TO: **KIEFER LANDFILL, DEPARTMENT OF WASTE MANAGEMENT AND RECYCLING, COUNTY OF SACRAMENT**

EQUIPMENT LOCATION: **12701 KIEFER BLVD., SLOUGHHOUSE, CA 95683**

PERMIT NO.	EQUIPMENT DESCRIPTION
25438	IC ENGINE NON-ROAD, MAKE: JOHN DEERE, MODEL: 4045HF, SERIAL NO.: PE4045U053337, 99 BHP @ 2,200 RPM, 4.5 L DISPLACEMENT, DIESEL FIRED, DRIVING A DRIVING A VACUUM SYSTEM AND BRUSHES ON A STREET SWEEPER.

SUBJECT TO THE FOLLOWING CONDITIONS:

GENERAL

1. The permit holder agrees to indemnify and defend SMAQMD, its officers, agents, and employees if this permit or CEQA or NEPA is challenged in state or federal court. This indemnification includes attorney fees awarded against SMAQMD, as well as attorney fees, court costs, legal fees, and other expenses incurred in defending the challenge. The District will provide written notice to the permit holder within 5 days if it receives a petition, complaint or other legal notice by a third party challenging this Permit to Operate or CEQA or NEPA. The permit holder may, within 10 days of notification, request cancellation of the Permit to Operate. If the permit holder requests cancellation, SMAQMD will cancel the permit within 5 days, and will notify the plaintiffs of the cancellation and request dismissal of the litigation.
[Basis: SMAQMD Rule 201, Section 405]
2. The equipment must be properly maintained and operated in accordance with the information submitted with the application and the manufacturer's recommendations at all times.
[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 408.1]
3. The Air Pollution Control Officer and/or authorized representatives must be permitted to do all of the following:
 - A. Enter the source premises or any location which any records required by this Permit to Operate are kept.
 - B. Access and copy any records required by this Permit to Operate.

DATE ISSUED: 02-20-2019
DATE EXPIRES: 01-25-2020 (UNLESS RENEWED)

ALBERTO AYALA, PH.D., M.S.E.
AIR POLLUTION CONTROL OFFICER

BY: 

PERMIT NO.: 25438

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- C. Inspect or review any equipment, operation, or method required under this Permit to Operate.
- D. Sample emissions from the source or require samples to be taken.

[Basis: SMAQMD Rule 201, Section 405]

- 4. This Permit to Operate does not authorize the emission of air contaminants in excess of those allowed by Division 26, Part 4, Chapter 3, of the California Health and Safety Code or the SMAQMD Rules and Regulations.

[Basis: SMAQMD Rule 201, Sections 303.1, 405]

- 5. The facility may not discharge air contaminants or other materials that cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

[Basis: SMAQMD Rule 402, Section 301]

- 6. A legible copy of this Permit to Operate must be maintained on the premises with the equipment.

[Basis: SMAQMD Rule 201, Section 401]

EMISSIONS LIMITATIONS

- 7. The IC engine must not discharge into the atmosphere any visible air contaminant other than uncombined water vapor for a period or periods aggregating more than three minutes in any one hour if the discharge is as dark or darker than Ringelmann No. 1 or is equal to or greater than 20% opacity.

[Basis: SMAQMD Rule 401, Section 301]

- 8. The portable IC engine must meet the following BACT standards:

- A. EPA-certified Tier 4 engine,

- B. An engine that meets the following standards:

- NOx: 0.30 g/hp-hr

- VOC: 0.14 g/hp-hr

- C. Use of CARB-approved diesel fuel or a fuel that meets the CARB requirements in 17 CCR Section 93115.5

[Basis: SMAQMD Rule 202, Section 408.2.a and Title 13 CCR, Section 2025]

- 9. The emissions from the IC engine must not exceed the following:

[Basis: SMAQMD Rules 201, Section 405]

Pollutant	Emission Factor g/hp-hr (A)	Emission Limits (B)					
		Daily lb/day	Quarter 1 lb/quarter	Quarter 2 lb/quarter	Quarter 3 lb/quarter	Quarter 4 lb/quarter	Annual lb/year
VOC	0.14	0.7	16	16	16	16	64
NOx	0.30	1.6	34	34	34	34	136
SOx	0.005	0.0	1	1	1	1	4

SACRAMENTO METROPOLITAN
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Pollutant	Emission Factor g/hp-hr (A)	Emission Limits (B)					
		Daily lb/day	Quarter 1 lb/quarter	Quarter 2 lb/quarter	Quarter 3 lb/quarter	Quarter 4 lb/quarter	Annual lb/year
PM10	0.01	0.1	1	1	1	1	4
PM2.5	0.01	0.1	1	1	1	1	4
CO	0.67	3.5	76	76	76	76	304

- (A) Emission factors for NOx, VOC and PM10 are based on the EPA non-road Tier 4 Final standard. The CO emission factor is based on the certified emission of CARB Executive Order U-R-004-0315. PM10 and PM2.5 emission factors include both the condensable portion and the filterable portion of the particulates. The filterable portion is based on the certification standard and the condensable portion is derived using the condensable to filterable fraction, taken from AP-42, Table 3.4-2 (10/96), multiplied by the certification standard $((0.01 \text{ g/hp-hr} + 0.01 \text{ g/hp-hr} * 0.0077/0.0496) = 0.01 \text{ g/hp-hr})$ and assuming that all PM is PM10 and PM2.5. SOx emission factor is based on AP-42, Table 3.3-1 (10/96) using a fuel sulfur content of 15 ppm.
- (B) Emissions are based on 99 bhp, 24 hours/day, and 520 hours/quarter. The yearly emissions are equal to the cumulative of the quarterly emissions.

EQUIPMENT OPERATION

10. The IC engine must not remain at the same location for more than 12 consecutive months.
- A. "Location" is defined as any single site at a building, structure, facility or installation by SMAQMD Rule 412 Section 208.
 [Basis: SMAQMD Rule 201, Section 405]
11. The IC engine must not operate more than the following hours:
 [Basis: SMAQMD Rules 201, Section 405]

Equipment	Maximum Allowable Operating Hours	
	hours/day	hours/quarter
IC Engine	24	520

12. The IC engine must be equipped with a non-resetting totalizing hour meter.
 [Basis: SMAQMD Rule 201, Section 405]
13. To determine whether the engine complies with opacity requirements, the Air Pollution Control Officer or designee may require the permit holder to operate the IC engine during a SMAQMD inspection. The inspection will be conducted during daylight hours, and the IC engine must be operated at maximum anticipated load and from a cold start condition.
 [Basis: SMAQMD Rule 201, Section 405]
14. The IC engine may only be fueled with a CARB-approved diesel fuel or a fuel that meets the CARB requirements in 17 CCR Section 93116.3.
 [Basis: SMAQMD Rule 202, Section 301]

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15. The exhaust stack of the IC engine must exit vertically and must not be obstructed during engine operation. A flapper-type rain cap is permitted provided it does not impede the vertical exhaust flow.
[Basis: SMAQMD Rule 201, Section 405 and Rule 402, Section 301]
16. The IC engine must comply with the requirements of Title 13 California Code of Regulations, Section 2025 *Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants, from In-Use Diesel-Fueled Vehicles.*
[Basis: Title 13 CCR, Section 2025]

RECORD KEEPING & REPORTING

17. The following records must be continuously maintained onsite for the most recent five year period and must be made available to the SMAQMD Air Pollution Control Officer upon request. Quarterly records must be made available for inspection within 30 days of the end of the previous quarter.
[Basis: SMAQMD Rule 201, Section 405]

Frequency	Information to be Recorded
Quarterly	A. The number of hours that the IC engine operated. (hours/quarter)

18. The permit holder must, upon determination of applicability and written notification by the District, comply with all applicable requirements of the Air Toxics "Hot Spots" Information and Assessment Act (California Health and Safety Code Section 44300 et seq.).
[Basis: SMAQMD Rule 201, Section 303.1]

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EMISSION OFFSETS

19. The County of Sacramento Department of Waste Management and Recycling (Kiefer Landfill) must provide sufficient emission reduction credits to the Air Pollution Control Officer to fully offset the following amount of emissions:

[Basis: SMAQMD Rule 202, Section 302 and Rule 214, Section 302]

Pollutant	Credits from the Essential Public Services Bank Account (A) lb/quarter			
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
VOC	129	129	129	129
NOx	339	339	339	339
SOx	6	6	6	6
PM10	28	28	28	28

(A) These credits are returned to the Priority Reserve Bank if the permit to operate is surrendered, revoked, not renewed or ownership is transferred.

(B) These credits under SMAQMD Priority Reserve Bank Loan No. P16-1003 were issued to the replaced engine under P/O 23679 and will be reassessed for this engine upon expiration of Loan P16-1003. These credits were based on the Tier 3 standards and the credits for the replacement engine will be based on the Tier 4 Final Standards, which will result in lower amounts of credits.

20. The following emission reduction credits (ERCs) have been provided by the County of Sacramento Department of Waste Management and Recycling (Kiefer Landfill) to fully offset the emissions specified in Condition No. 18:

[Basis: SMAQMD Rule 202, Sections 408 and 409, Rule 205, Section 316, and Rule 214, Sections 408 and 409]

Emission Reduction Credits	Pollutant	Emission Offsets Provided (lb/quarter) (A)(B)(C)			
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Essential Public Services Account SMAQMD Priority Reserve Bank P16-1003	VOC	129	129	129	129
	NOx	339	339	339	339
	SOx	6	6	6	6
	PM10	28	28	28	28

(A) Emission offset provided at an offset ratio of 1.0 to 1.0.

(B) These credits are returned to the Priority Reserve Bank if the permit to operate is surrendered, revoked, not renewed or ownership is transferred.

(C) These credits under SMAQMD Priority Reserve Bank Loan No. P16-1003 were issued to the replaced engine under P/O 23679 and will be reassessed for this engine upon expiration of Loan P16-1003. These credits were based on

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the Tier 3 standards and the credits for the replacement engine will be based on the Tier 4 Final Standards, which will result in lower amounts of credits.

21. The borrowed emission reduction credits specified in Condition No. 20 are valid only if the facility operates in a manner consistent with the requirements of Rule 205 – COMMUNITY BANK AND PRIORITY RESERVE BANK and the facts, including the information provided in the application, that were presented to the Board of Directors
[Basis: SMAQMD Rule 205, Section 307.7]
22. In order for ownership of this process to be transferred, the new owner must provide replacement credits for those credits that were returned pursuant to Condition No. 20.
[Basis: SMAQMD Rule 205, Section 315]
23. **This permit will expire on April 1, 2019, unless replacement credits have been provided.** To replace credits specified in Condition No. 20: The facility must submit an application to modify the current permit six months prior to April 1, 2019. Failure to provide replacement credits after April 1, 2019, will require the facility to reapply for a permit and the equipment will be subject to Rule 202 New Source Review and Rule 214 Federal New Source Review at the time of re-permitting.
[Basis: SMAQMD Rule 205, Sections 307 and 312]

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Your application for this air quality Permit to Operate was evaluated for compliance with Sacramento Metropolitan Air Quality Management District (SMAQMD), state and federal air quality rules. The following list identifies the rules that most commonly apply to the operation of your equipment. Other rules may also be applicable.

<u>SMAQMD RULE NO.</u>	<u>RULE TITLE</u>
201	GENERAL PERMIT REQUIREMENTS (8-24-06)
202	NEW SOURCE REVIEW (8-23-12)
401	RINGELMANN CHART (4-19-83)
402	NUISANCE (8-3-77)
406	SPECIFIC CONTAMINANTS (12-6-78)
420	SULFUR CONTENT OF FUELS (8-13-81)
<u>STATE</u>	<u>REGULATION TITLE</u>
TITLE 17 CCR SECTION 93115	CARB AIR TOXICS CONTROL MEASURES - STATIONARY COMPRESSION IGNITION ENGINES
<u>FEDERAL</u>	<u>REGULATION TITLE</u>
40 CFR 60 SUBPART IIII	NEW SOURCE PERFORMANCE STANDARDS - STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES
40 CFR 63 SUBPART ZZZZ	NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS - STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES

The conditions on this Permit to Operate reflect some, but not all, of the requirements of these rules. Because other rule requirements may apply to the operation, the permit holder should be familiar with all of the rules and related requirements. In addition, because future changes in prohibitory rules may establish more stringent requirements that may supersede the conditions listed here, the permit holder should monitor proposed rules and rule adoption actions at SMAQMD.

For further information please consult your SMAQMD rulebook or contact the SMAQMD for assistance.