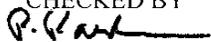


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**Permit to Operate**      *(Pc/PO)*

**COMPANY NAME, MAILING AND LOCATION ADDRESS:**

Ultramar Inc., SCAQMD ID# 800026  
 2402 E. Anaheim Street  
 Wilmington CA 90744

**EQUIPMENT DESCRIPTION:**

The changes to the equipment description in Section D are shown below:

**Section D of the Ultramar's Facility Permit, ID# 800026**

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
<b>Process 19: PETROLEUM MISCELLANEOUS</b>					
<b>System 2: EMERGENCY EQUIPMENT</b>					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, 755 BHP, CUMMINS, MODEL NO. QSX15- G9, LEAN BURN, DIESEL FUEL, AFTERCOOLER, TURBOCHARGER  A/N: 487438	D1639		NOX: <u>PROCESS</u> <u>SOURCE:</u>  SOX: <u>PROCESS</u> <u>UNIT</u>	CO: 2.6 GRAMS/BHP-HR (4) [RULE 1303(a)(1) BACT];  NOX: 216 LBS/1000 GAL (1) [RULE 2012]  NOx + ROG: 4.8 GRAMS/BHP- HR (4) [RULE 1303(a)(1) BACT; RULE 2005 BACT];  PM: 0.15 GRAMS/BHP-HR (4) [RULE 1303(a)(1) BACT]; PM: (9) [RULE 404]  SOX: 6.24 LBS/1000 GAL (1) [RULE 2011]	B61.3 C1.41 E193.7 H23.31 I30.1 I296.1

**CONDITIONS:**

**Facility Conditions**

F14.1 The operator shall not purchase diesel fuel containing sulfur compounds in excess of 15 ppm by weight as supplied by the supplier.

~~This condition shall become effective on or after June 1, 2004.~~

[RULE 431.2]

*Note: Facility condition F14.1 already exists on the Facility Permit.*

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**Device Conditions**

**B, Material/Fuel Type Limit**

B61.3 The operator shall only use diesel fuel containing the following specified compounds:

Compound	Weight Percent
Sulfur less than	0.0015

Unless the operator demonstrates in writing to the Executive Officer that specific additional time is necessary to comply with this limit.

[RULE 2005]

**C. Throughput/Operating Limitation**

C1.41 The operator shall limit the operating time to no more than 200 hour(s) in any one year.

This limit includes no more than 50 hour(s) in any one year for maintenance and testing purposes.

To comply with this condition, the operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

The operator shall maintain an engine operating log which, on a monthly basis, shall list all engine operations in each of the following areas:

- A. Emergency use hours of operation
- B. Maintenance and testing hours
- C. Other operating hours (Describe the reason for the operation)

In addition, each time the engine is started manually, the log shall include the date of operation and the time reading in hours at the beginning and end of the operation.

The operation of the engine beyond the 50 hours per year allotted for engine maintenance and testing shall be allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage, provided that the electrical grid operator or electric utility has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a utility service block that is subject to the rotating outage. Engine operation shall be terminated immediately after the utility distribution company advises that a rotating outage is no longer imminent or in effect.

[RULE 1110.2; RULE 1303(a)-BACT; RULE 1303(b)(1)-Modeling; RULE 1303(b)(2)-Offsets; RULE 1304(a)-Modeling and Offset Exemption; RULE 2005; RULE 1470]

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**E. Equipment Operation/Construction Requirements**

E193.7 The operator shall restrict the operation of this equipment as follows:

In addition to maintenance and testing of this engine, this engine shall only be used for either providing electrical power to portable operations or emergency power to stationary sources.

Portable operations are those where it can be demonstrated that because of the nature of the operation, it is necessary to periodically move the equipment from one location to another.

Emergencies at stationary sources are those that result in an interruption of services of the primary power supply or during Stage II or III electrical emergencies declared by the California Independent System Operator.

[RULE 1470]

**H. Applicable Rules**

H23.31 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
PM	District Rule	1470
CO	40 CFR 60, Subpart	III
NOx	40 CFR 60, Subpart	III
PM	40 CFR 60, Subpart	III
ROG	40 CFR 60, Subpart	III
HAPs	40 CFR 63, Subpart	ZZZZ

[Rule 1470; 40 CFR 60, Subpart III], 40 CFR 63, Subpart ZZZZ

**I. Administrative**

I30.1 In accordance with Rule 3002(a)(3), the permit for this equipment is being issued as a non-Title V permit.

The facility permit holder shall file an application for a Title V permit revision for this equipment within 90 days of the issuance of the facility's initial Title V permit.

[RULE 3002]

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I296.1 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

[Rule 2005]

**COMPLIANCE RECORD REVIEW**

A check of the AQMD Compliance Database shows that this facility was issued 17 notices of violation (NOVs) since January 1, 2006. No NCs or NOVs were issued to the internal combustion engine since it has not been constructed at the facility yet.

**BACKGROUND**

Ultramar (Wilmington) Refinery is NOx and SOX RECLAIM facility. Ultramar proposes to install a diesel-fired internal combustion (IC) engine driving an emergency electrical generator to sustain power to the Data Center and Emergency Operations Center at the refinery in the event of a power loss from LADWP. Both the Refinery Data Center and the Emergency Operations Center are located in the Engineering Building of the refinery. The emergency electrical generator will be situated to the west of the Engineering Building. Ultramar is submitted the following applications listed in Table 1.

**Table 1: AQMD Applications Submitted**

A/N	Date Submitted	Equipment	Type	Status	Previous A/N
487438	October 3, 2008	IC Engine, Emergency	10	20	n/a
489282	October 2, 2008	Facility Permit Amendment	80	25	n/a

**FEE SUMMARY**

**Table 2 – Fee Summary**

A/N	Equipment	Type	Fee Required, \$	Fee Submitted, \$
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A/N	Equipment	Type	Fee Required, \$	Fee Submitted, \$
487438	IC Engine, Emergency	10	\$2,051.52	\$ 2,051.52
	Expedited Processing Fee	--	\$1,025.76	\$1,025.76
489282	Facility Permit Amendment	80	\$ 843.80	\$ 843.80
Total			\$3,921.08	\$3,921.08

**PROCESS DESCRIPTION:**

The diesel-fired engine proposed is a Cummins QSX15-G9, 755 bhp, 6-cylinder, turbocharged and aftercooled. As noted above, the proposed diesel-fired internal combustion (IC) engine will drive an emergency electrical generator to sustain power to the Data Center and Emergency Operations Center at the refinery in the event of a power outage. This Cummins engine has been issued an AQMD-certified equipment permit (A/N 455700, granted on May 25, 2006, expiring on December 31, 2010).

The proposed diesel generator is equipped with an integrated 600 gallon tank for diesel fuel storage. This tank is exempt from permitting under Rule 219(m)(4), which applies to equipment used exclusively for the storage of unheated organic materials with an initial boiling point of 302°F or greater, or with an organic vapor pressure of 0.1 psia or less at 70°F, not including liquid fuel storage greater than 40,000 gallons.

Installation of the emergency electrical generator is scheduled to begin in December 2008.

**EMISSIONS:**

The emissions data for the Cummins QSX15-G9 engine is as follows:

**Table 3 - Cummins QSX15-G9 Emission Data**

Source	ROG	NOx	SOx	CO	PM
Manufacturer's Data, Full Standby	0.06	4.35 grams/bhp-hr	--	0.54 grams/bhp-hr	0.05 grams/bhp-hr
AQMD's Certified IC Engine Emergency Generator List for Cummins QSX15-G9, July 12, 2007 (A/N 455700)*	0.11 grams/bhp-hr	4.59 grams/bhp-hr	--	0.45 grams/bhp-hr	0.075 grams/bhp-hr

\*The emission factors from the AQMD's Certified IC Engine Emergency Generator List for Cummins QSX15-G9, July 12, 2007 (A/N 455700) is derived from measured emissions data supplied by the manufacturer.

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The overall mass emissions are summarized below in Table 4. A complete summary of the emissions with calculations is found in Appendix A.

**Table 4 – Estimated Emissions**

	lb/hour R1 = R2	lb/day, max R1 = R2	30-day avg*, lb/day R1 = R2	lb/year** R1 = R2
NOx	7.63	7.63	1.27	381.66
ROG	0.18	0.18	0.03	9.15
CO	0.75	0.75	0.12	37.42
SOx	0.01	0.01	0.00	0.42
PM	0.12	0.12	0.02	6.24
PM10	0.12	0.12	0.02	5.99

\* Assumes each engine will operate 1 hr/day, 1 day/week in a 30-day month for testing

\*\* Engine is limited to operate 50 hours/year for maintenance and testing.

For applications deemed complete after October 3, 2008, Best Available Control Technology (BACT) for IC Engine, Stationary, Emergency, Compression Ignition,  $\geq 750$  bhp is based on the U.S. EPA Tier 2 Certification Levels Required for Compression-ignition Engines (7-14-2006). There are no Tier 3 levels for emergency compression engines  $\geq 750$  bhp. Table 5 shows the BACT compliance for the proposed IC engine.

**Table 5 – BACT Compliance**

	NOx + NMHC	SOx	CO	PM
U.S. EPA Tier 2 Certification Levels Required for Emergency Compression-Ignition Engines, $\geq 750$ bhp (10-3-2008 Revision)	4.8 gr/bhp-hr	Diesel Fuel Sulfur Content $\leq 0.05\%$ by Weight; User only purchase diesel $< 0.015\%$ by weight (Rule 431.2)	2.6 gr/bhp-hr	0.15 gr/bhp-hr
Cummins QSX15-G9, 755 bhp	4.7 gr/bhp-hr	Rule 431.2: Diesel Fuel Sulfur $\leq 0.0015\%$ by Weight	0.45 gr/bhp-hr	0.075 gr/bhp-hr
Comply with BACT?	Yes	Yes	Yes	Yes

**EVALUATION:**

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**PART 1      SCAQMD REGULATIONS**

<b>Rule 212</b>	<b>Standards for Approving Permits</b>	<b>November 14, 1997</b>
	<p>This project is not considered as a significant project due to the new equipment proposed. In accordance with Rule 219(c), a significant project is a new or modified facility in which:</p> <p>(1) the new or modified permit unit is located within 1000 feet of a school;</p> <p>(2) the new or modified facility has on-site emission increases exceeding the daily maximum specified in subdivision (g); or</p> <p>(3) the new or modified permit unit has an increased cancer risk greater than, or equal to, one in a million (<math>1 \times 10^{-6}</math>) during a lifetime of 70 years or pose a risk of nuisance.</p> <p>The IC engine is not within 1,000 feet of a school, the emission increase does not exceed the daily maximum specified in Rule 212(g), and the IC engine is exempt from Rule 1401 per Rule 1401(g)(1)(F). Therefore, a public notice is not required.</p>	

<b>Rule 401</b>	<b>Visible Emissions</b>	<b>November 9, 2001</b>
	<p>The equipment is not expected to emit visible emissions.</p>	

<b>Rule 402</b>	<b>Nuisance</b>	<b>May 7, 1976</b>
	<p>The equipment is not expected to emit odorous emissions.</p>	

<b>Rule 404</b>	<b>Particulate Matter – Concentration</b>	<b>February 7, 1986</b>
	<p>Based on the manufacturer's data, the exhaust flow rate for this engine is 1,100 cfm. By interpolation at this flow rate, the maximum concentration of particulate matter allowed according to Table 404(a) is approximately <b>0.181</b> grains per cubic feet (gr/cf).</p> <p>Based on the certified equipment emission factor data for PM, the PM emission rate is <b>0.0132</b> grains/dscf, which is below the allowable limits noted above.</p> <p style="text-align: center;">           PM emission factor: 0.075 grams/bhp-hr (Certified equipment emission factor)            Exhaust flow rate: 1,100 cfm (Provided by manufacturer)         </p> $\frac{0.075 \text{ grams}}{\text{bhp} - \text{hr}} \times \frac{\text{lb}}{454 \text{ grams}} \times 755 \text{ bhp} \times \frac{\text{min}}{1,100 \text{ cf}} \times \frac{\text{hr}}{60 \text{ min}} \times \frac{7000 \text{ grains}}{1 \text{ lb}} = 0.0132 \frac{\text{grains}}{\text{dscf}}$	

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Therefore, the engine should comply with Rule 404.

<b>Rule 407</b>	<b>Liquid and Gaseous Air Contaminants</b>	<b>April 2, 1982</b>
	In accordance with Rule 407(b)(1), the provisions of this rule shall not apply to emissions from stationary internal combustion engines.	

<b>Rule 409</b>	<b>Combustion Contaminants</b>	<b>August 7, 1981</b>
	The provisions of this rule shall not apply to emissions from internal combustion engines.	

<b>Rule 431.2</b>	<b>Sulfur Content of Liquid Fuels</b>	<b>September 15, 2000</b>
	Ultramar is a SOx RECLAIM facility. In accordance with Rule 431.2(e)(3), the facility shall not purchase any diesel fuel with the sulfur content greater than 15 ppm by weight as supplied by the supplier. A facility condition (i.e., F14.1) is already included on the facility permit requiring that the facility not purchase diesel fuel with sulfur content greater than 15 ppmw.	

<b>Rule 1110.2</b>	<b>Emissions from Gaseous- and Liquid-Fueled Engines</b>	<b>February 1, 2008</b>
	In accordance with Rule 1110.2(i)(2), the requirements specified in subdivision (d) of this rule shall not apply to emergency standby engines which operate less than 200 hours per year as determined by an elapsed operating time meter. Therefore, this engine is exempt from the requirements of this rule.	

<b>REG XIII</b>	<b>New Source Review</b>	<b>December 6, 2002</b>
	<b>Application Deem Complete Date: October 8, 2008</b>	
	The modifications and new construction proposed in this project will cause an emission increase of CO, ROG, and PM. The emission increase due to this project is shown in Table 4. The following is a discussion of each requirement in NSR.	
<b>BACT: 1303(a)</b>	BACT has been included in the design of the proposed project. BACT means the most stringent emission limitation or control technique which:	
	(1) has been achieved in practice for such category or class of source; or (2) is contained in any State Implementation Plan (SIP) approved by the US EPA for	

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<b>REG XIII</b>	<b>New Source Review</b>  <b>December 6, 2002</b> <b>Application Deem Complete Date: October 8, 2008</b>
	<p>such category or class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed source demonstrates to the satisfaction of the Executive Officer or designee that such limitations or control technique is not presently achievable; or</p> <p>(3) is any other emission limitation or control technique, found by the Executive Officer or designee to be technologically feasible for such class or category of sources or for a specific source, and cost effective as compared to measures as listed in the Air Quality Management Plan (AQMP) or rules adopted by the District Governing Board.</p> <p>Ultramar is proposing the emission levels specified in Table 3 for the new engine. The engine will meet the BACT requirements for ROG, CO, and PM<sub>10</sub> as shown in the BACT Compliance Table 5.</p> <p>The analysis of BACT for NO<sub>x</sub> and SO<sub>x</sub> is discussed under Rule 2005.</p>
<b>1303(b)(1)</b>	Modeling. In accordance with Rule 1304(a)(4) – Exemptions (Emergency Equipment), the engine is exempt from the modeling requirements specified in 1303(b)(1) if the source is exclusively used as emergency standby equipment, provided the source does not operate more than 200 hours per year as evidenced by an engine-hour meter.
<b>1303(b)(2)</b>	Offsets. No offsets are required since the emission increases are less than 0.5 lbs/day for ROG, CO, or PM <sub>10</sub> .
<b>1303(b)(3)</b>	Sensitive Zone Requirements. The emission increases from this project are exempt from offsets per Rule 1304(a)(4). Therefore, ERCs are not required.
<b>1303(b)(4)</b>	Facility Compliance. This facility complies with all applicable District rules and regulations.
<b>1303(b)(5)</b>	Major Polluting Facilities. This is not a new major polluting facility or major modification at an existing major polluting facility. Therefore, the provisions of this rule do not apply to this engine.

<b>Rule 1401</b>	<b>New Source Review of Toxic Air</b> <b>Contaminants</b>  <b>March 7, 2008</b> <b>Application Deem Complete Date: October 8, 2008</b>
	This engine would be exempted under Rule 1304 since it would exclusively be used as emergency standby equipment for nonutility electrical power generation and will not operate more than 200 hours per year. Rule 1401(g)(1)(F) – Emergency Internal Combustion Engines provides an exemption from the requirements of Rule 1401 (d) - Requirements if the engine is exempted under Rule 1304, in which it would be.

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<b>Rule 1470</b>	<b>Requirements For Stationary Diesel-Fueled Internal Combustion And Other Compression Ignition Engines</b>	<b>June 1, 2007</b>															
1470(c)(2)(B)	<p>The proposed IC engine is subject to certain provisions of Rule 1470. In accordance with the requirements of Rule 1470(c)(2)(B), the operator of a new emergency standby diesel-fueled compression ignition (CI) engine greater than 50 bhp shall operate in response to the notification of an impending rotating outage if all the following criteria are met:</p> <ul style="list-style-type: none"> <li>(i) the engine's permit to operate allows operation of the engine in anticipation of a rotating outage; and</li> <li>(ii) the Utility Distribution Company has ordered rotating outages in the control area where the engine is located, or has indicated it expects to issue such an order at a specified time; and</li> <li>(iii) the engine is located in a specific location that is subject to the rotating outage; and</li> <li>(iv) the engine is operated no more than 30 minutes prior to the time when the Utility Distribution Company officially forecasts a rotating outage in the control area; and</li> <li>(v) the engine operation is terminated immediately after the Utility Distribution Company advises that a rotating outage is no longer imminent or in effect.</li> </ul>																
1470(c)(2)(C)	<p>(i) New stationary emergency standby diesel-fueled engines (&gt;50 bhp), shall:</p> <ul style="list-style-type: none"> <li>(I) emit diesel PM at a rate less than or equal to 0.15 g/bhp-hr; or</li> <li>(II) meet the diesel PM standard specified in the Off-Road Compression Ignition Engine Standards for off-road engines with the same maximum rated power (Title 13 CCR Section 2423), whichever is more stringent; and</li> <li>(III) not operate more than 50 hours per year for maintenance and testing.</li> </ul> <p>The Cummins QSX15-G9, 755 bhp, is certified to emit PM at a rate of 0.075 g/bhp-hr and will be conditioned to 50 hours per year for maintenance and testing. Compliance is expected.</p>																
	<p>(ii) New stationary emergency standby diesel-fueled CI engines (&gt; 50 bhp) must meet the HC, NOx, NMHC + NOx, and CO Standards as specified in the Off-Road Compression-Ignition Engine Standards (Title 13, CCR, Section 2423). In accordance to Title 13, CCR, Section 2423, Table 1a, the applicable exhaust emission standards for the proposed IC engine would be:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Maximum Rated Power, KW</th> <th rowspan="2" style="text-align: center;">Tier</th> <th rowspan="2" style="text-align: center;">Model Year</th> <th style="text-align: center;">NMHC+NOx</th> <th style="text-align: center;">CO</th> <th style="text-align: center;">PM</th> </tr> <tr> <th colspan="3" style="text-align: center;">gram/bhp-hr</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">KW &gt; 550</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2006-2010</td> <td style="text-align: center;">6.4</td> <td style="text-align: center;">3.5</td> <td style="text-align: center;">0.20</td> </tr> </tbody> </table>		Maximum Rated Power, KW	Tier	Model Year	NMHC+NOx	CO	PM	gram/bhp-hr			KW > 550	2	2006-2010	6.4	3.5	0.20
Maximum Rated Power, KW	Tier	Model Year				NMHC+NOx	CO	PM									
			gram/bhp-hr														
KW > 550	2	2006-2010	6.4	3.5	0.20												

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<b>Rule 1470</b>	<b>Requirements For Stationary Diesel-Fueled Internal Combustion And Other Compression Ignition Engines</b>	<b>June 1, 2007</b>
	<p>The certified exhaust emissions from the Cummins QSX15-G9 is well below the Tier 2 limits of Title 13, CCR, Section 2423, Table 1a. Compliance is expected.</p>	
1470(d)	<p>The operator is subject to the recordkeeping, reporting, and monitoring requirements of this subdivision. The operator shall provide the necessary information required in subparagraph (d)(1)(C) prior to installation, maintain monitoring equipment as required by (d)(7), and report information as required by (d)(9).</p>	

<b>Rule 2005</b>	<b>New Source Review for RECLAIM</b>	<b>May 6, 2005</b>
	<b>Application Decm Complete Date: October 8, 2008</b>	
	<p>Ultramar is a NOx and SOx RECLAIM facility. The IC engine proposed will cause an emission increase of SOx and NOx. Based on the maximum rating of the engine to be installed or modified and the NOx BACT limits proposed, the NOx and SOx controlled emission increases from each engine are 381.66 lbs/year and 0.42 lbs/year, respectively. The emission increase due to this project is shown in Table 4. The following is a discussion of each applicable requirement in RECLAIM NSR for this project.</p>	
<b>2005(c)(1)</b>	<p>(A) BACT. The proposed NOx and SOx BACT limits are shown in Table 5, and the engine should meet the U.S. EPA Tier 2 Certification Level shown in Table 5.</p>	
	<p>(B) Modeling. In accordance with Rule 2005(k)(5) – Exemptions, the engine is exempt from the modeling requirements specified in 1303(c)(1)(B) if the equipment is exclusively used as emergency standby equipment, provided the source does not operate more than 200 hours per year as evidenced by an engine-hour meter.</p>	
<b>2005(c)(2)</b>	<p>Sufficient RECLAIM Trading Credits. The NOx and SOx emission increases from this project are 381.66 lbs/year and 0.42 lbs/year, respectively. Checking Ultramar’s NOx and SOx RTC holding account, the facility currently holds sufficient RTCs to offset the annual emission increase for the first year of operation at a 1-to-1 ratio.</p>	
<b>2005(c)(3)</b>	<p>Change of Operator. This subparagraph does not apply since this project is not for a change of operator.</p>	
<b>2005(c)(4)</b>	<p>Allocation Increase greater than Starting Allocation. The emission increase due to this project will not increase the facility’s annual Allocation to a level greater than the facility’s starting allocation (NOx: 1,024,673 lbs/year; SOx: 134,018 lbs/year) plus non-tradable credits (NOx: 0; SOx: 8,791).</p>	

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<b>Rule 2005</b>	<b>New Source Review for RECLAIM</b>	<b>May 6, 2005</b>
		<b>Application Deem Complete Date: October 8, 2008</b>
<b>2005(d)</b>	Emission Increase. NOx and SOx emission increases from this project are 381.66 lbs/year and 0.42 lbs/year, respectively, as shown in Table 4.	
<b>2005(e)</b>	Trading Zone Restrictions. The emission increase due to this project will not increase the facility's annual Allocation to a level greater than the facility's starting allocation (NOx: 1,024,673 lbs/year; SOx: 134,018 lbs/year) plus non-tradable credits.	
<b>2005(f)</b>	Offsets. The facility will need to hold 382 lbs/year of NOx RTCs and 0.5 lbs/year of SOx RTCs at the commencement of each compliance year.	
<b>2005(g)</b>	Additional Federal Requirements for Major Stationary Sources. The construction and operation of the emergency IC engine is not considered a major stationary source.	
<b>2005(h)</b>	Public Notice. A public notice is not required for this project. See the discussion under Rule 212.	
<b>2005(i)</b>	Rule 1401. See the discussion under Rule 1401.	
<b>2005(j)</b>	Compliance with State and Federal New Source Review Requirements. The NOx and SOx emission increases will be included in the NSR Tracking System so the emissions can be reported the District Governing Board regarding the effectiveness of Rule 2005 in meeting the state and federal NSR requirements.	

<b>Rule 2011</b>	<b>Requirements For Monitoring, Reporting, And Recordkeeping For Oxides Of Sulfur (SO<sub>x</sub>) Emissions</b>	<b>May 6, 2005</b>
<b>Rule 2012</b>	<b>Requirements For Monitoring, Reporting, And Recordkeeping For Oxides Of Nitrogen (NO<sub>x</sub>) Emissions</b>	<b>May 6, 2005</b>
	<p>Ultramar is a NOx and SOx RECLAIM facility. The proposed emergency IC engine is subject to the monitoring, reporting, and recordkeeping requirements for a NOx and SOx Process Unit.</p> <p>In accordance with Rule 2011(d)(2)(C), the facility has accepted the SOx emission factor of 6.24 lbs/1,000 gal diesel as specified in Rule 2002 as the sole method for determining mass emissions. The facility expressed interest in a SOx equipment specific emission rate since the current 6.24 lbs/1,000 gal diesel emission factor is based on the now obsolete 500 ppm sulfur diesel limit. Rule 431.2 currently requires the facility to only purchase diesel fuel with the sulfur content greater than 15 ppm by weight. Therefore, the facility believes they should be able to apply a SOx emission rate to reflect the current 15 ppm sulfur diesel limit. The RECLAIM Administration team has been contacted to evaluate an emission rate based on 15 ppm sulfur diesel. In the meantime, the facility has accepted the 6.24 lbs/1,000 gal diesel SOx emission factor.</p>	

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<b>Rule 2011</b>	<b>Requirements For Monitoring, Reporting, And Recordkeeping For Oxides Of Sulfur (SO<sub>x</sub>) Emissions</b>	<b>May 6, 2005</b>
<b>Rule 2012</b>	<b>Requirements For Monitoring, Reporting, And Recordkeeping For Oxides Of Nitrogen (NO<sub>x</sub>) Emissions</b>	<b>May 6, 2005</b>
	<p>with the sulfur content greater than 15 ppm by weight. Therefore, the facility believes they should be able to apply a SO<sub>x</sub> emission rate to reflect the current 15 ppm sulfur diesel limit. The RECLAIM Administration team has been contacted to evaluate an emission rate based on 15 ppm sulfur diesel. In the meantime, the facility has accepted the 6.24 lbs/1,000 gal diesel SO<sub>x</sub> emission factor.</p> <p>In accordance with Rule 2012(e)(2)(C), the facility has accepted the NO<sub>x</sub> emission factor as specified in Rule 2002 as the sole method for determining mass emissions. In Rule 2002, Table 1 (RECLAIM NO<sub>x</sub> Emission Factors), the emission factor for ICEs*, All Fuels, is "Equivalent to permitted BACT limit." This proposed engine is a certified engine and the certified NO<sub>x</sub> emission rate is 4.59 grams/bhp-hr. The current Tier 2 BACT limit for NO<sub>x</sub> + ROG = 4.8 grams/bhp-hr. Converting the certified NO<sub>x</sub> emissions from grams/bhp-hr to gal diesel/hr, the RECLAIM NO<sub>x</sub> emission factor is 216 lbs NO<sub>x</sub>/1,000 gal diesel based the highest fuel consumption rate and engine hp data provided by the manufacturer.</p> <p>Full, standby, engine HP = 520  Fuel consumption, gal/hr = 24.3  Certified NO<sub>x</sub> emission rate = 4.59 grams/bhp-hr</p> <p>NO<sub>x</sub> emission factor:</p> $\frac{4.59 \text{ grams}}{\text{bhp} - \text{hr}} \times 520 \text{ bhp} \times \frac{\text{lb}}{454 \text{ grams}} \times \frac{\text{hr}}{24.3 \text{ gal}} \times \frac{1,000 \text{ gal}}{1,000 \text{ gal}} = 216 \frac{\text{lbs NO}_x}{1,000 \text{ gal diesel}}$	

\* Newly installed or modified after the year selected for maximum throughput for determining starting allocations pursuant to Rule 2002(c)(1), and meeting BACT limits in effect at the time of installation.

<b>Regulation XXX</b>	<b>Title V</b>	<b>March 16, 2001</b>
	<p>Ultramar has been designated as the Title V facility. The facility submitted their initial Title V application in 1998. The public notification of the initial Title V permit was on July 7, 2008. Since the initial Title V permit has not been issued, the District will issue a local permit or non-Title V permit to the IC engine. Condition I30.1 will be included in the Facility Permit for the IC engine. Condition I30.1 will require Ultramar to file an application for a Title V permit revision for this equipment within 90 days of the issuance of the facility's initial Title V permit in accordance with Rule 3002(a)(3).</p>	

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**PART 2 STATE REGULATIONS**

**California Environmental Quality Act (CEQA)**

This project does not trigger CEQA and is exempt from further CEQA action since it does not have the potential to generate significant adverse environmental impacts.

**PART 3 FEDERAL REGULATIONS**

<b>Part 60, NSPS</b>	<b>Subpart III - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines</b>	<b>July 11, 2006</b>
§60.4200 - §60.4219	<p>Subpart III regulates stationary compression ignition (CI) IC engines such as the one proposed at Ultramar. For engines with a maximum engine power greater than or equal to 50 HP, §60.4202(a)(2) of this subpart states the engine shall not exceed the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112* and 40 CFR 89.113* for all pollutants beginning in model year 2007. 40 CFR 89.112 (Oxides of nitrogen, carbon monoxide, hydrocarbon, and particulate matter exhaust emission standards) contains the exhaust emission standards from nonroad engines for nitrogen, carbon monoxide, hydrocarbon, and particulate matter. These emission standards are the same the BACT, Tier 2 standards shown in Table 5 for IC engines greater than 750 bhp. 40 CFR 89.113 (Smoke emission standard) specifies that the exhaust opacity from compression-ignition nonroad engines must not exceed:</p> <ul style="list-style-type: none"> <li>(1) 20 percent during the acceleration mode;</li> <li>(2) 15 percent during the lugging mode; and</li> <li>(3) 50 percent during the peaks in either the acceleration or lugging modes.</li> </ul> <p>For the life of the engine, §60.4206 requires the operator to operate and maintain the engine according to the manufacturer's written instructions or procedures. §60.4207(a) and (b) requires the engine to only be fueled with diesel that meets minimum federal requirements.</p> <p>§60.4209(a) requires the installation of a non-resettable hour meter. Maintenance checks and testing is limited to 100 hour per year in accordance with §60.4211(e). NSPS initial notification under Subpart A and Subpart III is waived for emergency stationary engines (§60.4214(b)).</p> <p>Compliance is expected since the Subpart III requirements are equivalent or superseded by more stringent District rules.</p>	

\* Part 89- Control of Emissions from New and In-use Nonroad Compression-Ignition Engines, Subpart B—Emission Standards And Certification Provisions

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<b>Part 63, NESHAP</b>	<b>Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines</b>	<b>January 18, 2008</b>
§60.6580 - §63.6675	<p>Subpart ZZZZ, otherwise known as RICE MACT, regulates stationary reciprocating internal combustion engines (RICE). The proposed IC engine is subject to the RICE MACT regulation as a new “emergency stationary RICE.” In accordance with §63.6590(b)(1), the engine does not need to meet the requirements of Subpart ZZZZ and Subpart A except for the initial notification requirements in §63.6645(d). In addition, according to §60.6600(c), an operator an emergency stationary RICE or limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions does not have to comply with the emission limitations in this subpart or operating limitations in this subpart.</p> <p>According to the definition of “emergency stationary RICE” in §63.6675, an emergency stationary RICE with a site-rating of more than 500 brake HP located at a major source of HAP emissions that were installed on or after June 12, 2006 must comply with requirements specified in 40 CFR 60.4243(d). 40 CFR 60.4243(d) of NSPS, Subpart JJJJ limits the maintenance and testing of the emergency IC engine to 100 hours per year and does not limit on the use of emergency stationary ICE in emergency situations. However, District Rules 1110.2, 1303(b), and 1470 are more stringent than the requirement in 40 CFR 60.4243(d). District Rule 1470 restricts the maintenance and testing of the engine to 50 hours per year. In addition, to qualify as an emergency engine, the engine shall not operate more than a total of 200 hours per year in accordance with District Rules 1303(b) and 1470.</p>	

**CONCLUSION:**

Based on the evaluation above, the emergency IC engine will comply with all applicable District, State, and Federal rules and regulations. Therefore, the following is recommended:

A/N	Equipment	Recommendation
487438	Internal Combustion Engine, Emergency	Approve PO with conditions
489282	RECLAIM Facility Permit Amendment	Approve Plan

## Appendix A - Emission Calculations

Ultramar  
A/N 487438

### Engine data

Engine hp	755	hp
Engine manufacturer	Cummins	
Fuel type	Diesel	
Fuel rate	22.1	gal/hour
EPA non-road engine	No	
Date manufactured	2008	

Default PM E.F.	yes	
PM10	0.96	
hr/day	1	hour
day/week	1	day
day/month	30	days
hrs/month	5	hours
weeks/year	50	weeks

Emission factors	R1	units	R2	units
NOx	4.59	g/bhp-hr	4.59	g/bhp-hr
ROG	0.11	g/bhp-hr	0.11	g/bhp-hr
CO	0.45	g/bhp-hr	0.45	g/bhp-hr
SOx	0.005	g/bhp-hr	0.005	g/bhp-hr
PM	0.075	g/bhp-hr	0.075	g/bhp-hr
PM10	0.072	g/bhp-hr	0.072	g/bhp-hr

BACT	R2	units
NOx+ROG	4.8	g/bhp-hr
CO	2.6	g/bhp-hr
SOx	Diesel Fuel S ≤ 0.0015% by Wt	
PM10	0.144	g/bhp-hr

Emission calculations	lb/hour		lb/day max		30-day avg		lb/year	
	R1	R2	R1	R2	R1	R2	R1	R2
NOx	7.63	7.63	7.63	7.63	1.27	1.27	381.66	381.66
ROG	0.18	0.18	0.18	0.18	0.03	0.03	9.15	9.15
CO	0.75	0.75	0.75	0.75	0.12	0.12	37.42	37.42
SOx	0.01	0.01	0.01	0.01	0.00	0.00	0.42	0.42
PM	0.12	0.12	0.12	0.12	0.02	0.02	6.24	6.24
PM10	0.12	0.12	0.12	0.12	0.02	0.02	5.99	5.99

Equations:

A. Emissions as a function of gr/bhp-hr

$$\text{Emissions} = \text{gr/bhp-hr} \times \text{hp rating} \times 1 \text{ lb}/454 \text{ grams}$$

B. The SOx emission factor was developed based on:

- the maximum diesel sulfur content of 15 ppmv (0.0015% by weight)
- an assumed average brake-specific fuel consumption (BSFC) from AP-42, footnote a, of 7,000 Btu/bhp-hr
- diesel heating value of 19,300 Btu/lb

$$\frac{7,000 \text{ Btu}}{\text{bhp} \cdot \text{hr}} \times \frac{\text{lb diesel}}{19,300 \cdot \text{Btu}} \times \frac{15 \text{ lb S}}{10^6 \text{ lb diesel}} \times \frac{64 \text{ lb SO}_2}{32 \text{ lb S}} \times \frac{453.59 \text{ grams SO}_2}{\text{lb SO}_2} = 0.00494 \frac{\text{grams SO}_2}{\text{bhp} \cdot \text{hr}}$$

C. NSR 30-day and lb/year values

$$30\text{-day avg} = \text{lb/hr} \times 1 \text{ hr/day} \times 5 \text{ week/month} \times 1 \text{ day/week} \times 1 \text{ month}/30 \text{ day}$$

$$\text{lb/year} = \text{lb/day} \times 50 \text{ weeks/year} \times 1 \text{ day/week}$$