BOARD MEETING DATE: February 2, 2018 AGENDA NO. 30

PROPOSAL: Determine Proposed Amendments to BACT Guidelines Are Exempt from CEQA and Amend BACT Guidelines

SYNOPSIS: Periodically, staff proposes amendments to the BACT Guidelines to add new determinations or reflect updates. These actions are to add new and amended listings to Part B, Lowest Achievable Emission Rate and BACT Determinations for Major Polluting Facilities and Part D, BACT Determinations for Non-Major Polluting Facilities. Additionally, these actions are to determine the proposed amendments to the BACT Guidelines are exempt from CEQA and amend the BACT Guidelines to make them consistent with recent changes to SCAQMD rules and regulations as well as state requirements.

COMMITTEE: Stationary Source, January 19, 2018; Recommended for Approval

RECOMMENDED ACTIONS:
1. Determine the proposed amendments to the BACT Guidelines are exempt from the requirements of CEQA; and
2. Approve Proposed Amendments to BACT Guidelines, Parts B and D.

Wayne Nastri
Executive Officer

MMM:AHB:TL

Background

SCAQMD's Regulation XIII – New Source Review (NSR), requires permit applicants to use BACT for new sources, relocated sources and modifications to existing sources that may result in an emission increase of any nonattainment air contaminant, any ozone depleting compound (ODC) or ammonia. Regulation XIII also requires the Executive Officer to periodically publish BACT Guidelines that establish the procedures and requirements for applying BACT to commonly permitted equipment.

The BACT Guidelines are separated into two parts: 1) major polluting facilities, and 2) non-major polluting facilities. A facility is a major polluting facility if it emits, or has the potential to emit, a criteria air pollutant at a level that equals or exceeds the emission thresholds in SCAQMD's Regulation XXX - Title V Permits. Major polluting facilities that are subject to NSR are required by the federal Clean Air Act (CAA) to have the

Lowest Achievable Emission Rate (LAER). The federal CAA requirement for LAER is implemented through BACT in the SCAQMD. The Part B BACT and LAER determinations for major polluting facilities are only examples of past determinations that help in determining LAER for new permit applications. At the state level, California Health and Safety Code (H&SC) Section 40405 defines BACT in a similar manner to federal LAER and requires the application of BACT for all new and modified permitted sources subject to NSR. For non-major polluting facilities, minor source BACT (MSBACT) is as specified in Part D of the BACT Guidelines and determined in accordance with state law H&SC Section 40440.11 at the time an application is deemed complete. In updating Part D with new or more stringent MSBACT, SCAQMD must follow a more rigorous process than for major polluting facilities, including a cost-effectiveness analysis, notification to the public, presentation at a BACT Scientific Review Committee (BACT SRC) meeting and Board approval.

The BACT SRC was established as a standing committee by the Board to enhance the public participation process with technical review and comments by a focused committee at periodic intervals, prior to the updates of the BACT Guidelines.

Proposed Amendments to the BACT Guidelines

The proposed amendments are to add new as well as update BACT listings in Parts B and D of the BACT Guidelines and maintain consistency with recent changes to SCAQMD rules and state requirements. The BACT SRC and other interested parties were provided with detailed descriptions of the proposed amended BACT Guidelines at scheduled publicly noticed meetings on April 4, 2017, May 24, 2017, October 26, 2017 and December 12, 2017. The proposed amendments to the BACT Guidelines were posted on SCAQMD's website and two 30-day public comment periods were provided. Comments by BACT SRC members and the general public, and staff responses are included in Attachment F.

Making the Online BACT Guidelines User Friendly

Staff is continually identifying ways to make the interactive experience with the online BACT Guidelines more user friendly. Through staff input and suggestions from the public, new ideas are evaluated and taken into consideration for future implementation. Staff proposes to add a link in the BACT Guidelines webpage titled "EQUIPMENT CATEGORY SEARCH." By clicking this link, users will be able to more efficiently and expeditiously search for specific equipment BACT requirements for both major and non-major sources.

New and Updated Listings, Part B - LAER/BACT Determinations for Major Polluting Facilities

Part B consists of three sections: Section I contains listings of LAER/BACT determinations made by SCAQMD; Section II contains listings of LAER/BACT determinations for equipment in other air districts; and Section III contains listings of

emerging technologies which have been in operation with an air quality permit but do not yet qualify as LAER. The proposed Part B LAER/BACT determinations of Section I and emerging technologies or Section III are summarized below with the complete proposed determinations included in Attachment B. The other portions of Sections I, II and III are not included in this Board package because they are not being updated at this time.

Section I – SCAQMD LAER/BACT Determinations
Six new proposed listings include Furnace-Heat Treating Aluminum ≤900 degrees Fahrenheit (°F), Food Oven-Bakery with add-on control, Food Oven-Tortilla Chip, Food Oven-Snack Food, Flare-Biogas and Flare-Landfill. Two proposed updated listings include Boiler and Internal Combustion (I.C.) Engine-Digester Gas-Fired.

The new "Furnace-Heat Treating Aluminum ≤900°F" listing is for a custom-built Carlton Forge Works furnace with a 5 million British thermal units per hour (MMBtu/hr) Low NOx burner used for heating aluminum billets prior to the forging process. This furnace was permitted to not exceed 900°F with NOx emission level of 30 ppm corrected to 3 percent oxygen (O2). The furnace commenced operation and was source tested in mid-2014 and has operated since that time. The source test showed the furnace complied with the NOx emission limit.

The new "Food Oven-Bakery with add-on control" listing is for four bakery ovens with burners ranging from 2.8 MMBtu/hr to 5.4 MM Btu/hr used to bake rolls and buns vented to a 4 MMBtu/hr catalytic oxidizer to control VOC emissions. The ovens were permitted to meet a NOx emission limit of 40 ppm corrected to 3 percent O2 and the catalytic oxidizer to meet 30 ppm NOx with a 95 percent overall VOC control efficiency. Both the ovens and oxidizer began operation in mid-2014 and were source tested in 2016. The source test showed the ovens and oxidizer complied with the permitted emission limits.

The new "Food Oven-Tortilla Chip" listing is for an oven with both 1.742 MMBtu/hr infrared and 4.032 MMBtu/hr ribbon burners used to dry and bake corn dough into tortilla chips prior to cooking in deep fat fryer. The oven was permitted to meet a NOx emission limit of 54 ppm corrected to 3 percent O2 and began operation in early 2014. The oven was source tested in early 2015 and showed compliance with the permitted emission limits.

The new "Food Oven-Snack Food" listing is for an oven with a 1.6 MMBtu/hr low NOx burner used to bake corn meal cheese puffs. The oven was permitted to meet a NOx emission limit of 25 ppm corrected to 3 percent O2 and began operation in early 2008. The oven was source tested in 2009 and showed compliance with the permitted emission limits.

The new "Flare-Digester Gas" listings are for two digester gas-fired flares. The first is a 12 MMBtu/hr enclosed ground flare which operates intermittently as needed to incinerate excess digester gas not used as fuel in the boilers, fuel cell or to relieve pressure from

storage tanks. This flare was permitted to achieve NOx, VOC and CO emission levels of 0.025, 0.038 and 0.06 pounds per million British thermal units (lb/MMBtu), respectively, at an operating temperature of 1600°F or greater. The flare commenced operation and was source tested in late 2011 and has operated since that time. The source test showed the flare complied with the emission and temperature limits. The second is a 39.3 MMBtu/hr enclosed ground flare which operates intermittently to incinerate excess digester gas vented from food waste and manure anaerobic digesters. This flare was permitted to achieve 0.025 lb NOx/MMBtu, 0.06 lb CO/MMBtu and 5.5 lb VOC/day at an operating temperature of 1500°F or greater. The flare commenced operation and was source tested in late 2008 and has operated since that time. The source test showed the flare complied with the emission and temperature limits.

The new "Flare-Landfill Gas, Active, Solid Non-Hazardous Waste" listing is for a 120MMBtu/hr enclosed ground flare which operates to incinerate landfill gas vented from a collection system. This flare was permitted to achieve 0.025 lb NOx/MMBtu, 0.06 lb CO/MMBtu and 1.33 lb VOC/hr at an operating temperature of 1400°F or greater. The flare commenced operation and was source tested in late 2009 and has operated since that time. The source test showed the flare complied with the emission and temperature limits.

The "Boilers" LAER category is being updated with a listing of a 39.9 MMBtu/hr water tube boiler with low NOx burner and selective catalytic reduction (SCR) which provides steam for laundry facilities, hospital heating and sterilization procedures. This boiler was permitted to achieve 5 ppm NOx and 100 ppm CO, both corrected to 3 percent O2. The boiler commenced operation in mid-2015 and has operated since that time. A source test was conducted in mid-2016 which showed compliance with the permitted emission limits.

The "I.C. Engine-Digester Gas Fired" LAER category is being updated with a listing of a 3,471 horsepower (HP), 2500 kilo Watts (kW) I.C. Engine with digester gas clean-up system, oxidation catalyst and SCR. The engine is fueled with biogas from digester tanks at a wastewater treatment facility and generates electrical power and waste heat for the facility. This engine was permitted to achieve emission limits of 11ppm NOx, 30ppm VOC and 250ppm CO, all corrected to 15 percent O2 in accordance with SCAQMD Rule 1110.2 - Emissions from Gaseous and Liquid-Fueled Engines. The engine commenced operation and was source tested in 2010 and has operated since that time. The source test showed compliance with the permitted emission limits.

Section III – Other Technologies

Staff is proposing to clarify the intent of this section to indicate that these listings are of emerging technologies which have been in operation with an air quality permit but do not yet qualify as LAER. Staff continues to gather performance, reliability, maintenance and other relevant data on these emerging technologies as part of the process for establishing achieved in practice LAER status. Once staff makes a determination that an emerging technology meets the minimum requirements established in the BACT Guidelines for

LAER, it will be recommended for LAER in Part B, Section I or II. The two new proposed listings for Section III include an I.C. Engine-Emergency Compression Ignition with particulate matter (PM) Trap and SCR and a Distributed Generation Fuel Cell with Digester Gas Clean-Up System. Staff is awaiting further operational performance testing prior to making a determination for proposed LAER recommendation for these technologies.

The "I.C. Engine, Stationary, Emergency, Electrical Generators" listing is for a 1,490 BHP, 1000 kW I.C. Engine equipped with exhaust aftertreatment system consisting of SCR and diesel particulate filter. The engine is also equipped with an exhaust heater/load bank and control to regulate temperatures and assure full SCR efficiency. The engine has been installed and operated as emergency standby at a facility that manufactures industrial gases. The engine complies with EPA Tier 4 emission standards of 0.14, 0.5, 2.61 and 0.022 grams per brake horsepower-hour of non-methane hydrocarbons (g/bhp-hr NMHC), NOx, CO and PM, respectively. Emissions testing was done on the ISO 8178 D2 cycle consistent with constant speed stationary engines. The engine was permitted and commenced operation in late 2015 and continues operation to date.

The "Fuel Cell Electricity Generator-Digester Gas Fueled" listing is for a 1.4 megawatt (MW) fuel cell, molten carbonate, equipped with biogas clean up system, start-up air heater and 2.5 MMBtu/hr exhaust heat recovery unit. The fuel cell is fueled with biogas from digester tanks at a wastewater treatment facility and generates electrical power and waste heat for the facility. The fuel cell was permitted to comply with emission limits of 0.07, 0.1 and 0.1 pounds per megawatt-hour (lbs/MW-hr) NOx, VOC and CO, respectively. The fuel cell commenced operation in late 2015, continues to operate and was source tested in late 2016 to show compliance with the permitted emission limits.

<u>Proposed Amendments to Part D BACT Determinations for Non-Major Polluting Facilities</u>
Part D consists of BACT determinations for minor sources which are established in accordance with state law at the time an application is deemed complete. The proposed new and updated amendments to Part Dare for equipment and processes which have been achieved in practice and to maintain consistency with recent changes to SCAQMD rules and state requirements. All proposed Part D amendments and updates, with the exception of add-on control listings for Printing (Graphic Arts)-Flexographic and Bakery Oven with Yeast Leavened Products ≥30 lb VOC/day, will not result in more stringent requirements than would otherwise occur through SIP-approved rule compliance which constitutes MSBACT under Part C – Policy Guidance. Therefore, it was not required for staff to evaluate the achieved-in-practice status nor cost effectiveness of these underlying technologies. The proposed amendments comply with the requirements of H&SC Section 40440.11. The proposed Part D BACT determinations are summarized below with the complete proposed amended Part D included in Attachment C.

Printing (Graphic Arts)-Flexographic
--Current Language
Minor source BACT for flexographic printing is use of inks ≤1.5 lbs VOC/gallon, less water and less exempt compounds in addition to compliance with SCAQMD Rules 1130 - Graphic Arts and 1171 - Solvent Cleaning Operations.

--Proposal
Ultraviolet/electron beam (UV/EB) and water-based inks and coatings are widely used in the flexographic printing industry. The use of these inks and coatings typically result in lower VOC emissions and have been used in the flexographic printing industry for many years. The use of these low VOC ink and coating technologies as an alternate equivalent option for BACT compliance in specific applications will lead to increased implementation and further reduction of emissions.

Staff is proposing to add language to this BACT determination stating "or use of UV/EB or water-based inks/coatings ≤180 grams of volatile organic compound per liter (g VOC/l)." This proposed BACT equivalent compliance option is consistent with the existing VOC limit of ≤1.5 lbs /gal limit and encourages the use of low VOC materials while still complying with applicable requirements under Rules 1130 and 1171. Staff is also proposing to add the subcategory of Add-On Control to Flexographic Printing consisting of the installation of a regenerative thermal oxidizer as an emission control compliance option allowed under Rule 1130 (c)(5) which is discussed in the "Compliance with Health and Safety Code" section below.

Printing (Graphic Arts) - Lithographic or Offset, Heatset
--Current Language
Minor source BACT for lithographic or offset, heatset printing is use of low VOC fountain solution (≤8% by volume); low vapor pressure (≤10 millimeters of mercury (mm Hg)) or low VOC (≤100 g/l) blanket and roller washes; oil-based or UV-curable inks and compliance with SCAQMD Rules 1130 and 1171.

--Proposal
To be consistent with the requirements of Rule 1130, staff is proposing to remove language stating "low vapor pressure (≤10 millimeters of mercury (mm Hg))". Staff is also proposing to move afterburner add-on control listing from PM10 column to VOC column to reflect correct criteria pollutant control.

Printing (Graphic Arts) - Screen Printing and Drying
--Current Language
Minor source BACT for screen printing and drying is compliance with SCAQMD Rules 1130.1- Screen Printing Operations and 1171.

--Proposal
UV/EV and water-based inks and coatings are widely used in the screen printing and drying industry. These type of inks and coatings have been manufactured with low VOC content and used in the screen printing and drying industry for many years. Identifying the use of these low VOC ink and coating technologies as an alternate equivalent option for BACT compliance in specific applications will lead to increased implementation and further reduction of emissions.

Staff is proposing to add language to this BACT determination stating "or use of Rule 1130.1 and 1171 compliant UV/EB or water-based inks/coatings." This new BACT compliance option is consistent with the existing applicable rule requirements and encourage the use of low VOC materials.

Food Oven – Ribbon Burner, Direct Fired Burner, Infrared Burner and Other Burners
--Current Language
Part D of the BACT guidelines does not list a specific Equipment/Process category for food ovens. The Equipment/Process category of "Dryer or Oven", subcategory "Other Dryers and Ovens – Direct and Indirect Fired" has been used to address BACT for food ovens. With the adoption of Rule 1153.1 - Emissions of Oxides of Nitrogen from Commercial Food Ovens specific emission standards for commercial food ovens were established.

--Proposal
Staff is proposing to add a new Equipment/Process category of "Food Oven" with subcategories of "Ribbon Burner, Direct Fired Burner, Infrared Burner, and Other Burners" which will be in line with current BACT and rule requirements. This new BACT category for food ovens will establish a dedicated listing that can be referenced for BACT applicability purposes. Staff has included achieved in practice BACT determination examples of the subcategories under Food Oven in Attachment C. Staff is also proposing to add the subcategory of "Add-on control for Bakery Oven processing yeast leavened products with emissions ≥30 lb VOC/day" which is discussed in the "Compliance with Health and Safety Code" section below.

I.C. Engine, Stationary, Non-Emergency, Electrical Generators
--Current Language
Part D of the BACT Guidelines has an Equipment/Process category listing for "I.C. Engine, Stationary, Non-Emergency." Due to recent amendments to Rule 1110.2, staff has recognized the need for a new Equipment/Process category to address stationary, non-emergency I.C. engines that generate electrical power.

--Proposal
Staff proposes to replace the current BACT determination of "I.C. Engine, Stationary, Non-Emergency" with a new BACT determination of "I.C. Engine, Stationary, Non-Emergency, Electrical Generators." This new listing will incorporate the existing Rule 1110.2 limits and requirements listed below for new or modified engines subject to BACT rated greater than 50 bhp and taking into account applicable thermal credit. Staff has included achieved in practice BACT determination examples for electrical generation stationary non-emergency I.C. Engines in Attachment C.

NOx lbs/MW-hr @ 15% O_2	VOC[1] lbs/MW-hr @ 15% O_2	CO lbs/MW-hr @ 15% O_2
0.07	0.10	0.20

[1]measured as carbon

I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators
--Current Language
The Equipment/Process category BACT listing for "I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators" applies to stationary, non-emergency engines that do not generate electrical power. The proposed replacement of BACT determination "I.C. Engine, Stationary, Non-Emergency" with "I.C. Engine, Stationary, Non-Emergency, Electrical Generators" will require removal of footnote one under "I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators" which notes this future pending action.

--Proposal
Staff proposes to delete footnote number one under BACT determination "I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators" which will no longer apply due to proposed new BACT determination "I.C. Engine, Stationary, Non-Emergency, Electrical Generators."

I.C. Engine, Stationary, Non-Emergency
--Current Language
The proposed BACT Equipment/Process category "I.C. Engine, Stationary, Non-Emergency, Electrical Generators" supersedes the category "I.C. Engine, Stationary, Non-Emergency". These are redundant categories as they both apply to stationary, non-emergency engines that generate electrical power. This will require removal of footnote

one under "I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators" which notes this future pending action.

--Proposal
Staff proposes to delete the BACT Equipment/Process category listing "I.C. Engine, Stationary, Non-Emergency" which will be replaced with BACT Equipment/Process category listing "I.C. Engine, Stationary, Non-Emergency, Electrical Generators."

I.C. Engine, Portable
--Current Language
Equipment/Process category listing for "I.C. Engine, Portable" includes emission requirements that mirror the California Air Resources Board Airborne Toxic Control Measure (CARB ATCM) Tier requirements for portable engines. CARB has updated their emission requirements for portable engines rated at 75 HP up to 174 HP to Tier 4 final.

--Proposal
To maintain consistency with the CARB ATCM Tier requirements for portable engines rated 75 to 174 HP staff is proposing to amend the "I.C. Engine, Portable" BACT listing for the same portable engine rating range with the requirement to meet Tier 4 Final emission standards.

Dryer or Oven
--Current Language
Equipment/Process category listing for "Dryer or Oven" has a subcategory of "Other Dryers and Ovens – Direct and Indirect Fired" which has been used to address BACT for food ovens. With the adoption of Rule 1153.1 specific emission standards for commercial food ovens were established. Staff is also proposing a new Equipment/Process category of "Food Oven" to establish a dedicated listing that can be referenced for BACT applicability purposes.

--Proposal
For clarification, staff proposes to add a footnote under the "Dryer or Oven" BACT listing stating "Does not include food or bakery ovens. See listing for 'Food Oven'."

<u>Correction to Part C – Policy and Procedures for Non-Major Polluting Facilities</u>
During the publication of the BACT Guidelines after the approved amendments from the December 2, 2016 Board meeting, section titled "Equipment Not Identified in the MSBACT Guidelines" was inadvertently omitted. Staff is proposing to include the original language in Part C of the BACT Guidelines.

<u>Compliance with Health and Safety Code</u>
In amending the BACT guidelines for non-major polluting facilities to be more stringent, SCAQMD must comply with H&SC Section 40440.11. Staff is proposing two new BACT

determinations in Part D; 1) Printing (Graphic Arts) Flexographic – Add-on control of Regenerative Thermal Oxidizer and 2) Food Oven – Catalytic Oxidizer Add-on Control for Bakery Oven processing yeast leavened products with emissions ≥30 lb VOC/day. The following paragraphs identify the applicable requirements in H&SC Section 40440.11 and demonstrate compliance with each requirement:

(c)(1) Identify one or more potential control alternatives that may constitute the best available control technology as defined in section 40405.

Printing (Graphic Arts) Flexographic: Potential control alternative is compliance with Rule 1130.
Food Oven – Bakery Oven: Potential control alternative is installation of a regenerative thermal oxidizer.

(c)(2) Determine that the proposed emission limitation has been met by production equipment, control equipment, or a process that is commercially available for sale, and has achieved the best available control technology in practice on a comparable commercial operation for at least one year, or a period longer than one year if a longer period is reasonably necessary to demonstrate the operating and maintenance reliability, and costs, for an operating cycle of the production or control equipment, or process.

Printing (Graphic Arts) - Flexographic: Regenerative Thermal Oxidizer technology has been commercially available for many years as a method for control of VOCs in an exhaust air stream. Staff has included a BACT determination citing an achieved in practice application of a RTO controlling VOC emissions from a Flexographic Printing Press. The equipment under this proposed BACT determination commenced operation in December 2013 and was source tested to verify performance and emission control.

Food Oven – Bakery Oven: Catalytic Oxidizer (CatOx) technology has been commercially available for many years as a method for control of VOCs in an exhaust air stream. Staff has included a BACT determination citing an achieved in practice application of a CatOx controlling VOC emissions from a bakery oven. The equipment under this proposed BACT determination commenced operation in September 2007 and was source tested to verify performance and emission control.
(c)(3) Review the information developed to assess the cost-effectiveness (annual cost of control divided by annual emission reduction potential) of each potential control alternative.

Printing (Graphic Arts) Flexographic: The potential control alternative is compliance with Rule 1130 for which a socioeconomic analysis was done at the time of rule adoption or amendments, when applicable.

Food Oven - Bakery Oven: The potential control alternative is the installation of a regenerative thermal oxidizer for which the cost effectiveness calculations are included in Attachment D.

(c)(4) Calculate the incremental cost-effectiveness for each potential control option (difference in cost divided by difference in emissions for each progressively more stringent control option)

See attached cost-effectiveness calculations.

(c)(5) Place the best available control technology revision proposed on the calendar of a regular meeting agenda of the SCAQMD board for its acceptance or further action as the board determines.

The proposed revisions to the BACT Guidelines were placed on the agenda of the February 2, 2018 meeting of the SCAQMD Board.

Presentation to BACT Scientific Review Committee

The proposed amendments to the BACT Guidelines were presented to the BACT SRC at publicly noticed meetings on April 4, 2017, May 24, 2017, October 26 2017, and December 12, 2017. Two 30-day comment periods were provided to the BACT SRC and general public to review and submit comments. Comments by BACT SRC members and the general public along with staff responses are included in Attachment F.

CEQA

SCAQMD staff has reviewed the proposed amendments to the BACT Guidelines, pursuant to CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA, and CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA. The proposed amendments are comprised of updates to the existing requirements and new LAER/BACT determinations in the BACT Guidelines to reflect the most current achieved-in-practice air pollution control equipment and/or processes. In addition, SCAQMD staff has conducted an analysis to demonstrate compliance with California Health and Safety Code Section 40440.11, which shows that the achieved in practice controls are both economically and technically feasible for minor sources. SCAQMD staff has also determined that it can be seen with certainty that there is no possibility that the proposed amendments to the BACT Guidelines may have a significant adverse effect on the environment. Thus, the project is considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule. A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062 - Notice of Exemption, and if the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

Socioeconomic Analysis
The proposed amendments of the BACT Guidelines are to maintain consistency with recent changes to SCAQMD rules and state requirements. These proposed amendments represent achieved in practice emission control equipment and/or processes in addition to other amendments which are administrative in nature and will therefore not result in more stringent requirements than would otherwise occur and would not result in any significant socioeconomic impacts.

Benefits to SCAQMD
Emission reductions realized through new, modified and relocated permitted sources that apply the latest BACT will benefit air quality, achieve emissions reductions needed to attain air quality standards and help improve public health in the SCAQMD's jurisdiction. In addition, the successful implementation of BACT for permitted stationary sources will contribute towards achieving the air quality objectives of SCAQMD's Air Quality Management Plan.

Resource Impacts
Existing SCAQMD resources will be sufficient to implement the proposed changes to the BACT Guidelines.

Recommendation
This Board letter serves as the staff report on proposed amendments to the BACT Guidelines. Staff recommends that the Board approve the proposed amendments of Parts B and D and determine that the proposed amendments to the BACT Guidelines are exempt from the requirements of CEQA.

The updated BACT Guidelines with the proposed amendments are scheduled to be made available on SCAQMD's website at http://www.aqmd.gov/home/permits/bact, pending Board approval.

Attachments
A. Summary of Proposed Amendments to BACT Guidelines
B. Proposed Amended BACT Guidelines Part B
C. Proposed Amended BACT Guidelines Part D
D. Cost Effectiveness Calculations
E. Notice of Exemption
F. Comments and Responses
G. Board Meeting Presentation

ATTACHMENT A

SUMMARY OF PROPOSED AMENDMENTS TO BACT GUIDELINES

New LAER/BACT Part B, Section I – SCAQMD LAER

a. Furnace, Heat Treating Aluminum ≤900°F
b. Food Oven, Bakery with CatOx add-on control
c. Food Oven, Tortilla Chip
d. Food Oven, Snack Food
e. Flare, Digester Gas, 12MMBtu/hr & 39.3MMBtu/hr
f. Flare, Landfill Gas, 120MMBtu/hr

Updated LAER/BACT Part B, Section I – SCAQMD LAER

a. Boiler, 39.9MMBtu/hr
b. I.C. Engine – Digester Gas-Fired, 3471 BHP, 2500kW

New Part B, Section III – Other Technologies

These are emerging technologies which have been in operation with an air quality permit, however do not yet qualify as LAER

a. I.C. Engine, Stationary, Emergency, 1 MW with SCR and PM Trap
b. Fuel Cell, Electricity Generator- Digester Gas-fueled, 1.4MW Electrical Power Generation with digester gas clean up

Part D – Minor Source BACT

a. Update - Dryer or Oven
b. New - Food Oven – Ribbon, Direct fired and Infrared burners, Other burners and Add-on control for bakery oven
c. Update - I.C. Engine, Portable (Tier 4 Final, 75≤HP<175)
d. Update - I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators
e. New – I.C. Engine, Stationary, Non-Emergency, Electrical Generators
f. Remove - I.C. Engine, Stationary, Non-Emergency
g. Updated - Printing, Graphic Arts – Flexographic, Add-on control
h. Updated - Printing, Graphic Arts – Lithographic or Offset, Heatset
i. Updated - Printing, Graphic Arts – Screen Printing and Drying

ATTACHMENT B

Part B, Section 1, SCAQMD BACT Determination

Source Type: **Major/LAER**

Application No.: **560283, 560285**

Equipment Category: **Furnace, Heating**

Equipment Subcategory: **Aluminum, ≤ 900ºF**

Date: **September 15, 2016**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Custom	B. MODEL: Aluminum
C. DESCRIPTION: Aluminum forging furnace	
D. FUNCTION: Furnace heats aluminum billets prior and during forging process	
E. SIZE/DIMENSIONS/CAPACITY: 32'-9" x 11'-10.5" x 6'-2.5"	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: 5.0 MMBtu/hr	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
ECLIPSE WINNOX	5.0 MMBtu/hr	1

H. PRIMARY FUEL: NATURAL GAS	I. OTHER FUEL: N/A
J. OPERATING SCHEDULE: 24 7 52	
K. EQUIPMENT COST:	
L. EQUIPMENT INFORMATION COMMENTS:	

2. COMPANY INFORMATION

A. COMPANY: Carlton Forge Works	B. FAC ID: 22911
C. ADDRESS: 7743 E. Adams St. CITY: Paramount STATE: CA ZIP: 90723	D. NAICS CODE: 33211
E. CONTACT PERSON: Armando Bautista	F. TITLE:
G. PHONE NO.: (562) 633-1131	H. EMAIL: abautista@cfworks.com

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: MODIFICATION
C. SCAQMD ENGINEER: Monica Fernandez-Neild	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 5/27/14 P/O NO.: G42717,-8 PO ISSUANCE DATE: 9/19/2016	
E. START-UP DATE: 8/1/2014	
F. OPERATIONAL TIME: 2+ years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit		30 PPMV	NATURAL GAS			NATURAL GAS
Averaging Time		1 HOUR				
Correction		@ 3% O_2				

B. OTHER BACT REQUIREMENTS:

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS: The BACT requirements are based on Part D of the BACT Guidelines. No more stringent, achieved in practice, requirements were found in EPA, CARB, or SCAQMD BACT listings or elsewhere.

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Eclipse Winnox	B. MODEL: Low NOx

C. DESCRIPTION: Low NOx burner

D. SIZE/DIMENSIONS/CAPACITY:

E. CONTROL EQUIPMENT PERMIT INFORMATION:

APPLICATION NO. 560283,-5 PC ISSUANCE DATE: 5/27/14
PO NO.: G42717, -8 PO ISSUANCE DATE: 9/9/2016

F. REQUIRED CONTROL EFFICIENCIES:

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	%	%	%
NOx	%	%	%
SOx	%	%	%
CO	%	%	%
PM	%	%	%
PM_{10}	%	%	%
INORGANIC	%	%	%

G. CONTROL TECHNOLOGY COMMENTS

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Method 100.1 Source Test

B. DATE(S) OF SOURCE TEST: 10/5/2014 and 10/19/2014

C. COLLECTION EFFICIENCY METHOD: N/A

D. COLLECTION EFFICIENCY PARAMETERS: N/A

E. SOURCE TEST/PERFORMANCE DATA: <10 PPMV NOx @3% O2 for both furnaces, and <143 PPMV CO @3% O2 (CO was measured well below 20% of full scale and was increased to 20% of scale or 40 ppmvd and corrected to 3% O2

F. TEST OPERATING PARAMETERS AND CONDITIONS:

G. TEST METHODS (SPECIFY AGENCY): SCAQMD Method 100.1

H. MONITORING AND TESTING REQUIREMENTS:

I. DEMONSTRATION OF COMPLIANCE COMMENTS:

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT:	B. CCAT:	C. APPLICATION TYPE CODE: 50	
D. RECLAIM FAC? YES ☒ NO ☐	E. TITLE V FAC: YES ☒ NO ☐	F. SOURCE TEST ID(S):	
G. SCAQMD SOURCE SPECIFIC RULES:			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR:	H2. MICR DATE:	H3. CANCER BURDEN:	H4. CB DATE:
H5: HIA:	H6. HIA DATE:	H7. HIC:	H8. HIC DATE:

Part B, Section 1, SCAQMD BACT Determination

Source Type: **Major/LAER**

Application No.: **Oven 1-580239, Oven 1B-580240, Oven 5-440543, Oven 6-440544, Cat Ox-563257**

Equipment Category: **Food Oven**

Equipment Subcategory: **Bakery**

Date: **April 7, 2016**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Oven No. 1 and 1B; Chubco/Winkler; Oven No. 5 Baker Perkins; Oven No 6 Lanham Machinery	B. MODEL: #1 – BE/W; #1B – Superflo 2328075, #5- 960, #6- N/A
C. DESCRIPTION: Four bakery ovens manifolded to a single catalytic oxidizer for VOC control	
D. FUNCTION: Four natural gas-fired bakery ovens are used to bake bread products such as rolls and buns. Yeast is used in the products resulting in the release of VOCs which are collected by a ventilation system and control by a catalytic oxidizer	
E. SIZE/DIMENSIONS/CAPACITY: Catalytic Oxidizer – 7' W x 20' L x 6' H with a 50 HP blower	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: Cat Ox 4.0 MMBtu/hr; Oven 1 – 3.2 MMBtu/hr; Oven 5 – 2.8 MMBtu ; Oven 1B – 5.4 MMBtu/hr; Oven 6 – 3.2 MMBtu/hr	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
OVEN 1 UNKNOWN "LOW NOX"	1.6 MMBtu/hr	2
OVEN 1B UNKNOWN "LOW NOX"	5.4 MMBtu/hr	1
OVEN 5 – BAKER PERKINS		42
OVEN 6 – FLYNN NO. 156HN		24
CAT OX – MAXON OVENPACK 400 EB-4 BURNER	4.0 MMBtu/hr	1

H. PRIMARY FUEL: NATURAL GAS	I. OTHER FUEL: N/A
J. OPERATING SCHEDULE: 24 HRS/DAY 7 DAYS/WEEK 52 WKS/YR	
K. EQUIPMENT COST:	
L. EQUIPMENT INFORMATION COMMENTS: OPERATING TEMP LESS THAN 500OF	

2. COMPANY INFORMATION

A. COMPANY: Galasso's Bakery	B. FAC ID: 72351
C. ADDRESS: 10820 San Sevaine Way CITY: Mira Loma STATE: CA ZIP: 91752	D. NAICS CODE: 311812
E. CONTACT PERSON: Brian Workman	F. TITLE: Chief Engineer
G. PHONE NO.: (951) 360-1211	H. EMAIL: bworkman@galassos.com

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: OTHER
C. SCAQMD ENGINEER: Vicky Lee	
D. PERMIT INFORMATION: PC ISSUANCE DATE: P/O NO.: G43113, G43117, F83743, F83744, G32643 PO ISSUANCE DATE: 10/6/2016	
E. START-UP DATE:	
F. OPERATIONAL TIME: > 10 years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit	CAT OX: 95% OVERALL CONTROL EFFICIENCY (MASS BASIS)	OVENS: 40 PPM CAT OX: COMPLIANCE WITH RULE 1147 AT TIME OF APPLICABILITY.		OVENS: 800 PPMV (COMPLIANCE WITH RULE 1153.1)		
Averaging Time	CAT OX: 1 HR	OVENS:15 MIN		OVENS: COMPLIANCE WITH RULE 1153.1		
Correction		OVENS: 3% O2		OVENS: COMPLIANCE WITH RULE 1153.1		

B. OTHER BACT REQUIREMENTS:

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS:

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Anguil	B. MODEL: 100
C. DESCRIPTION: Catalyic Oxidizer	
D. SIZE/DIMENSIONS/CAPACITY: 4.00 MMBtu/hr Maxon burner venting ovens Oven 1, 1B, 5 and 6	
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. 563257 PC ISSUANCE DATE: PO NO.: G32643 PO ISSUANCE DATE: 10/6/2016	

F. REQUIRED CONTROL EFFICIENCIES:

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	95%	%	%
NOx	%	%	%
SOx	%	%	%
CO	%	%	%
PM	%	%	%
PM_{10}	%	%	%
INORGANIC	%	%	%

G. CONTROL TECHNOLOGY COMMENTS Inlet temp catalyst bed ≥600ºF. Average uncontrolled emission rate 14.7 lb. VOC/day/oven (from permit evaluation)

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test

B. DATE(S) OF SOURCE TEST: Cat Ox (VOC) April 6, 2006 & March 8, 2011, Ovens (NOx): #1- May 21, 2015, #1B - April 8, 2016, #5 - June 9, 2006, #6 - June 21, 2006

C. COLLECTION EFFICIENCY METHOD: Smoke test

D. COLLECTION EFFICIENCY PARAMETERS: Inward air flow at oven openings. Exhaust rate 3556 dscfm (inlet to Cat Ox).

E. SOURCE TEST/PERFORMANCE DATA: Actual Control Efficiency 95.04%, Inlet VOC 20.6 lb/hr Outlet 1.02 lb/hr (both as ethanol). Outlet VOC Conc. 34.3 ppmv VOC (as ethanol).

F. TEST OPERATING PARAMETERS AND CONDITIONS: Normal operation processing rolls, bread sticks and buns

G. TEST METHODS (SPECIFY AGENCY): SCAQMD Method 25.1 and 25.3, SCAQMD Method 100.1

H. MONITORING AND TESTING REQUIREMENTS:
I. DEMONSTRATION OF COMPLIANCE COMMENTS:

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT:	B. CCAT:	C. APPLICATION TYPE CODE:
D. RECLAIM FAC? YES ☐ NO ☒	E. TITLE V FAC: YES ☒ NO ☐	F. SOURCE TEST ID(S): PR11031, 06151A-B, 14410
G. SCAQMD SOURCE SPECIFIC RULES: 1153, 1153.1		

H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR:	H2. MICR DATE:	H3. CANCER BURDEN:	H4. CB DATE:
H5: HIA:	H6. HIA DATE:	H7. HIC:	H8. HIC DATE:

Part B, Section 1, SCAQMD BACT Determination

Source Type: **Major/LAER**

Application No.: **551284**

Equipment Category: **Food Oven**

Equipment Subcategory: **Tortilla Chip Oven**

Date: **March 8, 2017**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Casa Herrera	B. MODEL: C1 120-28 RGX (E)
C. DESCRIPTION: Natural gas-fired food oven to dry and bake tortilla chips.	
D. FUNCTION: Food oven equipped with IR burners to dry masa and ribbon burners to bake masa into tortilla chips prior to cooking in a deep fat fryer.	
E. SIZE/DIMENSIONS/CAPACITY:	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: 5.774 MMBtu/hr	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
CASA HERRERA ENSIGN RIBBON	4.032 MMBtu/hr	
IR IET COMB. ULTRA GLO 7D-400P	1.742 MMBtu/hr	

H. PRIMARY FUEL: NATURAL GAS	I. OTHER FUEL: N/A
J. OPERATING SCHEDULE: 24 7 52	
K. EQUIPMENT COST:	
L. EQUIPMENT INFORMATION COMMENTS: RECLAIM Device ID D85. The facility also operates an identical line under D86, Appl. No. 551289, which has identical emission limits.	

2. COMPANY INFORMATION

A. COMPANY: Frito-Lay, Inc.	B. FAC ID: 000346
C. ADDRESS: 9535 Archibald Ave. CITY: Rancho Cucamonga STATE: CA ZIP: 91730	D. NAICS CODE: 311919
E. CONTACT PERSON: Bob Biasci	F. TITLE: Technical Director
G. PHONE NO.: (909) 941-6203	H. EMAIL: bob.biacsi@pepsico.com

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE:
C. SCAQMD ENGINEER: Michael Solis	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 9/15/09 P/O NO.: G28761 PO ISSUANCE DATE: 9/15/2009	
E. START-UP DATE: 3/17/2014	
F. OPERATIONAL TIME: 3 years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit		54 PPMV		2000 PPMV		
Averaging Time		1 HOUR		15 MIN		
Correction		@ 3% O_2		STACK CONDITIONS		

B. OTHER BACT REQUIREMENTS: CO limit based on SCAQMD Rule 407 requirements

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS:

5. CONTROL TECHNOLOGY

A. MANUFACTURER:	B. MODEL:

C. DESCRIPTION: N/A. No add-on control equipment

D. SIZE/DIMENSIONS/CAPACITY:

E. CONTROL EQUIPMENT PERMIT INFORMATION:

APPLICATION NO. PC ISSUANCE DATE:
PO NO.: PO ISSUANCE DATE:

F. REQUIRED CONTROL EFFICIENCIES:

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	%	%	%
NOx	%	%	%
SOx	%	%	%
CO	%	%	%
PM	%	%	%
PM_{10}	%	%	%
INORGANIC	%	%	%

G. CONTROL TECHNOLOGY COMMENTS

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: SCAQMD Method 100.1 Source Test

B. DATE(S) OF SOURCE TEST: January 13, 2015

C. COLLECTION EFFICIENCY METHOD: N/A

D. COLLECTION EFFICIENCY PARAMETERS: N/A

E. SOURCE TEST/PERFORMANCE DATA: 43 PPMV NOx @3% O2. 36 PPMV CO @ stack conditions. (Identical Unit D86: 22.9 PPMV NOx @3% O2. 85 PPMV CO @ stack conditions)

F. TEST OPERATING PARAMETERS AND CONDITIONS: Tested at normal load. Burner firing rate 50%. Stack Fan Temp >560ºF. Oven Temps: Top: 302ºF, Middle:470ºF, Lower: 299ºF

G. TEST METHODS (SPECIFY AGENCY): SCAQMD Method 100.1

H. MONITORING AND TESTING REQUIREMENTS:
I. DEMONSTRATION OF COMPLIANCE COMMENTS: 54 ppmv @3%O2 limit was established during permit evaluation to ensure there was no increase in emissions due to a modification with an increased rating of the unit. Previous source test prior to modification showed unit tested at 53.7 ppm @3%O2.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 000264	B. CCAT:	C. APPLICATION TYPE CODE: 50
D. RECLAIM FAC? YES ☒ NO ☐	E. TITLE V FAC: YES ☒ NO ☐	F. SOURCE TEST ID(S): PR14386
G. SCAQMD SOURCE SPECIFIC RULES:		
H. HEALTH RISK FOR PERMIT UNIT		

H1. MICR:	H2. MICR DATE:	H3. CANCER BURDEN:	H4. CB DATE:
H5: HIA:	H6. HIA DATE:	H7. HIC:	H8. HIC DATE:

Part B, Section 1, SCAQMD BACT Determination

Source Type: **Major/LAER**

Application No.: **499293/551284**

Equipment Category: **Food Oven**

Equipment Subcategory: **Snack Food**

Date: **March 8, 2017**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Maxon	B. MODEL: C1 120-28 RGX (E)
C. DESCRIPTION: Natural gas-fired food oven to bake corn meal cheese puffs	
D. FUNCTION: Food oven equipped with 1.6 MMBtu/hr burner to bake Frito Lay cheese puffs. The combustion air is recirculated in the oven with a 0.5 HP blower to distribute the heat before exhausting to atmosphere.	
E. SIZE/DIMENSIONS/CAPACITY: Cheese Puff production line capable of frying or baking cheese puffs. Oven is conveyorized and equipped with one Maxon low NOx burner.	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: 1.6 MMBtu/hr	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
MAXON CYCLOMAX	1.6 MMBtu/hr	1

H. PRIMARY FUEL: NATURAL GAS	I. OTHER FUEL: N/A
J. OPERATING SCHEDULE: 24 7 52	
K. EQUIPMENT COST:	
L. EQUIPMENT INFORMATION COMMENTS:	

2. COMPANY INFORMATION

A. COMPANY: Frito-Lay, Inc.	B. FAC ID: 000346
C. ADDRESS: 9535 Archibald Ave. CITY: Rancho Cucamonga STATE: CA ZIP: 91730	D. NAICS CODE: 311919
E. CONTACT PERSON: Bob Biasci	F. TITLE: Technical Director
G. PHONE NO.: (909) 941-6203	H. EMAIL: bob.biacsi@pepsico.com

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: MODIFICATION
C. SCAQMD ENGINEER: Michael Solis	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 9/15/09 P/O NO.: G4333 PO ISSUANCE DATE: 9/15/2009	
E. START-UP DATE: 4/15/2008	
F. OPERATIONAL TIME: 8 years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit		25 PPMV		75 PPMV		
Averaging Time		1 HOUR		1 HOUR		
Correction		@ 3% O_2		@ 3% O_2		

B. OTHER BACT REQUIREMENTS: Method 100.1 Source Test every 5 years pursuant to Permit Condition D28.9

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS: Emissions guaranteed by manufacturer per application package

5. CONTROL TECHNOLOGY

A. MANUFACTURER:	B. MODEL:

C. DESCRIPTION: N/A. No add-on control equipment

D. SIZE/DIMENSIONS/CAPACITY:

E. CONTROL EQUIPMENT PERMIT INFORMATION:

APPLICATION NO. PC ISSUANCE DATE:
PO NO.: PO ISSUANCE DATE:

F. REQUIRED CONTROL EFFICIENCIES:

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	%	%	%
NOx	%	%	%
SOx	%	%	%
CO	%	%	%
PM	%	%	%
PM_{10}	%	%	%
INORGANIC	%	%	%

G. CONTROL TECHNOLOGY COMMENTS

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Method 100.1 Source Test when the equipment was under Application #471591.

B. DATE(S) OF SOURCE TEST: April 29, 2009

C. COLLECTION EFFICIENCY METHOD: N/A

D. COLLECTION EFFICIENCY PARAMETERS: N/A

E. SOURCE TEST/PERFORMANCE DATA: 20 PPMV NOx @3% O2. 58 PPMV CO @3% O2

F. TEST OPERATING PARAMETERS AND CONDITIONS: Tested at normal load. Oven Temp 298°F. 1700 lb product per hour. Fuel Flow 15.77 scfm nat gas.

G. TEST METHODS (SPECIFY AGENCY): SCAQMD Method 100.1

H. MONITORING AND TESTING REQUIREMENTS: Source testing every 5 years pursuant to Permit Condition D28.9
I. DEMONSTRATION OF COMPLIANCE COMMENTS:

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 000255	B. CCAT:	C. APPLICATION TYPE CODE: 50
D. RECLAIM FAC? YES ☒ NO ☐	E. TITLE V FAC: YES ☒ NO ☐	F. SOURCE TEST ID(S): PR09058
G. SCAQMD SOURCE SPECIFIC RULES:		
H. HEALTH RISK FOR PERMIT UNIT		

H1. MICR:	H2. MICR DATE:	H3. CANCER BURDEN:	H4. CB DATE:
H5: HIA:	H6. HIA DATE:	H7. HIC:	H8. HIC DATE:

Part B, Section 1, SCAQMD BACT Determination

Source Type: **Major/LAER**

Application No.: **513835**

Equipment Category: **Flare**

Equipment Subcategory: **Digester Gas, Wastewater**

Date: **March 15, 2017**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Bekaert	B. MODEL: CEB 350
C. DESCRIPTION: 12 MMBtu/hr enclosed flare, digester gas fired with natural gas pilots	
D. FUNCTION: Flare incinerates excess digester gas not used as fuel in the boilers or fuel cell system, or to relieve pressure from storage tanks.	
E. SIZE/DIMENSIONS/CAPACITY: 3'-8" W. x 3' 8" L. x 23'-4" H., 12 MMBtu/hr, 333 SCFM digester gas permitted limit	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: 12 MMBtu/hr	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
NIT MESH	12 MMBtu/hr	1

H. PRIMARY FUEL: DIGESTER GAS	I. OTHER FUEL: NATURAL GAS (PILOT)
J. OPERATING SCHEDULE: 24 HRS/DAY 7 DAYS/WEEK 52 WKS/YR	
K. EQUIPMENT COST:	
L. EQUIPMENT INFORMATION COMMENTS: FLARE OPERATES INTERMITTANTLY AS NEEDED SECONDARY TO FUEL CELLS AND BOILER. MAINTENANCE IMPROVEMENTS FOR THERMOCOUPLES, IGNITERS AND THE EXHAUST STACK WERE MADE BY THE FACILITY TO IMPROVE RELIABLE OPERATION. THE FLARE IS LOCATED AT A SEWAGE TREATMENT PLANT.	

2. COMPANY INFORMATION

A. COMPANY: EMWD-PVRWRF	B. FAC ID: 7417
C. ADDRESS: 1301 Case Rd. CITY: Perris STATE: CA ZIP: 92570	D. NAICS CODE: 221320
E. CONTACT PERSON: Alison Torres	F. TITLE: Sr. AQ Compliance Analyst
G. PHONE NO.: 951-928-3777 x 6345	H. EMAIL: torresa@emwd.org

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Angela Shibata	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 6/27/12 P/O NO.: G25306 PO ISSUANCE DATE: 6/26/2013	
E. START-UP DATE: 11/9/2011	
F. OPERATIONAL TIME: 5 years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit	0.038 lb/MMBtu	0.025 lb/MMBtu		0.06 lb/MMBtu		
Averaging Time	1 HR	1 HR		1 HR		
Correction						

B. OTHER BACT REQUIREMENTS:

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS: Maximum 333 scfm digester gas (Condition 11-project specific). 1600°F Min temp (Condition 7-project specific). Performance tests every five years (Condition 18). BACT Limits apply when fired on digester gas.

5. CONTROL TECHNOLOGY

A. MANUFACTURER:	B. MODEL:
C. DESCRIPTION:	
D. SIZE/DIMENSIONS/CAPACITY:	
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. PC ISSUANCE DATE: PO NO.: PO ISSUANCE DATE:	

F. REQUIRED CONTROL EFFICIENCIES:

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	%	%	%
NOx	%	%	%
SOx	%	%	%
CO	%	%	%
PM	%	%	%
PM_{10}	%	%	%
INORGANIC	%	%	%

G. CONTROL TECHNOLOGY COMMENTS

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test

B. DATE(S) OF SOURCE TEST: 11/9/2011

C. COLLECTION EFFICIENCY METHOD: N/A

D. COLLECTION EFFICIENCY PARAMETERS: N/A

E. SOURCE TEST/PERFORMANCE DATA: 96.9% TGNMO Destruction Effic., 99.99 HC destruction Effic., 0.70 ppm VOC (as hexane) @3%O2, 0.011 lb CO/MMBtu; 13.8 ppm CO@ 3%O2, 0.014 lb/MMBtu NOx, 10.45 ppm NOx @3%O2; 0.455 lb SOX/hr (as SO2)

F. TEST OPERATING PARAMETERS AND CONDITIONS: 246 dscfm digester gas

G. TEST METHODS (SPECIFY AGENCY): SCAQMD 25.3, 100.1, ARB Mod. Method 307.91

H. MONITORING AND TESTING REQUIREMENTS: Source Testing every five years for TGNMO, NOx, CO, PM10, O2, N2, H2O, Temp and BTU Value

I. DEMONSTRATION OF COMPLIANCE COMMENTS:

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT:	B. CCAT: 50	C. APPLICATION TYPE CODE: 10
D. RECLAIM FAC? YES ☐ NO ☐	E. TITLE V FAC: YES ☒ NO ☐	F. SOURCE TEST ID(S):
G. SCAQMD SOURCE SPECIFIC RULES:		
H. HEALTH RISK FOR PERMIT UNIT		

H1. MICR: 6.55 x10-9	H2. MICR DATE: 6/19/13	H3. CANCER BURDEN: <0.5	H4. CB DATE: 6/19/13
H5: HIA:	H6. HIA DATE:	H7. HIC:	H8. HIC DATE:

Part B, Section 1, SCAQMD BACT Determination

Source Type: **Major/LAER**

Application No.: **448345**

Equipment Category: **Flare**

Equipment Subcategory: **Digester Gas, Food Waste and Manure Digester**

Date: **March 17, 2017**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: John Zink	B. MODEL: Zink Ultra Low Emission (ZULE)
C. DESCRIPTION: 39.3 MMBtu/hr enclosed flare, digester gas fired with natural gas pilots	
D. FUNCTION: Flare incinerates digester gas vented from food waste and manure anaerobic digesters. Natural gas (or propane) pilot.	
E. SIZE/DIMENSIONS/CAPACITY: 7'D. x 40' H., 39.3 MMBtu/hr, 32.4 MMBtu/hr permitted limit	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: 39.3 MMBtu/hr	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
ZULE	13.1 MMBtu/hr	3

H. PRIMARY FUEL: DIGESTER GAS	I. OTHER FUEL: NAT GAS/PROPANE
J. OPERATING SCHEDULE: 24 HRS/DAY 7 DAYS/WEEK 52 WKS/YR	
K. EQUIPMENT COST:	
L. EQUIPMENT INFORMATION COMMENTS: INTERMITTANT OPERATION TO PROCESS DIGESTER GAS.	

2. COMPANY INFORMATION

A. COMPANY: Inland Empire Utilities Agency RP-5 SHF	B. FAC ID: 147371
C. ADDRESS: 6063 Kimball Ave. CITY: Chino STATE: CA ZIP: 91708	D. NAICS CODE: 582212
E. CONTACT PERSON: Sylvie Lee	F. TITLE: Manager
G. PHONE NO.: 909-993-1646	H. EMAIL: slee@ieua.org

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Angela Shibata	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 8/8/06 P/O NO.: G28957 PO ISSUANCE DATE: 12/12/2013	
E. START-UP DATE:10/30/2008 Source Test Date	
F. OPERATIONAL TIME: > 6 months	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit		0.025 lb/MMBtu		0.06 lb/MMBtu		
Averaging Time		1 HR		1 HR		
Correction						

B. OTHER BACT REQUIREMENTS: Maximum 32.4 MMBtu/hr digester gas (Condition 7- project specific). 1500°F Min temp (Condition 9- project specific). Performance tests every 5 years (Condition 12). Per source test PM10 as PM.

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS: Permit does not have minimum VOC destruction efficiency or residence time requirements.

5. CONTROL TECHNOLOGY

A. MANUFACTURER:	B. MODEL:
C. DESCRIPTION:	
D. SIZE/DIMENSIONS/CAPACITY:	
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. PC ISSUANCE DATE: PO NO.: PO ISSUANCE DATE:	
F. REQUIRED CONTROL EFFICIENCIES:	

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	%	%	%
NOx	%	%	%
SOx	%	%	%
CO	%	%	%
PM	%	%	%
PM_{10}	%	%	%
INORGANIC	%	%	%

G. CONTROL TECHNOLOGY COMMENTS

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test

B. DATE(S) OF SOURCE TEST: 10/30/2008

C. COLLECTION EFFICIENCY METHOD: N/A

D. COLLECTION EFFICIENCY PARAMETERS: N/A

E. SOURCE TEST/PERFORMANCE DATA: 5.05 ppm VOC (as CH4); 0.08 lb VOC/hr (as (CH4); < 0.0046 lb CO/MMBtu; 5.9 ppm CO@ 3% O2; 0.016 lb/MMBtu NOx; 12.3 ppm NOx @3% O2; 0.01 lb SOX/hr (as SO2); 0.096 lb PM/hr;

F. TEST OPERATING PARAMETERS AND CONDITIONS: 279 dscfm digester gas. Minimum flow during S/T run 133.5 dscfm.

G. TEST METHODS (SPECIFY AGENCY): SCAQMD 25.3, 100.1, SCAQMD 5.1, ARB Mod. Method 307.91

H. MONITORING AND TESTING REQUIREMENTS: Source Testing every 5 years for Methane, TGNMO, NOx, CO, SOx, PM10 (as PM), O2, N2, H2O, Temp and Flow
I. DEMONSTRATION OF COMPLIANCE COMMENTS:

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT:	B. CCAT: 50	C. APPLICATION TYPE CODE: 10	
D. RECLAIM FAC? YES ☐ NO ☐	E. TITLE V FAC: YES ☒ NO ☐	F. SOURCE TEST ID(S): PR03440	
G. SCAQMD SOURCE SPECIFIC RULES:			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: 2.36x10-7	H2. MICR DATE: 11/12/13	H3. CANCER BURDEN: <0.5	H4. CB DATE: 11/12/13
H5: HIA: <1.0	H6. HIA DATE: 11/12/13	H7. HIC: <1.0	H8. HIC DATE: 11/12/13

Part B, Section 1, SCAQMD BACT Determination

Source Type: **Major/LAER**

Application No.: **491442**

Equipment Category: **Flare**

Equipment Subcategory: **Landfill Gas, Active Solid Waste Landfill, Non-Hazardous Waste**

Date: **March 17, 2017**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: John Zink	B. MODEL: Zink Ultra Low Emission (ZULE)
C. DESCRIPTION: 120 MMBtu/hr maximum input to enclosed flares, landfill gas fired with propane pilot	
D. FUNCTION: Flare incinerates landfill gas vented from landfill gas collection system. Flare is part of a two flare system. Propane gas pilot.	
E. SIZE/DIMENSIONS/CAPACITY: 12'D. x 50' H., 120 MMBtu/hr, 4000 SCFM landfill gas permitted limit	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: 120 MMBtu/hr	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
ZULE	120 MMBtu/hr	1

H. PRIMARY FUEL: LANDFILL GAS	I. OTHER FUEL: PROPANE GAS (PILOT)
J. OPERATING SCHEDULE: 24 HRS/DAY 7 DAYS/WEEK 52 WKS/YR	
K. EQUIPMENT COST:	
L. EQUIPMENT INFORMATION COMMENTS:	

2. COMPANY INFORMATION

A. COMPANY: Chiquita Canyon, LLC	B. FAC ID: 119219
C. ADDRESS: 29201 Henry Mayo Drive CITY: Valencia STATE: CA ZIP: 91355	D. NAICS CODE: 582212
E. CONTACT PERSON: Mike Dean	F. TITLE: General Manager
G. PHONE NO.: 661-257-3655	H. EMAIL: deanmj@repsrv.com

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Guarang Rawal	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 6/27/12 P/O NO.: G25306 PO ISSUANCE DATE: 3/7/2013	
E. START-UP DATE:12/7/2009 Source Test Date	
F. OPERATIONAL TIME: 7 years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit		0.025 lb/MMBtu		0.06 lb/MMBtu		
Averaging Time		1 HR		1 HR		
Correction						

B. OTHER BACT REQUIREMENTS:

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS: Maximum 4000 scfm landfill gas (Condition 8- project specific). 1400ºF Min temp (Condition 5- project specific). Annual performance tests (Condition 12). Per source test PM10 as PM. BACT Limits apply when unit is fired on landfill gas.

5. CONTROL TECHNOLOGY

A. MANUFACTURER:	B. MODEL:
C. DESCRIPTION:	
D. SIZE/DIMENSIONS/CAPACITY:	
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. PC ISSUANCE DATE: PO NO.: PO ISSUANCE DATE:	
F. REQUIRED CONTROL EFFICIENCIES:	

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	98%	%	%
NOx	%	%	%
SOx	%	%	%
CO	%	%	%
PM	%	%	%
PM_{10}	%	%	%
INORGANIC	%	%	%

G. CONTROL TECHNOLOGY COMMENTS 99% by wt. Destruction Efficiency Methane. 98% by wt destruction efficiency or less than 20 ppmvd, hexane, @ 3% O2

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test

B. DATE(S) OF SOURCE TEST: 12/7/2009

C. COLLECTION EFFICIENCY METHOD: N/A

D. COLLECTION EFFICIENCY PARAMETERS: N/A

E. SOURCE TEST/PERFORMANCE DATA: 98.9% TGNMO Destruction Eff., 2.13 ppm VOC (as hexane) @3% O2, < 0.02 lb CO/MMBtu; <23.3 ppm CO@ 3% O2, 0.01 lb/MMBtu NOx, 6.7 ppm NOx @3% O2; 1.22 lb SOX/hr (as SO2); 0.75 lb PM/hr;

F. TEST OPERATING PARAMETERS AND CONDITIONS: 2367 dscfm landfill gas

G. TEST METHODS (SPECIFY AGENCY): SCAQMD 25.3, 100.1, SCAQMD 5.1, ARB Mod. Method 307.91

H. MONITORING AND TESTING REQUIREMENTS: Source Testing annually for Methane, TGNMO, NOx, CO, SOx, PM10 (as PM), O2, N2, H2O, Temp and Flow

I. DEMONSTRATION OF COMPLIANCE COMMENTS:

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT:	B. CCAT: 50	C. APPLICATION TYPE CODE: 10
D. RECLAIM FAC? YES ☐ NO ☐	E. TITLE V FAC: YES ☒ NO ☐	F. SOURCE TEST ID(S): PR09359
G. SCAQMD SOURCE SPECIFIC RULES:		
H. HEALTH RISK FOR PERMIT UNIT		

H1. MICR:	H2. MICR DATE:	H3. CANCER BURDEN:	H4. CB DATE:
H5: HIA:	H6. HIA DATE:	H7. HIC:	H8. HIC DATE:

Part B, Section 1, SCAQMD BACT Determination

Source Type: **Major/LAER**

Application No.: **562449**

Equipment Category: **Boiler**

Equipment Subcategory: **39.9 MMBtu/hr with SCR**

Date: **March 22, 2016**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Simoneau	B. MODEL: FX2-35
C. DESCRIPTION: 39.9 MMBtu watertube boiler with low NOx burner and SCR	
D. FUNCTION: Boilers provides steam for laundry facilities, hospital heating and sterilization procedures.	
E. SIZE/DIMENSIONS/CAPACITY: Boiler No. 2	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: 39.9 MMBtu/hr	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
WEBSTER	39.9 MMBtu/hr	1

H. PRIMARY FUEL: NATURAL GAS	FUEL OIL
J. OPERATING SCHEDULE: 24 7 52	
K. EQUIPMENT COST:	
L. EQUIPMENT INFORMATION COMMENTS: EQUIPMENT IS NEW CONSTRUCTION. THREE IDENTICAL BOILERS AND SCR WITH IDENTICAL LIMITS. ADD'L PERMIT NO. BOILER 1 G36227, BOILER 3 G36229, SCR 1 G36231, SCR 3 G36234	

2. COMPANY INFORMATION

A. COMPANY: US GOVT, VET. AFFAIRS MED CTR (LONG BEACH)	B. FAC ID: 13990
C. ADDRESS: 5901 E. 7th ST. CITY: Long Beach STATE: CA ZIP: 90822	D. NAICS CODE: 622110
E. CONTACT PERSON: Jason Thompson	F. TITLE: Env Protection Spec.
G. PHONE NO.: 562-826-8000 x3083	H. EMAIL:

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Roy Olivares	
D. PERMIT INFORMATION: PC ISSUANCE DATE: P/O NO.: G36227 PO ISSUANCE DATE: 6/18/2015	
E. START-UP DATE: 8/7/2015	
F. OPERATIONAL TIME: > 1 year	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit		5 ppmvd		100 ppmvd		5 ppmvd NH3 slip
Averaging Time		15 min		15 MIN		60 MIN
Correction		@ 3% O2		@ 3% O2		@ 3% O2

B. OTHER BACT REQUIREMENTS: When firing on Standby fuel: 40 ppmvd NOx @3%O2, 15 min avg; 400 ppmvd CO @3%O2.

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS:

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Pasasia	B. MODEL: Custom

C. DESCRIPTION: Selective Catalytic Reduction, low temp de-NOx, haldor topsoe, model dnx-1029. Ammonia injection, three 150 lb cylinders, feed forward

D. SIZE/DIMENSIONS/CAPACITY: 4'-9" W x 4'-9" L x 9'-0" H

E. CONTROL EQUIPMENT PERMIT INFORMATION:
APPLICATION NO. 562452 PC ISSUANCE DATE:
PO NO.: G36233 PO ISSUANCE DATE: 6/18/2015

F. REQUIRED CONTROL EFFICIENCIES: Emission requirements are mass based and listed in Section 4 emission Information

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	%	%	%
NOx	%	%	%
SOx	%	%	%
CO	%	%	%
PM	%	%	%
PM_{10}	%	%	%
INORGANIC	%	%	%

G. CONTROL TECHNOLOGY COMMENTS Pressure drop not to exceed 2.5" H2O. SCR be temperature 400-650oF. Ammonia injection shall not exceed 0.55 lb/hr. Ammonia injection to start when cat bed outlet temp reaches 400oF. Start-ups not to exceed 120 min for cold start and 30 min for warm start.

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test PR16435

B. DATE(S) OF SOURCE TEST: October 12, 2016

C. COLLECTION EFFICIENCY METHOD:

D. COLLECTION EFFICIENCY PARAMETERS:

E. SOURCE TEST/PERFORMANCE DATA: low mid and high fire each tested for NOx, CO and NH3. Reference source test report for details of each load tested. All loads met emission limits for each contaminant,

F. TEST OPERATING PARAMETERS AND CONDITIONS: Low fire 322 Mcfd, mid fire 437 Mcfd, 814 Mcfd

G. TEST METHODS (SPECIFY AGENCY): SCAQMD Method 207.1, SCAQMD 100.1

H. MONITORING AND TESTING REQUIREMENTS: NH3 slip test every 3 months for first year.
I. DEMONSTRATION OF COMPLIANCE COMMENTS:

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 011204	B. CCAT: 81	C. APPLICATION TYPE CODE: 10
D. RECLAIM FAC? YES ☐ NO ☐	E. TITLE V FAC: YES ☒ NO ☐	F. SOURCE TEST ID(S): PR16435
G. SCAQMD SOURCE SPECIFIC RULES: 1146		

H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR:	H2. MICR DATE:	H3. CANCER BURDEN:	H4. CB DATE:
H5: HIA:	H6. HIA DATE:	H7. HIC:	H8. HIC DATE:

Part B, Section I: SCAQMD BACT Determination

Source Type: **Major/LAER**

Application No.: **546360**

Equipment Category: **I.C. Engine, Digester Gas Fired**

Equipment Subcategory:

Date: **April 4, 2017**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Cooper Bessmer	B. MODEL: LSVB-12-SGC
C. DESCRIPTION: Spark Ignition, four strokes with modified turbocharged-intercooled, V-12 type	
D. FUNCTION: On-site electrical power generation	
E. SIZE/DIMENSIONS/CAPACITY: 3471 HP, driving 2500 kW generator	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: ---	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
---	---	---

H. PRIMARY FUEL: Digester and/or natural gas	I. OTHER FUEL: ---
J. OPERATING SCHEDULE: 24 HRS/DAY 7 DAYS/WEEK 52 WKS/YR	
K. EQUIPMENT COST: Not Available	
L. EQUIPMENT INFORMATION COMMENTS: Engine is equipped with an exhaust heat recovery steam generator, 5,008,500 Btu/hr capacity and digester gas cleaning system to remove siloxanes and other contaminants that may damage and reduce performance of SCR and oxidation exhaust control system. Inlet siloxane loading levels of less than 1 ppmv for D4 and less than 5 ppmv for D5.	

2. COMPANY INFORMATION

A. COMPANY: Orange County Sanitation District	B. FAC ID: 017301
C. ADDRESS: 10844 Ellis Avenue CITY: Fountain Valley STATE: CA ZIP: 92708	D. NAICS CODE:
E. CONTACT PERSON: Terry Ahn	F. TITLE: Regulatory Specialist
G. PHONE NO.: 714-593-7082	H. EMAIL: tahn@ocsd.com

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: PERMIT TO OPERATE
C. SCAQMD ENGINEER:	
D. PERMIT INFORMATION: P/O NO.: G45189	PC ISSUANCE DATE: PO ISSUANCE DATE: 3/3/2017
E. START-UP DATE:	
F. OPERATIONAL TIME:	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit	30 PPM	11 PPM		250 PPM	RULE 404	
Averaging Time	Per 1110.2 requirements	Per 1110.2 requirements		Per 1110.2 requirements		
Correction	15% O_2	15% O_2		15% O_2		

B. OTHER BACT REQUIREMENTS: Compliance with emission requirements of Rule 1110.2(d)(1)(C)

C. BASIS OF THE BACT/LAER DETERMINATION: New listing to show compliance with the more stringent Rule 1110.2. Other (add comment)

D. EMISSION INFORMATION COMMENTS:

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Johnson Matthey, Inc.	B. MODEL: 79449

C. DESCRIPTION: Selective Catalytic Reduction and Catalytic Oxidizer

D. SIZE/DIMENSIONS/CAPACITY: SCR metallic substrate with 37.33 cu.ft. volume and CatOx aluminum oxide or platinum with 200 CPSI oxidation catalyst, 18.67 cu.ft. volume

E. CONTROL EQUIPMENT PERMIT INFORMATION:
APPLICATION NO. 559225 PC ISSUANCE DATE:
PO NO.: G45196 PO ISSUANCE DATE: 3/3/2017

F. REQUIRED CONTROL EFFICIENCIES: Maintain compliance with Rule 1110.2(d)(1)(C) for engine emissions.

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	%	%	%
NOx	%	%	%
SOx	%	%	%
CO	%	%	%
PM	%	%	%
PM_{10}	%	%	%
INORGANIC	%	%	%

G. CONTROL TECHNOLOGY COMMENTS Maintain compliance with Rule 1110.2(d)(1)(C) for engine emissions. H2S compliance with Rule 431.1.

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source test conducted when equipment was under Permit to Construct (A/N 497717).

B. DATE(S) OF SOURCE TEST: November 20, 2014

C. COLLECTION EFFICIENCY METHOD:

D. COLLECTION EFFICIENCY PARAMETERS:

E. SOURCE TEST/PERFORMANCE DATA:

F. TEST OPERATING PARAMETERS AND CONDITIONS:

G. TEST METHODS (SPECIFY AGENCY): NOx, CO and O2 determined using SCAQMD Method 100.1. VOC determined using SCAQMD Method 25.3.

H. MONITORING AND TESTING REQUIREMENTS: Compliance with Rule 1110.2(f)

I. DEMONSTRATION OF COMPLIANCE COMMENTS:

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT:	B. CCAT:	C. APPLICATION TYPE CODE:
D. RECLAIM FAC? YES ☐ NO ☐	E. TITLE V FAC: YES ☐ NO ☐	F. SOURCE TEST ID(S):
G. SCAQMD SOURCE SPECIFIC RULES:		
H. HEALTH RISK FOR PERMIT UNIT		

H1. MICR:	H2. MICR DATE:	H3. CANCER BURDEN:	H4. CB DATE:
H5: HIA:	H6. HIA DATE:	H7. HIC:	H8. HIC DATE:

Part B, Section III: Other Technologies

(These are emerging technologies which have been in operation with an air quality permit, however do not yet qualify as LAER)

Source Type: **Major/LAER**

Application No.: **567735**

Equipment Category: **I.C. Engine, Stationary, Emergency, Electrical Generators**

Equipment Subcategory:

Date: **December 11, 2016**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Cummins	B. MODEL: QST30-G5
C. DESCRIPTION: EPA-certified Compression Ignition, diesel engine, 12 cylinders, turbocharged and aftercooled, Engine Family CCEXL030.AAD.	
D. FUNCTION: On-site emergency electrical power generation.	
E. SIZE/DIMENSIONS/CAPACITY: 1490 BHP, driving 1000 kW generator	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: ---	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
---	---	---

H. PRIMARY FUEL: DIESEL	I. OTHER FUEL: ---
J. OPERATING SCHEDULE: <1 HRS/DAY 1 DAYS/WEEK 52 WKS/YR	
K. EQUIPMENT COST: Not Available	
L. EQUIPMENT INFORMATION COMMENTS: Engine is equipped with an Aftertreatment system consisting of Selective Catalytic Reduction and Diesel Particulate Filter.	

2. COMPANY INFORMATION

A. COMPANY: Praxair, Inc.	B. FAC ID: 007416
C. ADDRESS: 2300 E. Pacific Coast Highway CITY: Wilmington STATE: CA ZIP: 90744	D. NAICS CODE:
E. CONTACT PERSON: Laura Cremer	F. TITLE: Environmental Specialist
G. PHONE NO.: 925-866-6851	H. EMAIL: laura_cremer@praxair.com

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: NEW CONSTRUCTION PERMIT TO OPERATE
C. SCAQMD ENGINEER: Tracy Nguyen	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 6/16/15 P/O NO.: G43499 PO ISSUANCE DATE: 10/27/2016	
E. START-UP DATE: 10/1/2015	
F. OPERATIONAL TIME: Intermittent--for engine readiness test. Limited to 200 hrs/year which includes no more than 50 hours/year and 4.2 hour/month for maintenance and testing.	

4. EMISSION INFORMATION

A. EMISSION LIMITS AND AVERAGING TIMES:

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit	0.19 G/KW-HR 0.14 G/BHP-HR)	0.67 G/KW-HR (0.5 G/BHP-HR)		3.5 G/KW-HR (2.61 G/BHP-HR)	0.03 G/KW-HR (0.022 G/BHP-HR)	
Averaging Time						
Correction						

B. OTHER REQUIREMENTS: Compliance with rules 404, 431.2 and 1470.

C. PENDING STATUS: Technology has been in operation with an active air quality permit. Other (add comment)

D. EMISSION INFORMATION COMMENTS: A certified Tier 2 Engine is equipped with a Tier 4 Aftertreatment to comply with EPA Tier 4 Requirements.

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Cummins	B. MODEL: S4F-H-T4F

C. DESCRIPTION: Selective Catalytic Reduction and Diesel Particulate Filter with an electric heater.

D. SIZE/DIMENSIONS/CAPACITY: 85% DPF efficiency.

E. CONTROL EQUIPMENT PERMIT INFORMATION:

APPLICATION NO. 567735 PC ISSUANCE DATE: 6/16/15
PO NO.: G43499 PO ISSUANCE DATE: 10/27/2016

F. REQUIRED CONTROL EFFICIENCIES:

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	%	%	%
NOx	%	%	%
SOx	%	%	%
CO	%	%	%
PM	85%	%	%
PM_{10}	%	%	%
INORGANIC	%	%	%

G. CONTROL TECHNOLOGY COMMENTS Engine is certified to comply with EPA Tier 4 requirements: NMHC=0.14 g/bhp-hr, NOx=0.5 g/bhp-hr, CO=2.61 g/bhp-hr and PM=0.022 g/bhp-hr.

6. DEMONSTRATION STATUS

A. COMPLIANCE DEMONSTRATED BY: Compliance with EPA Tier 4 standards is based on EPA nonroad engine test methods and duty cycles. Tests conducted under other duty cycles or using different test methods may produce different results and are not indicative of noncompliance with the BACT levels.

B. DATE(S) OF SOURCE TEST:

C. COLLECTION EFFICIENCY METHOD:

D. COLLECTION EFFICIENCY PARAMETERS:

E. SOURCE TEST/PERFORMANCE DATA:

F. TEST OPERATING PARAMETERS AND CONDITIONS:
G. TEST METHODS (SPECIFY AGENCY):
H. MONITORING AND TESTING REQUIREMENTS:
I. DEMONSTRATION OF COMPLIANCE COMMENTS:

7. PENDING CONSIDERATIONS

A. SCR GETTING UP TO TEMPERATURE AND RUN TIME: Equipped with exhaust heater/load bank and control to regulate temperatures and assure quick (<10 minute) full SCR efficiency.
B. TIER 4 ENGINES WITH INDUCEMENT THAT MAY BE BYPASSED: In July 2016 EPA amended 40 CFR Part 60, Subpart IIII to allow manufacturers to design engines so that operators can temporarily override performance inducements related to emission control system during emergency situations to protect human life and require Tier 1 compliance during such emergencies. EPA is confident that Tier 4 engines will function properly in emergency situations and expects that auxiliary emission control devices allowed under this provision will rarely be activated.
C. CERTIFICATION OF EMERGENCY ENGINE AT DIFFERENT DUTY CYCLE THAT MAY NOT ACHIEVE CLAIMED EMISSION LEVELS: Emissions testing was done on the ISO 8178 D2 Cycle consistent with constant speed stationary engines. (5% @ 100% Torque, 25%@75%, 30%@50%, 30%@25% and 10%@10%).
D. COST EFFECTIVENESS ANALYSIS: TBD

8. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT:	B. CCAT:	C. APPLICATION TYPE CODE:
D. RECLAIM FAC? YES ☐ NO ☐	E. TITLE V FAC: YES ☐ NO ☐	F. SOURCE TEST ID(S):
G. SCAQMD SOURCE SPECIFIC RULES:		
H. HEALTH RISK FOR PERMIT UNIT		

H1. MICR:	H2. MICR DATE:	H3. CANCER BURDEN:	H4. CB DATE:
H5: HIA:	H6. HIA DATE:	H7. HIC:	H8. HIC DATE:

Part B, Section III: Other Technologies

(These are emerging technologies which have been in operation with an air quality permit, however do not yet qualify as LAER)

Source Type: **Minor**

Application No.: **591787**

Equipment Category: **Fuel Cell Electricity Generator – Digester Gas fueled**

Equipment Subcategory:

Date: **March 1, 2017**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Fuel Cell Energy	B. MODEL: DFC 1500
C. DESCRIPTION: Fuel Cell, digester gas fueled with biogas clean-up system and start-up air heater with natural gas burner (Rule 222 Registration per Rule 219(b)(5)).	
D. FUNCTION: On-site electrical power generation and heat recovery.	
E. SIZE/DIMENSIONS/CAPACITY: 1.4 MW, 355 scfm Digester gas flow	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: ---	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
---	---	---

H. PRIMARY FUEL: DIGESTER GAS	I. OTHER FUEL: NATURAL GAS
J. OPERATING SCHEDULE: 24 HRS/DAY 7 DAYS/WEEK 52 WKS/YR	
K. EQUIPMENT COST: Not Available	
L. EQUIPMENT INFORMATION COMMENTS: Biogas clean-up system consists of condensate drain tank, hydrogen sulfide removal vessel, siloxane removal vessels, polishing vessel and refrigerant chiller.	

2. COMPANY INFORMATION

A. COMPANY: Riverside Fuel Cell, LLC	B. FAC ID: 181483
C. ADDRESS: 5950 Acorn Street CITY: Riverside STATE: CA ZIP: 92504	D. NAICS CODE:
E. CONTACT PERSON: Don Bell	F. TITLE: Field Service Manager
G. PHONE NO.: 203-648-3658	H. EMAIL: dbell@fce.com

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: NEW CONSTRUCTION PERMIT TO OPERATE
C. SCAQMD ENGINEER: Gaurang Rawal	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 2/25/17 P/O NO.: G45213 PO ISSUANCE DATE: 3/1/2017	
E. START-UP DATE: 10/1/2015	
F. OPERATIONAL TIME: Fuel cell is operational 24 hour/day, 365 days/year.	

4. EMISSION INFORMATION

A. EMISSION LIMITS AND AVERAGING TIMES:

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit	0.10 LBS/MW-HR	0.07 LBS/MW-HR		0.10 LBS/MW-HR		
Averaging Time	Per test Method					
Correction						

B. OTHER REQUIREMENTS:

C. PENDING STATUS: Technology has been in operation with an active air quality permit. Other (add comment)

D. EMISSION INFORMATION COMMENTS: Fuel cells are typically tested during steady state mode, not during startup or shutdown.

5. CONTROL TECHNOLOGY

A. MANUFACTURER: ---	B. MODEL: ---
C. DESCRIPTION: ---	
D. SIZE/DIMENSIONS/CAPACITY: ---.	
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. --- PC ISSUANCE DATE: --- PO NO.: --- PO ISSUANCE DATE: ---	
F. REQUIRED CONTROL EFFICIENCIES: ---	

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	%	%	%
NOx	%	%	%
SOx	%	%	%
CO	%	%	%
PM	%	%	%
PM_{10}	%	%	%
INORGANIC	%	%	%

G. CONTROL TECHNOLOGY COMMENTS ---

6. DEMONSTRATION STATUS

A. COMPLIANCE DEMONSTRATED BY: Source Test

B. DATE(S) OF SOURCE TEST: December 20, 2016

C. COLLECTION EFFICIENCY METHOD:

D. COLLECTION EFFICIENCY PARAMETERS:

E. SOURCE TEST/PERFORMANCE DATA: < 0.024 lb NOx/MW-hr; <0.012 lb CO/MW-hr; 0.045 lb VOC/MW-hr (as hexane)

F. TEST OPERATING PARAMETERS AND CONDITIONS: Testing performed under steady state conditions. Method 100.1 results for NOx and CO had to be corrected up to 20% full scale range of analyzer, but still demonstrated compliance with permit limits.

G. TEST METHODS (SPECIFY AGENCY): SCAQMD M. 100.1, 25.3

H. MONITORING AND TESTING REQUIREMENTS:
I. DEMONSTRATION OF COMPLIANCE COMMENTS:

7. PENDING CONSIDERATIONS

A. START-UP AIR HEATER WITH COMBUSTION BURNER EXHAUST EMISSIONS: Testing commended after the fuel cell reached stable steady state operation.
B. COST EFFECTIVENESS: TBD

8. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT:	B. CCAT:	C. APPLICATION TYPE CODE:
D. RECLAIM FAC? YES ☐ NO ☐	E. TITLE V FAC: YES ☐ NO ☐	F. SOURCE TEST ID(S):
G. SCAQMD SOURCE SPECIFIC RULES:		
H. HEALTH RISK FOR PERMIT UNIT		

H1. MICR:	H2. MICR DATE:	H3. CANCER BURDEN:	H4. CB DATE:
H5: HIA:	H6. HIA DATE:	H7. HIC:	H8. HIC DATE:

ATTACHMENT C

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

DRAFT

10-20-2000 Rev. 0
2-2-2018 Rev. 1

Equipment or Process: Dryer or Oven

	Criteria Pollutants					
Subcategory/ Rating/Size	**VOC**	**NOx**	**SOx**	**CO**	**PM_{10}**	**Inorganic**
Carpet Oven		80 ppmvd, corrected to 3% O_2 (10-20-2000)	Natural Gas (1990)		Natural Gas (1990)	
Rotary, Spray and Flash Dryers[1)]		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas (1990)		Natural Gas with Baghouse (1990)	
Tray, Agitated Pan, and Rotary Vacuum Dryers		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas (1990)		Natural Gas (1990)	
Tenter Frame Fabric Dryer		60 ppmvd Corrected to 3% O_2 (10-20-2000)	Natural Gas (10-20-2000)		Natural Gas (10-20-2000)	
Other Dryers and Ovens – Direct and Indirect Fired[2]		30 ppmvd corrected to 3% O_2 (04-10-98)	Natural Gas (10-20-2000)		Natural Gas (10-20-2000)	

1. Dryers for foodstuff, pharmaceuticals, aggregate & chemicals.
~~1.~~2. Does not include food or bakery ovens. See listing for "Food Oven."

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

DRAFT

2-2-2018 Rev. 0

Equipment or Process: Food Oven

		Criteria Pollutants					
Subcategory[1]	**Rating/ Size**	**VOC**	**NOx**	**SOx**	**CO**	**PM10**	**Inorganic**
Ribbon Burner	> 500°F		60 ppmvd @ 3% O_2 (2-2-2018)	Natural Gas (2-2-2018)	Compliance with applicable SCAQMD Rules 407 or 1153.1(2-2-2018)	Natural Gas (2-2-2018)	
	≤ 500°F		30 ppmvd @ 3% O_2 (2-2-2018)	Same as above	Same as above	Same as above	
Other Direct Fired Burner			30 ppmvd @ 3% O_2 (2-2-2018)				
Infrared Burner			30 ppmvd @ 3% O_2 (2-2-2018)				
Add-on Control for Bakery Oven processing yeast leavened products with emissions ≥ 30 lb VOC/day		Catalytic oxidizer with 95% overall control efficiency (mass basis); catalyst inlet temperature ≥ 600°F; ceramic prefilter (2-2-2018)	Compliance with SCAQMD Rule 1147 at the time of applicability (2-2-2018)				

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

(Continued on next page)

[1]Indirect Fired units may be subject to Rules 1146 and 1146.1 and BACT for Process Heater

		Criteria Pollutants					
Subcategory	**Rating/ Size**	**VOC**	**NOx**	**SOx**	**CO**	**PM10**	**Inorganic**
Other Burners		Compliance with SCAQMD Rules and Regulations					

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

10-20-2000 Rev. 0
7-14-2006 Rev. 1
12-02-2016 Rev. 2
2-2-2018 Rev. 3

Equipment or Process: I.C. Engine, Portable [1]

		Criteria Pollutants					
Subcategory	**Rating/Size**	**VOC**	**NOx**	**NOx + NMHC[2]**	**SOx**	**CO**	**PM**
Compression-Ignition[3]	50 ≤ HP < 75			Tier 4 Final: 4.7 grams/kW-hr (3.5 grams/bhp-hr) (12-02-2016)	Diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2). (6-6-2003)	Tier 4 Final: 5.0 grams/kW-hr (3.7 grams/bhp-hr) (12-02-2016)	Tier 4 Final: 0.03 grams/kW-hr (0.02 grams/bhp-hr) and CARB ATCM for portable diesel engines[4] (12-02-2016)
	75≤ HP < 175-~~[5]~~		Tier 4 Final~~Interim~~: ~~3.4~~0.40 grams/kW-hr (~~2.5~~0.30 grams/bhp-hr) (2-2-2018)	Tier 4 Final~~Interim~~: NMHC only: 0.19 grams/kW-hr (0.14 grams/bhp-hr) (2-2-2018)		Tier 4 Final~~Interim~~: 5.0 grams/kW-hr (3.7 grams/bhp-hr) (2-2-2018)	Tier 4 Final~~Interim~~: 0.02 grams/kW-hr (0.01 grams/bhp-hr) and CARB ATCM for portable diesel engines[4] (2-2-2018)
	175 ≤ HP < 750		Tier 4 Final: 0.40 grams/kW-hr (0.30 grams/bhp-hr) (12-02-2016)	Tier 4 Final: NMHC only: 0.19 grams/kW-hr (0.14 grams/bhp-hr) (12-02-2016)		Tier 4 Final: 3.5 grams/kW-hr (2.6 grams/bhp-hr) (12-02-2016)	Tier 4 Final: 0.02 grams/kW-hr (0.01 grams/bhp-hr) and CARB ATCM for portable diesel engines[4] (12-02-2016)

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

		Criteria Pollutants					
Subcategory	**Rating/Size**	**VOC**	**NOx**	**NOx + NMHC[2]**	**SOx**	**CO**	**PM**

(Continued on Next Page)

Compression-Ignition[3]	≥750 HP [5]		Tier 4 Interim: **For Generator Sets > 1200 HP:** 0.67 grams/kW-hr (0.50 grams/bhp-hr) **For All Engines Except "Generator Sets > 1200 HP":** 3.5 grams/kW-hr (2.6 grams/bhp-hr) (12-02-2016)	Tier 4 Interim: NMHC only: 0.4 grams/kW-hr (0.30 grams/bhp-hr) (12-02-2016)	Diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2). (6-6-2003)	Tier 4 Interim: 3.5 grams/kW-hr (2.6 grams/bhp-hr) (12-02-2016)	Tier 4 Interim: 0.10 grams/kW-hr (0.07 grams/bhp-hr)and CARB ATCM for portable diesel engines[4] (12-02-2016)
Spark Ignition	All	1.5 grams/bhp-hr, or 240 ppmvd as methane @ 15% O2 (4-10-1998)	1.5 grams/bhp-hr, or 80 ppmvd @ 15% O2 (4-10-1998)			2.0 grams/bhp-hr, or 176 ppmvd @ 15% O2 (4-10-1998)	

Notes:

1) BACT for "I.C. Engine, Portable" is determined by deemed complete date of permit application not date of manufacture or installation.
2) NMHC + NOx means the sum of non-methane hydrocarbons and oxides of nitrogen emissions, unless specified as "NMHC only", which only includes NMHC emissions.
3) The engine must be certified by U.S. EPA or CARB to meet the Tier 4 emission requirements of 40 CFR Part 89 – Control of Emissions from New and In-use Nonroad Compression-Ignition Engines shown in the table– or otherwise demonstrate that it meets the Tier 4 emission limits. If, because of the averaging, banking, and trading program, there is no new engine from any manufacturer that meets the above standards, then the engine must meet the family emission limits established by the manufacturer and approved by U.S. EPA. Based on the model year, the CARB Airborne Toxic Control Measure (ATCM) for Portable Diesel Engines (see www.arb.ca.gov/diesel/peatcm/peatcm.htm) requires in-use portable diesel engines to be certified to Tier 1, 2, 3 or 4 by their respective deadlines, all of which have passed. All exceptions allowed in the ATCM are also allowed in this guideline.

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

4) The CARB ATCM also requires in-use portable diesel engines to meet fleet-average PM standards beginning 1/1/2013. The PM limits in the table apply only to filterable PM.
5) CARB has extended the Tier 4 Final requirements deadline "until further notice" for Portable, Compression-Ignition Engines for ~~75 ≤ HP < 175 and~~ HP ≥ 750.

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

DRAFT

~~10-20-2000 Rev. 0~~
~~7-9-2004 Rev. 1~~
~~12-3-2004 Rev. 2~~
2-2-2018 Rev. 3

~~Equipment or Process:~~ ~~I.C. Engine, Stationary, Non-Emergency~~

	~~Criteria Pollutants~~					
~~Subcategory/ Rating/Size~~	~~VOC~~	~~NOx~~	~~SOx~~	~~CO~~	~~PM_{10}~~	~~Inorganic~~
~~< 2064 bhp~~	~~0.15 grams/bhp-hr (4-10-98)~~	~~0.15 grams/bhp-hr (4-10-98)~~	~~See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)~~	~~0.60 grams/bhp-hr (4-10-98)~~	~~See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000) Compliance with Rule 1470. (12-3-2004)~~	
~~≥ 2064 bhp~~	~~25 ppm @ 15% O_2 (7-9-2004)~~	~~9 ppmvd @ 15% O_2 (7-9-2004)~~	~~Same as Above (10-20-2000)~~	~~33 ppmvd @ 15% O_2 (5-8-98)~~	~~Same as Above (7-9-2004)~~	~~Ammonia: 10 ppmvd @ 15% O_2 (7-9-2004)~~
~~Landfill or Digester Gas Fired~~	~~0.8 grams/bhp-hr (4-10-98)~~	~~0.60 grams/bhp-hr (4-10-98)~~	~~Compliance with Rule 431.1 (10-20-2000)~~	~~2.5 grams/bhp-hr (4-10-98)~~		

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

DRAFT

12-02-2016 Rev. 0
2-2-2018 Rev. 1

Equipment or Process: - I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators [1]

	Criteria Pollutants					
Subcategory/ Rating/Size	**VOC**	**NOx**	**SOx**	**CO**	**PM10**	**Inorganic**
> 50 bhp	Compliance with SCAQMD Rule 1110.2 (12-02-2016)	Compliance with SCAQMD Rule 1110.2 (12-02-2016)	See Clean Fuels Policy in Part C of the BACT Guidelines (12-02-2016)	Compliance with SCAQMD Rule 1110.2 (12-02-2016)	See Clean Fuels Policy in Part C of the BACT Guidelines (12-02-2016) Compliance with Rule 1470 (12-02-2016)	
Landfill or Digester Gas Fired[2]	Compliance with SCAQMD Rule 1110.2 ~~0.8 grams/bhp-hr (12-02-2016)~~(2-2-2018)	Compliance with SCAQMD Rule 1110.2 ~~0.60 grams/bhp-hr (12-02-2016)~~(2-2-2018)	Compliance with SCAQMD Rule 431.1 (12-02-2016)	Compliance with SCAQMD Rule 1110.2~~2.5 grams/bhp-hr (12-02-2016)~~(2-2-2018)		

~~1) This BACT listing was adapted from the "I.C. Engine, Stationary, Non-Emergency." An additional listing for "I.C. Engine, Stationary, Non-Emergency, Electrical Generators," is currently under development. Until the amendment is developed, Stationary, Non-Emergency, Electrical Generators will be subject to "I.C. Engine, Stationary, Non-Emergency."~~

~~2)~~1) For the adoption of this new listing, the requirements for this subcategory were transferred directly from the existing requirements under "I.C. Engine, Stationary, Non-Emergency." The requirements are not new, but the date listed was updated to reflect the date of adoption of the new listing.

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

DRAFT

2-2-2018 Rev. 0

Equipment or Process: I.C. Engine, Stationary, Non-Emergency, Electrical Generators [1]

	Criteria Pollutants					
Subcategory/ Rating/Size	**VOC**	**NOx**	**SOx**	**CO**	**PM10**	**Inorganic**
> 50 bhp	Compliance with SCAQMD Rule 1110.2 (2-2-2018)	Compliance with SCAQMD Rule 1110.2 (2-2-2018)	See Clean Fuels Policy in Part C of the BACT Guidelines (2-2-2018)	Compliance with SCAQMD Rule 1110.2 (2-2-2018)	See Clean Fuels Policy in Part C of the BACT Guidelines (2-2-2018) Compliance with Rule 1470 (2-2-2018)	
Landfill or Digester Gas Fired	Compliance with SCAQMD Rule 1110.2 (2-2-2018)	Compliance with SCAQMD Rule 1110.2 (2-2-2018)	Compliance with SCAQMD Rule 431.1 (2-2-2018)	Compliance with SCAQMD Rule 1110.2 (2-2-2018)		

1) This BACT listing was adapted from the previous "I.C. Engine, Stationary, Non-Emergency," Part D BACT listing.

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

DRAFT

10-20-2000 Rev. 0
12-5-2003 Rev. 1
7-14-2006 Rev 2
2-2-2018 Rev 3

Equipment or Process: Printing (Graphic Arts)

	Criteria Pollutants					
Subcategory	**VOC**	**NOx**	**SOx**	**CO**	**PM_{10}**	**Inorganic**
Flexographic	Inks with ≤ 1.5 Lbs VOC/Gal, Less Water and Less Exempt Compounds (1990); or use of UV/EB or water-based inks/coatings ≤ 180 g VOC/L. Compliance with SCAQMD Rules 1130 and 1171 ~~(12-5-2003)~~(2-2-2018)					
Control	For add-on control required by SCAQMD Rule 1130(c)(5) or other District requirement: EPA M. 204 Permanent Total Enclosure (100% collection) vented to RTO with 95% overall control efficiency; Combustion Chamber: Temp ≥ 1500°F[1], Retention Time > 0.3 seconds (2-2-2018)	Compliance with SCAQMD Rule 1147 at time of applicability (2-2-2018)				
Letterpress	Compliance with SCAQMD Rules 1130 and 1171 (12-5-2003)					
Lithographic or Offset, Heatset	Low VOC Fountain Solution (≤ 8% by Vol. VOC); ~~Low Vapor Pressure (≤ 10 mm Hg VOC Composite Partial Pressure[1]) or~~ Low VOC (≤ 100 g/l) Blanket and Roller Washes; Oil-Based or UV-Curable Inks; and Compliance with SCAQMD Rules 1130 and 1171 (7-14-2006) (2-2-18)				~~Oven Venting to an Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1400 °F; 95% Overall Efficiency) (10-20-2000)~~	
Control	Oven Venting to an Afterburner (≥ 0.3 Sec.					

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

	Criteria Pollutants					
Subcategory	**VOC**	**NOx**	**SOx**	**CO**	**PM_{10}**	**Inorganic**
	Retention Time at ≥ 1400 ^{0}F; 95% Overall Efficiency) (10-20-2000)					

(Continued on next page)

Lithographic or Offset, Non-Heatset	Same As Above					
Rotogravure or Gravure—Publication and Packaging	Compliance with SCAQMD Rules 1130 and 1171 (10-20-2000)					
Screen Printing and Drying	Compliance with SCAQMD Rules 1130.1 and 1171 ~~(12-5-2003)~~; or use of Rule 1130.1 and 1171 compliant UV/EB or water-based inks/coatings. (2-2-2018).					

(Continued on Next Page)

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

~~1) VOC COMPOSITE PARTIAL PRESSURE is the sum of the partial pressures of the compounds defined as VOCs. VOC Composite Partial Pressure is calculated as follows:~~

$$PP_c = \sum_{i=1}^{n} \frac{\frac{(W_i)(VP_i)}{MW_i}}{\frac{W_w}{MW_w} + \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

~~Where: PPc = VOC composite partial pressure at 20°C in mm Hg~~
~~Wi = Weight of the "i"th VOC compound in grams~~
~~MWi = Molecular weight of "i"th VOC compound in grams per gram-mole~~
~~VPi = Vapor pressure of the "i"th VOC compound at 20°C in mm Hg~~
~~Ww = Weight of water in grams~~
~~MWw = Molecular weight of water in grams per gram-mole~~
~~We = Weight of exempt compound in grams~~
~~MWe = Molecular weight of exempt compound in grams per gram-mole~~

~~For multiple exempt compounds:~~ $We / MWe = \sum_{j=1}^{n} Wej / MWej$

1~~2~~) or temperature demonstrating equivalent overall control efficiency in a District-approved source test.

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

ATTACHMENT D

Flexographic Printing Press Cost Effectiveness Calculations for Regenerative Thermal Oxidizer as control - Asia Plastics

Flexo Printing Presses Info

Manufacturer: Hon Jin Iron Works
Model: HJ-222, 4-Color, Air Dry
Model HJ-HS6001, 6-Color, Air Dry
Operation Schedule: 16 hr/day, 365 days/yr

Control Technology	RTO - Ship & Shore Model SSE-3K-95X-RTO, 1.35MMBtu/hr

Capital Cost		
Equipment	$	160,000
Direct & Indirect Installation	$	140,000
Total Capital	$	300,000
Operating Cost		
Direct & Indirect	$	124,720
Total Average Annual	$	124,720
Present Value of Capital Costs	$	300,000
Present Value of Annual Costs (10 years @ 4%)	$	1,011,479
Total 10-Year Capital Cost	$	1,311,479

Uncontrolled Emissions (lbs/day)		**133**
Control Efficiency		95%
Controlled Emissions (lbs/day)		127
Controlled Emissions (tons/10 years)		231
Cost per ton of VOC controlled	**$**	**5,675**

MSBACT maximum cost effectiveness ROG ($/ton)	**$**	**28,886**	
	COST EFFECTIVE		**AVERAGE**
	$	*28,107*	*1st quarter 2013 M&S cost effectiveness (1558.7)*
MSBACT maximum cost effectiveness ROG ($/ton)	**$**	**86,658**	
	COST EFFECTIVE		**INCREMENTAL**
	$	*84,322*	*1st quarter 2013 M&S cost effectiveness (1558.7)*

Notes:

- Calculations were based on Regenerative Thermal Oxidizer permit application no. 548337 submitted by applicant controlling VOC emissions from two Flexographic Printing Presses, 6-color and 4-color. In addition to cost information provided by applicant.
- 133.3 lbs/day of uncontrolled VOC emissions was the baseline used in determining cost effectiveness
- Maximum allowed cost effectiveness was based on 1st quarter 2017 Marshall & Swift index
- Incremental costs are assumed to be the same since there is no more stringent control technology

Bakery Oven Cost Effectiveness Calculations for Regenerative Thermal Oxidizer (RTO) as control - Bon Appetit

Oven Information

Manufacturer: GPA Orlandi
Model: Turbo termo oven 25
Rating/Fuel: 5,000,000 Btu/hr
4 Burners, 3x1MM Btu/hr & 1x2MM Btu/hr
Outside Dimensions: 86'-5"L, 15'-5"W, 6'-3"H
Operation Schedule: 24 hr/day, 360 days/yr

Control Technology RTO - Alliance Corporation
Model Boxidizer 2-bed, .96 therms/hr

Capital Cost		
Equipment	$	150,166
Direct Installation	$	85,600
Indirect Installation	$	18,020
Total Capital	$	253,786
Operating Cost		
Direct & Indirect	$	42,046
Total Average Annual	$	42,046
Present Value of Capital Costs	$	253,786
Present Value of Annual Costs (10 years @ 4%)	$	340,993
Total 10-Year Capital Cost	$	594,779
Uncontrolled Emissions (lbs/day)		**30**
Control Efficiency		95%
Controlled Emissions (lbs/day)		29
Controlled Emissions (tons/10 years)		52
Cost per ton of VOC controlled	**$**	**11,435**
MSBACT maximum cost effectiveness ROG ($/ton)	**$**	**28,886**
	COST EFFECTIVE	**AVERAGE**
MSBACT maximum cost effectiveness ROG ($/ton)	**$**	**86,658**
	COST EFFECTIVE	**INCREMENTAL**

Notes:

- Calculations were based on cost effectiveness analysis submitted by applicant in April 2017 for Bakery Oven permit application no. 523867 that was evaluated for cost-effectiveness for expected 15.56 lbs/day of uncontrolled VOC emissions and cost estimates from another RTO manufacturer.
- 30 lbs/day of uncontrolled VOC emissions was the baseline used in determining cost effectiveness
- Maximum allowed cost effectiveness was based on 1st quarter 2017 Marshall & Swift index
- Incremental costs are assumed to be the same since there is no more stringent control technology

Bakery Oven Cost Effectiveness Calculations for Catalytic Oxidizer as control- Bon Appetit

Oven Information

Manufacturer: GPA Orlandi
Model: Turbo termo oven 25
Rating/Fuel: 5,000,000 Btu/hr
4 Burners, 3x1MM Btu/hr & 1x2MM Btu/hr
Outside Dimensions: 86'-5"L, 15'-5"W, 6'-3"H
Operation Schedule: 24 hr/day, 360 days/yr

Control Technology	CSM Cat-Ox Model 30A, 0.80MMBtu/hr

Capital Cost		
Equipment	$	460,438
Direct Installation	$	277,455
Indirect Installation	$	56,416
Total Capital	$	794,309

Operating Cost		
Direct	$	75,136
Indirect	$	2,000
Total Average Annual	$	77,136

Present Value of Capital Costs	$	794,309
Present Value of Annual Costs (10 years @ 4%)	$	625,573
Total 10-Year Capital Cost	$	1,419,882

Uncontrolled Emissions (lbs/day)	**30**
Control Efficiency	95%
Controlled Emissions (lbs/day)	28.50
Controlled Emissions (tons/10 years)	51.30
Cost per ton of VOC controlled	**$ 27,678**

MSBACT maximum cost effectiveness ($/ton)	**$**	**28,886**
	COST EFFECTIVE	

MSBACT maximum cost effectiveness ($/ton)	**$**	**86,658**
	COST EFFECTIVE	

Notes:

- Calculations were based on cost effectiveness analysis submitted by applicant in April 2017 for Bakery Oven permit application no. 523867 that was evaluated for cost-effectiveness for expected 15.56 lbs/day of uncontrolled VOC emissions.
- 30 lbs/day of uncontrolled VOC emissions was the baseline used in determining cost effectiveness
- Maximum allowed cost effectiveness was based on 1st quarter 2017 Marshall & Swift index
- Incremental costs are assumed to be the same since there is no more stringent control technology

Bakery Oven Cost Effectiveness Calculations for Catalytic Oxidizer as control - Aryzta, Ontario

Oven Information (two identical ovens vented)

Manufacturer: Baking Technology
Model: Baketech Maxisaver bun oven
Rating/Fuel: 7,300,000 Btu/hr
24 Burners, Flynn no. 162HN, 30ppm NOx
Outside Dimensions: 48'-4"L, 33'-0"W, 11"-0"H
Operation Schedule: 24 hr/day, 360 days/yr

Control Technology	CSM Cat-Ox Model 180A, 2.7MMBtu/hr

Capital Cost		
Equipment	$	709,769
Direct Installation	$	45,000
Indirect Installation	$	71,000
Total Capital	$	825,769

Operating Cost		
Direct and Indirect	$	37,178
Total Average Annual	$	37,178

Present Value of Capital Costs	$	825,769
Present Value of Annual Costs (10 years @ 4%)	$	301,514
Total 10-Year Capital Cost	$	1,127,283

Uncontrolled Emissions (lbs/day)	**114**
Control Efficiency	95%
Controlled Emissions (lbs/day)	108.64
Controlled Emissions (tons/10 years)	195.56
Cost per ton of VOC controlled	**$ 5,765**

MSBACT maximum cost effectiveness ROG ($/ton)	**$**	**28,886**	
	COST EFFECTIVE		**AVERAGE**
	$	*24,573*	*1st quarter 2007 M&S cost effectiveness (1362.7)*
MSBACT maximum cost effectiveness ROG ($/ton)	**$**	**86,658**	
	COST EFFECTIVE		**INCREMENTAL**
	$	*73,719*	*1st quarter 2007 M&S cost effectiveness (1362.7)*

Notes:

- Calculations were based on cost effectiveness analysis provided by applicant for Cat-Ox under application no. 548869 venting two bakery ovens appl. Nos. 548863 & 548866 for expected 114.36 lbs/day of uncontrolled VOC emissions.
- Since applicant stated that these costs are almost 10 years old, cost effectiveness based on 1st quarter 2007 Marshall & Swift index was also used.
- Incremental costs are assumed to be the same since there is no more stringent control technology

ATTACHMENT E

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SUBJECT: **NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT**

PROJECT TITLE: **PROPOSED AMENDED BEST AVAILABLE CONTROL TECHNOLOGY GUIDELINES**

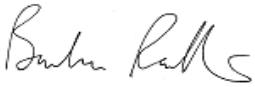
Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the South Coast Air Quality Management District (SCAQMD) is the Lead Agency and has prepared a Notice of Exemption for the project identified above.

SCAQMD staff has reviewed the proposed project to amend the Best Available Control Technology (BACT) Guidelines pursuant to: 1) CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA.

Since the proposed project is comprised of updates to the existing requirements and new Lowest Achievable Emission Rate (LAER)/BACT determinations in the BACT Guidelines to reflect the most current achieved-in-practice air pollution control equipment and/or processes, SCAQMD staff has determined that it can be seen with certainty that there is no possibility that the proposed amendments to the BACT Guidelines may have a significant adverse effect on the environment. In addition, SCAQMD staff has conducted an analysis to demonstrate compliance with California Health and Safety Code Section 40440.11, which shows that the achieved in practice controls are both economically and technically feasible for minor sources. Therefore, the project is considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule. A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062 – Notice of Exemption. If the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

Any questions regarding this Notice of Exemption should be sent to Ryan Bañuelos (c/o Planning, Rule Development and Area Sources) at the above address. Mr. Bañuelos can also be reached at (909) 396-3479. Mr. Alfonso Baez (909) 396-2516 should be contacted to answer any questions regarding the proposed amended guidelines.

Date: December 7, 2017

Signature: 

Barbara Radlein
Program Supervisor, CEQA Section
Planning, Rules, and Area Sources

Reference: California Code of Regulations, Title 14

NOTICE OF EXEMPTION

To:	County Clerks Counties of Los Angeles, Orange, Riverside, and San Bernardino	**From:**	South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765

Project Title: Proposed Amended Best Available Control Technology (BACT) Guidelines

Project Location: The SCAQMD has jurisdiction over the four-county South Coast Air Basin (all of Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). The SCAQMD's jurisdiction includes the federal nonattainment area known as the Coachella Valley Planning Area, which is a sub-region of Riverside County and the SSAB.

Description of Nature, Purpose, and Beneficiaries of Project: SCAQMD staff is proposing several amendments to the BACT Guidelines to reflect the most current achieved-in-practice air pollution control equipment and/or processes. The following new major source categories are proposed to be added to Part B, Section 1 – SCAQMD Lowest Achievable Emissions Rate (LAER): 1) Food Ovens (Bakery with Catalytic Oxidizer add-on control, Tortilla Chip, and Snack Food); 2) Furnace, Heat Treating Aluminum (≤ 900 degrees Fahrenheit); and 3) Flares (Biogas rated at 12 million British Thermal Units per hour (MMBTU/hr) and 39.3 MMBTU/hr, and Landfill Gas rated at 120 MMBTU/hr). Updates to the following major source categories are proposed to Part B, Section 1 – SCAQMD LAER: 1) Boiler rated at 39.9 MMBTU/hr with selective catalytic reduction (SCR); and 2) Internal Combustion (I.C.) Engine - Digester Gas-Fired rated at 3,471 brake horsepower (hp) and 2,500 kilowatts with digester gas cleanup, oxidation catalyst, and SCR. Updates to Part B, Section III – Other Technologies, are proposed for the following categories of emerging technologies in operation with an air quality permit that are not yet qualified as LAER: 1) I.C. Engine, Stationary, Emergency, Electrical Generator rated at 1 megawatt with a particulate matter trap and SCR; and 2) Fuel Cell Electricity Generator – Digester Gas fueled, electrical power generation with digester gas cleanup rated at 1.4 megawatts. Updates to Part D – Minor Source BACT are proposed for the following categories: 1) Printing, Graphic Arts (Flexographic, Lithographic or Offset, Heatset, and Screen Printing and Drying); 2) Dryer or Oven; 3) I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators; 4) I.C. Engine, Portable (Tier 4 Final, rated between 75 hp and 175 hp). In addition, the following new minor source categories are proposed to be added to Part D: 1) Food Oven – Ribbon, Direct-fired and Infrared Burners, Other Burners and Add-on control for bakery oven; and 2) I.C. Engine, Stationary, Non-Emergency, Electrical Generators. The category of I.C. Engine, Stationary, Non-Emergency is proposed for deletion from Part D. Lastly, an equipment category search web link is proposed to make the BACT Guidelines user friendly.

Public Agency Approving Project:	**Agency Carrying Out Project:**
South Coast Air Quality Management District	South Coast Air Quality Management District

Exempt Status: CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule

Reasons why project is exempt: SCAQMD staff has reviewed the proposed amendments to the BACT Guidelines pursuant to: 1) CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA. The proposed amendments are comprised of updates to the BACT Guidelines with achieved-in-practice air pollution control equipment for major and minor sources. In addition, SCAQMD staff has conducted an analysis to demonstrate compliance with California Health and Safety Code Section 40440.11, which shows that the achieved in practice controls are both economically and technically feasible for minor sources. SCAQMD staff has also determined that it can be seen with certainty that there is no possibility that the proposed amendments to the BACT Guidelines may have a significant adverse effect on the environment. Therefore, the project is considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule.

Date When Project Will Be Considered for Approval (subject to change):
SCAQMD Governing Board Hearing: February 2, 2018; SCAQMD Headquarters

CEQA Contact Person:	**Phone Number:**	**Email:**	**Fax:**
Mr. Ryan Bañuelos	(909) 396-3479	rbaneuelos@aqmd.gov	(909) 396-3982
Rule Contact Person:	**Phone Number:**	**Email:**	**Fax:**
Mr. Alfonso Baez	(909) 396-2516	abaez@aqmd.gov	(909) 396-3252

Date Received for Filing: _____ **Signature:** *(Signed Upon Board Approval)*

Barbara Radlein
Program Supervisor, CEQA Section
Planning, Rule Development & Area Sources

ATTACHMENT F

Public Comment Letters and Staff Responses

BACT Scientific Review Committee Meetings

30-Day Comment Period Starting October 26, 2017

AA. Comment Letter AA – Alison Torres, Eastern Municipal Water District (e-mail)

BB. Comment Letter BB – Terry Ahn, Orange County Sanitation District (e-mail)

CC. Comment Letter CC – Bridget McCann, Western States Petroleum Association (e-mail)

DD. Comment Letter DD – Rita Loof, RadTech (e-mail)

30-Day Comment Period Starting April 4, 2017

A. Comment Letter A – Gary Rubenstein, Sierra Research

B. Comment Letter B – Gerry Bonetto, Printing Industries Association of So. California

C. Comment Letter C – Rita Loof, RadTech

D. Comment Letter D – Phanindra Kondagari, Aereon

E. Comment Letter E – Marcia Kinter, Specialty Graphic Imaging Association

F. Comment Letter F – Alfred Javier, Eastern Municipal Water District

G. Comment Letter G – David Rothbart, Los Angeles County Sanitation District

H. Comment Letter H – Sylvie Lee, Inland Empire Utilities Agency

I. Comment Letter I – Karl Lany, Montrose Air Quality Services

J. SCAQMD Staff responses to comments from April 4, 2017 BACT Scientific Review Committee meeting and Public Comment Letters

RESPONSE TO COMMENTS FOR
PROPOSED AMENDMENTS OF THE BACT GUIDELINES

A public meeting was held on October 26, 2017 with the BACT Scientific Review Committee to present and discuss the proposed amendments to the BACT Guidelines. The following are staff responses to comments and questions from letters and e-mails received from the 30-day comment period:

Comment Letter AA – Alison Torres, Eastern Municipal Water District (e-mail)

Comment Letter BB – Terry Ahn, Orange County Sanitation District (e-mail)

Comment Letter CC – Bridget McCann, Western States Petroleum Association (e-mail)

Comment Letter DD – Rita Loof, RadTech (e-mail)

COMMENT LETTER AA

Al Baez

From: Torres, Alison [redacted]
Sent: Tuesday, November 7, 2017 9:46 AM
To: Al Baez
Cc: Tom Lee
Subject: BACT Comments

Good Morning Al,

Thank you for the opportunity to provide comments on the BACT determinations presented at the BACT SRC Meeting on Thursday October 26, 2017.

We appreciate your consideration of the comment letter we submitted in May 2017 and the changes you made based on those comments. We have some additional comments on the package provided at the October 26 SRC meeting.

Our comments are detailed below.

- Part B, Section I, SCAQMD LAER-Flare Biogas listing (A/N 513835):
  - AA1 o Section 1.L.- change "achieve reliable operation" to "improve reliable operation"
  - AA2 o Section 6.E.- add "@3% O2" to source test performance data for VOC
  - AA3 o Add "Wastewater" to Equipment Subcategory

- Part B, Section I, SCAQMD BACT-Updated listing, IC Engine DG fired (A/N 546360):
  - AA4 o We suggest adding discussion related to the need for fuel pretreatment to Section 1.L.
  - AA5 o We suggest adding some information related to the max inlet siloxane requirements based on control system specs to the listing.

- Part B, Section III, Other Technologies- IC Stationary Emergency Generator (A/N 567735)
  - AA6 o Listing should indicate that the engine is a Tier 2 certified engine.

Please let me know if you have questions or need additional information.

Thank you!

Alison Torres
Sr. Air Quality Compliance Analyst
Environmental & Regulatory Compliance Dept
Eastern Municipal Water District
[redacted]

Serving our community today and tomorrow

COMMENT LETTER BB

Al Baez

From: Ahn, Terry [redacted]
Sent: Monday, November 13, 2017 1:02 PM
To: Al Baez
Cc: Tom Lee
Subject: RE: EXTERNAL: proposed BACT/LAER listing of OCSB biogas engine A/N: 546360
Attachments: Lab Siloxane Data Nov 2016-Nov 2017.xlsx

Hi Al,

Please find attached Siloxane analysis results for OCSD's digester gas for the past 12 months. The sampling/analysis is done in-house usually twice a month. Based on these results, the suggested inlet Siloxanes loading would be less than 1 ppmv for D4 and less than 5 ppmv for D5. [redacted] BB1

If you have any questions please let me know.

Thanks,

Terry Ahn
Orange County Sanitation District
Regulatory Specialist
[redacted]
www.ocsewers.com

COMMENT LETTER CC

Al Baez

From: Bridget McCann [redacted]
Sent: Monday, November 27, 2017 2:24 PM
To: Al Baez
Subject: Comments on Section 1, SCAQMD BACT Determination (Major/LAER)
Attachments: LAER_Section1_all_WSPA Comments 112717.pdf

Hi Al—

Attached are my comments regarding Section 1, SCAQMD BACT Determination (Major/LAER). I have made my comments directly onto the draft document.

Let me know if you have any questions.

Thank you,
Bridget

Bridget McCann
Manager, Southern California Region
Western States Petroleum Association
[redacted]

WSPA comments are listed in the comment bubbles in the margin. All other edits are made by SCAQMD staff.

Section 1, SCAQMD BACT Determination

Source Type: **Major/LAER**

Application No.: **562449**

Equipment Category: **Boiler**

Equipment Subcategory: **39.9 MMBtu/hr with SCR**

Date: **March 22, 2016**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Simoneau	B. MODEL: FX2-35
C. DESCRIPTION: 39.9 MMBtu watertube boiler with low NOx burner and SCR unit with ammonia injection	
D. FUNCTION: Boilers provides steam for laundry facilities, hospital heating and sterilization procedures.	
E. SIZE/DIMENSIONS/CAPACITY: Boiler No. 2	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: 39.9 MMBtu/hr	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
WEBSTER	39.9 MMBtu/hr	1

H. PRIMARY FUEL: NATURAL GAS	FUEL OIL
J. OPERATING SCHEDULE: 24 7 52	
K. EQUIPMENT COST:	
L. EQUIPMENT INFORMATION COMMENTS: EQUIPMENT IS NEW CONSTRUCTION. THREE IDENTICAL BOILERS AND SCR WITH IDENTICAL LIMITS. ADD'L PERMIT NO. BOILER 1 G36227, BOILER 3 G36229, SCR 1 G36231, SCR 3 G36234	

2. COMPANY INFORMATION

A. COMPANY: US GOVT, VET. AFFAIRS MED CTR (LONG BEACH)	B. FAC ID: 13990
C. ADDRESS: 5901 E. 7th ST. CITY: Long Beach STATE: CA ZIP: 90822	D. NAICS CODE: 622110
E. CONTACT PERSON: Jason Thompson	F. TITLE: Env Protection Spec.
G. PHONE NO.: 562-826-8000 x3083	H. EMAIL:

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Roy Olivares	
D. PERMIT INFORMATION: PC ISSUANCE DATE: P/O NO.: G36227 PO ISSUANCE DATE: 6/18/2015	
E. START-UP DATE: 8/7/2015	
F. OPERATIONAL TIME: > 1 year	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES:

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit		5 ppmvd		100 ppmvd		5 ppmvd NH3 slip
Averaging Time		15 min		15 MIN		60 MIN
Correction		@ 3% O2		@ 3% O2		@ 3% O2

B. OTHER BACT REQUIREMENTS: When firing on Standby fuel: 40 ppmvd NOx @3%O2, 15 min avg; 400 ppmvd CO @3%O2.

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS: Enter any additional comments regarding Emissions Information.

CC1

Comment [BM1]: The averaging time for NOx emissions should be 1 hour or multi-hour (as applicable), as specified in EPA NSPS 40 CFR Part 60 Subpart D. BACT determinations are case-by-case and similarly the applicable averaging periods are case-by-case determinations. In many cases 1-hr averages or longer are appropriate for BACT and consistent with applicable NSPS and/or NESHAPS standards.

Comment [BM2]: Same comment applies here. The averaging time for NOx emissions should be 1 hour or multi-hour (as applicable), as specified in EPA NSPS 40 CFR Part 60 Subpart D. BACT determinations are case-by-case and similarly the applicable averaging periods are case-by-case determinations. In many cases 1-hr averages or longer are appropriate for BACT and consistent with applicable NSPS and/or NESHAPS standards.

CC2

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Pasasia	B. MODEL: Custom
C. DESCRIPTION: Selective Catalytic Reduction, low temp de-NOx, haldor topsoe, model dnx-1029. Ammonia injection, three 150 lb cylinders, feed forward	
D. SIZE/DIMENSIONS/CAPACITY: 4'-9" W x 4'-9" L x 9'-0" H	
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. 562452 PC ISSUANCE DATE: PO NO.: G36233 PO ISSUANCE DATE: 6/18/2015	
F. REQUIRED CONTROL EFFICIENCIES: Emission requirements are mass based and listed in Section 4 emission Information	

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	%	%	%
NOx	%	%	%
SOx	%	%	%
CO	%	%	%
PM	%	%	%
PM_{10}	%	%	%
INORGANIC	%	%	%

G. CONTROL TECHNOLOGY COMMENTS Pressure drop not to exceed 2.5" H2O. SCR be temperature 400-650oF. Ammonia injection shall not exceed 0.55 lb/hr. Ammonia injection to start when cat bed outlet temp reaches 400oF. Start-ups not to exceed 120 min for cold start and 30 min for warm start.

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test PR16435
B. DATE(S) OF SOURCE TEST: October 12, 2016
C. COLLECTION EFFICIENCY METHOD:
D. COLLECTION EFFICIENCY PARAMETERS:
E. SOURCE TEST/PERFORMANCE DATA: low mid and high fire each tested for NOx, CO and NH3. Reference source test report for details of each load tested. All loads met emission limits for each contaminant,

F. TEST OPERATING PARAMETERS AND CONDITIONS: Low fire 322 Mcfd, mid fire 437 Mcfd, 814 Mcfd
G. TEST METHODS (SPECIFY AGENCY): SCAQMD Method 207.1, SCAQMD 100.1

H. MONITORING AND TESTING REQUIREMENTS: NH3 slip test every 3 months for first year.
I. DEMONSTRATION OF COMPLIANCE COMMENTS:

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 011204	B. CCAT: 81	C. APPLICATION TYPE CODE: 10
D. RECLAIM FAC? YES ☐ NO ☐	E. TITLE V FAC: YES ☒ NO ☐	F. SOURCE TEST ID(S): PR16435
G. SCAQMD SOURCE SPECIFIC RULES: 1146		
H. HEALTH RISK FOR PERMIT UNIT		

H1. MICR:	H2. MICR DATE:	H3. CANCER BURDEN:	H4. CB DATE:
H5: HIA:	H6. HIA DATE:	H7. HIC:	H8. HIC DATE:

COMMENT LETTER DD

Al Baez

From: Rita Loof [redacted]
Sent: Monday, November 27, 2017 11:18 PM
To: Al Baez
Subject: BACT Comments
Attachments: Commnets BACT 1117.doc

Dear Al,

DD1 Please refer to our previous comments on the BACT guidelines proposal. We appreciate your consideration of UV/EB/LED technology as a compliance option.

DD2 As per your request, attached please find a listing of permitted UV equipment. We can provide additional information if needed. Thank you so much,
Rita

Rita M. Loof
Director, Environmental Affairs
RadTech International
[redacted]
www.radtech.org

Flexographic Printing, UV

Facility Name	Permit #	Date Issued
Accurate Label	F31154	04/06/00
Accurate Label	F31155	04/06/00
Accurate Label	F31156	04/06/00
Accurate Label	F31157	04/06/00
Accurate Label	F31158	04/06/00
Accurate Label	F31160	04/06/00
Accurate Label	F31161	04/06/00
Accurate Label	F31162	04/06/00
CCL Label	F16171	09/24/98
CCL Label	F16172	09/25/98
CCL Label	F21107	06/30/99
CCL Label	F16175	09/24/98
CCL Label	F5347	02/12/97
CCL Label	F5349	02/12/97
Pac West Label & Graphics	F18786	01/14/99
Pac West Label & Graphics	F18787	01/14/99
Pac West Label & Graphics	F18789	01/14/99
Pac West Label & Graphics	F18790	01/14/99
Pac West Label & Graphics	F18791	01/14/99
California Litho CO. Inc.	F33208	08/16/00
The Label Co,	F10135	10/29/97
The Label Co,	F10136	10/29/97
National Card, Label & Affixing Inc.	F25239	03/10/00
KenPak Inc	F22938	12/03/99
Western Shield Label Co. Inc.	F20459	05/05/99
Western Shield Label Co. Inc.	F20460	05/05/99
Genforms Corp.	F30121	05/16/00

Lithographic Printing, UV

Holiday Printing & Lithograph Inc.	F32751	07/25/00
Westminster Press	F15320	08/11/98
K & D Graphics, A California Corp.	F24307	02/09/00
Jaco Printing Corp, Business Forms Press	D53533	05/21/92
Jaco Printing Corp, Business Forms Press	F15651	11/24/98
Jaco Printing Corp, Business Forms Press	F15651	11/24/98
Royal Paper Box Co.	D92649	08/10/95
Creative Mailings Inc.	F31957	06/21/00

Screen Printing, UV

Screen Label Corp.	D90436	05/03/95

Spray Booth, UV

Excel Cabinets, Inc.	Application # 450588	11/26/05
Head West Inc.	F80114	01/12/06

Response to Comment Letter AA (Alison Torres, EMWD)

Comment AA1:

Part B, Section I, SCAQMD LAER-Flare Biogas listing (A/N 513835): Section 1.L.- change "achieve reliable operation" to "improve reliable operation"

Response AA1:

Staff agrees and has revised language in Section 1.L to "improve reliable operation".

Comment AA2:

Part B, Section I, SCAQMD LAER-Flare Biogas listing (A/N 513835): Section 6.E.- add "@3% O2" to source test performance data for VOC.

Response AA2:

Staff agrees and has included language in Section 6.E to read "@ 3% O_2".

Comment AA3:

Part B, Section I, SCAQMD LAER-Flare Biogas listing (A/N 513835): Add "Wastewater" to Equipment Subcategory

Response AA3:

Staff agrees and has included clarification language to Equipment Subcategory of "Wastewater".

Comment AA4:

Part B, Section I, SCAQMD BACT-Updated listing, IC Engine DG fired (A/N 546360): We suggest adding discussion related to the need for fuel pretreatment to Section 1.L..

Response AA4:

Staff agrees and has included language in Section 1.L regarding usage of fuel pretreatment.

Comment AA5:

Part B, Section I, SCAQMD BACT-Updated listing, IC Engine DG fired (A/N 546360): We suggest adding some information related to the max inlet siloxane requirements based on control system specs to the listing.

Response AA5:

Staff agrees and has included language regarding inlet siloxane levels.

Comment AA6:

Part B, Section III, Other Technologies- IC Stationary Emergency Generator (A/N 567735): Listing should indicate that the engine is a Tier 2 certified engine.

Response AA6:

Staff agrees and has included clarification language regarding certified Tier 2 engine equipped with Tier 4 Aftertreatment to comply with EPA Tier 4 Requirements.

Response to Comment Letter BB (Terry Ahn, OCSD)

Comment BB1:

The sampling/analysis is done in-house usually twice a month. Based on these results, the suggested inlet Siloxanes loading would be less than 1 ppmv for D4 and less than 5 ppmv for D5.

Response BB1:

Staff agrees and has included language regarding inlet siloxane loading levels of less than 1 ppmv for D4 and less than 5 ppmv for D5.

Response to Comment Letter CC (Bridget McCann, WSPA)

Comment CC1:

Part B, Section I, SCAQMD BACT-Updated listing, Boiler (A/N 562449) Section 4.A: The averaging time for NOx emissions should be 1 hour or multi-hour (as applicable), as specified in EPA NSPS 40 CFR Part 60 Subpart D. BACT determinations are case-by-case and similarly the applicable averaging periods are case-by-case determinations. In many cases 1-hr averages or longer are appropriate for BACT and consistent with applicable NSPS and/or NESHAPS standards.

Comment CC2:

Part B, Section I, SCAQMD BACT-Updated listing, Boiler (A/N 562449) Section 4.B: Same comment applies here. The averaging time for NOx emissions should be 1 hour or multi-hour (as applicable), as specified in EPA NSPS 40 CFR Part 60 Subpart D. BACT determinations are case-by-case and similarly the applicable averaging periods are case-by-case determinations. In many cases 1-hr averages or longer are appropriate for BACT and consistent with applicable NSPS and/or NESHAPS standards.

Response CC1 and CC2:

Staff agrees that BACT determinations are case-specific as is the case with the proposed LAER BACT determination for the 39.9 MMBtu/hr Boiler in Part B, Section I of the BACT Guidelines. The 5 ppmvd, 15 minute average NOx emission limit listed on section 4A of the BACT determination form is consistent with the applicable Rule 1146 requirement which is also listed on the permit conditions. In addition, EPA has reviewed and made a determination that these type of boilers are subject to 40 CFR Part 60 Subpart Dc, even though they do not have emission limits under Subpart Dc. Specifically, natural gas units are subject to the fuel recordkeeping requirement in 40 CFR 60.48c(g)(2). Furthermore, pursuant to 40 CFR 63.11195(e) these type of boilers are not subject to NESHAP 40 CFR 63 Subpart JJJJJJ because they meet the definition of "gas-fired boiler" in 40 CFR 63.11236.

Response to Comment Letter DD (Rita Loof, RadTech)

Comment DD1:

Please refer to our previous comments on the BACT guidelines proposal. We appreciate your consideration of UV/EB/LED technology as a compliance option.

Response DD1:

Staff agrees and has recognized UV/EB ink and coating technology in past BACT determinations both in Part B and D (major and non-major sources) of the BACT Guidelines. Staff is also proposing the inclusion of compliant UV/EB and water-based inks/coatings as an alternative method of BACT compliance for Printing (Graphic Arts)-Flexographic and Screen Printing and Drying operations.

Comment DD2:

As per your request, attached please find a listing of permitted UV equipment.

Response DD2:

Staff will be reviewing the provided list of permitted UV equipment for potential future inclusion into Part B, Section I LAER/BACT determinations.

Public Comment Letters and Staff Responses

BACT Scientific Review Committee Meeting (April 4, 2017)

A. Comment Letter A – Gary Rubenstein, Sierra Research
B. Comment Letter B – Gerry Bonetto, Printing Industries Association of So. California
C. Comment Letter C – Rita Loof, RadTech
D. Comment Letter D – Phanindra Kondagari, Aereon
E. Comment Letter E – Marcia Kinter, Specialty Graphic Imaging Association
F. Comment Letter F – Alfred Javier, Eastern Municipal Water District
G. Comment Letter G – David Rothbart, Los Angeles County Sanitation District
H. Comment Letter H – Sylvie Lee, Inland Empire Utilities Agency
I. Comment Letter I – Karl Lany, Montrose Air Quality Services
J. SCAQMD Staff responses to comments from April 4, 2017 BACT Scientific Review Committee meeting and Public Comment Letters

Comment Letter A

1801 J Street | Sacramento, CA 95811 | P (916) 444-6666 | F (916) 444-8373
sierraresearch.com | trinityconsultants.com

To: Al Baez, Jason Aspell
South Coast AQMD
From: Gary Rubenstein
Date: April 5, 2017
RE: Comments on Proposed BACT Listings Presented at April 4, 2017 Scientific Review Committee Meeting

Following are my comments on the proposed BACT listings presented to the SCAQMD BACT Scientific Review Committee on April 4, 2017. Please let me know if you have any questions about these comments.

Part B Listings

Section 1: A/N 491442 – Flare – Landfill Gas, Active Solid Waste Landfill, Non-Hazardous Waste

A1 This unit is variously described as being fired with digester gas and landfill gas (with propane as a pilot fuel and/or backup fuel). The listing form should clearly indicate the primary, backup, and pilot fuels used, and whether the emission limits vary depending on the fuel being fired.

Section 1: A/N 448345 – Flare – Digester Gas, Food Waste and Manure Digester

A2 The listing form does not indicate a VOC destruction efficiency for this flare. In addition, while the listing form indicates a minimum operating temperature for the flare, it does not indicate the associated minimum residence time. If the underlying permit does not contain a required VOC destruction efficiency or a minimum residence time, the listing form should so indicate.

Section 3: A/N 591787 – Fuel Cell Electricity Generator – Digester Gas Fueled

A3 The listing form identifies VOC, NOx, and CO emission limits of 0.10, 0.07, and 0.10 lbs/MW-hr (respectively). Some, if not all, of these limits are associated with sub-1 ppm concentrations in a fuel cell exhaust stream, and may be at or below the limits of detection for approved District and EPA test methods. The listing document does not indicate the test methods used to verify compliance with these BACT levels. I would strongly suggest that you defer publishing this listing until you are able to confirm that compliance with the proposed BACT limits can, in fact, be established with District- or EPA-approved test methods and, if so, the listing should clearly indicate the methods that must be used (and approved deviations, if necessary) to establish compliance. The listing should also clearly indicate whether the limits apply during all fuel cell operating periods, or are applicable only during steady-state charging operation. (The nature of the duty cycle may vary depending on the fuel cell design and application.)

Section 3: A/N 567735 – IC Engine, Stationary, Emergency, Electrical Generators

A4 The listing document states, in Section 1.C, that the engine is equipped with an "integrated aftertreatment system." To avoid confusion, this description should read as follows: "EPA-certified Compression Ignition Diesel Engine, 12 cylinders, turbocharged and aftercooled, Engine Family [XXX]. Certified configuration includes integrated aftertreatment system including Selective Catalytic Reduction and Diesel Particulate Filter." In Section 6.A. I recommend that the following clarification be added at the end of the existing sentence: "Compliance with the EPA Tier 4 standards is based on EPA nonroad engine test methods and duty cycles. Tests conducted under other duty cycles, or using different test methods, may produce different results, and are not indicative of noncompliance with the BACT levels."

Part D Listings

Page 55: Food Oven

A5 The draft listing identifies a catalytic oxidizer as a potential (or required) add-on control device. The conditions under which the CatOx would be required as part of a BACT determination should be clearly stated. (If this determination is applicable only to bakery ovens with yeast-containing products and VOC emissions greater than 25 lbs/day, this should be stated more clearly, and not just implied.) In addition, the draft listing implies that this add-on control could be required for all ovens, regardless of the oven exhaust temperature. The District should clarify whether it expects facility operators to provide supplemental heating to ensure that the CatOx reaches its required minimum operating temperature of 600°F, or whether the listing is limited to ovens that normally achieve that minimum temperature.

A/N 475618: Food Oven, Ribbon Burner > 500°F

A6 Section 4A of the proposed listing indicates a BACT level for NOx of 30 ppm @ 3% O_2; however, Section 6E reports a NOx concentration of 52.6 ppm @ 3% O_2. It is unclear how the data in Section 6E support the listing.

A/N 396227: Food Oven, Direct Fired

A7 Although this unit received its permit to operate in February 2002, the proposed listing does not summarize any source test data demonstrating compliance with the listed BACT limits. I suggest that this listing be withdrawn until the missing data can be added.

Comment Letter B

PIASC
Printing Industries Association, Inc. of Southern California
5800 South Eastern Avenue • P.O. Box 910936 • Los Angeles, CA 90091-0936 • Telephone: (323) 728-9500 • Fax: (323) 724-2327

May 1, 2017

Mr. Al Baez
Program Supervisor, Best Available Control Technology
Science & Technology Advancement Office
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Re: Proposed Updates to BACT Guidelines for Printing Operations

Dear Mr. Baez:

I am writing on behalf of the Printing Industries of California (PIC) on the Proposed Updates to the BACT Guidelines for the both major and minor flexographic and screen printing operations (April 4, 2017, meeting of the Scientific Review Committee).

By way of introduction, PIC is the government affairs office of the three commercial printing trade associations in the state: Visual Media Alliance (Northern California), Printing Industries Association of San Diego, and Printing Industries Association of Southern California. The combined membership of the three affiliates is over 1,800 companies.

Part B - LAER (Lowest Achievable Emission Rate), Major New or Modified Sources
Flexographic Printing. The permit application of G3 Enterprises doesn't tell the whole story of major flexographic printing. G3 Enterprises is a unique flexographic printer. Looking at the company's website, G3 Enterprises produces product caps, corks, and other closures wine labels and packaging custom label printing, bottle etching, decorating, and folding cartons. Because of
B1 the nature of the products, ink formulations, and substrates on which these products are produced and printed—paper, metal, and metalized paper—the Volatile Organic Compound (VOC) content of the ink is likely higher than the flexographic limit in San Joaquin Valley Air Pollution Control District's Rule 4607 (Graphic Arts and Paper, Film, Foil and Fabric Coatings). Moreover, the quantity of ink and coating used per year far exceeds that of other flexographic printers. This company falls outside the parameters of the typical flexographic printing company.

We believe the VOC content of the ink and coating in SCAQMD Rule 1130 should remain the standard by which to judge new major source permit applications, unless the process would use an ink above the VOC content in the rule.

Part D – Minor Source BACT (Best Available Control Technology)

B2 **Printing (Graphic Arts) Flexographic** or UV/EB or water-based inks/coatings, and use of super compliant cleaning solvents

Printing (Graphic Arts) Screen Printing and Drying or UV/EB or water-based inks/coatings, and use of super compliant cleaning solvents

We appreciate staff's willingness to add UV/EB and water-based inks/coating to both the flexographic and screen printing listings. It's critical that both UV and water-based inks/coating
B2 are listed. Both ink processes are prevalent in flexographic and screen printing—as staff has seen firsthand in site visits to flexographic narrow web and screen printing facilities (and as demonstrated in the video we produced for Jantex. Here's a link to the screen printing ink video on YouTube (https://www.youtube.com/watch?v=RMQaIlpyb1A).

We suggest that the proposed "use of super compliant cleaning solvents" in both listings be revised to read "use cleanup solvents that meet the standards in Rule 1171 (Solvent Cleaning Operations)" which, since 2009, has been set at 25 g/l (0.21 lbs/gal) or less. The inclusion of "super compliant" solvents actually increases the VOC content to 50 g/l (4.2 lbs/gal). Obviously, industry would support this option, but this would be considered "backsliding."

Water-based and plastisol inks are the two most frequently used inks in fabric screen printing.

Water-based ink utilizes pigments in a suspension with water as the solvent. The evaporation of the water is necessary to cure the ink. This curing can take place either at room temperature or with the assist of a dryer depending upon the formulation of the water-based ink used and the speed or volume of production. Water-based ink produces a "soft hand," that is, the ink absorbs into the fabric and feels "soft" to the touch. This makes it ideal for a wide variety of printing applications, including shirts, towels, sweatpants, towels, and even paper.

Plastisol is a thermoplastic ink that must be heated to a temperature high enough to cause the molecule resin and plasticizer to cross-link and thereby cure. Plastisol ink creates an ink film that can be felt with the hand, thus the term "heavy hand" to refer to such inks. The higher the opacity of the ink is, the heavier the hand. This heavy hand is a disadvantage at the consumer level since it since on top of the fabric and the image feels stiff (thus the term "heavy hand").

Printing (Graphic Arts) Lithographic or Offset, Heatset

B3 The proposed standard of 99 percent overall efficiency for add-on control devices is achievable in practice, as shown in the scattered plot slide #11 at the April 4th Scientific Review Committee meeting.

Printing (Graphic Arts) Flexographic, Heatset

B4 At the April 4th meeting, slide #12 proposes a 95 percent overall efficiency for add-on control as a proposed BACT limit for these devices. There is, however, no listing in the actual guideline. Does this mean that slide #12 is for information only, or is it an oversight on staff's part?

I have also included data sheets from Jantex Inks. The inks are typical of the water-based inks used in fabric screen printing. You received by email from Mark Brouillard, International Coatings, data sheets on the plastisol inks.

Sincerely,

Gerry Bonetto, Ph.D.
Vice President
Government Affairs

Enclosures

May 2, 2017

Mr. Alfonso Baez
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Re: Best Available Control Technology Guidelines Proposal

Dear Al:

RadTech appreciates the opportunity to serve on the Best Available Control Technology Guidelines Scientific Review Committee. Our technology is pollution prevention technology and should be recognized as an alternative to add-on control devices in the guidelines. Our association supports the staff's efforts to implement the board resolution which directed staff to work with industry and other stakeholders on assessing Ultraviolet/ Electron Beam (UV/EB) technology as an alternative to meet Best Available Control Technology and including determinations by other air districts in the guidelines.

C1

As mentioned during the advisory committee meeting, the VOC limit for cleanup solvents should be consistent with the requirements of Rule 1171 (Solvent Cleaning). We have received input from printers who are struggling to make the super-compliant cleanup solvents work and in many cases, have to resort to multiple cleaning steps. We suggest that the proposed language be modified to allow for the use of Rule 1171 compliant cleanup solvent.

C2

We have provided additional cost information as per your request and look forward to a continued collaboration with the district on this matter.

Sincerely

Rita M. Loof
Director, Environmental Affairs

Cc: Wayne Nastri

Dated: May 2nd , 2017

Jason Aspell
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Re: Aereon CEB (Certified Ultra Low Emission Burner) Emission

Dear Jason,

Thank you for the opportunity to provide an official response regarding the CEB (Certified Ultra Low Emission Burner) technology. Aereon has over 120 installed units worldwide across various applications including, but not limited to, wastewater, landfill, upstream oil & gas and loading terminals. Across all the applications our installed base has achieved less than our standard guaranteed emissions as identified below.

Nitrogen Oxides: < 0.018 lb/MMBtu
Carbon Monoxide: < 0.01 lb/MMBtu
Volatile Organic Compounds: <0.008 lb/MMBtu

Below is the list of emissions specific to SCAQMD jurisdiction.

CEB Model No.	Gas Combusted (HHV)	Owner/Operator	Location (CA)	Test Date	Test Loading	NOx	VOC	CO
350	Oil field produced gas (1052 Btu/scf)	Bridgemark Corp.	Anaheim	10/28/2014	Normal (low)	10.1 ppmv 0.023 lb/MMBtu 0.084 lb/hr	5.8 ppmv 0.0043 lb/MMBtu 0.016 lb/hr (as CH_4)	3.2 ppmv 0.0043 lb/MMBtu 0.016 lb/hr
800-CA	Oil field produced gas (1359 Btu/scf)	Brietburn Operating LP	Santa Fe Springs	11/23/2016	Normal	3.41 ppmv 0.0058 lb/MMBtu 0.0707 lb/hr	11.38 ppmv 0.0050 lb/MMBtu 0.0615 lb/hr (as CH_4)	0.00 ppmv 0.00 lb/MMBtu 0.00 lb/hr
800-CA	Oil field produced gas (975 Btu/scf)	Matrix Oil Corp.	Whittier	8/1/2016	Low	4.06 ppmv 0.005 lb/MMBtu 0.07 lb/hr	16.66 ppmv 0.0063 lb/MMBtu 0.09 lb/hr (as CH_4)	0.00 ppmv 0.00 lb/MMBtu 0.00 lb/hr

	Oil field produced gas (536 Btu/scf)			8/1/2016	Mid	3.98 ppmv 0.005 lb/MMBtu 0.06 lb/hr	4.94 ppmv 0.0018 lb/MMBtu 0.02 lb/hr (as CH_4)	0.00 ppmv 0.00 lb/MMBtu 0.00 lb/hr
	Oil field produced gas (845 Btu/scf)			8/1/2016	High (limited gas)	4.23 ppmv 0.005 lb/MMBtu 0.08 lb/hr	6.27 ppmv 0.0026 lb/MMBtu 0.04 lb/hr (as CH_4)	0.00 ppmv 0.00 lb/MMBtu 0.00 lb/hr
	Oil field produced gas			2/25/2016	Low	10.0 ppmv 0.012 lb/MMBtu 0.29 lb/hr	Testing error	<0.1 ppmv <0.00011 lb/MMBtu <0.0025 lb/hr
	Oil field produced gas			2/25/2016	Normal	6.0 ppmv 0.0073 lb/MMBtu 0.23 lb/hr	Testing error	<0.1 ppmv <0.00011 lb/MMBtu <0.0034 lb/hr
	Oil field produced gas			2/24/2016	High	6.6 ppmv 0.0082 lb/MMBtu 0.23 lb/hr	Testing error	0.8 ppmv 0.0006 lb/MMBtu 0.016 lb/hr
800	Oil field produced gas (913 Btu/scf)	Linn Operating	Brea	3/25/2013 3/26/2013 4/19/2013	50%	5.73 ppmv 0.007 lb/MMBtu 0.07 lb/hr	5.04 ppmv 0.0036 lb/MMBtu 0.045 lb/hr (as CH_4)	0.00 ppmv 0.00 lb/MMBtu 0.00 lb/hr
					75%	5.89 ppmv 0.007 lb/MMBtu 0.12 lb/hr	5.72 ppmv 0.0025 lb/MMBtu 0.042 lb/hr (as CH_4)	0.00 ppmv 0.00 lb/MMBtu 0.00 lb/hr
					Max	8.37 ppmv 0.010 lb/MMBtu 0.20 lb/hr	3.93 ppmv 0.0056 lb/MMBtu 0.040 lb/hr (as CH_4)	0.26 ppmv 0.00 lb/MMBtu 0.00 lb/hr
500	Oil field produced gas (1032 Btu/scf)	Warren E&P	Wilmington (WTU)	1/18/2012	Normal	6.91 ppmv 0.009 lb/MMBtu 0.12 lb/hr	1.88 ppmv 0.001 lb/MMBtu 0.01 lb/hr (as CH_4)	3.2 ppmv 0.002 lb/MMBtu 0.03 lb/hr
500	Oil field produced gas (1032 Btu/scf)	Warren E&P	Wilmington (NWU)	7/11/2011	Normal	6.54 ppmv 0.008 lb/MMBtu 0.06 lb/hr	6.98 ppmv 0.0029 lb/MMBtu 0.02 lb/hr (as CH_4)	9.9 ppmv 0.007 lb/MMBtu 0.052 lb/hr

350	Digester gas (601 Btu/scf)	EMWD Perris Valley RWRF	Perris	11/9/2011	Normal	8.62 ppmv 0.014 lb/MMBtu 0.12 lb/hr	3.5 ppmv 0.0022 lb/MMBtu 0.02 lb/hr (as CH_4)	13.8 ppmv 0.011 lb/MMBtu 0.096 lb/hr
350	Digester gas (600 Btu/scf)	EMWD San Jacinto RWRF	San Jacinto	3/8/2007	Normal	2.40 ppmv 0.006 lb/MMBtu 0.03 lb/hr	13.89 ppmv 0.0072 lb/MMBtu 0.03 lb/hr (as CH_4)	3.0 ppmv 0.003 lb/MMBtu 0.014 lb/hr

Below is a supplemental list of emissions specific to biogas/landfill gas applications across the United States.

CEB Model No.	Gas Combusted (HHV)	Owner/Operator	Location	Test Date	Test Loading	NOx	VOC	CO
350	Landfill gas	Waters Landfill Michigan	Michigan	10/17/2007	Normal	6.0 ppmv 0.010 lb/MMBtu 0.11 lb/hr	1.1 ppmv 0.0007 lb/MMBtu 0.007 lb/hr (as CH_4)	1.5 ppmv 0.0015 lb/MMBtu 0.017 lb/h
350	Digester gas (600 Btu/scf)	Ocean County Utilities Agency	New Jersey	17/12/2009	Normal	4.4 ppmv 0.010 lb/MMBtu 0.069 lb/hr	3.0 ppmv 0.0019 lb/MMBtu 0.011 lb/hr (as CH_4)	2.7 ppmv 0.003 lb/MMBtu 0.0198 lb/h

D1 In light of the fact that our equipment/CEB technology has routinely exceeded our standard guarantees and the current posted SCAQMD BACT/LAER standards, Aereon requests for the CEB emission guarantees to be recognized as BACT/LAER for oil-field produced gas, digester and landfill gas applications.

Regards

Phanindra Kondagari

Phanindra Kondagari
Sr. Process Engineer
Aereon

Attachments (Emission Reports):

1. Waters Landfill, Michigan
2. Ocean County Utilities Agency, New Jersey

Comment Letter E

May 3, 2017

TO: SCAQMD BACT Team

RE: Proposed Minor Source BACT Guidelines

Good morning,

SGIA, the association representing facilities producing a variety of products through either the screen printing or digital imaging processes, and the associated supplier base, submits the following comments to the South Coast Air Quality Management District's proposed revisions to Best Available Control Technologies (BACT) Guidelines for Non-Major Polluting Facilities" published April 4, 2017. SGIA has a long established working relationship with the SCAQMD that began with the development of Rule 1130.1, Screen Printing, and most recently with the development of the solvent cleaning limits found in Rule 1171.

The screen and digital printing industry operating in the SCAQMD is diverse, both in terms of products produced and size of facility. The average size of a screen and/or digital printing facility is 15 employees, including sales and management. These facilities print a variety of products, including but not limited to signage of all types, textiles, the graphic overlays for electronic equipment such as microwave ovens, and the dashboards of cars. As one can begin to see, the variety of products requires the use of different substrates which in turn determine the inks used on the final product.

The current proposal for BACT for Non-Major Polluting Facilities would establish the VOC control standards as:

"Compliance with SCAQMD Rules 1130.1 and 1171; or UV/EB or water based inks and the use of super compliant cleaning solvents."

E1 SGIA agrees with maintaining BACT for these sources as compliance with both Rule 1130.1 and 1171. However, we disagree with the requirement to establish the use of UV/EB or water based inks and the use of super compliant cleaning materials as a BACT requirement. The establishment of this as a requirement is redundant and unnecessary.

E1

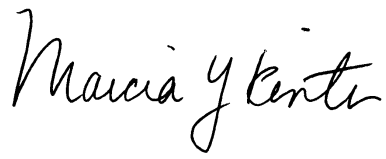
The District's Rule 1130.1 establishes the limit of 400 grams per liter, less water and exempt solvents for virtually all screen printing applications. This VOC content figure was developed based on the test methods mandated by the District and allows the use of both UV/EB and UV LED technologies, as well as water based ink systems for both graphic and garment applications. Additionally, the limit establishes allows the use of plastisol ink systems for the textile industry.

The current BACT requirements also indicate and set Rule 1171 as the guideline for solvent cleaning activities. During the development of this regulation, SGIA participated in several District funded research initiatives regarding the appropriate VOC content limits for solvent cleaning activities associated with the screen printing process. The limit of 100 grams of VOC per liter was established for all ink systems, including UV/EB, used within the screen printing industry.

The imposition of the additional BACT guideline of "or UV/EB or water based inks and use of super compliant cleaning solvents" is duplicative of the requirements stated in both Rule 1130.1 and Rule 1171. We contend that with the reduction in VOC content limits for Extreme Performance Inks and Coatings found in Rule 1130.1 to 400 grams of VOC per liter, as well as the exhaustive research conducted by the District to establish the limit of 100 grams per liter for Rule 1171, that the additive statement proposed is not needed. We recommend that this statement be removed from the guidelines for the category of "Screen Printing and Drying."

Thank you for the opportunity to participate in this important rulemaking. If you have any questions regarding our comments, please do not hesitate to contact me directly at 703-359-1313 or by email at marcik@sgia.org.

Sincerely,



Marcia Y. Kinter
Vice President – Government & Business Information

Comment Letter F

May 3, 2017

Al Baez, BACT Program Supervisor
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: Proposed Updates to the BACT Guidelines dated April 4, 2017

Dear Mr. Baez:

The Eastern Municipal Water District (EMWD) appreciates this opportunity to provide comments on the proposed updates to the Best Available Control Technology Guidelines that were presented at the Scientific Review Committee Meeting on April 4, 2017. EMWD values the effort by South Coast AQMD staff to update the guidelines and make the BACT resources available to owners and operators more "user friendly", however EMWD has concerns related to the proposed biogas flare listings. EMWD operates many stationary sources within the South Coast Air Basin to provide potable water, water reclamation and recycled water services to over 700,000 people in a service area of 555 square miles. Effective, robust and reliable control technologies for the equipment we utilize for our services are vital to our operations and critical to ensure we maintain safe, dependable services to our customers.

The purpose of this letter is to expand upon verbal comments provided at the April meeting. Our comments and recommendations regarding the proposed updates are outlined below.

Part B, Section 1 - SCAQMD LAER:

F1 This section includes several new proposed listings for biogas flares, one of which is a digester gas flare at EMWD's Perris Valley Regional Water Reclamation Facility (PVRWRF). Overall we are concerned that this technology is not resilient enough to handle intermittent operation common to digester gas flares in which there is frequent on/off cycling. This operation is necessary to alleviate pressures in the digester gas handling system at our facility to safely combust the excess digester gas. These concerns are based on our experience operating this flare and the multiple

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unfortunate corrective maintenance events that have occurred with this equipment. More specifically, since installation, EMWD staff have reported approximately 30 breakdown events with the Bekeart CEB flare at our PVRWRF, which have impacted the ability for the flare to operate. Many of the issues we've experienced with this flare have involved difficulty obtaining adequate OEM supplies, and limited vendor response to emergencies; consequently EMWD staff have to internally troubleshoot and identify solutions to solve equipment problems. Many of these events have resulted in digester gas venting and excess emission deviation reporting under Title V. Intermittent flare operation as a secondary use for digester gas is common in the industry of Publicly Owned Treatment Works. Consequently, equipment reliability and robustness is critical to the function of the flares at our facilities to avoid venting.

We request that the breakdown history and level of corrective maintenance this flare has required since installation be considered as part of the "Reliability" standard outlined in the BACT guidelines criteria for BACT/LAER determinations. In addition, it may be beneficial to evaluate flares at wastewater treatment plants differently depending on their use by establishing subcategories, for example a back-up flare versus a prime use flare.

In addition to the above, we also have a few minor descriptive comments in this Section 1 that we would like to include, which are:

F2 **Landfill Gas Flare, A/N 441442 Listing:**

- Replace the word "digester gas" with "landfill gas" in the Description (1.C.)

F3 **Digester Gas Flare, A/N 513835 Listing**

- Note "Intermittent" in the Operating Schedule (1.J.)
- Correct the VOC results listed in the source test performance data (6.E.) to 0.58 ppmv VOC (as hexane) or 0.70 ppm VOC (as hexane) @ 3% O_2 rather than the 0.02 ppm VOC (as hexane) currently listed.

F4 **Part B, Section 3 - Other Technologies**

We appreciate that staff have added an "Other Technologies" section, but we would like to request that staff consider adding an introduction to this section to clarify that these technologies are not BACT.

Thank you in advance for considering our comments above and for the opportunity to comment. If you have any questions, please feel free to contact Alison Torres at (951) 928-3777 extension 6345 or at torresa@emwd.org

Sincerely,

Alfred Javier
Manager of Environmental and Regulatory Compliance

ARJ/AT:tlg

By e-mail to abaez@aqmd.gov

c: Records Management, EMWD
Jason Aspell, AQMD

Jason Aspell

From: Rothbart, David <DRothbart@lacsd.org>
Sent: Thursday, May 4, 2017 1:54 PM
To: Al Baez
Cc: Jason Aspell; Ahn, Terry; Alison Torres
Subject: BACT Comments

Hi Al,

I appreciate your efforts to publish BACT determinations, which will help stakeholders better understand applicable BACT standards. Per your request, the following are my comments on the draft BACT determinations discussed at the last BACT SRC:

G1
- Considering the BACT Guidance contains determinations, including the proposed section describing technologies that may become BACT will be confusing. While this could be helpful as a separate listing on SCAQMD's website, these potential determinations should be excluded from the BACT Guidance document.

G2
- Regarding biogas flares, it is recommended that separate BACT categories be maintained (i.e., landfill vs. wastewater and backup vs. prime). These are very different situations that dictate different technologies rather than one blanket BACT determination. For example, landfill biogas quality and quantity decline after site closure and eventually flares cannot effectively combust this waste gas. Another unique issue is prime vs. standby flares, where backup flares must work reliably in response to process changes or equipment breakdowns. Greater complexity in the technology needed for BACT/LAER tends to undermine the reliability of such standby equipment. To minimize the potential venting of biogas, highly reliable technologies should be used rather than technologies more suitable for prime applications. Moreover, standby flares are not a significant source of emissions, which should also support such a separate classification.

G3
- BACT determinations contain inconsistent units and averaging times (e.g., ppmv, mmBtu/hr, lb/hr, lb/day, etc.). It is recommended that consistent units be provided to help facility operators and owners understand the potential limits associated with a determination.

Please let me know if you have any questions.

Thanks again,

D

David

DAVID L. ROTHBART, P.E., BCEE
SCAP Air Quality Committee Chair
Supervising Engineer | Air Quality Engineering
SANITATION DISTRICTS OF LOS ANGELES COUNTY | 1955 Workman Mill Road, Whittier, CA 90601
Phone: 562.908.4288 x2412 | Cell: 714.878.9655 | FAX: 562.692.9690
Converting Waste Into Resources | www.LACSD.org

From: Al Baez [mailto:abaez@aqmd.gov]
Sent: Friday, April 21, 2017 1:44 PM
To: beckham.lisa@epa.gov; Dave Mehl; steve moore; rizaldo.aldas@energy.ca.gov; Nicholas Maiden; Carol Cauthen; McGivney, Daniel; Rothbart, David; Giese, Jodean; Terry Ahn; Bridget McCann; Bill LaMarr; radtech.org, rita; jyorke yorkeengr.com; Karl Lany; Anoosheh M. Oskouian; Gary Rubenstein; Wayne Miller; Vince McDonell

Cc: Jason Aspell
Subject: NOTICE of BACT SRC meeting scheduled for Wednesday, May 24, 2017, 2pm - 4pm at SCAQMD

Dear BACT SRC members,

Thank you for your input to the Doodle Poll. The next BACT SRC meeting has been scheduled for **Wednesday, May 24, 2017 from 2:00pm – 4:00pm at SCAQMD Headquarters in Diamond Bar, CA in room GB**. Further notifications will follow.
Once again as a reminder, comments to the proposed BACT updates are due by May 4, 2017 at 5 p.m. (PST). The Agenda, Presentation and Handouts of the 4/4/17 BACT SRC meeting are available here http://www.aqmd.gov/home/permits/bact

-Al

Alfonso Baez
Program Supervisor, Best Available Control Technology
Science & Technology Advancement Office
abaez@aqmd.gov
909-396-2516
909-396-3252 (Fax)

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

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Comment Letter H

May 4, 2017

Al Baez
BACT Program Supervisor
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765

Subject: Inland Empire Utilities Agency, Zink Ultra Low Emission Flare (A/N: 448345)
Proposed Update to BACT/LAER Guidelines

Dear Mr. Baez,

Inland Empire Utilities Agency (IEUA) appreciates your department's continued efforts to improve the Best Available Control Technology (BACT) Guidelines and would like to provide comments on the recently proposed determination updates. To provide a brief background, IEUA currently oversees the operation of a Zink Ultra Low Emission (ZULE) flare at its Regional Plant No. 5 Solids Handling Facility (RP-5 SHF). IEUA selected and installed the ZULE flare in 2007 in response to Lowest Achievable Emission Rate (LAER) requirements imposed by the South Coast Air Quality Management District (SCAQMD). The ZULE flare was selected to replace an existing BACT flare; however, immediately following construction and start-up of the ZULE flare, IEUA had faced constant mechanical and control system reliability issues. By the recommendation of John Zink Company service representatives in 2008, IEUA began operating the flare in a limited-capacity state, using just one of three available burners, and currently continues to operate as such.

H1

During the April 4, 2017, BACT Scientific Review Committee (SRC) meeting, IEUA's ZULE flare was proposed as a potential LAER determination. While IEUA has continued to maintain compliance with the ZULE flare, we do not believe the operational data gathered thus far reliably encompasses the proposed BACT/LAER determination basis of, "Achieved in Practice/New Technology" – SCAQMD BACT guidelines state that in order for new technologies to be considered achieved in practice, certain reliability criteria must be met. Specifically, the control technology, or flare in this case, must have operated reliably "at a minimum of 50% design capacity". As of first quarter 2017, due to the digester gas production and process limitations, the flare intermittently operated at an approximate maximum flow rate of 300 scfm, which is only 30% of the maximum design capacity for this unit (900 scfm). This is consistent with the SCAQMD source test engineers' evaluation of the 2008 and 2016 flare source test reports (S/T IDs: PR08335 and R16145A, respectively); under the Representativeness of Data & Process

H2

section, the permit engineers noted the limited operating capacity may not represent normal operation.

It should also be noted that several sections of the proposed determination contain inaccurate information:

1. **EQUIPMENT INFORMATION**
   Section G: Burner Information – Only one burner is usable due to design constraints

   Section J: Operating Schedule – Only used intermittently as a back-up control device and not as full-time primary control

H3

2. **COMPANY INFORMATION**
   Section B: FAC ID – 128863 refers to duplicate ID, actual permitted Facility ID – 147371

3. **PERMIT INFORMATION**
   Section F: Operational Time – RP-5 SHF did not operate between February 2009 through December 2011

4. **EMISSION INFORMATION**
   Section A: Emission Limits & Averaging Times – SOx, CO, and PM10 limits do not match limits listed on permit (A/N 448345)

   Section C: Basis of BACT/LAER Determination – Achieved in practice criteria not currently met

H4

With the above referenced factors in mind, IEUA does not recommend the use of our RP-5 SHF ZULE flare as a LAER determination, since operation under full capacity has not been well documented.

Thank you for your time and consideration in reviewing our comments. Please feel free to contact me at (909) 993-1646 should you have any questions or need additional information.

Sincerely,

Sylvie Lee, P.E.
Manager of Planning and Environmental Resources

cc: Jason Aspell, AQMD
Pietro Cambiaso, IEUA
Eddie Lin, IEUA
Tiffany Tran, IEUA

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Comment Letter I

MONTROSE
AIR QUALITY SERVICES

May 4, 2017

Mr. Alfonso Baez
Program Supervisor, Best Available Control Technology
Science & Technology Advancement Office
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: Proposed BACT Guidelines

Dear Mr. Baez:

Montrose Air Quality Services appreciates the opportunity to submit comments regarding the proposed BACT guidelines emergency engines that were presented during the recent BACT Scientific Review Committee meeting.

SCAQMD Proposes to incorporate a recent installation of a diesel engine with integrated selective catalytic reduction (SCR) technology in the Section B, Part III BACT Guidelines as an example of emerging technology that may be appropriate for major source applications. The reference to SCR in emergency engine applications raises the need for additional scrutiny and debate of the following concepts.

I1

`The Appropriate Use of Section III

Section III of the guidelines is rarely updated or referenced and users may not be aware of the distinction between emerging technologies in Part III of the guidelines, and the more concrete listings of LAER determinations in Parts I and II of the guidelines. SCAQMD should take extra care to clarify, in both the guidance document and Staff Report, that the Part III listings are not to be automatically interpreted as LAER, but are instead simply references to technologies that someday may be construed as BACT / LAER.

Attributes of Emergency Engines that
Warrant New Approaches to Evaluating BACT

I2

Traditionally, new technologies would be deemed LAER or achieved in practice BACT after only a brief period of commercial operation. Also, SCAQMD rarely considers cost effectiveness when making BACT or LAER determinations. However, emergency engines are unique due to their limited operating schedules. Even if an engine were operated for the entire allowance specified by SCAQMD regulations

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(50 hours of testing and 200 total operating hours), it would take years to accumulate adequate operating hours to assess the longevity and overall effectiveness of the emission control technology. In typical applications where actual testing and emergency operations are a fraction of what SCAQMD would allow, the ability to understand long term implications is even further inhibited.

I2 On several occasions, SCAQMD has recognized the challenges of demonstrating emergency engine emission control technologies due to their restricted operating schedules. It seems that Section 6.I of the Part III BACT guideline entry should be used to discuss these limitations and also to discuss the nuances of emergency engine operations that will significantly affect system viability. Those nuances include varying industry standards for testing and maintenance operations, impacts of system aging, long term DEF storage and Tier 4F inducement provisions. SCAQMD should also commit to a long-term review and public disclosure of operating and maintenance records surrounding the recent SCR installation before transferring the entry from Part III to Part II of the BACT guidelines. Recognition and disclosure of these nuances is critical because BACT is ultimately determined on a case by case basis and so many people, both inside and outside of SCAQMD, rely upon the guidelines to make purchasing and permitting decisions.

I3 Additionally, although cost effectiveness demonstrations are often ignored when discussing LAER, the high cost effectiveness values (dollars / ton of emissions reduced) of SCR in emergency engine applications speaks to the overall viability of the technology and the reader should be advised of that consideration. Under current regulations and BACT policy, emergency applications are served by Tier 2 / 3 engine technology that produces a small fraction of the emissions that would have been expected only a few years ago. In this case cost effectiveness estimates should be disclosed in the Part III guideline and to the SCAQMD Governing Board as the guidelines are being proposed.

I look forward to continuing our discussion regarding these guideline entries during the May meeting and am also happy to discuss in advance of the meeting if you desire.

Sincerely,
Montrose Air Quality Services

Karl Lany
Vice President, Regulatory Compliance Services

N: BACT Comments May 4 2017

RESPONSE TO COMMENTS FOR PROPOSED AMENDMENTS OF THE BACT GUIDELINES

A public meeting was held on April 4, 2017 with the BACT Scientific Review Committee to present and discuss the proposed amendments to the BACT Guidelines. The following are staff responses to comments and questions from letters and e-mails received, as well as responses to comments made at the BACT SRC meeting:

BACT SRC Meeting Comments

Comment SRC1:

Request to have staff to research how small of a flare the proposal is addressing for biogas and landfill flares. (ES Engineering– BACT SRC member)

Response SRC1:

BACT Staff acknowledges the comment regarding the applicability of the flares to other processes that might not be of similar size. It was discussed in the BACT SRC meeting in a non-related discussion that LAER is determined on a case by case basis and the listings provide a strong presumption of what LAER will be. Permitting staff will evaluate the appropriateness of applying LAER to other processes during the permit evaluation process. BACT Staff is evaluating the permitted flare and is providing as much relevant information in the Determination form to assist permitting with future evaluations. In discussions with a flare manufacturer, there are design considerations and modifications to the flare that can be made to address low flow issues, such as removing burners on the John Zink ZULE flare. BACT Staff will continue to research the topic to list examples of smaller flares and encourages the public to provide information as well. It should be noted that the proposed listings are in addition to flares already listed for similar processes in Part B, Section 2 as well as the EPA Clearinghouse that are achieving the same NOx and CO emission concentrations.

As part of the public comment, staff received a source test report for a Bekaert CEB 350 flare at OCUA in West Creek, New Jersey that demonstrated similar emission rates when firing digester gas at 182-184 scfm. In addition, the three flare proposals were source tested at 144 dscfm (digester gas), 246 dscfm (digester gas) and 2367 dscfm (landfill gas). Lower flow rates than these source tested values will need to be evaluated on a case by case by Permitting.

Regarding the specific lower flow siloxane-rich streams that may be created from the biogas clean-up process, the EPA RACT/BACT Clearinghouse currently lists a siloxane destruction flare that has achieved 0.06 lb NOx/MMBtu when fired on digester gas. The flare is rated at 6.14 MMBtu/hr.

Comment SRC2:

Request to have staff specify if the LAER proposal for the boiler is for a new or retrofitted boiler. (ES Engineering– BACT SRC member)

Response SRC2:

The permit evaluation indicates that the boiler is a new construction. This will be indicated on the Determination Form in Box 1.L. "Equipment Information Comments."

Comment SRC3:

Request to have staff preface Part B, Section 3 listings with a statement to declare that the listings are not BACT determinations to memorialize the discussion. (LA Co. Sanitation District – BACT SRC member)

Response SRC3:

Staff agrees with the comment and will add a statement to Part B, Section 3 on the BACT webpage stating "These are emerging technologies which have been achieved in practice with an air quality permit however do not yet qualify as LAER." In addition, to prevent confusion when referencing these individual Part B, Section 3 listings, a similar statement will be added to the beginning of each form. It should be noted that any Part B, Section 3 listings may potentially be proposed as BACT/LAER after staff determines that they meet the proper criteria and are presented again to the BACT SRC.

Comment SRC4:

BACT SRC Member requested a focused discussion regarding compliance demonstration procedures for certified engines. He understood from the listing that the engine was a certified engine, not a retrofit, so the facility demonstrated compliance through the certification. (Sierra Research – BACT SRC member)

Response SRC4:

Staff agrees with the response that compliance is demonstrated through EPA Certification procedures for the Part B, Section 3 proposed addition of the I.C. Engine, Stationary, Emergency, Electrical Generator. This is similar to the SCAQMD practice for permitting portable engines. Staff would like to note that the addition of this equipment to Part B, Section 3 does not qualify as a BACT/LAER listing (see Response SRC3). Staff

commits to continuing the discussion regarding I.C. Engine compliance demonstrations and maintaining a transparent process for each BACT/LAER proposal. In addition, staff will be working with SCAQMD Permitting to ensure consistency with this issue.

Comment SRC5:

BACT SRC Member noted that the I.C. Engine, Stationary, Non-Emergency, Electrical Generators BACT Determination listed an averaging time of 15 minutes for compliance and she did not know how that would be possible. (SoCal Gas – BACT SRC member)

Response SRC5:

There are multiple engine listings in Part B and Part D which will need to be discussed separately due to different requirements. In Part B, Section 1, the "I.C. Engine, Stationary, Non-Emergency, Electrical Generators," proposal demonstrated compliance with SCAQMD Rule 1110.2 through the source test requirements of (f)(1)(C)(ii), which requires testing at multiple loads and two different averaging times (30 and 15 minutes). To clarify the averaging time for this listing, "Per Rule 1110.2 requirements" will replace "15 minutes" in Box 4.A. This change will also be made for all of the I.C. Engine forms under Part D. In addition, the 15% O_2 correction will be removed from the forms since it is not applicable to the mass emissions limit. It should be noted that Part D for "I.C. Engine, Stationary, Non-Emergency, Electrical Generators," is only being updated for rule compliance, and the forms are examples of Rule 1110.2 compliance and are not BACT Determinations.

The Part B, Section 3 form for the I.C. Engine, which is also not a BACT/LAER determination, demonstrated compliance through the EPA Certification requirements. Since the proposal of 15 minutes averaging time, as well as 15% O_2 correction, is not representative for these procedures, all averaging and correction entries will be removed from Box 4.A. Box 4.D. will still indicate that EPA Certification procedures were used to demonstrate compliance.

Comment SRC6:

A BACT SRC Member asked if the proposed listing for Food Ovens vented to a Catalytic Oxidizer would apply only to those processes operating at or above the proposed Cat Ox temperature of 600^{o}F.

Response SRC6:

The current SCAQMD Rule 1153 requirement to add air pollution control to bakery ovens is not dependent on process temperature. All of the facilities that staff visited that produced yeast leavened products that required control of the resulting VOC emissions had a temperature below 600^{o}F. Staff recognizes that the heating of the incoming oven

exhaust stream will result in additional costs and emissions, and will be accounting for this in the cost effectiveness evaluation for MSBACT, and taking it into consideration for the LAER proposal.

Comment SRC7:

BACT SRC Member asked if operational characteristics of the proposed flares need to be included or if it could be limited to emissions. (LA Co. Sanitation District – BACT SRC member)

Response SRC7:

Staff acknowledges the comment and will switch the current location of the operational parameters from Box 4.B. "Other BACT Requirements," to Box 4.D. "Emission Information Comments." This information may be used on a case by case basis by Permitting for developing permit conditions, but the BACT requirement will focus on the emissions presented in Boxes 4.A. and 4.B.

Comment SRC8:

BACT SRC Member asked if staff could clarify what inks the facilities were using compared to the Rule 1130 limits, for the BACT Determinations that were proposing control equipment. (LA Co. Sanitation District – BACT SRC member)

Response SRC8:

The BACT SRC member is referencing the proposed Part D BACT Determinations for Printing Operations for add-on control equipment for flexographic and lithographic printing presses. Both of the facilities for the two proposals comply with the VOC requirements of SCAQMD Rule 1130 under the provisions of 1130(c)(5). The lithographic operation uses inks that have a coating VOC content greater than 400 g VOC/L, and the flexographic printer uses inks that range from 290 g VOC/L up to 500 g VOC/L.

Response to Comment Letter A (BACT SRC Member Gary Rubenstein)

Response A1:

Staff has corrected all inconsistent references to digester and landfill gases for all three flare proposals. Box 1.I. has been updated to identify the fuel as a pilot fuel for all three proposals. Also, for all three proposals, a statement in Box 4.B. has been added

specifying that the BACT limit applies when the unit is fired on digester or landfill gas, whichever is applicable.

Response A2:

Staff has added a statement in Box 4.D. that the permit does not have a minimum destruction efficiency or residence time.

Response A3:

Staff agrees and has included clarification language to Flare – Landfill Gas, Active Solid Waste Landfill, Non-Hazardous Waste BACT determination form.

Response A4:

Staff has included clarification language to Fuel Cell – Electricity Generator Part B, Section 3 form. Although concentrations of CO and NOx were below the lower quantifiable limit and had to be corrected upwards (which is standard practice), the equipment still demonstrated compliance with permit conditions after this correction. District Methods 100.1 and 25.3 were followed and the fuel cell was operated in steady state condition.

Response A5:

Staff agrees and has included clarification language to Food Oven – Add-on Control for Bakery Oven with Yeast Leavened Products ≥ 30 lb VOC/day with Catalytic Oxidizer BACT determination form. The language in Part D has been changed to "Add-on Control for Bakery Oven processing yeast leavened products with emissions ≥ 30 lb VOC/day." The proposed threshold for requiring control equipment has been increased from 25 to 30 lb VOC/day due to the results of the Cost Effectiveness Analysis.

Response A6:

Staff has corrected the proposed BACT NOx limit to 60 ppm in Box 4.A in the BACT Determination Form. The source tested value of 52.6 ppm NOx @ 3% O2 supports the proposal of 60 ppm. The 60 ppm limit is reflected in the Part D Food Oven proposal for Ribbon burners operating at greater than 500^{o}F.

Response A7:

At the April 4, 2017 BACT SRC meeting, staff presented two potential Direct Fired Food Oven Part D proposals for Laguna Cookie (15 ppm NOx) and JSL Foods (30 ppm). The comment is referring to the Laguna Cookie proposed Determination form, which did not have data. The lack of supporting data is the reason that staff presented the Laguna Cookie emission rates as "TBD" in the Part D proposal. Staff agrees and will only be moving forward with the JSL Foods listing which is supported with source test data.

Response to Comment Letter B (Gerry Bonetto, PIASC)

Response B1:

After further review staff believes that the limits under the proposed BACT determination in Part B, Section 2 for Printing (Graphic Arts)- Flexographic may allow higher VOC content ink than in Rule 1130. Therefore, at this time staff will not be moving forward with this proposed BACT determination. Staff acknowledges comments by PIASC.

Response B2:

Staff agrees and for consistency has included clarification language to both proposed BACT determinations in Part D for Printing (Graphic Arts)- Flexographic, Heatset and Screen Printing and Drying by replacing "use of super compliant cleaning solvents" with use of cleaning solvents that meet the standards in Rule 1171- Solvent Cleaning Operations.

Response B3:

Staff agrees that 99 percent overall efficiency for add-on control devices is achievable in practice for Printing (Graphic Arts) Lithographic or Offset, Heatset as was presented in slide #11 plot presentation at April 4, 2017 BACT SRC meeting.

Response B4:

The achieved in practice 95 percent overall efficiency for add-on control devices for Printing (Graphic Arts) Flexographic, Heatset that was presented in slide #12 of the presentation at the April 4, 2017 BACT SRC meeting supports the proposed add-on control BACT determination listing that was provided in the handouts for Part D, Printing (Graphic Arts) Flexographic.

Response to Comment Letter C (BACT SRC Member Rita Loof)

Response C1:

Staff agrees and has recognized UV/EB ink and coating technology in past BACT determinations both in Part B and D (major and non-major sources) of the BACT Guidelines. Now staff is also proposing the inclusion of compliant UV/EB and water-

based inks/coatings as an alternative method of BACT compliance for Printing (Graphic Arts)- Flexographic and Screen Printing and Drying operations.

Response C2:

Staff agrees and for consistency is proposing clarification language to both proposed BACT determinations in Part D for Printing (Graphic Arts)- Flexographic, Heatset and Screen Printing and Drying by replacing "use of super compliant cleaning solvents" with use of cleaning solvents that meet the standards in Rule 1171- Solvent Cleaning Operations.

Response to Comment Letter D (Phanindra Kondagari, Aereon)

Response D1:

Staff appreciates and has reviewed the data provided by Aereon in support of the proposed BACT determination for flares for landfill and digester gas operations. Staff recognizes that the emission rates for the technology have been achieved in practice at multiple facilities for oil-field produced gas, and digester and landfill gas applications.

Response to Comment Letter E (Marcia Kinter, SGIA)

Response E1:

Staff agrees and for consistency is proposing clarification language to both proposed BACT determinations in Part D for Printing (Graphic Arts)- Flexographic, Heatset and Screen Printing and Drying by replacing "use of super compliant cleaning solvents" with use of cleaning solvents that meet the standards in Rule 1171- Solvent Cleaning Operations.

Response to Comment Letter F (Alfred Javier, EMWD)

Response F1:

Staff has discussed the reliability and breakdown history with EMWD staff during site visits. Staff acknowledges that periodic breakdowns can occur with equipment but understands that thermocouple, igniter and exhaust stack complications occurred in the early stages of operation of the equipment. Based on information from EMWD, staff has

monitored the reported breakdowns for this unit. Staff has observed that no reported breakdowns have occurred since July 26, 2016 (EMWD notified staff of a non-reportable breakdown in April 2017). This accounts for nine months of reliable operation of the flare in its intermittent operation state. This is greater than the 6 months of reliable operation that is required to establish achieved in practice. Also, the equipment must be operated "in a manner that is typical of the equipment in order to provide an expectation of continued reliability of the control technology," and as stated in the response letter, intermittent operation as a secondary use for digester gas is common in the industry. Staff will be clarifying in the listing that intermittent is an operational characteristic of this flare, but notes that the permit does not limit the flare to this type of operation. Staff has already included that it is for secondary use in Box 1.D. and incinerates excess digester gas that is not used by the fuel cells or boilers.

Response F2:

Staff has corrected the listing and inserted digester gas in Box 1.C.

Response F3:

Staff will include an intermittent operation description under Box 1.L. "Equipment Information Comments."

Staff agrees and has made the correction to the VOC emission concentration.

Response F4:

Staff agrees and will be adding language to clarify that the Part B, Section 3 listings are not currently considered BACT/LAER (see Response SRC3). In addition, the statement will be added to each of the proposed forms for the equipment, so the form is not misinterpreted as an approved BACT Determination.

Response to Comment Letter G (BACT SRC Member David Rothbart)

Response G1:

Staff wishes to clarify that the section, Part B, Section 3, already exists and has been utilized in the past and is not being proposed as a new section. Staff is proposing to add two pieces of equipment to the section. Although the BACT webpage currently indicates that equipment listed in Part B, Section 3 is not considered BACT or LAER, in response to concerns raised by the BACT SRC, additional language will be added to the webpage

and each form to ensure that the equipment is not misinterpreted as a BACT/LAER determination (see Response SRC3).

Based on previous meetings with the BACT SRC, staff received input that in past instances SCAQMD Permitting staff would impose LAER that had not been listed in the BACT Guidelines or properly evaluated. Staff feels it is important to utilize this section to communicate to SCAQMD Permitting staff, the public, and other agencies, that although the advanced technology is in use and has been permitted by SCAQMD, its effectiveness and reliability has not been fully vetted by the BACT staff. At such a time that staff obtains additional information and makes the decision to propose any equipment under Part B, Section 3 as BACT/LAER, staff will present the information before the BACT SRC and the Governing Board, and it will be available for public comment. At this time, staff feels it is appropriate to add the proposed listings for the Fuel Cell and the Stationary, Emergency, I.C. Engine under Part B, Section 3, because staff does not currently recognize this technology as BACT/LAER.

Response G2

Staff acknowledges the comment and agrees to categorize the proposed listings as permitted. If the operation is different than that reflected on the permit, staff agrees to include such information in Box 1.L. "Equipment Information Comments." It should be noted that if a flare is operated as a back-up flare, but has not been evaluated and permitted as such, then it is still capable of operating as a primary flare and can result in significant emissions. This scenario occurred recently at an oil field operation in which a secondary flare became a primary flare, when the primary means of processing the gas became unavailable for an extended period. Regardless of significance of source, BACT will continue to be triggered when emissions are greater than or equal to 1.0 lb/day.

Response G3

Staff acknowledges the comment and has attempted to maintain consistency in the units for emission limits where possible. Many of the units listed in the comment are included in the proposals because they are listed on the permits and are enforceable limits. Staff obtained input from the facilities during site visits and has attempted to maintain the units in lb/MMBtu where possible based on the input received.

Response to Comment Letter H (Sylvie Lee, IEUA)

Response H1:

Staff acknowledges the comment and was aware of the start-up issues in 2008 from the documentation in the permit evaluation. Staff contacted the manufacturer regarding this issue and they stated that removal of burners was their approach to handle lower biogas flows than the designed equipment capacity. Staff has added the source tested digester flow rate in 2008 that was 279 scfm to the proposal, which coincides to the reported amount in the comment. These flows are also consistent with the Inspection Report in 2014 (217 scfm). The source test demonstrated compliance with the proposed BACT limits. Staff has also researched reported breakdowns for the flare, and SCAQMD had only been notified of two reported breakdowns in the past year, and 7 breakdowns in the past three years

Response H2:

The comment only states one of the options to demonstrate reliability for Achieved in Practice LAER. The full section states:

> "During this period, the basic and/or control equipment must have operated: 1) at a minimum of 50% design capacity; or 2) in a manner that is typical of the equipment in order to provide an expectation of continued reliability of the control technology."

The flare is operating in such a manner that is typical of the flow rates that the system provides and has been source tested to verify the emissions at these same flow rates (see Response H1), and the source test was performed under conditions were have now shown to be its typical operation.. Staff feels that the system has demonstrated to meet the Achieved in Practice LAER reliability requirements.

Response H3:

1. Staff has added to Box 1.L. that the system currently operates on one burner. However, staff acknowledges that the system is still permitted for multiple burners.
2. Staff agrees and has corrected the Facility ID.
3. Staff has updated the operational time to ">6 months."
4. Staff has compared the March 14, 2017 version of Application Number 448345 (Permit No. G28957) and Permit Conditions 13 and 16 correspond with the emission limits on the proposed BACT Determination:

13.	Emissions resulting from the flaring operation shall not exceed the following:	
	Pollutant	lbs per day
	CO	46.6
	NOx	19.4
	PM10	14.2
	ROG	5.5
	SOx	1.40
	[Rule 1303(a)(1)-BACT/LAER, Rule 1303(b)(1), 1303(b)(2)-Modeling & Offset]	

16.	This equipment is subject to the applicable requirements of the following rules and regulations:	
	CO:	2,000 ppmv, Rule 407
	CO:	0.06 lbs/mmBTU, Rule 1303-BACT/LAER
	NOx:	0.025 lbs/mmBTU, Rule 1303-BACT/LAER
	PM:	Rule 404, see Appendix B for emission limits
	PM:	0.1 grain/scf, Rule 409

Response H4:

Staff agrees that the equipment has not operated at full capacity, however Achieved in Practice LAER may be demonstrated by operating "in a manner that is typical of the equipment in order to provide an expectation of continued reliability of the control technology." Staff feels that this is supported by consistent operation with limited reported breakdowns with flow rates documented from 217-300 scfm for a period greater than six months. Staff has noted the operational conditions on the BACT Determination form.

Response to Comment Letter I (BACT SRC Member Karl Lany)

Response I1:

Staff agrees and is proposing clarification language in both the BACT Guidelines Part B, Section 3 title description and on all Part B, Section 3 forms. The proposed language will state "these are emerging technologies which have been achieved in practice with an air quality permit, however do not yet qualify as LAER".

Response I2:

In accordance with the BACT Guidelines, an emission limit or control technology may be considered achieved in practice LAER for a category or class of source if it exists in any of the following regulatory documents or programs:

- SCAQMD BACT Guidelines

- CAPCOA BACT Clearinghouse
- US EPA RACT/BACT/LAER Clearinghouse
- Other districts' and states' BACT Guidelines
- BACT/LAER requirements in permits issued by SCAQMD or other agencies

In addition to the above means of being determined as achieved in practice LAER, a control technology or emission limit will be evaluated for commercial availability, reliability and effectiveness. Therefore, staff agrees and will include a description of operational limitations and maintenance history prior to advancing and proposing a potential LAER determination from Part B, Section 3 to Section 1 or 2.

Response I3:

USEPA guidelines do not allow for routine consideration of the cost of control in LAER determinations. However, USEPA guidance on economic feasibility of LAER states that costs should be considered only to the degree that they reflect unusual circumstances which, in some manner, differentiate the cost of control for that source from the costs of control for the rest of that industry. Staff acknowledges the request for economic feasibility and to the extent applicable under USEPA guidance will take into consideration addressing those factors in proposed LAER determination forms. Staff also re-emphasizes that the Part B, Section 3 proposals are not being proposed as LAER, but will continue address the comment moving forward.

ATTACHMENT G

Proposed Updates to BACT Guidelines

Governing Board Meeting
February 2, 2018

Background / Public Process

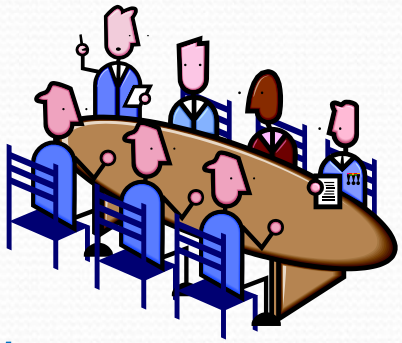
- **Updated BACT Guidelines and established Charter for BACT SRC at December 2016 Board meeting**
- **Board directed staff to continue work on updating BACT Guidelines**
- **Review BACT determinations done by other air districts with an emphasis on UV/EB inks and coatings technology**
- **Report back to Stationary Source Committee by June 2017 on proposed updates**
- **Held two public BACT SRC meetings, April 4 and May 24, 2017 with a 30-Day Comment period**

Background / Public Process

- Presented proposed amendments to BACT Guidelines at June 16 SSC
- Held two more public BACT SRC meetings, Oct. 26 & Dec. 12, 2017 with a 30-Day Comment period
- Response to comments in Attachment F of Board Letter Package
  - Received 13 comment letters with total of 40 comments

Proposed Updates to BACT Guidelines

- Parts B and D (major & minor source BACT)
- Reviewed achieved in practice BACT for UV/EB and water-based inks and coatings, Food Ovens, Engines and other equipment categories
- Reviewed BACT determinations from SCAQMD and other Air Districts
- Conducted site visits to facilities (Printing, Food Oven, APC mfg.) and worked with printing industry trade organizations
- Maintained consistency with recent changes to SCAQMD rules, State and Federal requirements
- Making BACT webpage interactive and User Friendly



Part B, Section I, SCAQMD LAER/BACT

New Listings

Furnace (Heat Treating Aluminum ≤900°F)	5MMBtu/hr, Low NOx burner, NOx=30ppm
Food Oven- Bakery	Four ovens: 3.2, 2.8, 3.2 & 5.4MMBtu/hr vented to 4MMBtu/hr CatOx @ 95% control & ≥600°F inlet temp & ceramic pre filter, R1147 compliant, Ovens - R1153.1 compliant
Food Oven- Tortilla Chip	5.774MMBtu/hr, IR & Ribbon burners, NOx=54ppm @ 1 hr. avg., CO=2000ppm, @ 15 min. avg.
Food Oven- Snack Food	1.6MMBtu/hr, Maxon Low NOx burner, NOx=25ppm, CO=75ppm, both @ 1 hr. avg. 3% O_2
Flare- Biogas	12MMBtu/hr, Bekaert, NOx=0.025 lb/MMBtu, CO=0.06 & VOC=0.038 39.3MMBtu/hr, John Zink, ZULE, NOx=0.025 lb/MMBtu and CO=0.06 lb/MMBtu
Flare- Landfill Gas	120MMBtu/hr, Zink ultra Low NOx, NOx=0.025 lb/MMBtu and CO=0.06 lb/MMBtu






Part B, Section I, SCAQMD LAER/BACT

Listing Updates

Boiler	39.9 MMBtu/hr, Low NOx burner with SCR NOx=5ppm, CO=100ppm & NH_3=5ppm
I.C. Engine – Digester Gas-Fired	Compliance with Rule 1110.2(d)(1)(C); NOx=11ppm, VOC=30ppm & CO=250ppm

Part B, Section III, Other Technologies

Emerging Technologies

I.C. Engine- Emergency Compression Ignition with PM Trap and SCR	Tier 2 Engine with Tier 4 Final aftertreatment at permitted emission limits: NMHC=0.14 g/bhp-hr, NOx=0.5 g/bhp-hr, CO=2.61 and PM=0.022 g/bhp-hr	
Distributed Generation Fuel Cell with digester gas clean up system	1.4MW Fuel Cell equipped with 2.5 MMBtu/hr heater fired on digester gas used for start up, cool down and low power operation. Rule 222 registration per Rule 219(b)(5). NOx=0.07, VOC=CO=0.10 lb/MW-hr	

- ***These are emerging technologies which have been in operation with an air quality permit, however do not yet qualify as LAER***
- ***Proposed new section in BACT Determination form titled "7. Pending Considerations"***

Part D, BACT for Non-Major Facilities

New Listings

Food Oven

– Ribbon burner	>500°F: NOx = 60 ppm, CO= Rule 407/1153.1, PM10=SOx= Nat Gas ≤500°F: NOx = 30ppm CO = Rule 407/1153.1, PM10=SOx= Nat Gas
– Other Direct fired	NOx = 30 ppm, CO=Rule 407/1153.1, PM10=SOx= Nat Gas
– Infrared	NOx = 30 ppm, CO=Rule 407/1153.1, PM10=SOx= Nat Gas
– Other	Compliance with Rule 1147/1153.1, PM10=SOx= Nat Gas
– Bakery Oven with Yeast Leavened Products ≥30 lb VOC/day	CatOx @ 95% overall control, ≥600°F inlet temp & ceramic pre filter *{cost effectiveness}*

Part D, BACT for Non-Major Facilities

New Listing/Updates

I.C. Engine, Stationary, Non-Emergency, Electrical Generators	Compliance with Rule 1110.2
I.C. Engine, Stationary, Non-Emergency	Delete listing. Being replaced by BACT determinations I.C. Engine, Stationary, Non-Emergency, Electrical and Non-Electrical Generators
I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators	Delete footnote #1 consistent with proposed listing of new BACT determination for "I.C. Engine, Stationary, Non-Emergency, Electrical Generator"
I.C. Engine, Portable	75≤ HP <175, Tier 4 Final – Consistent with CARB
Dryer or Oven	Footnote of non-applicability to food oven

Part D, BACT for Non-Major Facilities

New Listings

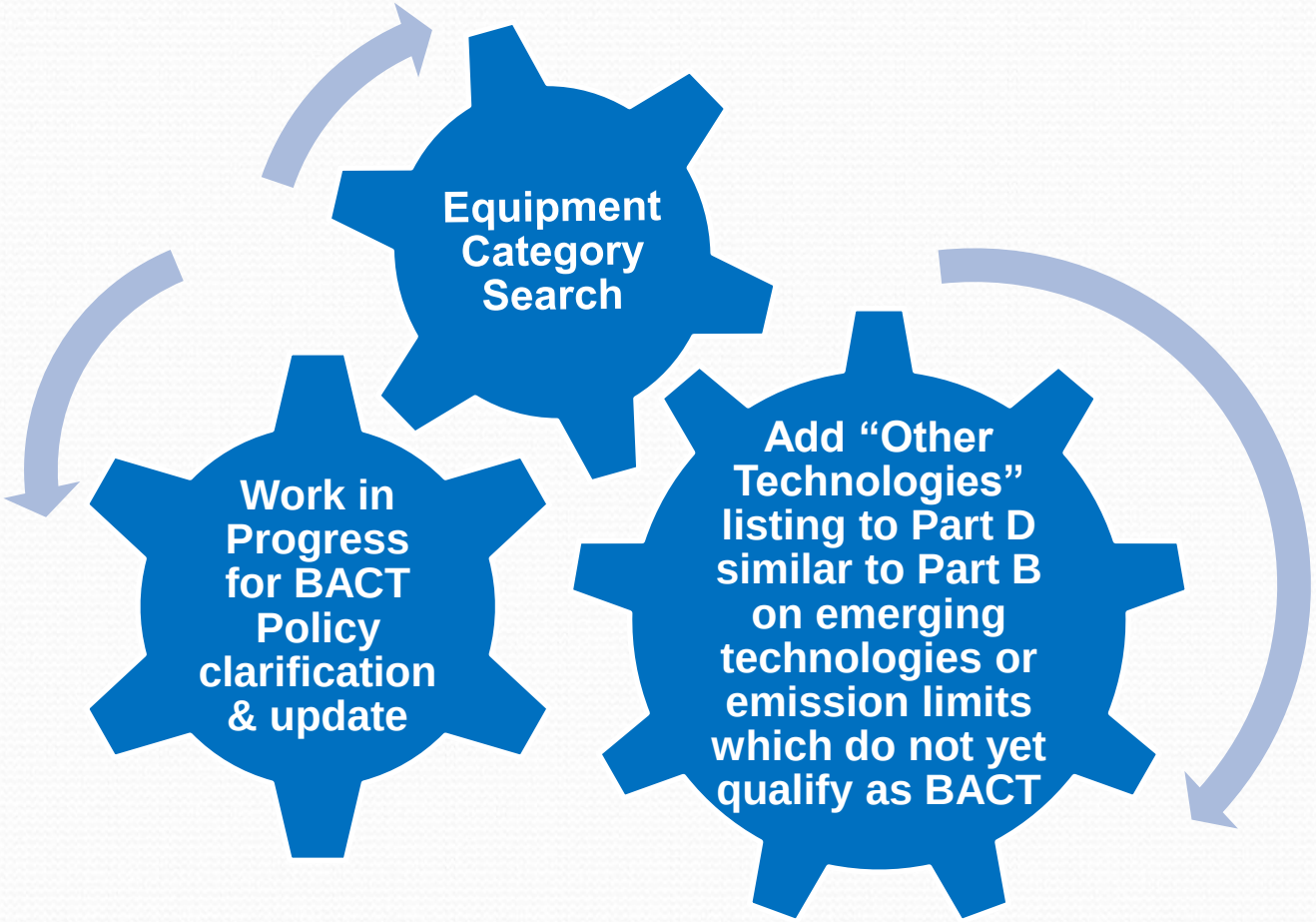
Printing (Graphic Arts) Flexographic	Inks with ≤1.5 lb VOC/gal, Less Water and Exempt Compounds; or UV/EB or water-based inks/coatings ≤180 g VOC/L. Compliance with SCAQMD Rules 1130 and 1171.
Printing (Graphic Arts) Flexographic	Add-on control venting to Regenerative Thermal Oxidizer, 95% destruction eff. and ≥1500°F operating temp with total enclosure. *{cost effectiveness}*
Printing (Graphic Arts) Lithographic or Offset, Heatset	Low VOC Fountain Solution (≤ 8% by Vol. VOC); ~~Low Vapor Pressure (≤ 10 mm Hg VOC Composite Partial Pressure[1])) or~~ Low VOC (≤ 100 g/l) Blanket and Roller Washes; Oil-Based or UV-Curable Inks; and Compliance with SCAQMD Rules 1130 and 1171 (7-14-2006).
Printing (Graphic Arts) Lithographic or Offset, Heatset	Correct listing of oven venting to afterburner from PM_{10} column to VOC column.

Part D, BACT for Non-Major Facilities

New Listings

Printing (Graphic Arts) Screen Printing and Drying	Compliance with SCAQMD Rules 1130.1 and 1171; or use of Rule 1130,1 compliant UV/EB or water-based inks/coatings.	

Making BACT Guidelines User Friendly



Key Issues

- **Transparency of BACT update process**
  - **4 BACT SRC meetings, 2 30-day public comment periods**
- **Develop more specific BACT determinations**
  - **Staff will review future BACT determinations for case specific applicability based on operation**
- **Permitting policy**
  - **Outside scope of BACT Guidelines policy**
- **Make BACT Guidelines more user friendly**
  - **Staff is working on making BACT Guidelines webpage more interactive and streamlined**

Recommended Actions

- **Determine that the proposed amendments to the BACT Guidelines are exempt from CEQA; and**
- **Approve Proposed Amendments to the BACT Guidelines, Part B and D.**