

A

ROUTING RECORD

DATE	FROM	TO	ACTION
<del>9-4-03</del>	<del>TL03</del>	<del>MP01</del>	<del>Proposed</del>
<del>10-15-03</del>	<del>MP01</del>	<del>TL03</del>	<del>Revised</del>
9-3-08	CT01	GR01	Rule 1110.2 ECF (Change of Cond) HD
9-4-08	GR01		Accept <del>Plan I</del> Plan I, C/C ECF
01-29-09	GR01	AD01	P/O for C/C ECF
3-31-09	GR01	AD01	Revised
3-31-09	AD01	CT01	EPA Review
5-28-09	AD01	CT01	PLD Approved (TU) HD

REFERENCE TO OTHER APCD RECORDS INCLUDING VARIANCES

495837

G 2955

APPL # 486760

I. D. # 17301

ORANGE COUNTY SANITATION DISTRICT  
10844 ELLIS AVE  
FOUNTAIN VALLEY  
ICE

Date: 08/12/08

①

ORANGE COUNTY SANITATION DISTRICT  
ICE

AP486760  
ID 17301



South Coast Air Quality Management District

Form 400-A

Application For Permit To Construct and Permit To Operate

Mail Application To: P.O. Box 4944 Diamond Bar, CA 91765

Tel: (909) 396-3385 www.aqmd.gov

Section A: Operator Information

1. Business Name of Operator To Appear On The Permit: Orange County Sanitation District
2. Valid AQMD Facility ID (Available on Permit or Invoice issued by AQMD): 017301
3. Owner's Business Name (only if different from Business Name of Operator):

Section B: Equipment Location

4. Equipment Location Address: 10844 Ellis Avenue, Fountain Valley, CA, 92708 - 7018
5. Permit and Correspondence Information: [X] Check here if same as equipment location address

Section D: Application Type

The facility is in RECLAIM Title V RECLAIM & Title V Program (please check if applicable)
6. Reason for Submitting Application (Select only ONE): Change of Condition For Permit To Operate
7. Estimated Start Date of Operation/Construction (MM/DD/YYYY): 08/01/2008
8. Description of Equipment: Internal Combustion Engine (CG3-FV), Cooper Bessemer, Spark Ignition, Four Stroke with Modified Turbocharged-Intercooled V-12 Type, Model No. LSVB-12-SGC, 3471 HP, Natural Gas and/or Digester Gas Fired, Driving a 2500 KW Electric Generator

Section E: Facility Business Information

13. What type of business is being conducted at this equipment location? Municipal Wastewater Treatment
14. What is your businesses primary NAICS Code (North American Industrial Classification System)? 221320
15. Are there other facilities in the SCAQMD jurisdiction operated by the same operator? Yes
16. Are there any schools (K-12) within a 1000-ft. radius of the equipment physical location? No

Section F: Authorization/Signature

17. Signature of Responsible Official: Mike D. Moore
18. Title: Manager, ECRA
19. Print Name: Mike D. Moore
20. Date: 7/30/08
Check List: [X] Form(s) signed and dated by authorized official, [X] Supplemental Equipment Form (400-E-XX or 400-E-GEN), [X] CEQA Form (400-CEQA) attached, [X] Payment for permit processing fee attached

Table with columns: AQMD USE ONLY, APPLICATION/TRACKING # (486760), TYPE (B/C/D), EQUIPMENT CATEGORY CODE (056057), FEE SCHEDULE (D), VALIDATION (8/12/08), ENG. A/R, DATE, CLASS (I/II/IV), ASSIGNMENT (Unit, Engineer), CHECK/MONEY ORDER # (1000013220), AMOUNT (\$7027.06), TRACKING #

Handwritten circled number: 72708

Handwritten number: 3/5

S.C.A.O.M.D.  
ENGINEERING

08 AUG 12 P452



South Coast Air Quality Management District

Form 400-CEQA

California Environmental Quality Act (CEQA) Applicability

Mail Application To:
P.O. Box 4944
Diamond Bar, CA 91765
Tel: (909) 396-3385
www.aqmd.gov

The SCAQMD is required by state law, the California Environmental Quality Act (CEQA), to review discretionary permit project applications for potential air quality and other environmental impacts. This form is a screening tool to assist the SCAQMD in clarifying whether or not the project has the potential to generate significant adverse environmental impacts that might require preparation of a CEQA document [CEQA Guidelines §15060(a)].

FACILITY INFORMATION
Business Name of Operator to Appear on the Permit: Orange County Sanitation District
Facility ID (6-Digit): 017301
Project Description: Change of condition for Permit to Operate to incorporate ECF-adjusted emission limits per requirements of SCAQMD Rule 1110.2 as amended on February 1, 2008

REVIEW FOR EXEMPTION FROM FURTHER CEQA ACTION
Check "Yes" or "No" as applicable
A. A CEQA and/or NEPA document previously or currently prepared that specifically evaluates this project?
B. A request for a change of permittee only (without equipment modifications)?
C. Equipment certification or equipment registration (qualifies for Rule 222)?
D. A functionally identical permit unit replacement with no increase in rating or emissions?
E. A change of daily VOC permit limit to a monthly VOC permit limit?
F. Equipment damaged as a result of a disaster during state of emergency?
G. A Title V (i.e., Regulation XXX) permit renewal (without equipment modifications)?
H. A Title V administrative permit revision?
I. The conversion of an existing permit into an initial Title V permit?

REVIEW OF IMPACTS WHICH MAY TRIGGER CEQA
Complete Sections I-VI by checking "Yes" or "No" as applicable. To avoid delays in processing your application(s), explain all "Yes" responses on a separate sheet and attach it to this form.
Section I - General
1. Has this project generated any known public controversy regarding potential adverse impacts that may be generated by the project?
2. Is this project part of a larger project?
Section II - Air Quality
3. Will there be any demolition, excavating, and/or grading construction activities that encompass an area exceeding 20,000 square feet?
4. Does this project include the open outdoor storage of dry bulk solid materials that could generate dust? If Yes, include a plot plan with the application package.

1 A "project" means the whole of an action which has a potential for resulting in physical change to the environment, including construction activities, clearing or grading of land, improvements to existing structures, and activities or equipment involving the issuance of a permit. For example, a project might include installation of a new, or modification of an existing internal combustion engine, dry-cleaning facility, boiler, gas turbine, spray coating booth, solvent cleaning tank, etc.
2 To download the CEQA guidelines, visit http://ceres.ca.gov/env\_law/state.html.
3 To download this form and the instructions, visit http://www.aqmd.gov/ceqa or http://www.aqmd.gov/permit

	Yes	No	
5.	<input type="radio"/>	<input checked="" type="radio"/>	<p>Would this project result in noticeable off-site odors from activities that may not be subject to SCAQMD permit requirements?</p> <p>For example, compost materials or other types of greenwaste (i.e., lawn clippings, tree trimmings, etc.) have the potential to generate odor complaints subject to Rule 402 – Nuisance.</p>
6.	<input type="radio"/>	<input checked="" type="radio"/>	Does this project cause an increase of emissions from marine vessels, trains and/or airplanes?
7.	<input type="radio"/>	<input checked="" type="radio"/>	Will the proposed project increase the QUANTITY of hazardous materials stored aboveground onsite or transported by mobile vehicle to or from the site by greater than or equal to the amounts associated with each compound on the attached Table 1? <sup>4</sup>
<b>Section III – Water Resources</b>			
8.	<input type="radio"/>	<input checked="" type="radio"/>	<p>Will the project increase demand for water at the facility by more than 5,000,000 gallons per day?</p> <p>The following examples identify some, but not all, types of projects that may result in a "yes" answer to this question: 1) projects that generate steam; 2) projects that use water as part of the air pollution control equipment; 3) projects that require water as part of the production process; 4) projects that require new or expansion of existing sewage treatment facilities; 5) projects where water demand exceeds the capacity of the local water purveyor to supply sufficient water for the project; and 6) projects that require new or expansion of existing water supply facilities.</p>
9.	<input type="radio"/>	<input checked="" type="radio"/>	<p>Will the project require construction of new water conveyance infrastructure?</p> <p>Examples of such projects are when water demands exceed the capacity of the local water purveyor to supply sufficient water for the project, or require new or modified sewage treatment facilities such that the project requires new water lines, sewage lines, sewage hook-ups, etc.</p>
<b>Section IV – Transportation/Circulation</b>			
10.			Will the project result in (Check all that apply):
	<input type="radio"/>	<input checked="" type="radio"/>	a. the need for more than 350 new employees?
	<input type="radio"/>	<input checked="" type="radio"/>	b. an increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round-trips per day?
	<input type="radio"/>	<input checked="" type="radio"/>	c. increase customer traffic by more than 700 visits per day?
<b>Section V – Noise</b>			
11.	<input type="radio"/>	<input checked="" type="radio"/>	Will the project include equipment that will generate noise GREATER THAN 90 decibels (dB) at the property line?
<b>Section VI – Public Services</b>			
12.			Will the project create a permanent need for new or additional public services in any of the following areas (Check all that apply):
	<input type="radio"/>	<input checked="" type="radio"/>	a. Solid waste disposal? Check "No" if the projected potential amount of wastes generated by the project is less than five tons per day.
	<input type="radio"/>	<input checked="" type="radio"/>	b. Hazardous waste disposal? Check "No" if the projected potential amount of hazardous wastes generated by the project is less than 42 cubic yards per day (or equivalent in pounds).
**REMINDER: For each "Yes" checked in the sections above, attach all pertinent information including but not limited to estimated quantities, volumes, weights, etc.**			
<b>SIGNATURES</b>			
I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. I UNDERSTAND THAT THIS FORM IS A SCREENING TOOL AND THAT THE SCAQMD RESERVES THE RIGHT TO CONSIDER OTHER PERTINENT INFORMATION IN DETERMINING CEQA APPLICABILITY.			
SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM: <i>Mike D. Moore</i>		TITLE OF RESPONSIBLE OFFICIAL OF FIRM: Manager, ECRA	
TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM: Mike D. Moore	RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER: (714) 5937-450	DATE Signed: 7/30/08	
SIGNATURE OF PREPARER, IF PREPARED BY PERSON OTHER THAN RESPONSIBLE OFFICIAL OF FIRM: <i>Vlad Kogan</i>		TITLE OF PREPARER: Senior Scientist	
TYPE OR PRINT NAME OF PREPARER: Vlad Kogan	PREPARER'S TELEPHONE NUMBER: (714) 5937-085	DATE Signed: 7/30/08	

THIS CONCLUDES FORM 400-CEQA. INCLUDE THIS FORM AND THE ATTACHMENTS WITH FORM 400-A.

<sup>4</sup> Table 1 – Regulated Substances List and Threshold Quantities for Accidental Release Prevention can be found in the Instructions for Form 400-CEQA.

**SCAQMD PERMIT PROCESSING SYSTEM (PPS)  
FEE DATA - SUMMARY SHEET**

Application No : 486760  
 Previous Application No: 492039

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IRS/SS No:  
 Previous Permit No: G1041

Company Name : ORANGE COUNTY SANITATION DISTRICT  
 Equipment Street: 10844 ELLISAVE , FOUNTAIN VALLEY CA 92708  
 Equipment Desc : I C E (>500 HP) NAT & DIGESTER GAS

Facility ID: 17301

Equipment Type : BASIC  
 B-CAT NO. : 056057  
 Facility Zone : 18

C-CAT NO: 00  
 Deemed Compl. Date: 9/4/2008

Fee Charged by: B-CAT  
 Fee Schedule: D  
 Public Notice: NO

Evaluation Type : CHANGE OF CONDITIONS, (PO)  
 Disposition : Approve PO, Recommended by Engineer  
 Lead Appl. No : 486760

Small Business:   
 Higher Fees for Failing to Obtain a Permit:   
 Identical Permit Unit:

Air quality Analysis	\$0.00	Filing Fee Paid:	\$0.00
E.I.R	\$0.00	Permit Processing Fee Paid:	\$3,008.18
Health Risk Assessment	\$0.00	Permit Processing Fee Calculated*:	\$3,008.18
Significant Project	\$0.00	Permit Processing Fee Adjustment:	\$0.00
Expedited Processing	Hours: 0.00 \$0.00		
Source Test Review	Hours: 0.00 \$0.00		
Time & Material	Hours: 0.00 \$0.00		
		Total Additional Fee:	\$0.00
		Additional Charge:	\$0.00

COMMENTS: C/C FOR ECF CORRECTION, R1110.2.

RECOMMENDED BY: GAURANG RAWAL

DATE: 01/16/2009

REVIEWED BY: CDI

DATE: 5/26/09

\* ADJUSTED FOR SMALL BUSINESS, IDENTICAL EQUIPMENT AND P/O NO P/C PENALTY

SCAQMD PERMIT PROCESSING SYSTEM (PPS)

**AEIS DATA SHEET**

Company Name : ORANGE COUNTY SANITATION DISTRICT

Facility ID : 17301

Equipment Address : 10844 ELLIS AVE

FOUNTAIN VALLEY CA 92708

Application Number : 486760

Equipment B-Cat : 056057

Estimated Completion Date : 01/16/09

Equipment C-Cat :

Equipment Type : Basic

Equipment Description : I C E (>500 HP) NAT & DIGESTER GAS

Emittants	Emissions	
	R1 LB/HR	R2 LB/HR
CO	18.35	18.35
NOX	7.67	7.67
PM10	0.75	0.75
ROG	5.75	5.75
SOX	0.75	0.75

**Applicable Rules**

1110.2	02/01/2008	Emissions from Gaseous-and Liquid-fueled Engines
401	11/09/2001	Visible Emissions
402	05/07/1976	Nuisance

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Daily Start Times :	00:00	00:00	00:00	00:00	00:00	00:00	00:00
Daily Stop Times :	24:00	24:00	24:00	24:00	24:00	24:00	24:00

User's Initials : GR01    Date: 01/16/09    Supervisor's Name :   CST      Review Date :   5/26/09

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NSR DATA SUMMARY SHEET

Application No: 486760  
Application Type: Change of Conditions  
Application Status: PENDAPPRV  
Previous Apps,Dev,Permit #: 492039, 0 - ICE-PPS, NONE

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Company Name: ORANGE COUNTY SANITATION DISTRICT  
Company ID: 17301  
Address: 10844 ELLIS AVE, FOUNTAIN VALLEY, CA 92708  
RECLAIM: NO  
RECLAIM Zone: 01  
Basin: SC  
Zone: 18  
Title V: YES

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Device ID: 0 - ICE-PPS  
Estimated Completion Date: 12-30-2008  
Heat Input Capacity: 0 Million BTU/hr  
Priority Reserve: NONE - No Priority Access Requested  
Recommended Disposition: 31 - PERMIT TO OPERATE GRANTED  
PR Expiration:  
School Within 1000 Feet: NO  
Operating Weeks Per Year: 52  
Operating Days Per Week: 7  
Monday Operating Hours: 00:00 to 24:00  
Tuesday Operating Hours: 00:00 to 24:00  
Wednesday Operating Hours: 00:00 to 24:00  
Thursday Operating Hours: 00:00 to 24:00  
Friday Operating Hours: 00:00 to 24:00  
Saturday Operating Hours: 00:00 to 24:00  
Sunday Operating Hours: 00:00 to 24:00

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Emittant: CO  
BACT:  
Cost Effectiveness: NO  
Source Type: MAJOR  
Emis Increase: 0  
Modeling: N/A  
Public Notice: N/A  
CONTROLLED EMISSION  
Max Hourly: 18.35 lbs/hr  
Max Daily: 440.4 lbs/day  
UNCONTROLLED EMISSION  
Max Hourly: 18.35 lbs/hr  
Max Daily: 440.4 lbs/day  
CURRENT EMISSION  
BACT 30 days Avg: 441 lbs/day  
Annual Emission: 160305.6 lbs/yr  
District Exemption: None

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Emittant: NOX  
BACT:  
Cost Effectiveness: NO  
Source Type: MAJOR  
Emis Increase: 0  
Modeling: N/A  
Public Notice: N/A  
CONTROLLED EMISSION  
Max Hourly: 7.67 lbs/hr  
Max Daily: 184.08 lbs/day  
UNCONTROLLED EMISSION  
Max Hourly: 7.67 lbs/hr  
Max Daily: 184.08 lbs/day  
CURRENT EMISSION  
BACT 30 days Avg: 187 lbs/day  
Annual Emission: 67005.12 lbs/yr  
District Exemption: None

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Emittant: PM10  
BACT:  
Cost Effectiveness: NO  
Source Type: MINOR  
Emis Increase: 0  
Modeling: N/A  
Public Notice: N/A  
CONTROLLED EMISSION  
Max Hourly: 0.75 lbs/hr  
Max Daily: 18 lbs/day  
UNCONTROLLED EMISSION  
Max Hourly: 0.75 lbs/hr  
Max Daily: 18 lbs/day  
CURRENT EMISSION  
BACT 30 days Avg: 18 lbs/day  
Annual Emission: 6552 lbs/yr  
District Exemption: None

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Emittant: ROG  
 BACT:  
 Cost Effectiveness: NO  
 Source Type: MINOR  
 Emis Increase: 0  
 Modeling: N/A  
 Public Notice: N/A  
**CONTROLLED EMISSION**  
 Max Hourly: 5.75 lbs/hr  
 Max Daily: 138 lbs/day  
**UNCONTROLLED EMISSION**  
 Max Hourly: 5.75 lbs/hr  
 Max Daily: 138 lbs/day  
**CURRENT EMISSION**  
 BACT 30 days Avg: 140 lbs/day  
 Annual Emission: 50232 lbs/yr  
 District Exemption: None

Emittant: SOX  
 BACT:  
 Cost Effectiveness: NO  
 Source Type: MINOR  
 Emis Increase: 0  
 Modeling: N/A  
 Public Notice: N/A  
**CONTROLLED EMISSION**  
 Max Hourly: 0.75 lbs/hr  
 Max Daily: 18 lbs/day  
**UNCONTROLLED EMISSION**  
 Max Hourly: 0.75 lbs/hr  
 Max Daily: 18 lbs/day  
**CURRENT EMISSION**  
 BACT 30 days Avg: 18 lbs/day  
 Annual Emission: 6552 lbs/yr  
 District Exemption: None

SUPERVISOR'S APPROVAL:           cot           SUPERVISOR'S REVIEW DATE:           5/26/09



**FACILITY PERMIT TO OPERATE  
ORANGE COUNTY SANITATION DISTRICT**

**PERMIT TO OPERATE**

**Permit No. G2955  
A/N 486760**

**Equipment Description:**

RESOURCE RECOVERY SYSTEM NO. 3 CONSISTING OF:

INTERNAL COMBUSTION ENGINE (CG3-FV), COOPER BESSMER, SPARK IGNITION, FOUR STROKE, WITH A MODIFIED TURBOCHARGED-INTERCOOLED V-12 TYPE, MODEL NO. LSVB-12-SGC, 3471HP, NATURAL GAS AND/OR DIGESTER GAS FIRED, DRIVING A 2500 KW ELECTRIC GENERATOR, WITH AN EXHAUST HEAT RECOVERY STEAM GENERATOR, 5,008,500 BTU/HR CAPACITY, UNFIRED.

**Conditions:**

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.  
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.  
[RULE 204]
3. THIS EQUIPMENT SHALL BE OPERATED BY PERSONNEL PROPERLY TRAINED IN ITS OPERATION.  
[RULE 204]
4. THIS ENGINE SHALL HAVE AN OPERATIONAL NON-RESETTABLE TOTALIZING TIME METER TO DETERMINE THE ENGINE ELAPSED OPERATING TIME FOR EACH FUEL BLEND BURNED.  
[RULE 1110.2]
5. A FLOW INDICATING AND RECORDING DEVICE SHALL BE INSTALLED IN THE FUEL GAS, OR FUEL BLEND, SUPPLY LINE TO THE ENGINE TO MEASURE AND RECORD THE QUANTITY OF EACH FUEL GAS (IN SCFM) BURNED.  
[RULE 204]
6. SAMPLING PORT SHALL BE INSTALLED FOR THE INLET GAS LINE TO THE ENGINE TO ALLOW THE COLLECTION OF A FUEL GAS OR FUEL BLEND SAMPLES.  
[RULE 204]
7. MONTHLY READINGS OF THE BTU CONTENT OF FUEL GAS (BTU/SCF) AT THE COMBINED INLET TO THE CGS ENGINES SHALL BE TAKEN USING AN INSTRUMENT APPROVED BY THE SCAQMD. ALL RESULTS SHALL BE RECORDED.  
[RULE 204]
8. ALL RECORDING DEVICES SHALL BE SYNCHRONIZED WITH RESPECT TO THE TIME OF THE DAY.  
[RULE 204]



**FACILITY PERMIT TO OPERATE  
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9. THE TOTAL HEAT INPUT OF GASEOUS FUEL, OR FUEL BLEND, BURNED IN THIS ENGINE SHALL NOT EXCEED 28.5 MM BTU PER HOUR. A LOG SHALL BE KEPT INDICATING THE TOTAL HEATING VALUE OF FUEL GAS, OR FUEL BLEND, BURNED IN THIS ENGINE BASED ON THE RECORDED FLOW RATE (SCFM) AND THE LATEST MONTHLY BTU CONTENT READING.  
[RULE 1303 (b) (1) AND 1303 (b) (2)-MODELING AND EMISSIONS OFFSET]

10. THIS EQUIPMENT SHALL BE OPERATED IN COMPLIANCE WITH RULES 218, 431.1 AND 1110.2.  
[RULE 218, 431.1 AND 1110.2]

11. THIS EQUIPMENT SHALL BE OPERATED IN SUCH A MANNER THAT THE FOLLOWING EMISSION RATES ARE NOT EXCEEDED.

AIR CONTAMINANT	
CARBON MONOXIDE	590 PPMV AT 15% O2
PARTICULATES (PM10)	0.0087 GRAINS/ DSCF
ROG OR TNMHC (AS CARBON)	209 PPMV AT 15% O2
[RULE 1303 (a) (1), 1303(b) (1) AND 1303 (b) (2)-BACT, MODELING AND EMISSIONS OFFSET]	

12. THE COMBINED EMISSIONS FROM THE THREE (3) CGS ENGINES, USING CALENDAR MONTHLY EMISSIONS DIVIDED BY 30, SHALL NOT EXCEED THE FOLLOWING:

AIR CONTAMINANT	LBS/DAY
CARBON MONOXIDE	1321
NITROGEN OXIDES (AS NO2)	368
PARTICULATES (PM10)	36
ROG OR TNMHC (AS CH4)	276
SULFUR DIOXIDE	36
[RULE 1303 (b) (2)-EMISSIONS OFFSET]	

13. THE OPERATOR SHALL INSTALL AND MAINTAIN A CONTINUOUS EMISSION MONITORING SYSTEM (CEMS), OR AN ALTERNATIVE SYSTEM, AS APPROVED BY THE EXECUTIVE OFFICER, TO MEASURE THE ENGINE EXHAUST FOR NO<sub>x</sub> AND O<sub>2</sub> CONCENTRATIONS ON A DRY BASIS, EXCEPT DURING SHUTDOWN FOR MAINTENANCE OF THE SYSTEM. IN ADDITION, THE CEMS SHALL CONVERT THE ACTUAL NO<sub>x</sub> TO MASS EMISSION RATES; AND RECORD THE ACTUAL AND CORRECTED ENGINE NO<sub>x</sub> CONCENTRATION AT 15% O<sub>2</sub> AND MASS EMISSION RATES ON AN HOURLY AND DAILY BASIS.  
[RULE 218, RULE 1110.2]

14. THE OPERATOR SHALL CONDUCT PERFORMANCE TESTS ANNUALLY. WRITTEN NOTICE OF THE PERFORMANCE TEST SHALL BE PROVIDED TO THE AQMD AT LEAST 7 DAYS PRIOR TO THE TEST SO THAT AN OBSERVER MAY BE PRESENT. A COMPLETE FINAL REPORT OF THE TEST (LBS/HR, PPMVD AT 15% O<sub>2</sub>, LBS/MMBTU, ETC.) SHALL BE PROVIDED TO THE AQMD WITHIN 45 DAYS AFTER TESTING. ALL TEST RUNS REQUIRED BY AQMD SHALL BE REPORTED. THE TESTS SHALL INCLUDE BUT NOT BE LIMITED TO, A TEST OF THE FUELS BURNED AND ENGINE EXHAUST FOR:

- A. TOTAL NON-METHANE HYDROCARBONS (EXHAUST ONLY).
- B. CARBON MONOXIDE (EXHAUST ONLY)
- C. TOTAL PARTICULATE MATTER (EXHAUST ONLY).
- D. OXIDES OF NITROGEN (EXHAUST ONLY).



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**FACILITY PERMIT TO OPERATE  
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- E. OXYGEN
- F. FLOW RATE
- G. MOISTURE
- H. TOXIC AIR CONTAMINANTS (EXHAUST ONLY), FOR ONE ENGINE PER YEAR
- I. ALDEHYDES (EXHAUST ONLY), FOR ONE ENGINE PER YEAR
- J. TOTAL REDUCED SULFUR COMPOUNDS (FUEL ONLY)
- K. NITROGEN AND CARBON DIOXIDE
- L. BTU CONTENTS (FUEL ONLY)
- M. POWER OUTPUT

[RULE 1303(b) (1) AND 1303(b) (2) - MODELING AND EMISSION OFFSET], [RULE 1110.2], [RULE 404]

- 15 RECORDS SHALL BE KEPT AND MAINTAINED TO PROVE COMPLIANCE WITH ALL CONDITIONS FOR THIS PERMIT. THE RECORDS SHALL BE KEPT ON FILE FOR AT LEAST FIVE YEARS AND SHALL BE MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.  
[RULE 204]

**Emissions And Requirements:**

16. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

CO: 2000 PPMV, RULE 1110.2  
NOx: 45 PPMV, RULE 1110.2 (WITH 1.25 ECF ADJUSTMENT FACTOR).  
ROG: 313 PPMV, RULE 1110.2 (WITH 1.25 ECF ADJUSTMENT FACTOR).  
PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS

**Gaurang Rawal**

**From:** Gaurang Rawal  
**Sent:** Wednesday, May 06, 2009 10:16 AM  
**To:** Kogan, Vlad  
**Cc:** Amir Dejbakhsh; Charles Tupac  
**Subject:** RE: Di-gas ratio

Vlad,

New applications are required, along with Title V revision application, for greater than 10% NG augmentation. Please provide justifications for such usage. This may include, but not limited to;

1. Design capacity for the facility's Digester gas (DG) production rate, scfm.
2. DG production rate, as % of design capacity, over the last two-year.
3. Minimum % load (in terms of DG heat input rate, considering thermal efficiency) that each CGS can be run on DG in compliance with current rules.
4. Number of CGS engines can be run on DG, simultaneously, at minimum load.
5. Scenario(s) when >10% NG augmentation is required (scfm or % of heat input based on monthly avg.), breakdown for DG and NG heat input, duration for such operation, and demonstrate that it can comply with R1110.2 requirements.
6. Currently, OCSD is able to operate engines with DG only. What are the consequences if >10% NG is prohibitive.
7. Assume that boiler can be operated on NG only (dual fuel operation), thereby using available DG for CGS engines only.

FYI...one of the POTW facilities had withdrawn their request for >10% NG usage. I am unaware about ECF based permits for other facilities, however, in my opinion ECF based emissions can be addressed for other POTW facilities with required source tests results (per Rule 1110.2, ASME Performance Test Code PTC 17-1973).

Gaurang Rawal  
 Air Quality Engineer  
 Refinery & Waste Management  
 South Coast A.Q.M. D.  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 grawal@aqmd.gov  
 Ph: (909) 396-2543  
 FAX: (909) 396-3341

-----Original Message-----

**From:** Kogan, Vlad  
**Sent:** Wednesday, May 06, 2009 8:50 AM  
**To:** Gaurang Rawal  
**Cc:** Amir Dejbakhsh; Charles Tupac  
**Subject:** RE: Di-gas ratio

Gaurang,

OCSD e-mails you are referring to were sent to you by your request as a condition of allowing us to include ECFs in our permit conditions without delay. If you remember we needed the ECFs to avoid receiving NOV's from your inspectors. We greatly appreciate your positive response to our request but we have never considered this action as a permanent withdrawn of our application to burn more than 10% natural gas if necessary. Though we are currently trying to fuel the engines by close to 100% di-gas there might be cases when this amount of gas is not available. One example is the upcoming source testing of flares when about a half of daily di-gas production will be used for burning in flares and supplementing of di-gas by 30-40% of the natural gas, albeit temporarily, will be required. Do you think that we should

submit a new application for permission to burn more than 10% natural gas if necessary?

My e-mail to you is somehow broader than OCSD issues. As I mentioned, several other POTWs expressed concern regarding both provisions –ECFs and natural gas as related to their engines. I was directed to gather related materials and submit the corresponding letter to Mr. Nazemi. So, my question is basically related to other facilities. If no other POTWs have problems with these issues please let me now. If the problems do exist can you tell me what is the reason?

Thank you for your consideration and reply.

VK

---

**From:** Gaurang Rawal [mailto:gawal@aqmd.gov]  
**Sent:** Wednesday, May 06, 2009 8:21 AM  
**To:** Kogan, Vladimir  
**Cc:** Amir Dejbakhsh; Charles Tupac  
**Subject:** RE: Di-gas ratio

Vlad,

Regarding provision for CGS to burn more than 10% natural gas;

Please refer to the attached E-mails from Halverson, David (O & M) – Feb. 5, 2009 and your E-mails – Feb. 11 & 12, 2009.

CGS applications (Plant 2, ID 29110) were processed only for change of condition for ECF based NOx and ROG emissions (R1110.2), and **NOT** for >10% natural gas as this request was withdrawn per OCSD's written confirmation.

Plant 1 (ID 17301) did not have >10% NG request for change of condition applications.

CGS can be source tested with up to 10% NG augmentation per Rule 1110.2.

**ECF applications for Plant 1-** On April 1, 2009 the letter was sent to EPA for their 45-day review/commenting (cc: to James D. Ruth, General Manager, OCSD). We expect to complete and issue Title V permit revision around last week of May 2009.

**ECF applications for Plant 2-** On April 16, 2009 the letter was sent to EPA for their 45-day review/commenting (cc: to James D. Ruth, General Manager, OCSD). We expect to complete and issue Title V permit revision during 2<sup>nd</sup> week of June 2009.

Hope, this answers your inquiry and status of the CGS applications.

Regards,

Gaurang Rawal  
 Air Quality Engineer  
 Refinery & Waste Management  
 South Coast A.Q.M. D.  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 gawal@aqmd.gov  
 Ph: (909) 396-2543  
 FAX: (909) 396-3341

-----Original Message-----

**From:** Kogan, Vlad  
**Sent:** Tuesday, May 05, 2009 4:53 PM  
**To:** Amir Dejbakhsh; Gaurang Rawal  
**Subject:** Di-gas ratio

Hi Amir and Gaurang,

Let me once more remind you that we still haven't received a provision in our CGS engines permits that would allow us to burn more than 10% natural gas if necessary. We submitted such applications more than a year ago. We are currently planning to test flares and during the testing it would be necessary to supplement di-gas by natural gas in the engines fuel mixture.

It looks like it is not just our problem. Our SCAP AQ committee directed me to prepare materials on this issue (and to the Efficiency Correction Factors) for the letter to Mohsen Nazemi. As you know I always prefer to avoid any complains to the management. So, please notify me regarding the situation with such applications. It looks like we might get the ECFs in our permits soon, correct?

Please contact me as soon as you can. Thanks,

VK

Vlad Kogan

Senior Scientist

Environmental Compliance Division

Orange County Sanitation District

Tel: 714-593-7085

Fax: 714-962-8379

**Gaurang Rawal**

---

**From:** Gaurang Rawal  
**Sent:** Wednesday, May 06, 2009 8:21 AM  
**To:** Kogan, Vlad  
**Cc:** Amir Dejbakhsh; Charles Tupac  
**Subject:** RE: Di-gas ratio

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Regarding provision for CGS to burn more than 10% natural gas;

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CGS applications (Plant 2, ID 29110) were processed only for change of condition for ECF based NOx and ROG emissions (R1110.2), and **NOT** for >10% natural gas as this request was withdrawn per OCSD's written confirmation.

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**ECF applications for Plant 1-** On April 1, 2009 the letter was sent to EPA for their 45-day review/commenting (cc: to James D. Ruth, General Manager, OCSD). We expect to complete and issue Title V permit revision around last week of May 2009.

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Hope, this answers your inquiry and status of the CGS applications.

Regards,

Gaurang Rawal  
Air Quality Engineer  
Refinery & Waste Management  
South Coast A.Q.M. D.  
21865 Copley Drive  
Diamond Bar, CA 91765  
grawal@aqmd.gov  
Ph: (909) 396-2543  
FAX: (909) 396-3341

-----Original Message-----

**From:** Kogan, Vlad  
**Sent:** Tuesday, May 05, 2009 4:53 PM  
**To:** Amir Dejbakhsh; Gaurang Rawal  
**Subject:** Di-gas ratio

Hi Amir and Gaurang,

Let me once more remind you that we still haven't received a provision in our CGS engines permits that would allow us to burn more than 10% natural gas if necessary. We submitted such applications more than a year ago. We are currently planning to test flares and during the testing it would be necessary to supplement di-gas by natural gas in the engines fuel mixture.

It looks like it is not just our problem. Our SCAP AQ committee directed me to prepare materials on this issue (and to the Efficiency Correction Factors) for the letter to Mohsen Nazemi. As you know I always prefer to avoid any complains to the management. So, please notify me regarding the situation with such applications. It looks like we might get the ECFs in our permits soon, correct?

5/6/2009

Please contact me as soon as you can. Thanks,  
VK  
Vlad Kogan  
Senior Scientist  
Environmental Compliance Division  
Orange County Sanitation District  
Tel: 714-593-7085  
Fax: 714-962-8379

## FACILITY PERMIT TO OPERATE ORANGE COUNTY SANITATION DISTRICT

### PERMIT TO OPERATE

Permit No. TBD  
A/N 486760

**Equipment Description:**

RESOURCE RECOVERY SYSTEM NO. 3 CONSISTING OF:

INTERNAL COMBUSTION ENGINE (CG3-FV), COOPER BESSMER, SPARK IGNITION, FOUR STROKE, WITH A MODIFIED TURBOCHARGED-INTERCOOLED V-12 TYPE, MODEL NO. LSVB-12-SGC, 3471HP, NATURAL GAS AND/OR DIGESTER GAS FIRED, DRIVING A 2500 KW ELECTRIC GENERATOR, WITH AN EXHAUST HEAT RECOVERY STEAM GENERATOR, 5,008,500 BTU/HR CAPACITY, UNFIRED.

**Conditions:**

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.  
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.  
[RULE 204]
3. THIS EQUIPMENT SHALL BE OPERATED BY PERSONNEL PROPERLY TRAINED IN ITS OPERATION.  
[RULE 204]
4. THIS ENGINE SHALL HAVE AN OPERATIONAL NON-RESETTABLE TOTALIZING TIME METER TO DETERMINE THE ENGINE ELAPSED OPERATING TIME FOR EACH FUEL BLEND BURNED.  
[RULE 1110.2]
5. A FLOW INDICATING AND RECORDING DEVICE SHALL BE INSTALLED IN THE FUEL GAS, OR FUEL BLEND, SUPPLY LINE TO THE ENGINE TO MEASURE AND RECORD THE QUANTITY OF EACH FUEL GAS (IN SCFM) BURNED.  
[RULE 204]
6. SAMPLING PORT SHALL BE INSTALLED FOR THE INLET GAS LINE TO THE ENGINE TO ALLOW THE COLLECTION OF A FUEL GAS OR FUEL BLEND SAMPLES.  
[RULE 204]
7. MONTHLY READINGS OF THE BTU CONTENT OF FUEL GAS (BTU/SCF) AT THE COMBINED INLET TO THE CGS ENGINES SHALL BE TAKEN USING AN INSTRUMENT APPROVED BY THE SCAQMD. ALL RESULTS SHALL BE RECORDED.  
[RULE 204]
8. ALL RECORDING DEVICES SHALL BE SYNCHRONIZED WITH RESPECT TO THE TIME OF THE DAY.  
[RULE 204]

## FACILITY PERMIT TO OPERATE ORANGE COUNTY SANITATION DISTRICT

9. THE TOTAL HEAT INPUT OF GASEOUS FUEL, OR FUEL BLEND, BURNED IN THIS ENGINE SHALL NOT EXCEED 28.5 MM BTU PER HOUR. A LOG SHALL BE KEPT INDICATING THE TOTAL HEATING VALUE OF FUEL GAS, OR FUEL BLEND, BURNED IN THIS ENGINE BASED ON THE RECORDED FLOW RATE (SCFM) AND THE LATEST MONTHLY BTU CONTENT READING.  
[RULE 1303 (b) (1) AND 1303 (b) (2)-MODELING AND EMISSIONS OFFSET]

10. THIS EQUIPMENT SHALL BE OPERATED IN COMPLIANCE WITH RULES 218, 431.1 AND 1110.2.  
[RULE 218, 431.1 AND 1110.2]

11. THIS EQUIPMENT SHALL BE OPERATED IN SUCH A MANNER THAT THE FOLLOWING EMISSION RATES ARE NOT EXCEEDED.

AIR CONTAMINANT	
CARBON MONOXIDE	590 PPMV AT 15% O <sub>2</sub>
PARTICULATES (PM <sub>10</sub> )	0.0087 GRAINS/ DSCF
ROG OR TNMHC (AS CARBON)	209 PPMV AT 15% O <sub>2</sub>

[RULE 1303 (a) (1), 1303(b) (1) AND 1303 (b) (2)-BACT, MODELING AND EMISSIONS OFFSET]

12. THE COMBINED EMISSIONS FROM THE THREE (3) CGS ENGINES, USING CALENDAR MONTHLY EMISSIONS DIVIDED BY 30, SHALL NOT EXCEED THE FOLLOWING:

AIR CONTAMINANT	LBS/DAY
CARBON MONOXIDE	1321
NITROGEN OXIDES (AS NO <sub>2</sub> )	368
PARTICULATES (PM <sub>10</sub> )	36
ROG OR TNMHC (AS CH <sub>4</sub> )	276
SULFUR DIOXIDE	36

[RULE 1303 (b) (2)-EMISSIONS OFFSET]

13. THE OPERATOR SHALL INSTALL AND MAINTAIN A CONTINUOUS EMISSION MONITORING SYSTEM (CEMS), OR AN ALTERNATIVE SYSTEM, AS APPROVED BY THE EXECUTIVE OFFICER, TO MEASURE THE ENGINE EXHAUST FOR NO<sub>x</sub> AND O<sub>2</sub> CONCENTRATIONS ON A DRY BASIS, EXCEPT DURING SHUTDOWN FOR MAINTENANCE OF THE SYSTEM. IN ADDITION, THE CEMS SHALL CONVERT THE ACTUAL NO<sub>x</sub> TO MASS EMISSION RATES; AND RECORD THE ACTUAL AND CORRECTED ENGINE NO<sub>x</sub> CONCENTRATION AT 15% O<sub>2</sub> AND MASS EMISSION RATES ON AN HOURLY AND DAILY BASIS.  
[RULE 218, RULE 1110.2]

14. THE OPERATOR SHALL CONDUCT PERFORMANCE TESTS ANNUALLY. WRITTEN NOTICE OF THE PERFORMANCE TEST SHALL BE PROVIDED TO THE AQMD AT LEAST 7 DAYS PRIOR TO THE TEST SO THAT AN OBSERVER MAY BE PRESENT. A COMPLETE FINAL REPORT OF THE TEST (LBS/HR, PPMVD AT 15% O<sub>2</sub>, LBS/MMBTU, ETC.) SHALL BE PROVIDED TO THE AQMD WITHIN 45 DAYS AFTER TESTING. ALL TEST RUNS REQUIRED BY AQMD SHALL BE REPORTED. THE TESTS SHALL INCLUDE BUT NOT BE LIMITED TO, A TEST OF THE FUELS BURNED AND ENGINE EXHAUST FOR:

- A. TOTAL NON-METHANE HYDROCARBONS (EXHAUST ONLY).
- B. CARBON MONOXIDE (EXHAUST ONLY)
- C. TOTAL PARTICULATE MATTER (EXHAUST ONLY).
- D. OXIDES OF NITROGEN (EXHAUST ONLY).

## FACILITY PERMIT TO OPERATE ORANGE COUNTY SANITATION DISTRICT

- E. OXYGEN
- F. FLOW RATE
- G. MOISTURE
- H. TOXIC AIR CONTAMINANTS (EXHAUST ONLY), FOR ONE ENGINE PER YEAR
- I. ALDEHYDES (EXHAUST ONLY), FOR ONE ENGINE PER YEAR
- J. TOTAL REDUCED SULFUR COMPOUNDS (FUEL ONLY)
- K. NITROGEN AND CARBON DIOXIDE
- L. BTU CONTENTS (FUEL ONLY)
- M. POWER OUTPUT

[RULE 1303(b) (1) AND 1303(b) (2) - MODELING AND EMISSION OFFSET], [RULE 1110.2], [RULE 404]

- 15 RECORDS SHALL BE KEPT AND MAINTAINED TO PROVE COMPLIANCE WITH ALL CONDITIONS FOR THIS PERMIT. THE RECORDS SHALL BE KEPT ON FILE FOR AT LEAST FIVE YEARS AND SHALL BE MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.  
[RULE 204]

### Emissions And Requirements:

16. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:
- CO: 2000 PPMV, RULE 1110.2
  - NOx: 45 PPMV, RULE 1110.2 (WITH 1.25 ECF ADJUSTMENT FACTOR).
  - ROG: 313 PPMV, RULE 1110.2 (WITH 1.25 ECF ADJUSTMENT FACTOR).
  - PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS

## FACILITY PERMIT TO OPERATE ORANGE COUNTY SANITATION DISTRICT

### PERMIT TO OPERATE

Permit No. TBD  
A/N 486792

**Equipment Description:**

RESOURCE RECOVERY SYSTEM NO. 2 CONSISTING OF:

INTERNAL COMBUSTION ENGINE (CG2-FV), COOPER BESSMER, SPARK IGNITION, FOUR STROKE, WITH A MODIFIED TURBOCHARGED-INTERCOOLED V-12 TYPE, MODEL NO. LSVB-12-SGC, 3471HP, NATURAL GAS AND/OR DIGESTER GAS FIRED, DRIVING A 2500 KW ELECTRIC GENERATOR, WITH AN EXHAUST HEAT RECOVERY STEAM GENERATOR, 5,008,500 BTU/HR CAPACITY, UNFIRED.

**Conditions:**

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.  
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.  
[RULE 204]
3. THIS EQUIPMENT SHALL BE OPERATED BY PERSONNEL PROPERLY TRAINED IN ITS OPERATION.  
[RULE 204]
4. THIS ENGINE SHALL HAVE AN OPERATIONAL NON-RESETTING TOTALIZING TIME METER TO DETERMINE THE ENGINE ELAPSED OPERATING TIME FOR EACH FUEL BLEND BURNED.  
[RULE 1110.2]
5. A FLOW INDICATING AND RECORDING DEVICE SHALL BE INSTALLED IN THE FUEL GAS, OR FUEL BLEND, SUPPLY LINE TO THE ENGINE TO MEASURE AND RECORD THE QUANTITY OF EACH FUEL GAS (IN SCFM) BURNED.  
[RULE 204]
6. SAMPLING PORT SHALL BE INSTALLED FOR THE INLET GAS LINE TO THE ENGINE TO ALLOW THE COLLECTION OF A FUEL GAS OR FUEL BLEND SAMPLES.  
[RULE 204]
7. MONTHLY READINGS OF THE BTU CONTENT OF FUEL GAS (BTU/SCF) AT THE COMBINED INLET TO THE CGS ENGINES SHALL BE TAKEN USING AN INSTRUMENT APPROVED BY THE SCAQMD. ALL RESULTS SHALL BE RECORDED.  
[RULE 204]
8. ALL RECORDING DEVICES SHALL BE SYNCHRONIZED WITH RESPECT TO THE TIME OF THE DAY.  
[RULE 204]

**Gaurang Rawal**

---

**From:** Kogan, Vlad  
**Sent:** Tuesday, January 13, 2009 5:19 PM  
**To:** Gaurang Rawal  
**Subject:** FW: CGS issues

Gaurang,

I'm sorry, but it is absolutely necessary for us to receive a positive response to my e-mail from 1/6/09. As You know, we are Title V facility right now and should report any non-compliance. Our engines often operate at 40+ ppm of NOx that is OK with the ECF (e.g. 36 ppm x 1.3=46.8). But without approved ECFs that we submitted back in July 2007 we are not sure that such calculations can be used. Still, we do not have other choice than continue operating the engines under the assumption that our ECFs are confirmed per Rule 1110.2.

The issue of operating at more than 10% natural gas is less burning at the current mode. Still, when flares were monthly tested we didn't have enough di-gas at Plant 2 and were forced to operate engines at more than 10% natural gas. It will happen once every 1.5 months or so. Other possibilities of violating this R1110.2 provisions are also might happen.

So we really need your response asap and even faster. If you think that Charlie/Amir should be involved, please let me know (or transfer this e-mail to them)

Please contact me if you have questions. Thanks,  
VK

---

**From:** Kogan, Vladimir  
**Sent:** Tuesday, January 06, 2009 2:41 PM  
**To:** Gaurang Rawal  
**Cc:** Ahn, Terry; Rothbart, Lisa  
**Subject:** CGS issues

Gaurang,

What is a situation with our application for including ECF to our engines emissions data? We submitted the application with the testing result back in July 2008. Can we use these results for calculation the compliance with NOx emission limits (e.g. consider these limits at 43-45 ppm and not at 36 ppm)? Another issue is a permission to run the engines at more than 10% of di-gas. We submitted the application as specified by the Rule 1110.2 almost a year ago. As you understand, we are running engines at almost 100% di-gas but during the flares testing we might not be able to run the engines at 100% di-gas for a short time. In both examples such events are very rare and short-time but being a Title V facilities we'd like to avoid such situations completely. Thanks,

VK

Vlad Kogan  
Senior Scientist  
Environmental Compliance Division  
Orange County Sanitation District  
Tel: 714-593-7085  
Fax: 714-962-8379

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b>  <b>PERMIT APPLICATION EVALUATION AND CALCULATIONS</b>	PAGES 5	PAGE 1
	APPL NO SEE BELOW	DATE 4/03/2009
	PROCESSED BY GCR	CHECKED BY AD

**PERMIT TO OPERATE (CHANGE OF CONDITION) EVALUATION**

**APPLICANT'S NAME:** ORANGE COUNTY SANITATION DISTRICT (OCS D)

**MAILING ADDRESS:** 10844 ELLIS AVENUE  
FOUNTAIN VALLEY, CA 92708  
ATTN.: VLAD KOGAN, SENIOR SCIENTIST

**EQUIPMENT ADDRESS:** WASTEWATER TREATMENT PLANT NO. 1  
"SAME AS ABOVE"

**FACILITY ID NO.:** 017301

**EQUIPMENT DESCRIPTION:**

**APPLICATION NO. 486760**

RESOURCE RECOVERY SYSTEM NO. 3 CONSISTING OF:

INTERNAL COMBUSTION ENGINE (CG3-FV), COOPER BESSMER, SPARK IGNITION, FOUR STROKE, WITH A MODIFIED TURBOCHARGED-INTERCOOLED V-12 TYPE, MODEL NO. LSVB-12-SGC, 3471HP, NATURAL GAS AND/OR DIGESTER GAS FIRED, DRIVING A 2500 KW ELECTRIC GENERATOR, WITH AN EXHAUST HEAT RECOVERY STEAM GENERATOR, 5,008,500 BTU/HR CAPACITY, UNFIRED.

**APPLICATION NO. 486792**

RESOURCE RECOVERY SYSTEM NO. 2 CONSISTING OF:

INTERNAL COMBUSTION ENGINE (CG2-FV), COOPER BESSMER, SPARK IGNITION, FOUR STROKE, WITH A MODIFIED TURBOCHARGED-INTERCOOLED V-12 TYPE, MODEL NO. LSVB-12-SGC, 3471HP, NATURAL GAS AND/OR DIGESTER GAS FIRED, DRIVING A 2500 KW ELECTRIC GENERATOR, WITH AN EXHAUST HEAT RECOVERY STEAM GENERATOR, 5,008,500 BTU/HR CAPACITY, UNFIRED.

**APPLICATION NO. 486793**

RESOURCE RECOVERY SYSTEM NO. 1 CONSISTING OF:

INTERNAL COMBUSTION ENGINE (CG1-FV), COOPER BESSMER, SPARK IGNITION, FOUR STROKE, WITH A MODIFIED TURBOCHARGED-INTERCOOLED V-12 TYPE, MODEL NO. LSVB-12-SGC, 3471HP, NATURAL GAS AND/OR DIGESTER GAS FIRED, DRIVING A 2500 KW ELECTRIC GENERATOR, WITH AN EXHAUST HEAT RECOVERY STEAM GENERATOR, 5,008,500 BTU/HR CAPACITY, UNFIRED.

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b>  <b>PERMIT APPLICATION EVALUATION AND CALCULATIONS</b>	PAGES 5	PAGE 2
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	PROCESSED BY GCR	CHECKED BY

**Conditions:** (A/N 486760, 486792 and 486793)

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.  
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[RULE 1110.2]
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[RULE 204]
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[RULE 204]
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[RULE 1303 (b) (1) AND 1303 (b) (2)-MODELING AND EMISSIONS OFFSET]
10. THIS EQUIPMENT SHALL BE OPERATED IN COMPLIANCE WITH RULES 218, 431.1 AND 1110.2.  
[RULE 218, 431.1 AND 1110.2]

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b>  <b>PERMIT APPLICATION EVALUATION AND CALCULATIONS</b>	PAGES	PAGE
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	APPL NO SEE BELOW	DATE 4/03/2009
	PROCESSED BY GCR	CHECKED BY

11. THIS EQUIPMENT SHALL BE OPERATED IN SUCH A MANNER THAT THE FOLLOWING EMISSION RATES ARE NOT EXCEEDED.

AIR CONTAMINANT  
CARBON MONOXIDE 590 PPMV AT 15% O2  
PARTICULATES (PM10) 0.0087 GRAINS/ DSCF  
ROG OR TNMHC (AS CARBON) 209 PPMV AT 15% O2  
[RULE 1303 (a) (1), 1303(b) (1) AND 1303 (b) (2)-BACT, MODELING AND EMISSIONS OFFSET]

12. THE COMBINED EMISSIONS FROM THE THREE (3) CGS ENGINES, USING CALENDAR MONTHLY EMISSIONS DIVIDED BY 30, SHALL NOT EXCEED THE FOLLOWING:

AIR CONTAMINANT	LBS/DAY
CARBON MONOXIDE	1321
NITROGEN OXIDES (AS NO2)	368
PARTICULATES (PM10)	36
ROG OR TNMHC (AS CH4)	276
SULFUR DIOXIDE	36

[RULE 1303 (b) (2)-EMISSIONS OFFSET]

13. THE OPERATOR SHALL INSTALL AND MAINTAIN A CONTINUOUS EMISSION MONITORING SYSTEM (CEMS), OR AN ALTERNATIVE SYSTEM, AS APPROVED BY THE EXECUTIVE OFFICER, TO MEASURE THE ENGINE EXHAUST FOR NO<sub>x</sub> AND O<sub>2</sub> CONCENTRATIONS ON A DRY BASIS, EXCEPT DURING SHUTDOWN FOR MAINTENANCE OF THE SYSTEM. IN ADDITION, THE CEMS SHALL CONVERT THE ACTUAL NO<sub>x</sub> TO MASS EMISSION RATES; AND RECORD THE ACTUAL AND CORRECTED ENGINE NO<sub>x</sub> CONCENTRATION AT 15% O<sub>2</sub> AND MASS EMISSION RATES ON AN HOURLY AND DAILY BASIS.

[RULE 218, RULE 1110.2]

14. THE OPERATOR SHALL CONDUCT PERFORMANCE TESTS ANNUALLY. WRITTEN NOTICE OF THE PERFORMANCE TEST SHALL BE PROVIDED TO THE AQMD AT LEAST 7 DAYS PRIOR TO THE TEST SO THAT AN OBSERVER MAY BE PRESENT. A COMPLETE FINAL REPORT OF THE TEST (LBS/HR, PPMVD AT 15% O<sub>2</sub>, LBS/MMBTU, ETC.) SHALL BE PROVIDED TO THE AQMD WITHIN 45 DAYS AFTER TESTING. ALL TEST RUNS REQUIRED BY AQMD SHALL BE REPORTED. THE TESTS SHALL INCLUDE BUT NOT BE LIMITED TO, A TEST OF THE FUELS BURNED AND ENGINE EXHAUST FOR:

- A. TOTAL NON-METHANE HYDROCARBONS (EXHAUST ONLY)
- B. CARBON MONOXIDE (EXHAUST ONLY)
- C. TOTAL PARTICULATE MATTER (EXHAUST ONLY).
- D. OXIDES OF NITROGEN (EXHAUST ONLY).
- E. OXYGEN
- F. FLOW RATE
- G. MOISTURE
- H. TOXIC AIR CONTAMINANTS, FOR ONE ENGINE PER YEAR
- I. ALDEHYDES (EXHAUST ONLY), FOR ONE ENGINE PER YEAR
- J. TOTAL REDUCED SULFUR COMPOUNDS (INLET)
- K. NITROGEN AND CARBON DIOXIDE

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b>  <b>PERMIT APPLICATION EVALUATION AND CALCULATIONS</b>	PAGES 5	PAGE 4
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L. BTU CONTENTS (INLET)

M. POWER OUTPUT

[RULE 1303(b) (1) AND 1303(b) (2) - MODELING AND EMISSION OFFSET], [RULE 1110.2], [RULE 404]

15 RECORDS SHALL BE KEPT AND MAINTAINED TO PROVE COMPLIANCE WITH ALL CONDITIONS FOR THIS PERMIT. THE RECORDS SHALL BE KEPT ON FILE FOR AT LEAST FIVE YEARS AND SHALL BE MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.

[RULE 204]

**EMISSIONS AND REQUIREMENTS:**

16. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

CO: 2000 PPMV, RULE 1110.2

NOX: 45 PPMV, RULE 1110.2 (1.25 ECF ADJUSTMENT FACTOR).

ROG: 313 PPMV, RULE 1110.2 (1.25 ECF ADJUSTMENT FACTOR).

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS

**BACKGROUND:**

On August 12, 2008, the above A/Ns 486760, 486792 and 486793 (identical equipment) were submitted by the Orange County sanitation District (OCSD) for change of condition for NOx and VOC emission concentrations, per Rule 1110.2 (d) (1) ( C ), amended February 1, 2008. Each identical equipment is part of the Central generation System (CGS), spark-ignited internal combustion engine, located at Fountain Valley, Plant No. 1.

This is a Title V facility and initial Title V facility permit was issued that became effective January 12, 2009. Application (495837) for Title V permit revision is submitted. Staff has decided to include these engines' permits under TV revision No. 1, and Rule 1110.2 I & M Plan, A/N 486759, will be addressed separately at a later date.

**PROCESS DESCRIPTION:**

On 12/9/2008, the following most recent permits for the above engines were granted.,

G1039 / A/N 492036 (CG1-FV)

G1040 / A/N 492038 (CG2-FV)

G1041 / A/N 492039 (CG3-FV)

To comply with Rule (d) (1) ( C ), Table III, Emission Correction factor (ECF) based concentrations, OCSD had conducted required source tests [Per R1110.2 (d) (1) ( C ) (i) and (ii)] for each engine during June and July 2008. The tests were conducted by .....as required under R1110.2 (ASME Performance Test Code PTC 17-1973) for high, medium and low load, and average values determined for NOx, VOC and ECF (see summary results tables in folder).

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b>  <b>PERMIT APPLICATION EVALUATION AND CALCULATIONS</b>	PAGES 5	PAGE 5
	APPL NO SEE BELOW	DATE 4/03/2009
	PROCESSED BY GCR	CHECKED BY

Average results from three different loads are summarized below,

	Units	Engine No. 1	Engine No. 2	Engine No. 3
<b>Exhaust Flow Rate</b>	DSCFM	8116	9771	8226
<b>O<sub>2</sub></b>	%O <sub>2</sub>	11.92	12.20	11.72
<b>NO<sub>x</sub></b>	ppmvd @ 15% O <sub>2</sub>	23.5	24.3	37.6
<b>TNMOC</b>	ppmvd @ 15% O <sub>2</sub>	45.5	114.8	102.4
<b>CO (for information)</b>	ppmvd @ 15% O <sub>2</sub>	399.3	466	385.9
<b>Measured Q<sub>a</sub></b>	Btu/Bhp-hr	7336.5	7524.3	7356.7
<b>ECF = 9250 / Q<sub>a</sub></b>		1.26	1.23	1.26

**EMISSION (ppmvd at 15% O<sub>2</sub>) :**

For these identical engines, average **ECF = 1.25** will be used to determine ECF based conc.emission.

**NO<sub>x</sub> = 36 x 1.25 = 45 ppmvd**

**TNMOC (VOC) = 250 x 1.25 = 313 ppmvd**

CO concentration limit is kept as before as no ECF adjustment is required..

Condition No. 16 is updated for NO<sub>x</sub> and ROG con. limit with ECF = 1.25 (Rule 1110.2).

Mass emissions are kept same as under previous permit(s);

CO = 18.35 lbs/hr

NO<sub>x</sub> = 7.67 lbs/hr

PM10 = 0.75 lbs/hr

ROG = 5.75 lbs/hr

SO<sub>x</sub> = 0.75 lbs/hr

**RULES EVALUATION:**

Compliance with all applicable rules and regulations is expected.

NO<sub>x</sub> and VOC concentration limits are imposed, Condition No. 11, per Rule 1110.2 (d) (1) ( C ).

**RECOMMENDATION:**

Permit to operate for the proposed change of condition for each engine is recommended with above listed conditions (to be incorporated into Title V revision (No. 1) , A/N 495837.

**TABLE 1.3**  
**SUMMARY OF RESULTS SCAQMD RULE 1110.2 PTC 17 & 8760 HOUR TEST**  
**OCSD PLANT 1 FV (ID-17301)**  
**ENGINE #3**  
**July 8, 2008**

Parameter	Units	High Load	Medium Load	Low Load	Average
NO <sub>x</sub>	ppmvd	64.6	54.5	56.7	58.6
	ppmvd @ 15% O <sub>2</sub>	41.5	35.8	35.6	37.6
	lb/hr	4.27	3.40	2.91	3.52
	lb/day	102.4	81.5	69.7	84.6
CO	ppmvd	593.1	619.0	587.7	599.9
	ppmvd @ 15% O <sub>2</sub>	381.0	407.4	369.4	385.9
	lb/hr	23.86	23.49	18.34	21.90
	lb/day	572.7	563.8	440.1	525.5
TGNMEO <sup>(1)</sup>	ppmvd	-	155.5	-	155.5
	ppmvd @ 15% O <sub>2</sub>	-	102.4	-	102.4
	lb/hr	-	2.53	-	2.53
	lb/day	-	60.7	-	60.7
O <sub>2</sub>	%	11.71	11.94	11.51	11.72
CO <sub>2</sub>	%	7.76	7.64	8.07	7.82
Measured Q <sub>a</sub>	BTU/BHP-HR	7,097	7,337	7,636	7,356.7
ECF	-	1.303	1.261	1.211	1.258
Load	KW	2,423.0	2,156.0	1,780.0	2,119.7
	%	96.9	86.2	71.2	84.8
Volume Flow Rate	DSCFM	9,076	8,562	7,039	8,226

<sup>(1)</sup> One Method 25.1 Tray (duplicate samples) was collected at average load. Results are the average of both samples.

**OCSD Performance Test  
Manual Data Recording**

Date 7/8/08

LSVB12 Unit 3

Start Time 11:07 13:34 15:17

**Generator Data**

	1	3	4	Average
Amps A:	108	130	144	
Amps B:	105	128	141	
Amps C:	105	126	141	
Voltage (KV):	12.1	12.1	12.2	
Power Factor:	0.8	0.8	0.8	
<b>Factory Generator Efficiency (%):</b>	<b>96.34</b>	<b>96.55</b>	<b>96.61</b>	<b>96.50</b>
<b>Power Output (KW):</b>	<b>1780</b>	<b>2156</b>	<b>2423</b>	<b>2119</b>
<b>Power Output (BHP):</b>	<b>2476</b>	<b>2993</b>	<b>3361</b>	<b>2944</b>

**Fuel Flow Meter Data**

DI-GAS Fuel Flow (SCFM):	524	613	665	
NAT-GAS Fuel Flow (SCFM):	20	20.333	22.667	
<b>Calc. BSFC(BTU/BHP.Hr), <math>q_a</math>:</b>	<b>7636</b>	<b>7337</b>	<b>7097</b>	<b>7356</b>
<b>Calc. BSFC(BTU/KW.Hr):</b>	<b>10625</b>	<b>10186</b>	<b>9847</b>	<b>10219</b>

**Emissions Data**

RM NOx:	54.7	54.0	64.5	<b>57.7</b>
RM O2:	11.5%	11.9%	11.7%	
Calc. RM NOx @15%O2:	34.2	35.3	41.3	<b>36.94</b>
RM CO (ppm):	578	610	590	
RM CO2 (%):	7.93	7.63	7.74	
<b>NOx (lbm/Hr):</b>	<b>2.79</b>	<b>3.35</b>	<b>4.26</b>	<b>3.47</b>
<b>CO (lbm/Hr):</b>	<b>17.94</b>	<b>23.06</b>	<b>23.75</b>	<b>21.6</b>
<b>BSNOx (g/BHP.Hr):</b>	<b>0.52</b>	<b>0.51</b>	<b>0.57</b>	<b>0.53</b>
<b>BSCO (g/BHP.Hr):</b>	<b>3.32</b>	<b>3.50</b>	<b>3.19</b>	<b>3.33</b>
<b>BSNOx (g/KW.Hr):</b>	<b>0.71</b>	<b>0.71</b>	<b>0.80</b>	<b>0.74</b>
<b>BSCO (g/KW.Hr):</b>	<b>4.57</b>	<b>4.85</b>	<b>4.45</b>	<b>4.62</b>

**Engine Data**

Speed (RPM):	400	400	400
AMP ("Hg):	12.5	20.4	24.2
AMT (F):	100.0	104.3	106.0
Load (%):	70%	84%	95%
Turbo Speed (RPM):	9039	11091	11912
Jacket Water Temp. IN (F):	166	169	170
Jacket Water Temp. OUT (F):	170	173	174
Ambient Temp. (F):	68	68	68
Barometric pressure ("Hg):	30.3	30.1	30.1
Relative Humidity (%):	77%	77%	77%
Turbo Air Inlet Temp. (F):	77	77	77

**AUTO-RECORDING SUMMARY****OCSO Standard Form**

Plant 1  
Engine 3  
Date 7/8/08 7/8/08 7/8/08  
Time 11:07 13:34 15:17

**Engine Data****Average**

SPEED (rpm):	400	400	400
Torque (%):	69.9%	85.4%	95.3%
Output (bhp):	2425	2965	3308
AMP ("Hg):	12.4	20.4	23.9
PGP (PSI):	21.1	28.6	31.8
PDP (PSI):	15.0	18.6	20.0
AMT (deg F):	101.2	105.6	107.4
IT (deg BTDC):	11.8	11.7	11.8

**2899****Engine Performance**

NG Fuel Flow (SCFM):	20	27	22
DG Fuel Flow (SCFM):	520	602	664
LHV Blend Ratio:	94%	93%	95%
BSFC (BTU/BHP-HR):	7741	7404	7180
NOx MASS FLOW (lbm/HR):	2.89	3.40	4.26
CO MASS FLOW (lbm/HR):	18.2	23.5	23.8
BS NOx (g/BHP-HR):	0.54	0.52	0.58
BS CO (g/BHP-HR):	3.41	3.60	3.26

**23****595****7442****3.52****21.8****0.55****3.42****Emissions Data**

RM NOx (ppm):	56.7	54.5	64.6
RM O2 (%):	11.5%	11.9%	11.7%
RM NOx @15%O2:	35.6	35.9	41.5
RM CO (ppm):	588	619	593
RM CO @15%O2:	369	408	381

**37.7****386****Combustion Data**

Engine Avg PP (psi):	1840	1845	1861
Engine Avg LOPP (deg. ATDC):	7.9	7.9	8.2
Engine Avg Std Dev. PP(psi):	23	27	31
Engine Exhaust Temp.(F):	874	855	875

**FACILITY PERMIT TO OPERATE  
ORANGE COUNTY SANITATION DISTRICT**

*Current PO*

**PERMIT TO OPERATE**

**Permit No. G1041  
A/N 492039**

**Equipment Description:**

RESOURCE RECOVERY SYSTEM NO. 3 CONSISTING OF:

INTERNAL COMBUSTION ENGINE (CG3-FV), COOPER BESSMER, SPARK IGNITION, FOUR STROKE, WITH A MODIFIED TURBOCHARGED-INTERCOOLED V-12 TYPE, MODEL NO. LSVB-12-SGC, 3471HP, NATURAL GAS AND/OR DIGESTER GAS FIRED, DRIVING A 2500 KW ELECTRIC GENERATOR, WITH AN EXHAUST HEAT RECOVERY STEAM GENERATOR, 5,008,500 BTU/HR CAPACITY, UNFIRED.

**Conditions:**

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.  
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.  
[RULE 204]
3. THIS EQUIPMENT SHALL BE OPERATED BY PERSONNEL PROPERLY TRAINED IN ITS OPERATION.  
[RULE 204]
4. THIS ENGINE SHALL HAVE AN OPERATIONAL NON-RESETTABLE TOTALIZING TIME METER TO DETERMINE THE ENGINE ELAPSED OPERATING TIME FOR EACH FUEL BLEND BURNED.  
[RULE 1110.2]
5. A FLOW INDICATING AND RECORDING DEVICE SHALL BE INSTALLED IN THE FUEL GAS, OR FUEL BLEND, SUPPLY LINE TO THE ENGINE TO MEASURE AND RECORD THE QUANTITY OF EACH FUEL GAS (IN SCFM) BURNED.  
[RULE 204]
6. SAMPLING PORT SHALL BE INSTALLED FOR THE INLET GAS LINE TO THE ENGINE TO ALLOW THE COLLECTION OF A FUEL GAS OR FUEL BLEND SAMPLES.  
[RULE 204]
7. MONTHLY READINGS OF THE BTU CONTENT OF FUEL GAS (BTU/SCF) AT THE COMBINED INLET TO THE CGS ENGINES SHALL BE TAKEN USING AN INSTRUMENT APPROVED BY THE SCAQMD. ALL RESULTS SHALL BE RECORDED.  
[RULE 204]
8. ALL RECORDING DEVICES SHALL BE SYNCHRONIZED WITH RESPECT TO THE TIME OF THE DAY.  
[RULE 204]

## FACILITY PERMIT TO OPERATE ORANGE COUNTY SANITATION DISTRICT

9. THE TOTAL HEAT INPUT OF GASEOUS FUEL, OR FUEL BLEND, BURNED IN THIS ENGINE SHALL NOT EXCEED 28.5 MM BTU PER HOUR. A LOG SHALL BE KEPT INDICATING THE TOTAL HEATING VALUE OF FUEL GAS, OR FUEL BLEND, BURNED IN THIS ENGINE BASED ON THE RECORDED FLOW RATE (SCFM) AND THE LATEST MONTHLY BTU CONTENT READING.  
[RULE 1303 (b) (1) AND 1303 (b) (2)-MODELING AND EMISSIONS OFFSET]

10. THIS EQUIPMENT SHALL BE OPERATED IN COMPLIANCE WITH RULES 218, 431.1 AND 1110.2.  
[RULE 218, 431.1 AND 1110.2]

11. THIS EQUIPMENT SHALL BE OPERATED IN SUCH A MANNER THAT THE FOLLOWING EMISSION RATES ARE NOT EXCEEDED.

AIR CONTAMINANT	
CARBON MONOXIDE	590 PPMV AT 15% O2
PARTICULATES (PM10)	0.0087 GRAINS/ DSCF
ROG OR TNMHC (AS CARBON)	209 PPMV AT 15% O2

[RULE 1303 (a) (1), 1303(b) (1) AND 1303 (b) (2)-BACT, MODELING AND EMISSIONS OFFSET]

12. THE COMBINED EMISSIONS FROM THE THREE (3) CGS ENGINES, USING CALENDAR MONTHLY EMISSIONS DIVIDED BY 30, SHALL NOT EXCEED THE FOLLOWING:

AIR CONTAMINANT	LBS/DAY
CARBON MONOXIDE	1321
NITROGEN OXIDES (AS NO2)	368
PARTICULATES (PM10)	36
ROG OR TNMHC (AS CH4)	276
SULFUR DIOXIDE	36

[RULE 1303 (b) (2)-EMISSIONS OFFSET]

13. THE OPERATOR SHALL INSTALL AND MAINTAIN A CONTINUOUS EMISSION MONITORING SYSTEM (CEMS), OR AN ALTERNATIVE SYSTEM, AS APPROVED BY THE EXECUTIVE OFFICER, TO MEASURE THE ENGINE EXHAUST FOR NO<sub>x</sub> AND O<sub>2</sub> CONCENTRATIONS ON A DRY BASIS, EXCEPT DURING SHUTDOWN FOR MAINTENANCE OF THE SYSTEM. IN ADDITION, THE CEMS SHALL CONVERT THE ACTUAL NO<sub>x</sub> TO MASS EMISSION RATES; AND RECORD THE ACTUAL AND CORRECTED ENGINE NO<sub>x</sub> CONCENTRATION AT 15% O<sub>2</sub> AND MASS EMISSION RATES ON AN HOURLY AND DAILY BASIS.  
[RULE 218, RULE 1110.2]

14. THE OPERATOR SHALL CONDUCT PERFORMANCE TESTS ANNUALLY. WRITTEN NOTICE OF THE PERFORMANCE TEST SHALL BE PROVIDED TO THE AQMD AT LEAST 7 DAYS PRIOR TO THE TEST SO THAT AN OBSERVER MAY BE PRESENT. A COMPLETE FINAL REPORT OF THE TEST (LBS/HR, PPMVD AT 15% O<sub>2</sub>, LBS/MMBTU, ETC.) SHALL BE PROVIDED TO THE AQMD WITHIN 45 DAYS AFTER TESTING. ALL TEST RUNS REQUIRED BY AQMD SHALL BE REPORTED. THE TESTS SHALL INCLUDE BUT NOT BE LIMITED TO, A TEST OF THE FUELS BURNED AND ENGINE EXHAUST FOR:

- A. TOTAL NON-METHANE HYDROCARBONS
- B. CARBON MONOXIDE (EXHAUST ONLY)
- C. TOTAL PARTICULATE MATTER (EXHAUST ONLY).
- D. OXIDES OF NITROGEN (EXHAUST ONLY).

## FACILITY PERMIT TO OPERATE ORANGE COUNTY SANITATION DISTRICT

- E. OXYGEN
- F. FLOW RATE
- G. MOISTURE
- H. TOXIC AIR CONTAMINANTS, FOR ONE ENGINE PER YEAR
- I. ALDEHYDES (EXHAUST ONLY), FOR ONE ENGINE PER YEAR
- J. TOTAL REDUCED SULFUR COMPOUNDS (INLET)
- K. NITROGEN AND CARBON DIOXIDE
- L. BTU CONTENTS (INLET)
- M. POWER OUTPUT

[RULE 1303(b) (1) AND 1303(b) (2) - MODELING AND EMISSION OFFSET], [RULE 1110.2], [RULE 404]

- 15 RECORDS SHALL BE KEPT AND MAINTAINED TO PROVE COMPLIANCE WITH ALL CONDITIONS FOR THIS PERMIT. THE RECORDS SHALL BE KEPT ON FILE FOR AT LEAST FIVE YEARS AND SHALL BE MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.  
[RULE 204]

### **Emissions And Requirements:**

16. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

CO: 2000 PPMV, RULE 1110.2  
NOx: 36 PPMV, RULE 1110.2.  
ROG: 250 PPMV, RULE 1110.2.  
PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS

**Permit Emissions : G1039**

Permit Nbr  Application Nbr  Facility Id  Sector

Facility Name  X  Y

Team  Description

Device Id	Day	Stop Time	Start Time	Emittent Id	Measure Basis Code	Amount
0	1	24.00	.00	CO	R1HR	18.35
	2	24.00	.00	CO	R2	18.31
	3	24.00	.00	CO	R2DY	440.40
	4	24.00	.00	CO	R2HR	18.35
	5	24.00	.00	CO	RACT	440.00
	6	24.00	.00	CO	YRLY	160,305.60

In Process  Approved

EQ Bcat  Description

492036 }  
 492038 } Identical Equip.  
 492039 }



**Permit Emissions : G1039**

Permit Nbr  Application Nbr  Facility Id  Sector

Facility Name  X  Y

Team  Description

Device Id	Day	Stop Time	Start Time	Emittent Id	Measure Basis Code	Amount
0	1	24.00	.00	NOX	R1DY	184.08
	2	24.00	.00	NOX	R1HR	7.67
	3	24.00	.00	NOX	R2	7.67
	4	24.00	.00	NOX	R2DY	184.08
	5	24.00	.00	NOX	R2HR	7.67
	6	24.00	.00	NOX	RACT	187.00

In Process  Approved

EQ Bcat  Description



**Permit Emissions : G1039**

Permit Nbr  Application Nbr  Facility Id  Sector

Facility Name  X  Y

Team  Description

Device Id	Day	Stop Time	Start Time	Emittent Id	Measure Basis Code	Amount
0	1	24.00	.00	PM10	R1DY	18.00
	2	24.00	.00	PM10	R1HR	.75
	3	24.00	.00	PM10	R2	.75
	4	24.00	.00	PM10	R2DY	18.00
	5	24.00	.00	PM10	R2HR	.75
	6	24.00	.00	PM10	RACT	18.00

In Process  Approved

EQ Bcat  Description

Wait..



**Permit Emissions : G1039**

Permit Nbr  Application Nbr  Facility Id  Sector

Facility Name  X  Y

Team  Description

Device Id	Day	Stop Time	Start Time	Emittent Id	Measure Basis Code	Amount
0	1	24.00	.00	ROG	R1DY	138.00
	2	24.00	.00	ROG	R1HR	5.75
	3	24.00	.00	ROG	R2	5.75
	4	24.00	.00	ROG	R2DY	138.00
	5	24.00	.00	ROG	R2HR	5.75
	6	24.00	.00	ROG	RACT	140.00

In Process  Approved

EQ Bcat  Description

Wait...



**Permit Emissions : G1039**

Permit Nbr  Application Nbr  Facility Id  Sector

Facility Name  X  Y

Team  Description

Device Id	Day	Stop Time	Start Time	Emittent Id	Measure Basis Code	Amount
0	1	24.00	.00	SOX	R1DY	18.00
	2	24.00	.00	SOX	R1HR	.75
	3	24.00	.00	SOX	R2	.75
	4	24.00	.00	SOX	R2DY	18.00
	5	24.00	.00	SOX	R2HR	.75
	6	24.00	.00	SOX	RACT	18.00

In Process  Approved

EQ Beat  Description

Wait...



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • www.aqmd.gov

December 19, 2008

Mr. James D. Ruth  
General Manager  
Orange County Sanitation District  
PO Box 8127  
Fountain Valley, CA 92728-8127

Subject: Title V Facility Permits  
Fountain Valley, Plant 1 (Facility ID 017301), and  
Huntington Beach, Plant 2 (Facility ID 029110).

Dear Mr. Ruth,

Enclosed please find the final Title V facility permits, for the Orange County Sanitation District (OCSD) Fountain Valley, Sewage Treatment Plant No. 1 (Facility ID 017301), located at 10844 Ellis Avenue, Fountain Valley, California, and Huntington Beach, Sewage Treatment Plant No. 2 (Facility ID 029110), located at 22212 Brookhurst Street, Huntington Beach, California.

The South Coast Air Quality Management District (AQMD) previously issued proposed permits and public notice on October 30, 2008, for Environmental Protection Agency (EPA) and public review and commenting. AQMD received no comments from EPA or public on the proposed permits. Since the proposed permits were released, the following non-significant revisions have been made to the permits:

Plant No. 1 Facility ID 017301

Updated facility's Responsible Official and contact person's names.

Section D: Included Central Generation System equipment permits to operate for A/Ns 492036, 492038 and 492039.

Made corrections and updated permits as deemed necessary.

Section K: This section has been updated with the current federal and non-federal enforceable versions.

Plant No. 2 Facility ID 029110

Updated facility's Responsible Official and contact person's names.

Section D: Made corrections and updated permits as deemed necessary.

As of January 12, 2009, the Title V permits replaces all existing Permits to Operate and Permits to Construct that have been issued by the AQMD to each of the above facilities (ID 017301 and ID 029110).

Please review the attached Title V Facility Permits. The operation of your each facility is bound by the conditions and/or requirements stated in your Facility Permit to Operate. If you determine any administrative errors in your Facility Permits, please contact Mr. Gaurang Rawal, Air Quality Engineer II, at (909) 396-2543 within 30 days of the receipt of your permits.

Sincerely,



Mohsen Nazemi, P.E.  
Deputy Executive Officer  
Engineering And Compliance

MN: JC: CDT: GCR

Attachments

cc: w/ enclosure  
Geraldo Rios, EPA Region IX  
Compliance  
Title V Central File  
Title V Applications (341103 and 332589) Files,  
w/o enclosure  
Jay Chen, SCAQMD  
William Thompson, SCAQMD



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • www.aqmd.gov

9/4/2008

TERRY AHN  
ORANGE COUNTY SANITATION DISTRICT  
P O BOX 8127  
FOUNTAIN VALLEY, CA 92728

Facility ID: 17301  
Located at: 10844 ELLIS AVE, FOUNTAIN VALLEY

Thank you for filing your application(s) with the South Coast Air Quality Management District (AQMD).

The application number(s) assigned by AQMD to your application package(s) is/are on Page 2 of this letter. Please refer to the information on Page 2 when contacting AQMD for assistance. The information you submitted with your application(s) or in your latest submittal is complete to the extent that allows us to begin processing of your application(s), however some clarifying data may still be needed. The acceptance of your application(s) does not imply that permit(s) has/have been approved. The engineer assigned to process your application(s), as indicated below, may contact you if additional information is required.

If you have any question or need additional information about your application(s), please contact the engineer listed below:

**Engineer:** Gaurang Rawal

**Telephone:** (909) 396 - 2543

For general information about AQMD's permitting process, please call (909) 396-2468.

cc: Application file(s)

# AQMD PERMIT APPLICATION INFORMATION

(Please refer to this information when contacting AQMD for Assistance)

9/4/2008

Facility ID: 17301

Application Number(s)	Equipment Description
486759	PLAN RULE 1110.2- Inspection & Monitoring Plan <sup>ATN</sup>
✓ 486760	ICE (>500 HP) NAT & DIGESTER GAS Rev. F96017/414651
486792	ICE (>500 HP) NAT & DIGESTER GAS " F96014/414650
486793	ICE (>500 HP) NAT & DIGESTER GAS " F96012/414648





# ORANGE COUNTY SANITATION DISTRICT

July 29, 2008

Permit Services  
South Coast Air Quality Management District  
21865 E. Copley Drive  
Diamond Bar, CA 91765-4182

phone:  
(714) 962-2411

mailing address:  
P.O. Box 8127  
Fountain Valley, CA  
92728-8127

SUBJECT: Change of Condition for Permits to Operate Central Power  
Generation System Engines (F96012, F96014, and F96017) at  
OCSD Plant No. 1

street address:  
10844 Ellis Avenue  
Fountain Valley, CA  
92708-7018

The purpose of this letter is to submit a permit application for the change of conditions for Permits to Operate F96012, F96014, and F96017 for Central Power Generation System Engines at Orange County Sanitation District's (OCSD) Wastewater Treatment located in Fountain Valley, CA.

**Member Agencies**

**Cities**

- Anaheim
- Brea
- Buena Park
- Cypress
- Fountain Valley
- Fullerton
- Garden Grove
- Huntington Beach
- Irvine
- La Habra
- La Palma
- Los Alamitos
- Newport Beach
- Orange
- Placentia
- Santa Ana
- Seal Beach
- Stanton
- Tustin
- Villa Park
- Yorba Linda

This application is being submitted in accordance with the SCAQMD Rule 1110.2, subparagraph (e)(2)(B) requirements, which allows engine operators to submit permit modification requests to incorporate efficiency correction factor (ECF)-adjusted emission limits.

OCSD determined the ECF for each engine by measuring the engine's net specific energy consumption, in accordance with ASME Performance Test Code PTC 17-1973 as specified in the SCAQMD Rule 1110.2, subparagraph (d)(1)(C). The preliminary results of the ECF measurements and the ECF-adjusted emission limits are provided in the Attachment 1. The final results of the ECF measurements will be provided shortly.

Also enclosed are:

- (3) SCAQMD Form 400-A's
- (1) SCAQMD Form 400-CEQA
- Check for the permit processing fee in the amount of \$6,016.36

If you have any questions or require further information, please contact Vlad Kogan at (714) 593-7085 or [vkogan@ocsd.com](mailto:vkogan@ocsd.com).

for Michael D. Moore, Manager  
Environmental Compliance and Regulatory Affairs Division  
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Enclosure(s)

cc: T. Ahn  
Charlie Tupac (SCAQMD)  
Gaurang Rawal (SCAQMD)

## Attachment 1

### Efficiency Correction Factor (ECF) Determination and ECF-Adjusted Emission Limits

#### Efficiency Correction Factor (ECF) Determination

OCSD hired the Advanced Engine Technologies Corporation (AETC) to measure the engine's net specific energy consumption ( $q_a$ ), in accordance with ASME Performance Test Code PTC 17-1973.

Per SCAQMD Rule 1110.2 subparagraph (d)(1)(C), ECF is calculated as follows:

$$ECF = 9250 \text{ Btu/hp-hr} / \text{Measured } q_a \text{ in Btu/hp-hr}$$

#### ECF-Adjusted Emission Limits

Engine No.	Permit No.	Efficiency Correction Factor (ECF)	Concentration Limits	
			NOx (ppmvd) 36 x ECF	VOC (ppmvd) 250 x ECF
1	F96012	1.261	45.40	315.25
2	F96014	1.230	44.28	307.50
3	F96017	1.258	45.29	314.50