

BOARD MEETING DATE: December 2, 2016

AGENDA NO. 32

PROPOSAL: Amend BACT Guidelines and Approve Charter for BACT Scientific Review Committee

SYNOPSIS: Periodically, staff proposes updates to Parts A and C of the Policy and Procedures of the BACT Guidelines for major and non-major polluting facilities as well as reports new Lowest Achievable Emission Rate and BACT determinations added to Parts B and D for major and non-major polluting facilities. Additionally, for the first time, the BACT Guidelines need to incorporate policy and procedures and determinations for facilities subject to prevention of significant deterioration for greenhouse gases. These actions are to amend the BACT Guidelines to make them consistent with recent changes to SCAQMD rules and regulations as well as state and federal requirements and approve a charter for the BACT Scientific Review Committee.

COMMITTEE: Stationary Source, September 16 and November 18, 2016;
Recommended for Approval

RECOMMENDED ACTIONS:

1. Determine that proposed amendments to the BACT Guidelines are exempt from the California Environmental Quality Act;
2. Approve Proposed Amendments to BACT Guidelines; and
3. Approve Proposed Charter for the SCAQMD BACT Scientific Review Committee detailing goals and objectives and membership of the BACT Scientific Review Committee.

Wayne Natri
Acting Executive Officer

Background

SCAQMD's New Source Review (NSR) regulations require permit applicants to use Best Available Control Technology (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–New Source Review also requires the Executive Officer to periodically publish BACT Guidelines that establish the procedures and the BACT requirements for commonly permitted equipment.

The BACT Guidelines are separated into parts for major polluting facilities and 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 Regulation XXX Title V emission thresholds. Major polluting facilities that are subject to NSR are required by the 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. The California Health & Safety Code (H&SC) Section 40405 defines state BACT similar 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 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 of the public, presentation at a BACT Scientific Review Committee (BACT SRC) meeting and Board approval. SCAQMD also follows the criteria and process specified in H&SC Section 40440.11.

The BACT SRC was established as a standing committee by the Board on September 8, 1995. The BACT SRC was intended 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. Staff is proposing the establishment of a Charter that will provide BACT SRC members with an outline of the BACT SRC's mission, goals and objectives, and membership.

Proposed Amendments to the BACT Guidelines

The proposed amendments are to update the Overview, Parts A, B, C and D and to add Parts E and F of the BACT Guidelines to maintain consistency with recent changes to SCAQMD rules and state and federal requirements. The proposed amendments will not result in more stringent requirements than would otherwise occur. Therefore, it was not necessary for staff to evaluate the achieved-in-practice status nor cost effectiveness of the underlying technologies. The BACT SRC and other interested parties were provided with a detailed description of the proposed amended BACT Guidelines at

scheduled public meetings on May 11, 2016, September 27, 2016 and November 9, 2016. The proposed amendments to the Guidelines were posted on the SCAQMD website, and a 30-day public comment period commenced after the first two BACT SRC meetings. Comments by BACT SRC members and the general public along with staff responses are included in Attachment G.

Overview

The Overview consists of five chapters which provide an introduction to the BACT Guidelines and a summary of how BACT is implemented in the SCAQMD. The proposed amendments to the Overview section are primarily administrative in nature and intended to update and clarify content. A summary of the proposed Overview amendments is included in Attachment A with the complete proposed amended Overview included in Attachment B.

Part A – Policy and Procedures for Major Polluting Facilities

Part A describes the policy and procedures for major polluting facilities and explains what BACT is, why it is required, when it is required and how it is determined for major polluting facilities. The proposed amendments to Part A are to maintain consistency with existing and recent changes to SCAQMD rules and state and federal requirements. A summary of the proposed Part A amendments is included in Attachment A with the complete proposed amended Part A included in Attachment B.

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 control technologies. The proposed Part B LAER/BACT determinations of Section I are summarized below with the complete proposed determinations included in Attachment C. The other portions of Section I, and Sections II and III, are not included because they are not being updated.

Section I – SCAQMD LAER/BACT Determinations

Four new listings include “Flare, Oil and Gas Production” and three listings under “I.C. Engine-Emergency, Compression Ignition with PM Trap”.

The new “Flare, Oil and Gas Production” listing is for a Flare Industries/Bekaert CEB enclosed ground flare with clean enclosed burner rated at 27 MMBtu per hour. This flare is operated by Linn Operating, Inc., for process gas disposal and is located in the City of Brea. The flare was permitted with NO_x, VOC and CO emission levels of 15 ppm, 10 ppm and 10 ppm, respectively, all corrected to 3% O₂, which are below current BACT requirements for this type of flare. The flare commenced operation and was source tested in early 2013 and has operated since that time. The source test showed the flare complied with the NO_x, VOC and CO emission limits. In addition, a similar 17

MMBtu per hour flare by the same manufacturer has been included in the CARB BACT Clearinghouse with the same emission limits.

The “I.C. Engine-Emergency, Compression Ignition with PM Trap” listings are for three separate engines rated at 374 horsepower (hp), 755 hp and 2220 hp, all equipped with a CARB-verified diesel particulate filter and certified to meet the applicable EPA tier emission standards. These engines were permitted between 2011 and 2014 and have operated since that time.

Part C – Policy and Procedures for Non-Major Polluting Facilities

Part C describes the policy and procedures for non-major polluting facilities and explains what BACT is, why it is required, when it is required and how it is determined for non-major polluting facilities. The proposed updates to Part C are to maintain consistency with recent changes to SCAQMD rules and state and federal requirements. A summary of the proposed Part C amendments is included in Attachment A with the complete proposed amended Part C included in Attachment B.

Part D BACT Determinations for Non-Major Polluting Facilities

Part D consists of BACT determinations for minor sources which are determined in accordance with state law at the time an application is deemed complete. The proposed amendments to Part D are intended to maintain consistency with recent changes to SCAQMD rules and state and federal requirements. The proposed amendments will not result in more stringent requirements than would otherwise occur through rule compliance. Therefore, it was not required for staff to evaluate the achieved-in-practice status nor cost effectiveness of the underlying technologies. The proposed amendments comply with the requirements of California H&SC Section 40440.11. The proposed Part D BACT determinations are summarized below with the complete proposed amended Part D included in Attachment D.

Boilers

Background

SCAQMD Rules 1146 and 1146.1, addressing emissions of oxides of nitrogen from industrial, institutional, and commercial boilers, steam generators, and process heaters, were most recently approved by the Board on November 1, 2013. These rules apply to most gaseous fuel-fired boilers, steam generators and process heaters rated at greater than 2,000,000 Btu per hour, with the exception of utility boilers, refinery boilers and process heaters rated at greater than 40,000,000 Btu per hour, thermal fluid heaters and sulfur plant reaction boilers.

Proposal

Updated NO_x concentration emissions requirements and additional subcategories are being proposed to the Boiler BACT listing to maintain consistency with the requirements in Rules 1146 and 1146.1.

Staff is recommending incorporating these limits into the BACT Guidelines now that the compliance deadlines have passed and all NO_x emission limits are now required by these rules. Subcategories for “Propane Fired, > 2 MMBtu/hr and < 20 MMBtu/hr,” “Natural Gas or Propane Fired, ≥ 20 MMBtu/hr and < 75 MMBtu/hr,” “Natural Gas or Propane Fired, ≥ 75 MMBtu/hr,” “Atmospheric Unit, ≥ 2 and ≤ 10 MMBtu/hr,” “Landfill Gas Fired, < 75 MMBtu/hr” and “Digester Gas Fired, < 75 MMBtu/hr” will be added to the listing to maintain consistency with the definitions in Rules 1146 and 1146.1.

Portable Internal Combustion Engines

Background

The BACT Guidelines for portable compression ignition I.C. engines reflect the federal emission standards for non-road engines. EPA has established a multiple-tiered system for the emission standards for non-road I.C. engines, which includes portable engines. The Tier 4 emission standards were introduced in 2004 and have been completely phased in for most non-road engines as of January 1, 2015. The current BACT Guidelines list the Tier 2 and Tier 3 requirements for Compression Ignition engines.

Proposal

Staff is proposing to update the BACT Guidelines for portable I.C. Engines to reflect the requirements of the current Tier 4 standards. CARB adopted the same Tier 4 emission standards and schedule on December 7, 2005. These standards are only applicable to the Compression Ignition subcategory of this listing and will not affect the Spark Ignition engine requirements. However, until further notice, CARB has extended the deadline of the Tier 4 Final requirements, which will now be subject to higher Tier 4 Interim emission levels and are being incorporated into the BACT Guidelines for Portable, Compression-Ignition Engines $75 \leq \text{HP} < 175$ and $\text{HP} \geq 750$. Final Tier 4 requirements will be added to NO_x, NMHC, “NO_x+NMHC”, CO and PM BACT emission standards for all the other listed ratings of Compression-Ignition portable I.C. Engines. These updates are all current requirements in 40 CFR Section 10301 Subpart B, 13 CCR Section 2420 et seq. and 17 CCR Section 93116.

Formatting changes in this BACT Listing were done to maintain consistency with the new standards. Most notably, the previous “NMHC+NO_x” standard has been changed to separate NO_x and NMHC standards for three of the four HP rating categories.

Stationary, Emergency, Internal Combustion Engines

Background

The BACT guidelines for the subcategories “Compression Ignition, Fire Pumps” as well as “Compression Ignition, Other” under the “I.C. Engine, Stationary, Emergency” listing reflect the federal emission standards for non-road engines as well as the CARB ATCM for Stationary Compression Engines 17 CCR Section 93115. As with the portable engines, EPA has established a tiered system for stationary I.C. engine

emission standards, which was adopted into the CARB ATCM. Currently, all I.C. engines rated greater than or equal to 50 HP and less than 750 HP are subject to the Tier 3 emission standards. Engines under these two subcategories that are rated greater than or equal to 750 HP are subject to the Tier 2 standards. In addition, these two subcategories are both subject to the requirements of SCAQMD Rule 1470 that was last amended on May 4, 2012. SCAQMD Rule 1470 sets emission standards for PM, primarily limited to new engines located at or near sensitive receptors, and NO_x + NMHC and CO that are consistent with EPA and CARB's tiered-emission standards.

The "Spark Ignition" subcategory is subject to the New Source Performance Standards (NSPS) under 40 CFR 60 Subpart JJJJ. The current BACT listing applies to all ratings of spark ignition I.C. engines and limits VOC emissions to 1.5 grams VOC/bhp-hr. Subpart JJJJ requires emergency spark ignition engines rated at greater than or equal to 130 HP to meet an emission standard of 1.0 grams VOC per brake horsepower-hour (/bhp-hr).

Proposal

Staff is proposing to add "Compliance with Rule 1470" for NO_x+NMHC and CO emission standards to the subcategories "Compression Ignition, Fire Pumps," and "Compression Ignition, Other". The current BACT listing already includes this requirement for the PM emission standard. In addition, staff is proposing to remove outdated diesel fuel standards from the SO_x emission standards for these two subcategories. The current SO_x standard required by SCAQMD Rule 431.2, which is also currently listed, will remain.

Staff is also proposing to remove the outdated Tier 2 references under the NO_x+NMHC standard and leave the current Tier 3 standards for "Compression Ignition, Fire Pumps".

For the Spark Ignition subcategory, staff proposes to separate the listing into two ratings: $50 \leq \text{HP} < 130$ and $\text{HP} \geq 130$. Engines rated $50 \leq \text{HP} < 130$ will be subject to the same existing requirements. Engines rated $\text{HP} \geq 130$ will be subject to the NSPS standard of 1.0 gram VOC/bhp-hr.

Staff is also proposing to delete previous footnotes for situations that are no longer applicable to the current standards due to compliance dates that have passed or rule changes.

Stationary, Non-Emergency, Non-Electrical Generators, Internal Combustion Engines

Background

Currently, Part D of the BACT Guidelines has a listing for "I.C. Engine, Stationary, Non-Emergency." Due to recent amendments to SCAQMD Rule 1110.2, "Emissions from Gaseous- and Liquid-Fueled Engines," staff has recognized the need for two major

categories under this listing and will be proposing two separate listings, “I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators,” and “I.C. Engine, Stationary, Non-Emergency, Electrical Generators.” At this time, only the former category will be added to the guidelines since analysis for the latter category is still in progress. The existing listing for “I.C. Engine, Stationary, Non-Emergency,” will remain until both new categories are implemented.

Qualifying engines under “I.C. Engine, Stationary, Non-Emergency” are subject to the requirements of Rule 1110.2. On February 1, 2008, the current NOx, VOC and CO concentration limits were adopted and fully implemented by 2010 for all engines, except landfill and digester gas (biogas) fired units. In 2012, a compliance deadline of January 1, 2016, was established for biogas-fired units to meet the same NOx, VOC and CO limits; however, the recent Rule 1110.2 amendment on December 4, 2015, extended the compliance date until January 1, 2017. In addition, an exemption was provided to biogas units with ongoing technology demonstration projects to extend the compliance date until January 1, 2018.

Proposal

Staff proposes to establish the category of “I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators.” The category of “I.C. Engine, Stationary, Non-Emergency” will remain unchanged. The new listing will incorporate the existing Rule 1110.2 limits and requirements listed below for all engines rated greater than 50 bhp.

ppmvd NOx @ 15% O ₂	ppmvd VOC ¹ @ 15% O ₂	ppmvd CO @ 15% O ₂
11	30	250

¹measured as carbon

Due to the extension allowed for biogas engines, the existing BACT limits will still apply for NOx, VOC and CO. A footnote will be added to indicate the compliance deadlines for biogas-fueled engines to meet the SCAQMD Rule 1110.2 limits for these contaminants. In addition, the SOx category will continue to require compliance with Rule 431.1.

Liquid Transfer and Handling

Background

Part D of the BACT Guidelines for Liquid Transfer and Handling currently lists three different subcategories for Marine, Loading and Tank Truck and Railcar Bulk Loading Classes A, B and C. The listing does not include a subcategory for Gasoline Transfer and Dispensing beyond the Bulk Loading subcategories.

Proposal

Staff is proposing to add an additional subcategory to Part D of the BACT Guidelines for “Gasoline Transfer and Dispensing.” The subcategory will only be subject to VOC

emission requirements, which will specify “Compliance with SCAQMD Rule 461.” These facilities are already subject to the requirements of this rule, last amended on April 6, 2012. This proposal will incorporate the existing rule requirements into the BACT Guidelines for minor sources.

Non-Refinery Process Heater

Background

SCAQMD Rules 1146 and 1146.1, both titled “Emissions of Oxides of Nitrogen from (Small) Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters,” were most recently approved by the Board on November 1, 2013. These rules apply to most gaseous fuel-fired boilers, steam generators and process heaters rated at greater than 2,000,000 Btu per hour, with the exception of utility boilers, refinery boilers and process heaters rated at greater than 40,000,000 Btu per hour, thermal fluid heaters and sulfur plant reaction boilers.

Proposal

To maintain consistency with the current requirements of Rules 1146 and 1146.1, staff is proposing to specify in the BACT listing for Process Heater–Non-Refinery under NO_x “Compliance with SCAQMD Rules 1146 and 1146.1.” This proposal will incorporate the existing rule requirements into the BACT Guidelines for minor sources.

Oil and Gas Production

Background

SCAQMD Rules 1148, Thermally Enhanced Oil Recovery Wells, and 1148.1, Oil and Gas Production Wells, apply to oil and gas production operations and specifically Rule 1148.1 was recently amended and approved by the Board on September 4, 2015.

Proposal

To maintain consistency with the current requirements of Rules 1148 and 1148.1, staff is proposing to specify in the BACT listing for Oil and Gas Production under VOC “Compliance with SCAQMD Rules 1148 and 1148.1.” This proposal will incorporate the existing rule requirements into the BACT Guidelines for minor sources.

Proposed New Part E–Policy and Procedures for Facilities Subject to Prevention of Significant Deterioration for Greenhouse Gases

Background

For the first time, GHG emissions from the largest stationary sources are covered by the Prevention of Significant Deterioration (PSD) and Title V Operating Permit Programs beginning January 2, 2011. These permitting programs, required under the Clean Air Act, are proven tools for protecting air quality and the same tools will be used to reduce GHG emissions. The SCAQMD is currently required to implement the GHG BACT requirements through its permitting program.

40 CFR 52.21, amended in both May 2010 and October 2015, established an approach to permit GHG emissions under PSD and Title V. Through this rule, permitting focused on the major industrial sources, which emit nearly 70 percent of the greenhouse gas pollution from stationary sources. At this time, lesser-emitting sources are not subject to these requirements.

The requirements of this rule apply only to GHG as defined by EPA as a total group of six GHG which are: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFC), perfluorocarbons (PFC) and sulfur hexafluoride (SF₆). All other attainment air contaminants, as defined in SCAQMD Rule 1702 subdivision (a), shall be regulated for the purpose of PSD.

Proposal

To maintain consistency with current federal GHG permitting requirements, staff is proposing to add Part E to the BACT Guidelines. This part summarizes the requirements of GHG BACT regulations according to EPA, describes the Top-Down Process, explains how to calculate GHG emissions and explains PSD Applicability for GHGs for new and modified sources. 40 CFR 52.21 was recently revised to address the U.S. Supreme Court decision in *Utility Air Regulatory Group v. Environmental Protection Agency*, 134 S. Ct. 2427 (2014)¹⁹, regarding the applicability of PSD and GHG BACT. The guidance in this chapter is applicable to the EPA requirements in place as of the date of these guidelines, as well as SCAQMD Rule 1714, which incorporates most of 40 CFR 52.21 by reference. Proposed Part E is included in Attachment B.

Proposed New Part F–BACT Determinations for Facilities Subject to Prevention of Significant Deterioration for Greenhouse Gases

Background

Similar to Part B, proposed new Part F will consist of Section I with listings of GHG BACT determinations made by SCAQMD, Section II with listings of GHG BACT determinations for equipment in other air districts, and Section III with listings of emerging GHG BACT control technologies.

Proposal

Staff is proposing to add Part F and bring new GHG BACT determinations for Board approval as they become available for inclusion into Part F. At this time, there are no GHG BACT listings to be proposed; however, staff is in the process of identifying potential GHG BACT for future listings. Proposed Part F is included in Attachment B.

Proposed Amendments to List of Abbreviations and Index of Equipment Categories

Staff is proposing to update the List of Abbreviations by the addition of the following: California Air Resources Board (CARB), Carbon Capture and Sequestration (CCS),

Carbon Dioxide (CO₂), Carbon Dioxide Equivalent (CO_{2e}), Greenhouse Gas (GHG), Global Warming Potential (GWP), Maximum Individual Cancer Risk (MICR), Lead (Pb), Particulate Matter less than 2.5 microns in diameter (PM_{2.5}), Prevention of Significant Deterioration (PSD), Potential to Emit (PTE), RECLAIM Trading Credit (RTC), South Coast Air Quality Management District (SCAQMD replaced AQMD) and Best Available Control Technology for Toxics (T-BACT).

To be consistent with the function of the Index of Equipment Categories, staff is proposing to rename it to List of Equipment Categories. The proposed amendments to this list are administrative in nature and consist of having the same equipment categories as those in Parts B, D and F and included in Attachment B.

Proposed Charter for BACT Scientific Review Committee

Staff is proposing the establishment of a Charter for the BACT SRC, which details the BACT SRC's goals and objective, the composition and selection of the BACT SRC membership, the desired qualifications of its membership and the operational guidelines for the BACT SRC. The proposed Charter for the BACT SRC is included in Attachment E.

Presentation to BACT Scientific Review Committee

The proposed amendments to the BACT Guidelines were presented to the BACT SRC at the publicly noticed May 11, 2016 meeting. A 30-day period was provided to the BACT SRC and general public to review and submit comments. At the September 16, 2016 Stationary Source Committee, staff was directed to hold a follow-up BACT SRC meeting; a meeting was held on September 27, 2016 to address additional comments on the Proposed Amended BACT Guidelines. At the request of BACT SRC members and the public an additional 30-day comment period was provided to review and submit comments. The proposed amended BACT Guidelines along with staff response to comments was, for the third time, presented to the BACT SRC at a publicly noticed meeting on November 9, 2016. Comments by BACT SRC members and the general public along with staff responses are included in Attachment G.

California Environmental Quality Act (CEQA)

SCAQMD staff has reviewed the proposed amendments to the BACT Guidelines, pursuant to CEQA Guidelines, pursuant to CEQA Guidelines Section 15002(k)(1) and Section 15061, and determined them to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). Since the proposed amendments are only updating the BACT Guidelines with current, already existing requirements, it can be seen with certainty that the proposed project has no potential to adversely impact air quality or any other environmental topic area.

Socioeconomic Analysis

The proposed amendments of the BACT Guidelines are to maintain consistency with recent changes to SCAQMD rules and state and federal requirements. These proposed amendments are administrative in nature and will therefore not result in more stringent requirements than would otherwise occur and would not result in any adverse socioeconomic impacts.

Benefits to SCAQMD

Emission reductions realized through permitted sources that apply the latest BACT will benefit air quality, achieve emissions reductions needed to attain air quality standards and 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 staff's report to the Board on proposed amendments to the BACT Guidelines. The updated BACT Guidelines with these amendments are scheduled to be made available at SCAQMD's website at <http://www.aqmd.gov/home/permits/bact>, pending Board approval.

These actions are to determine that proposed amendments to the BACT Guidelines are exempt from the California Environmental Quality Act, approve proposed amendments to the BACT Guidelines, and approve the proposed Charter for the SCAQMD BACT Scientific Review Committee.

Attachments

- A. Summary of Proposed Amendments to BACT Guidelines
- B. Proposed Amended BACT Guidelines Overview, Parts A, C, E and F
- C. Proposed Amended BACT Guidelines Part B
- D. Proposed Amended BACT Guidelines Part D
- E. Proposed Charter for BACT Scientific Review Committee
- F. Notice of Exemption from the California Environmental Quality Act
- G. Comments and Responses
- H. Board Meeting Presentation

ATTACHMENT A

SUMMARY OF PROPOSED AMENDMENTS TO BACT GUIDELINES

The following summarizes the key proposed amendments to the BACT Guidelines:

Overview

Chapter 1 - Introduction

- Toxic BACT (T-BACT) reference
- Description for addition of Parts E and F to address Prevention of Significant Deterioration (PSD) requirements for GHG emissions established by U.S. EPA
- BACT Docket information updated
- Hyperlinks added for Web pages and email

Chapter 2 – Applicability Determination

- Added PM_{2.5} and updated SO_x threshold levels on Table 1
- Clarification of GHG BACT emission threshold applicability in Table 1
- Updated map of SCAQMD, Figure 1

Chapter 3 – When is BACT Required?

- Carbon monoxide attainment and BACT requirement
- Added reference to Lead Rules 1420.1 and 1420.2
- Chlorobromomethane added to Table 2 – Class I Substances (ODCs)
- Added PM_{2.5} to Table 3

Chapter 4 – What is BACT?

- PSD Rules BACT applicability

Chapter 5 – Review of Staff BACT Determinations

- Background, goals and objectives and membership of the Scientific Review Committee

Part A

Chapter 1 – How is LAER Determined for Major Polluting Facilities?

- Added section on Federal PM_{2.5} New Source Review and SCAQMD Rule 1325
- Super “Clean” Materials clarified as Super “Compliant” Materials to be consistent with SCAQMD Rule 109 definition
- Added section on Other Considerations for Pollution Prevention, Monitoring and Testing and Capture Efficiency
- Clean Fuels Policy clarified as also including electricity as a clean fuel, as well as zero and near-zero emission technologies

Part B

The following LAER/BACT listings will be included in Part B:

- I.C Engines (3), Emergency, Compression Ignition with Diesel Particulate Filter
 - 374 BHP
 - 755 BHP
 - 2220 BHP
- Flare, Oil and Gas Operations

Part C

Chapter 1 – How is MSBACT Determined for Minor Polluting Facilities?

- Clarified that dates on Part D Determinations do not exempt equipment from complying with new requirements or limits implemented after that date
- Updated Maximum Cost Effectiveness Values
- Added section on BACT Top-Down Cost Methodology
- Clean Fuels Policy clarified as also including Industrial Electrification
- Updated Figure 2 flowchart: The Ongoing BACT Update Process

Chapter 2 – How to Use Part D of the MS BACT Guidelines?

- Super “Clean” Materials clarified as Super “Compliant” Materials to be consistent with definition
- Added section on Other Considerations for Pollution Prevention, Monitoring and Testing and Capture Efficiency

Part D

All of the following Part D listings are proposed to be updated to the current SCAQMD and state and federal requirements. In certain cases, new listings, categories and subcategories were created for consistency with the requirements.

- Boiler
- I.C. Engine, Portable
- I.C. Engine, Stationary Emergency
- I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators
- Liquid Transfer and Handling
- Oil and Gas Production
- Process Heater - Non-Refinery

Part E

Part E was added to address the policies and procedures set forth in EPA's GHG Program under 40 CFR 52.21, which is incorporated by reference under SCAQMD Rule 1714.

The following sections were added under Part E:

- Background
- Permitting Guidance for GHG
- Federal PSD Applicability for GHG
- SCAQMD PSD Applicability for GHG
- Top-Down BACT Process
- GHG Control Measures White Papers

Part F

This section is reserved for future GHG BACT listings. There are currently no proposed GHG listings.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Best Available Control Technology Guidelines

OVERVIEW

Part A: Policy and Procedures for Major Polluting Facilities

Part B: LAER/BACT Determinations for Major Polluting Facilities

Part C: Policy and Procedures for Non-Major Polluting Facilities

Part D: BACT Guidelines for Non-Major Polluting Facilities

Part E: Policy and Procedures for Facilities Subject to Prevention of Significant Deterioration for Greenhouse Gases

Part F: BACT Determinations for Facilities Subject to Prevention of Significant Deterioration for Greenhouse Gases

August 17, 2000 (Revised June 6, 2003; December 5, 2003; July 9, 2004; July 14, 2006; ~~October 7, 2016~~ December 2, 2016)

**Deputy Executive Officer
Science and Technology Advancement**

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OVERVIEW

Chapter 1 - Introduction

The South Coast Air Quality Management District (SCAQMD) Regulation XIII – New Source Review (NSR) and Regulation XX – RECLAIM, require applicants to use Best Available Control Technology (BACT) for new sources, relocated sources, and for 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 requires the Executive Officer to periodically publish BACT Guidelines that establish the procedures and the BACT requirements for commonly permitted equipment. SCAQMD Regulation XIV – Toxics and Other Non-Criteria Pollutants, requires applicants to use Best Available Control Technology for Toxics (T-BACT) for new, relocated or modified permit units that result in a cumulative increase in Maximum Individual Cancer Risk (MICR) of greater than one in a million (1.0×10^{-6}) at any receptor location. Additionally, Regulation XVII – Prevention of Significant Deterioration (PSD) also sets forth BACT requirements for new sources, relocated sources and modifications to existing sources that emit attainment air contaminants. Regulation XIII requires the Executive Officer to periodically publish BACT Guidelines that establish the procedures and the BACT requirements for commonly permitted equipment. PSD BACT is incorporated into these BACT Guidelines. As of the publication date of these guidelines, there is currently not a requirement for SCAQMD to publish T-BACT guidelines and T-BACT must be established during the permitting process. The BACT Guidelines were first published in May 1983, and later revised in October 1988.

Historically, the BACT Guidelines were first published in May 1983, and later revised in October 1988. The Guidelines consisted of two parts: Part A – Policy and Procedures, and Part B – BACT Determinations. Part A provided an overview and general guidance while Part B contained specific BACT information by source category and pollutant. Since the October 1988 revision, Part A was amended once in 1995, and Part B was updated with six LAER determination times between 1997 and 1998.

On December 11, 1998, the Governing Board approved a new format for listing BACT determinations in Part B of the Guidelines. While the previous Part B of the BACT Guidelines specified BACT requirements and set out source category determinations which could be interpreted as definitive, the new format simply provides listings of recent BACT determinations by SCAQMD permitting staff and others as well as information on new and emerging technologies. Part B of the SCAQMD BACT Guidelines now follows the same outline as the permit listings in the California Air Resources Board State BACT Clearinghouse Database, which is managed under the direction of the California Air Pollution Control Officers Association's (CAPCOA) Engineering Managers Committee. –and coordinates the submittal of– In addition, BACT determinations made by the districts SCAQMD are submitted to the U.S. Environmental Protection Agency (USEPA) RACT/BACT/LAER Clearinghouse by ARB staff, California Air Pollution Control Officer Association (CAPCOA) BACT Clearinghouse and the United States Environmental Protection Agency (USEPA) RACT/BACT/LAER Clearinghouse. Further information on the new format of the Guidelines, including reasons for the change in direction, may be found in Board Letters presented at the October 1998

Board Meeting, Agenda No. 41, and the December 1998 Board Meeting, Agenda No. 28.

The public participation process ~~was also enhanced to include~~ technical review and comments by a focused BACT Scientific Review Committee (BACT SRC) at periodic intervals, prior to the updates of the SCAQMD BACT Guidelines. ~~At the same time,~~ ~~the~~ Board established a 30-day notice period for the BACT SRC and interested persons to review and comment on SCAQMD BACT determinations that result in BACT requirements that are more stringent than previously imposed BACT.

As a result of amendments ~~being proposed to SCAQMD's New Source Review (NSR)~~ regulations in September 2000, the BACT Guidelines ~~was~~ ~~will~~ be separated into two sections: one for major polluting facilities and another for non-major (minor) polluting facilities. (See Chapter 2 in the Overview for how to determine if a facility is major or minor).

The BACT Guidelines for major polluting facilities include:

- Part A: Policy and Procedures for Major Polluting facilities, ~~;~~ and
- Part B: LAER/BACT Determinations for Major Polluting Facilities.

The BACT Guidelines for non-major polluting facilities include:

- Part C: Policy and Procedures for Non-Major Polluting Facilities, ~~;~~ and
- Part D: BACT Guidelines for Non-Major Polluting Facilities.

Both the format of the guidelines and the process for determining BACT are significantly different between major and non-major polluting facilities. Major polluting facilities that are subject to NSR are required by the Clean Air Act to have the Lowest Achievable Emission Rate (LAER). LAER is determined at the time the permit is issued, with little regard for cost, and pursuant to USEPA's LAER policy as to what is achieved in practice. 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.

For non-major polluting facilities, BACT will be determined in accordance with state law at the time an application is deemed complete unless a more stringent rule requirement becomes applicable prior to permit issuance. For the most part, it will be as specified in Part D of the BACT Guidelines. Changes to Part D for minor source BACT (MSBACT) to make them more stringent will be subject to public review and SCAQMD Board approval, in view of cost for considerations of cost.

For the 2016 amendment to the Guidelines, additional parts have been added to address PSD requirements for greenhouse gas (GHG) emissions established by U.S. EPA in 40 CFR 52.21 in 2011. The requirements are incorporated by reference in SCAQMD Rule 1714. The BACT Guidelines for GHG requirements include:

- Part E: Policy and Procedures for Facilities Subject to Prevention of Significant Deterioration for Greenhouse Gases; and
- Part F: BACT Determinations for Facilities Subject to Prevention of Significant Deterioration for Greenhouse Gases.

In order to distinguish between BACT for ~~major sources and BACT for minor~~ various sources, this document will use the following nomenclature for BACT:

LAER for BACT at major polluting facilities

MSBACT for BACT at non-major polluting facilities

PSD/CHE BACT for BACT at facilities subject to PSD/CHE BACT requirements for criteria pollutants

Written comments about the BACT Guidelines are welcome at any time and will be evaluated by SCAQMD staff and included in the BACT Docket at the SCAQMD library. These comments should be addressed to:

South Coast Air Quality Management District
BACT Docket
Science and Technology Advancement
21865 Copley Dr.
Diamond Bar, CA 91765-0934

Comments may also be submitted via email to BACTTeam@aqmd.gov, and should include BACT Docket in the subject line.

The BACT Guidelines are available without charge from SCAQMD's web site at www.aqmd.gov/home/permits/bact. A hardcopy of tThe BACT Guidelines may be obtained for a fee by submitting a request to contacting Subscription Services at www.aqmd.gov/contact/subscription-services or at the above address or by calling (909) 396-3720. Revisions to the guidelines-Guidelines will be mailed to all persons that have purchased annual updates to the BACT Guidelines. The BACT Guidelines are also available without charge from SCAQMD's Internet web site at <http://www.aqmd.gov/home/permits/bact> <http://www.aqmd.gov/bact>.

Chapter 2 – Applicability Determination

This chapter explains how to determine whether a facility is a major or minor polluting facility, and how a facility can become a minor polluting facility.

MAJOR POLLUTING FACILITY EMISSION THRESHOLDS

A facility is a major polluting facility (or a major stationary source as it is called in the federal Clean Air Act [CAA]) if it emits, or has the potential to emit (PTE), a criteria air pollutant at a level that equals or exceeds emission thresholds ~~specified given~~ in the CAA¹ based on the attainment or nonattainment status. Table 1 ~~presents~~ shows those emission thresholds for each criteria air pollutant for each air basin in SCAQMD. The map in Figure 1 shows the location of the three air basins in SCAQMD. If a threshold for any one criteria pollutant is equaled or exceeded, the facility is a major polluting facility, and will be subject to LAER for all pollutants subject to NSR. ~~Currently Although Table 1 is part of determining GHG BACT applicability, Table 1 does not include emission thresholds that trigger GHG BACT for SCAQMD Rule 1714 and 40 CFR 52.21. Subpart E of the BACT Guidelines should be referenced for a detailed explanation of how GHG BACT emission thresholds are determined.~~

A facility includes all sources located within contiguous properties owned or operated by the same person, or persons under common control. Contiguous means in actual contact or separated only by a public roadway or other public right-of-way. However, on-shore crude oil and gas production facilities under the same ownership or use entitlement must be included with offshore crude oil and gas production facilities located in Southern California Coastal or Outer Continental Shelf waters.

The following mobile source emissions are also considered as part of the facility²:

1. Emissions from in-plant vehicles; and
2. All emissions from ships during the loading or unloading of cargo and while at berth where the cargo is loaded or unloaded; and
3. Non-propulsion ship emissions within Coastal Waters under SCAQMD jurisdiction.

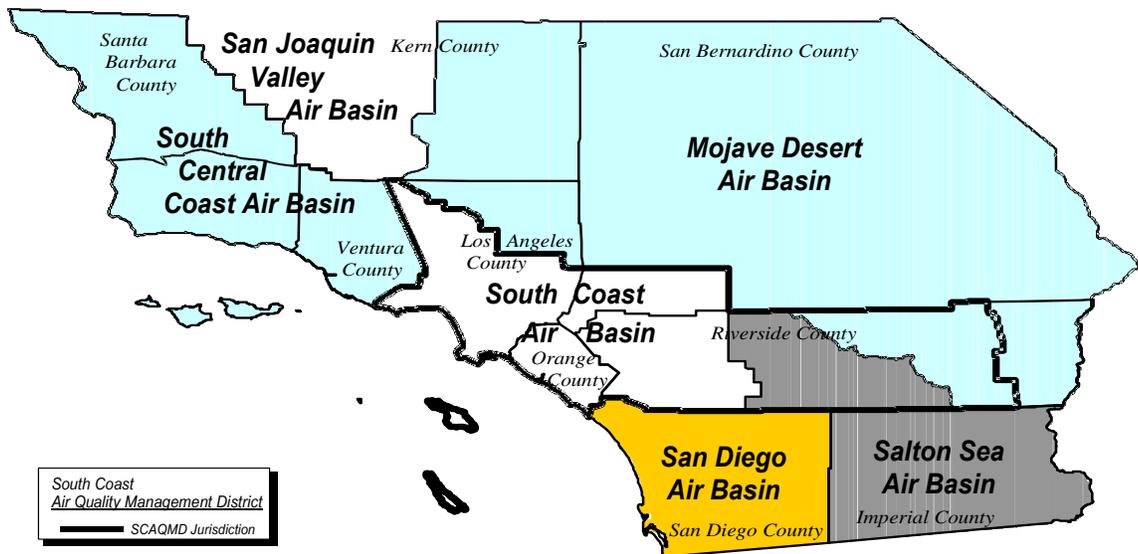
¹ The major source emission thresholds are higher for air basins that comply with the national ambient air quality standard and lower depending on how far an air basin is from compliance with the standard for a pollutant. The lowest thresholds apply to extreme non-attainment air basins, the only ~~example ones of which are~~ the South Coast Air Basin and San Joaquin Valley Air Basin for ozone (VOC and NOx).

² In accordance with Rule 1306(g).

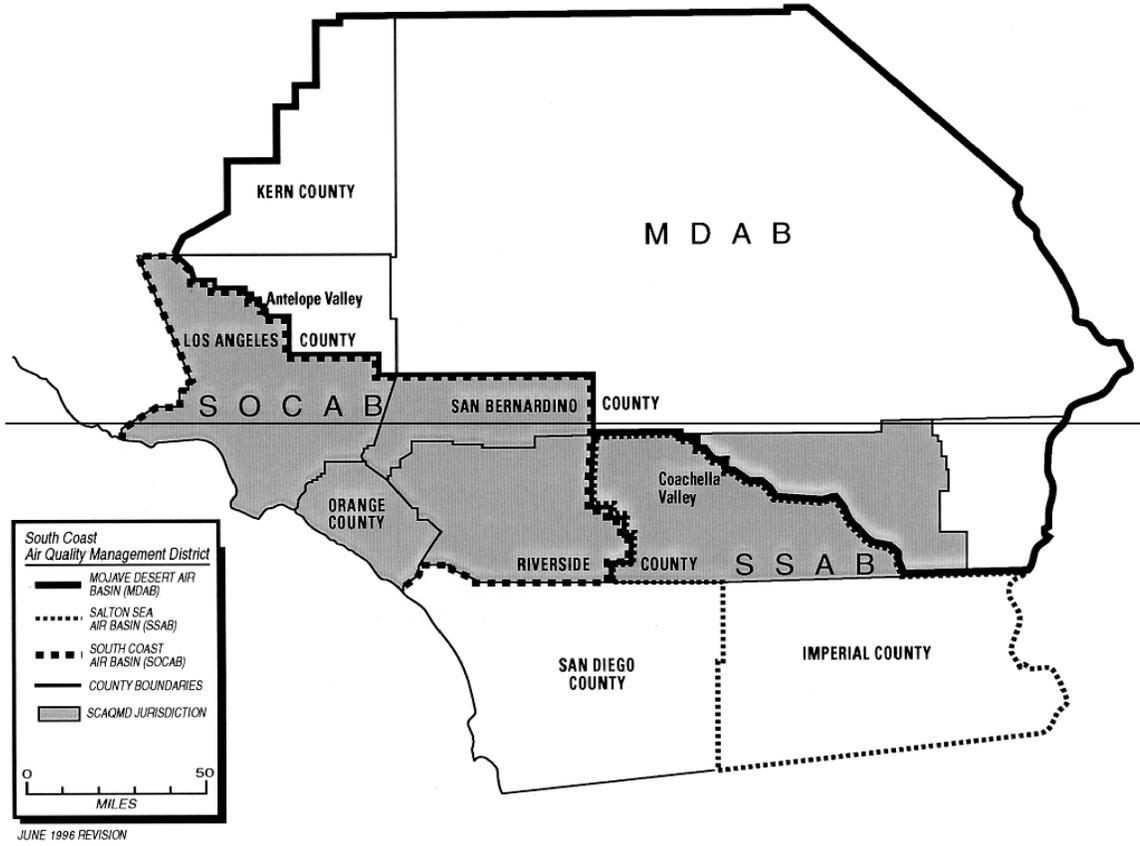
Table 1
Actual or Potential Emission Threshold Levels (Tons per Year)
for Major Polluting Facilities

Pollutant	South Coast Air Basin	Riverside County Portion of Salton Sea Air Basin	Riverside County Portion of Mojave Desert Air Basin
VOC	10	25	100
NO _x	10	25	100
³ SO _x	70 100	70 100	100
CO	50	100	100
PM ₁₀	70	70	100
PM _{2.5}	70 100	---	---

Figure 1: Map of SCAQMD



³ The threshold for SO_x, as a precursor for PM, is 70 tons per year for serious PM₁₀ areas, which the SCAB previously was, and 70 tons per year for serious PM_{2.5} areas, which the SCAB currently is. Rule 1302 previously ~~currently~~ specified 100 tons per year, which was in error, and was ~~being changed~~ corrected at the November 2016 Board Meeting.



POTENTIAL TO EMIT

Potential to emit (PTE) is based on permit conditions that limit emissions or throughput. If there are no such permit conditions, PTE is based on:

- the maximum rated capacity; and
- the maximum daily hours of operation; and
- physical characteristics of the materials processed.

The PTE must include fugitive emissions associated with the source. RECLAIM emission allocations are not considered emission limits because RECLAIM facilities may purchase RTCs and increase their emissions without modifying their permit. For PSD purposes, as well as Rule 1325 for PM_{2.5}, which incorporates federal requirements, fugitive emissions are included only for major source categories specifically identified in 40 CFR 52.21.

LIMITING POTENTIAL TO EMIT

A facility's PTE can be capped by an enforceable permit condition that limits emissions. This condition will likely involve monitoring, recordkeeping and reporting to ensure that emissions remain below the permit limit.

Chapter 3 - When is BACT Required?

This chapter explains when BACT is required by identifying the air pollutants subject to BACT, the permit actions that trigger BACT review, and the calculation procedures to determine emission increases.

POLLUTANTS SUBJECT TO NSR, PSD AND BACT

The SCAQMD's New Source Review (NSR) programs include *Regulation XIII - New Source Review* and *Rule 2005 - New Source Review for RECLAIM*. Rule 2005 applies only to NO_x and SO_x emissions from RECLAIM facilities, while Regulation XIII applies to other non-attainment air pollutants from RECLAIM facilities, all non-attainment air pollutants from all other facilities, and ammonia and ozone-depleting compound (ODC) emissions from all facilities. ODCs are defined as Class I substances listed in 40 CFR, Part 82, Appendix A, Subpart A, and are listed in Table 2. Rule 1325 specifically applies to PM_{2.5}.

Although the SCAQMD is in attainment with the ambient air quality standards for SO₂ and NO₂, NO_x is a precursor to ozone, and both SO_x and NO_x are precursors to PM₁₀ and PM_{2.5}, which are non-attainment air pollutants. Therefore, SO_x and NO_x are treated as non-attainment air pollutants as well, ~~including ozone~~. The net result is that VOC, NO_x, SO_x, ~~and PM₁₀ and PM_{2.5}~~ are subject to NSR in all of SCAQMD. ~~, while CO is only subject to NSR in the South Coast Air Basin (SOCAB).~~

~~The South Coast Air Basin has historically been had a persistent designated nonattainment for CO problem. However, there has been considerable improvement in CO air quality in the Basin from 1976 to 2005. In 2001, the Basin met both the federal and state 8-hour CO standards for the first time at all monitoring stations. The 2003 AQMP revision to the CO plan served a dual purpose; it replaced the 1997 attainment demonstration that lapsed at the end of 2000, and it provided the basis for a CO maintenance plan in the future. The Basin was designated as attainment for CO in 2007. Therefore, CO is no longer a nonattainment pollutant, since the state standard for CO is the same as the federal. Therefore, CO is in attainment with state and federal ambient air quality standards.~~

~~The SCAQMD's Regulation XVII – Prevention of Significant Deterioration sets forth BACT requirements for stationary sources that emit attainment air contaminants. The BACT requirement applies to any net emission increase of a criteria pollutant from a permit unit at any source. Similar to the Regulation XIII NSR requirements, precursors to attainment air contaminants, would also be treated as attainment air contaminants, unless they also qualify as a nonattainment air contaminant, or nonattainment precursor as well. As explained in the SCAQMD Staff Report for Regulation XVII dated September 28, 1998 for the October 7, 1988 Board meeting, the PSD BACT requirement is applicable to all permit units regardless if the source is classified as a minor or major facility.~~

Lead (Pb) is a criteria air pollutant and is subject to BACT in areas of non-attainment, or is subject to PSD in areas of attainment. Although the SCAQMD complies with the ambient air quality standards for lead (Pb), Pb can be a component of a source's PM₁₀ emissions and is therefore subject to BACT for PM₁₀. BACT for Pb will be BACT for PM₁₀ or compliance with Rules 1420 or, 1420.1 or 1420.2, whichever is more stringent. In addition, non-attainment pollutants include inorganic gases such as hydrogen chloride (HCl) and hydrogen fluoride (HF), which are precursors to PM₁₀, and hydrogen sulfide (H₂S), a precursor to SO₂.

The applicability of the various pollutants to NSR in the various air basins is summarized in Table 3. See Figure 1 in the previous chapter for a map of SCAQMD that shows the location of the three air basins in SCAQMD.

Table 2
Class I Substances (ODCs)*

<p>A. Group I: CFCl_3 Trichlorofluoromethane (CFC-11) CF_2Cl_2 dichlorodifluoromethane (CFC-12) $\text{C}_2\text{F}_3\text{Cl}_3$ Trichlorotrifluoroethane (CFC-113) $\text{C}_2\text{F}_4\text{Cl}_2$ Dichlorotetrafluoroethane (CFC-114) $\text{C}_2\text{F}_5\text{Cl}$ Monochloropentafluoroethane (CFC-115) All isomers of the above chemicals</p> <p>B. Group II: CF_2ClBr Bromochlorodifluoromethane (Halon-1211) CF_3Br Bromotrifluoromethane (Halon-1301) $\text{C}_2\text{F}_4\text{Br}_2$ Dibromotetrafluoroethane (Halon-2402) All isomers of the above chemicals</p> <p>C. Group III: CF_3Cl Chlorotrifluoromethane (CFC-13) C_2FCl_5 (CFC-111) $\text{C}_2\text{F}_2\text{Cl}_4$ (CFC-112) C_3FCl_7 (CFC-211) $\text{C}_3\text{F}_2\text{Cl}_6$ (CFC-212) $\text{C}_3\text{F}_3\text{Cl}_5$ (CFC-213) $\text{C}_3\text{F}_4\text{Cl}_4$ (CFC-214) $\text{C}_3\text{F}_5\text{Cl}_3$ (CFC-215) $\text{C}_3\text{F}_6\text{Cl}_2$ (CFC-216) $\text{C}_3\text{F}_7\text{Cl}$ (CFC-217) All isomers of the above chemicals</p> <p>D. Group IV: CCl_4 Carbon Tetrachloride</p> <p>E. Group V: $\text{C}_2\text{H}_3\text{Cl}_3$ 1,1,1 Trichloroethane (Methyl chloroform) All isomers of the above chemical except 1,1,2-trichloroethane</p> <p>F. Group VI: CH_3Br Bromomethane (Methyl Bromide)</p> <p><u>H. Group VIII:</u> <u>CH_2BrCl (Chlorobromomethane)</u></p>	<p>G. Group VII: CHFBr_2 CHF_2Br (HBFC-2201) CH_2FBr C_2HFBr_4 $\text{C}_2\text{HF}_2\text{Br}_3$ $\text{C}_2\text{HF}_3\text{Br}_2$ $\text{C}_2\text{HF}_4\text{Br}$ $\text{C}_2\text{H}_2\text{FBr}_3$ $\text{C}_2\text{H}_2\text{F}_2\text{Br}_2$ $\text{C}_2\text{H}_2\text{F}_3\text{Br}$ $\text{C}_2\text{H}_2\text{FBr}_2$ $\text{C}_2\text{H}_3\text{F}_2\text{Br}$ $\text{C}_2\text{H}_4\text{FBr}$ C_3HFBr_6 $\text{C}_3\text{HF}_2\text{Br}_5$ $\text{C}_3\text{HF}_3\text{Br}_4$ $\text{C}_3\text{HF}_4\text{Br}_3$ $\text{C}_3\text{HF}_5\text{Br}_2$ $\text{C}_3\text{HF}_6\text{Br}$ $\text{C}_3\text{H}_2\text{FBr}_5$ $\text{C}_3\text{H}_2\text{F}_2\text{Br}_4$ $\text{C}_3\text{H}_2\text{F}_3\text{Br}_3$ $\text{C}_3\text{H}_2\text{F}_4\text{Br}_2$ $\text{C}_3\text{H}_2\text{F}_5\text{Br}$ $\text{C}_3\text{H}_3\text{FBr}_4$ $\text{C}_3\text{H}_3\text{F}_2\text{Br}_3$ $\text{C}_3\text{H}_3\text{F}_3\text{Br}_2$ $\text{C}_3\text{H}_3\text{F}_4\text{Br}$ $\text{C}_3\text{H}_4\text{FBr}_3$ $\text{C}_3\text{H}_4\text{F}_2\text{Br}_2$ $\text{C}_3\text{H}_4\text{F}_3\text{Br}$ $\text{C}_3\text{H}_5\text{FBr}_2$ $\text{C}_3\text{H}_5\text{F}_2\text{Br}$ $\text{C}_3\text{H}_6\text{FBr}$</p> <p><u>H. Group VIII:</u> <u>CH_2BrCl</u> <u>(Chlorobromomethane)</u></p>
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* 40 CFR, Part 82, Appendix A, Subpart A

Table 3
Applicability of NSR and BACT to Various Pollutants in
South Coast Air Basin (SOCAB), Salton Sea Air Basin (SSAB),
and Mojave Desert Air Basin (MDAB)

<u>Air Basin</u>	<u>VOC</u>	<u>NOx</u>	<u>SOx</u>	<u>CO</u>	<u>PM₁₀</u>	<u>PM_{2.5}</u>	<u>NH₃</u>	<u>Pb</u>	<u>ODC</u>
SOCAB	√	√	√	√	√	√	√	√	√
SSAB	√	√	√		√		√	√	√
MDAB	√	√	√		√		√	√	√

PERMIT ACTIONS SUBJECT TO NSR, PSD AND BACT

SCAQMD's NSR and PSD regulations are preconstruction permit review programs that require the Executive Officer to deny a permit to construct unless the proposed equipment includes BACT when:

- new equipment is installed;
- existing stationary permitted equipment is relocated; or
- existing permitted equipment is modified such that there is an emission increase.

If the new equipment is to replace the same kind of equipment, NSR⁴ still requires BACT unless it is an identical replacement, which does not require a new permit according to ~~paragraph (e)(3) of Rule 219 -Equipment Not Requiring a Written Permit Pursuant to Regulation II, as amended May 19, 2000.~~

BACT is not required for a change of operator, provided the facility is a continuing operation at the same location, without modification or change in operating conditions.

In case of relocation of a non-major facility, the facility operator may opt out of installing MSBACT, provided that the owner/operator meets the conditions specified in Rule 1302 (ai) and Rule 1306 (d)(3).⁵

PSD applies to GHG if the source is otherwise subject to PSD for another regulated NSR pollutant and the source is new with has a GHG PTE ≥ 75,000 tons per year CO₂e, or an existing source with a modification resulting in a similar GHG emissions increase.

It is SCAQMD policy that BACT is required only for emission increases greater than or equal to one (1.0) pound per day.

CALCULATION PROCEDURES FOR EMISSION INCREASES

The calculation procedures for determining whether there is an increase in emissions from an equipment modification that triggers BACT are different for NOx

⁴ See Rules 1303(a) and 1304(a).

⁵ USEPA has expressed concerns with this provision of the NSR Rules for minor polluting facilities as of September 2000. Staff will continue to work with USEPA to resolve this issue.

and SO_x pollutants from RECLAIM facilities ~~and then~~ for all other cases. In general, the calculation procedures for RECLAIM facilities are less likely to result in an emission increase that requires BACT.

For NO_x and SO_x emissions from a source at a RECLAIM facility, there is an emission increase if the maximum hourly potential to emit is greater after the modification than it was before the modification.⁶

For modifications subject to Regulation XIII, there are two possible cases⁷:

1. If the equipment was previously subject to NSR, an emission increase occurs if the new potential to emit in one day is greater than the previous potential to emit in one day.
2. If the equipment was never previously subject to NSR, an emission increase occurs if the new potential to emit in one day exceeds the actual average daily emissions over the two-year period, or other appropriate period, prior to the permit application date. However, for the installation of air pollution controls on any source constructed prior to the adoption of the NSR on October 8, 1976 for the sole purpose of reducing emissions, Rule 1306(f) allows the emission change to be calculated as the post-modification potential to emit minus the pre-modification potential to emit.

The potential to emit is based on permit conditions that directly limit the emissions, or, if there are none, then the potential to emit is based on:

- ~~a)~~ maximum rated capacity; and
- ~~b)~~ the maximum daily hours of operation; and
- ~~c)~~ the physical characteristics of the materials processed.

⁶ See Rule 2005(d).

⁷ See Rule 1306(d)(2).

Chapter 4 - What is BACT?

This chapter explains the definitions of BACT found in SCAQMD rules, state law and federal law.

NSR RULES (REGULATION XIII)

New sources, relocations, and modifications of existing sources that increase nonattainment air contaminant emissions are subject to New Source Review (NSR) regulations which require BACT, among other requirements. Both federal and state laws require this strategy. The federal Clean Air Act (CAA) requirement for Lowest Achievable Emission Rate (LAER) is implemented through BACT in the SCAQMD. Federal LAER applies to major sources only. Although federal LAER applies to any emissions increase at a major stationary source of ozone precursors, SCAQMD has interpreted this provision as a 1.0 lb/day increase in emissions from all sources subject to NSR. According to SCAQMD's rules, BACT requirements may not be less stringent than federal LAER for major polluting facilities. The California Health & Safety Code (H&SC) Section 40405 defines state BACT similar to federal LAER and requires the application of BACT for all new and modified permitted sources subject to NSR.

PSD RULES (REGULATION XVII)

New sources, relocations, and modifications of existing sources that emit attainment air contaminant emissions and certain other specified pollutants are subject to Prevention of Significant Deterioration (PSD) regulations, which require BACT. Pursuant to Rule 1701, the BACT requirement applies to a net emission increase from a permit unit located at minor and major stationary sources. The intention of the PSD requirement is to implement a similar requirement as Regulation XIII to maintain national ambient air quality standards for attainment air contaminants.

DEFINITION OF BACT

Definitions of BACT are found in: Rule 1302 -*Definitions of Regulation XIII - New Source Review*, which applies to all cases in general, except for Rule 1702 – Definitions, which applies only to attainment air contaminants, and Rule 2000 - General, which applies to NO_x and SO_x emissions from ~~nearly 400~~ RECLAIM facilities. While the definitions are not identical, they are essentially the same. Section (f) of *Rule 1302 - Definitions* defines BACT as:

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) means the most stringent emission limitation or control technique which:

- (1) *has been achieved in practice for such category or class of source; or*
- (2) *is contained in any state implementation plan (SIP) approved by the United States Environmental Protection Agency (EPA) for such category or class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed source*

- (3) *demonstrates to the satisfaction of the Executive Officer or designee that such limitation or control technique is not presently achievable; or is any other emission limitation or control technique, found by the Executive Officer or designee to be technologically feasible for such class or category of sources or for a specific source, and cost-effective as compared to measures as listed in the Air Quality Management Plan (AQMP) or rules adopted by the District Governing Board.*

The first two requirements in the BACT definition are required by federal law, as LAER for major sources. The third part of the definition is unique to SCAQMD and some other areas in California, and allows for more stringent controls than LAER.

Rule 1303(a)(2), ~~as proposed to adopted, will further~~ requires that economic and technical feasibility be considered in establishing the class or category of sources and the BACT requirements for non-major polluting facilities.

REQUIREMENTS OF HEALTH & SAFETY CODE SECTION 40440.11

Senate Bill 456 (Kelley) was chaptered into state law in 1995 and became effective in 1996. H&SC Section 40440.11 specifies the criteria and process that must be followed by the SCAQMD to update its BACT Guidelines to establish more stringent BACT limits for listed source categories. After consultation with the affected industry, the CARB, and the U.S. EPA, and considerable legal review and analysis, staff concluded that the process specified in SB 456 to update the BACT Guidelines should be interpreted to apply only if the SCAQMD proposes to make BACT more stringent than LAER or to establish BACT for non-major sources. This is because the CAA requires the SCAQMD staff to apply current LAER for major polluting facilities, even if the proposed LAER determination has not gone through the SB456 process. Therefore, the SB 456 requirements do apply to BACT requirements for non-major polluting facilities, but do not apply to federal LAER determinations for major polluting facilities.

CLEAN FUEL GUIDELINES ~~REQUIREMENTS~~

In January 1988, the SCAQMD Governing Board adopted a Clean Fuels Policy that included a requirement to use clean fuels as part of BACT. The implementation of this policy is further described in Parts A and C of these guidelines.

Chapter 5 - Review of Staff BACT Determinations

New BACT determinations and guideline updates proposed by SCAQMD staff are subject to public notification requirements. In addition to allowing the public to comment on these items, the SCAQMD has established a BACT Scientific Review Committee (BACT SRC) to review and comment on technical matters of the proposals.

The SCAQMD has included provisions for an applicant to request a review of particular circumstances regarding a permit application and reconsideration of the BACT determination. Additional avenues are available to permit applicants for further review of staff BACT determinations through SCAQMD management, BACT Review Committee, Hearing Board, and the Governing Board.

BACT SCIENTIFIC REVIEW COMMITTEE (BACT SRC)

The BACT SRC was established as a standing committee by action of the SCAQMD Governing Board on September 8, 1995 to enhance the public participation process and include technical review and comments by a focused committee at periodic intervals, prior to the updates of the SCAQMD BACT Guidelines. A 30-day notice period applies for the BACT SRC and interested persons to review and comment on SCAQMD BACT determinations that result in BACT requirements that are more stringent than previously imposed. BACT SRC members, include but are not limited to, representatives from CARB, U.S. EPA, neighboring Air Pollution Control Districts (APCD), with the balance of the committee created by invitation of recognized experts from industry, public utilities, suppliers of air pollution control equipment and advocacy groups. Whenever a committee member resigns or is no longer able to serve, SCAQMD seeks out an appropriate replacement to join the committee. A list of current BACT SRC members can be accessed at:

www.aqmd.gov/home/permits/bact/scientific-review-committee/src-members.

The overall purpose of the BACT Scientific Review Committee (SRC) is to:

- Comment on proposed new and more stringent BACT determinations in permit applications under 30-day public review.
- Comment on proposed BACT listings for all parts of the BACT Guidelines.

Except for the above, the BACT SRC's purpose is not to comment on past permitting decisions or change them.

Specifically, the role of the BACT SRC is to review and comment in writing on the appropriateness of new BACT determinations under 30-Day public review. During this comment period, SCAQMD, State, and Federal required permit issuance timelines are still in effect. SCAQMD BACT staff will commit to sending the BACT

SRC newly proposed BACT listings at least seven days prior to the next scheduled BACT SRC meeting. Meetings will typically consist of a presentation by BACT Team (BACTTeam@aqmd.gov) staff of new BACT forms and technical data and a general discussion of the proposed BACT listings, as well as addressing any preliminary written comments received from the public and BACT SRC prior to the meeting. SCAQMD staff will respond in writing to preliminary comments about new BACT proposals within ~~two weeks~~thirty days of the subject BACT SRC meeting. New issues raised during the BACT SRC meetings regarding newly proposed BACT listings will be addressed at the subsequent BACT SRC meeting to allow time for SCAQMD staff to research the comments. SCAQMD Engineering and Compliance staff may also respond to specific issues raised at the following BACT SRC meeting.

In addition to newly proposed BACT listings, the BACT SRC will be tasked with reviewing and commenting on updates to the policy and procedure sections of the BACT Guidelines prior to the guidelines being presented to the SCAQMD Governing Board for approval.

MEETING WITH SCAQMD MANAGEMENT

SCAQMD management, starting with the Senior ~~Engineering~~ Manager of the permitting team, can consider unique and site-specific characteristics of an individual permit. The ~~allowance flexibility for considering~~ site-specific characteristics has been taken into account in these guidelines ~~designed into the guidelines~~ and can be reviewed with the manager of the section processing the permit. It is also possible to request review at the next level, with the Assistant Deputy Executive Officer of ~~Engineering and Compliance~~. The Senior ~~Engineering~~ Managers and the Assistant Deputy Executive Officers are ~~authorized~~empowered to make case-by-case decisions on an individual permit. Further review can be obtained through a meeting with the Deputy Executive Officer (DEO) of ~~Engineering and Compliance~~. Ultimately, all permitting decisions are the responsibility of the Executive Officer.

THE BACT REVIEW COMMITTEE

Beyond meetings with SCAQMD management, an applicant may also request, prior to permit issuance or denial, that the proposed BACT for an individual permit be reviewed by the BACT Review Committee (BRC). The BRC is composed of five senior-level SCAQMD officials - the DEO of Public Affairs; the DEO of Science and Technology Advancement; the DEO of ~~Engineering and Compliance~~; the DEO of Planning, Rule Development and Area Sources; and General Counsel. This committee can review pending individual applications and decide if the BACT determination is appropriate. The BRC can be accessed without any fee or legal representation, and will meet upon demand.

THE SCAQMD HEARING BOARD

After the permit is issued or denied, the applicant can seek further independent review of an individual BACT determination through the SCAQMD Hearing Board. In order to access this venue, the permit applicant would need to submit a petition and fee to appeal the final BACT determination by SCAQMD (once the permit is denied

or issued)⁸. The Hearing Board is an independent, quasi-judicial body composed of five members, who can review a permitting decision by the Executive Officer. In this venue, legal counsel represents the SCAQMD. Although not required, many petitioners choose to have legal counsel to represent their position.

THE SCAQMD GOVERNING BOARD

Any applicant may petition the SCAQMD Governing Board to review a pending application pursuant to SCAQMD Regulation XII and Health and Safety Code Section 40509. While tThe Governing Board has the authority to hear and consider any pending permit application, it has rarely done so. It is important to note that this action must be taken while the permit application is pending with staff. Once staff reaches its decision, the only avenue of appeal is through the Hearing Board and ultimately to court.

~~but this circumstance is extremely rare and cases has only agreed to consider two pending permit applications in the last sixteen years are typically handled during the prior stages of review.~~

⁸ Applicants must file an appeal petition with the Hearing Board within thirty days of the receipt of the permit or the notification of permit denial. See Rule 216 - *Appeals*, Regulation V - *Procedure Before the Hearing Board*, and Rule 303 - *Hearing Board Fees* for more information.

PART A - POLICY AND PROCEDURES FOR MAJOR POLLUTING FACILITIES

Chapter 1 - How is LAER Determined for Major Polluting Facilities?

This chapter explains the criteria used for determining LAER⁹ and the process for updating Part B of the BACT Guidelines for major polluting facilities.

CRITERIA FOR DETERMINING LAER FOR MAJOR POLLUTING FACILITIES

SCAQMD staff determines LAER requirements on a permit-by-permit basis based on the definition of LAER. In essence, LAER is the most stringent emission limit or control technology that is:

- found in a state implementation plan (SIP), or
- achieved in practice (AIP), or
- is technologically feasible and cost effective.

For practical purposes, at this time, nearly all SCAQMD LAER determinations will be based on AIP LAER because it is generally more stringent than LAER based on SIP, and because state law constrains SCAQMD from using the third approach, as such a determination must go through the SB456 process, which may take more time than allowed for the permit decision.

Based on Governing Board policy, LAER also includes a requirement for the use of clean fuels. Terms such as “achieved in practice” and “technologically feasible” have not been defined in the rule, so the purpose of this section is to explain the criteria SCAQMD permitting staff uses to make a LAER determination.

LAER Based on a SIP

The most stringent emission limit found in an approved state implementation plan (SIP) might be the basis for LAER. This means that the most stringent emission limit adopted by any state as a rule, regulation or permit¹⁰, and approved by USEPA, is eligible as a LAER requirement. No other parameters are required to be evaluated when this category is chosen. This does not include future emission limits that have not yet been implemented.

⁹ In order to distinguish between BACT for major polluting facilities and BACT for minor polluting facilities, this document uses the term LAER when referring to BACT for major polluting facilities.

¹⁰ Some states incorporate individual permits into their SIP as case-by-case Reasonably Available Control Technology requirements.

Achieved in Practice LAER

Regulatory Documents

An emission limit or control technology may be considered achieved in practice (AIP) 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
- USEPA RACT/BACT/LAER Clearinghouse
- Other districts' and states' BACT Guidelines
- BACT/LAER requirements in New Source Review permits issued by SCAQMD or other agencies

However, staff will check with the permitting authority (other than SCAQMD) on the status of the BACT or LAER requirement. If it is found that an emission limit is not being achieved or a control technology is not performing as expected in the equipment referenced in any of the above sources or in other equipment used as the basis for the BACT or LAER determination, then it will not be considered as AIP.

New Technologies/Emission Levels

New technologies and innovations of existing technologies occasionally evolve without a regulatory requirement, but still deserve consideration. They may have been voluntarily installed to reduce emissions, and may or may not be subject to an air quality permit or an emission limit. -Therefore, in addition to the above means of being determined as AIP, a control technology or emission limit may also be considered as AIP if it meets all of the following criteria:

Commercial Availability:

At least one vendor must offer this equipment for regular or full-scale operation in the United States. A performance warranty or guaranty must be available with the purchase of the control technology, as well as parts and service.

Reliability:

All control technologies must have been installed and operated reliably for at least six months. If the operator did not require the basic equipment to operate daily, then the equipment must have at least 183 cumulative days of operation. 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.

Effectiveness:

The control technology must be verified to perform effectively over the range of operation expected for that type of equipment. If the control technology will be allowed to operate at lesser effectiveness during certain modes of operation, then those modes of operation must be identified. The verification shall be based on a performance test or tests deemed to be acceptable by SCAQMD, when possible, or other performance data.

Technology Transfer

LAER is based on what is AIP for a category or class of source. However, USEPA guidelines require that technology that is determined to be AIP for one category of source be considered for transfer to other source categories. There are two types of potentially transferable control technologies: 1) exhaust stream controls, and 2) process controls and modifications. For the first type, technology transfer must be considered between source categories that produce similar exhaust streams. For the second type, technology transfer must be considered between source categories with similar processes.

Federal PM_{2.5} New Source Review and SCAQMD Rule 1325

PM_{2.5} NSR applies to a new major polluting facility, major modifications to a major polluting facility, and any modification to an existing facility that would constitute a major polluting facility. A major polluting facility would be a facility located in areas federally designated pursuant to 40 CFR 81.305 as non-attainment for PM_{2.5} for the South Coast Air Basin (SOCAB) which has actual emissions of, or the potential to emit, 4070 tons or more per year of PM_{2.5}, or its precursors for serious areas. For major modifications, LAER applies on a pollutant-specific basis to emissions of PM_{2.5} and its precursors, for which (1) the source is major, (2) the modification results in a significant increase, and (3) the modification results in a significant net emissions increase.

Significant means in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates¹¹:

Nitrogen oxides: 40 tons per year

Sulfur dioxide: 40 tons per year

PM_{2.5}: 10 tons per year

Ammonia: 40 tons per year¹²

A facility subject to the Federal PM_{2.5} NSR will be required to comply with the following:

- Lowest Achievable Emission Rate (LAER)
- Emission increases offset
- Certification of compliance with Clean Air Act; and
- Analysis conducted of benefits of the proposed project outweigh the environmental and social costs associated with that project.

Please refer to SCAQMD Rule 1325 for specific requirements.

¹¹ SCAQMD Rule 1325(b)(12), as amended on December 5, 2014

¹² Ammonia is being added to Rule 1325 as a precursor to PM_{2.5} pursuant to EPA's 2016 PM_{2.5} SIP implementation Rule. PAR 1325, scheduled for hearing in November 2016, would set a significance threshold of 40 tons per year for ammonia.

Cost in LAER Determinations

USEPA guidelines do not allow for routine consideration of the cost of control in LAER determinations. However, USEPA guidelines say that LAER is not considered achievable if the cost of control is so great that a new source could not be built or operated with a particular control technology. If a facility in the same or comparable industry already uses the control technology, then such use constitutes evidence that the cost to the industry is not prohibitive.

State law (H&SC 40405) also defines BACT as the lowest achievable emission rate, which is the more stringent of either (i) the most stringent emission limitation contained in the SIP, or (ii) the most stringent emission limitation that is achieved in practice. There is no explicit reference or prohibition to cost considerations, and the applicability extends to all permitted sources. SCAQMD rules implement both state BACT and federal LAER requirements simultaneously, and furthermore specify that SCAQMD BACT must meet federal LAER requirements for major polluting facilities.

If a proposed LAER determination results in extraordinary costs to a facility, the applicant may bring the matter to SCAQMD management for consideration as described in Overview, Chapter 6.

Clean Fuel Requirements

~~In January 1988, the SCAQMD Governing Board adopted a Clean Fuels Policy that included a requirement to use clean fuels as part of BACT/LAER. A clean fuel is one that produces air emissions equivalent to or lower than natural gas for NO_x, SO_x, ROG, and fine respirable particulate matter (PM₁₀). Besides natural gas, other clean fuels are methanol, liquid petroleum gas (LPG), and hydrogen. The burning of landfill, digester, refinery and other by-product gases is not subject to the clean fuels requirement. However, the combustion of these fuels must comply with other SCAQMD rules, including the sulfur content of the fuel.~~

~~The requirement of a clean fuel is based on engineering feasibility. Engineering feasibility considers the availability of a clean fuel and safety concerns associated with that fuel. Some state and local safety requirements limit the types of fuel, which can be used for emergency standby purposes. Some fire departments or fire marshals do not allow the storage of LPG near occupied buildings. Fire officials have, in some cases, vetoed the use of methanol in hospitals. If special handling or safety considerations preclude the use of the clean fuel, the SCAQMD has allowed the use of fuel oil as a standby fuel in boilers and heaters, and for emergency standby generators. The use of these fuels must meet the requirements of SCAQMD rules limiting NO_x and sulfur emissions.~~

Special Permitting Considerations

Although the most stringent, AIP LAER for a source category will most likely be the required LAER, SCAQMD staff may consider special technical circumstances that apply to the proposed equipment which may allow deviation from that LAER. The permit applicant should bring any pertinent facts to the attention of the SCAQMD permitting engineer for consideration.

Case-Specific Situations

SCAQMD staff may consider unusual equipment-specific and site-specific characteristics of the proposed project that would warrant a reconsideration of the LAER requirement for new equipment. Here are some examples of what may be considered.

Technical infeasibility of the control technology:

A particular control technology may not be required as LAER if the applicant demonstrates that it is not technically feasible to install and operate it to meet a specific LAER emission limitation in a specific permitting situation.

Operating schedule and project length:

If the equipment will operate much fewer hours per year than what is typical, or for a much shorter project length, it can affect what is considered "~~achieved in practice~~" AIP.

Availability of fuel or electricity:

Some LAER determinations may not be feasible if a project will be located in an area where natural gas or electricity is not available.

Process requirements:

Some LAER determinations specify a particular type of process equipment. SCAQMD staff may consider requirements of the proposed process equipment that would make the LAER determination not technically feasible.

Equivalency

The permit applicant may propose alternative means to achieve the same emission reduction as required by LAER. For example, if LAER requires a certain emission limit or control efficiency to be achieved, the applicant may choose any control technology, process modification, or combination thereof that can meet the same emission limit or control efficiency.

Super Clean-Compliant Materials

SCAQMD will accept the use of super ~~clean-compliant~~ materials in lieu of an add-on control device controlling volatile organic compound (VOC) emissions from coating operations. For example ~~at this time~~, if a permit applicant uses only surface coatings that ~~contain less than 5% VOC by weight~~ meet the super compliant material definition in SCAQMD Rule 109, an add-on control device would not be required for VOC LAER. This policy does not preclude any other LAER requirements for other contaminants.

Equipment Modifications

As a general rule, it is more difficult to retrofit existing equipment with LAER as a result of NSR modification when compared to a new source. The equipment being modified may not be compatible with some past LAER determinations that specify a particular process type. There may also be space restrictions that prevent installation of some add-on control technology.

Other Considerations

Although multiple process and control options may be available during the LAER determination process, considerations should be made for options that reduce the formation of air contaminants from the process, as well as ensuring that emissions are properly handled. In addition to evaluating the efficiency of the control stage, these additional considerations are needed to ensure that the system is capable of reducing or eliminating emissions from the facility on a consistent basis during the operational life of the equipment.-

Pollution Prevention

The Pollution Prevention Act of 1990 (42 U.S.C. §§13101-13109) established a national policy that pollution should be prevented or reduced at the source whenever feasible. In many cases, air pollution control is a process that evaluates contaminants at the exhaust of the system. Pollution prevention is the reduction or elimination of waste at the source by the modification of the production process. Pollution prevention measures may consist of the use of alternate or reformulated materials, a modification of technology or equipment, or improvement of energy efficiency changes that result in an emissions reduction. These measures should be considered as part of the LAER determination process if the measures will result in the elimination or reduction of emissions, but are not required to include projects which are considered to fundamentally redefine the source. New and different emissions created by a process or material change will also need to be considered as part of the LAER determination process, in contrast to the overall emissions reductions from the implementation of pollution prevention measures. U.S. EPA policy defined pollution prevention as source reduction and other practices that reduce or eliminate the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other resources, and protection of natural resources by conservation¹³. U.S. EPA further specifies that pollution prevention does not include recycling (except in-process recycling), energy recovery, treatment or disposal. For purposes of these BACT Guidelines, and to be consistent with federal definitions, source reduction and pollution prevention ~~shall~~ may include, but not be limited to, a consideration of the feasibility of:

- equipment or technology modifications,
- process or procedure modifications,
- reformulation or redesign of products,
- substitution of raw materials, or
- improvements in housekeeping, maintenance or inventory control,

that reduce the amount of air contaminants entering any waste stream or otherwise released into the environment, including fugitive emissions.

¹³ U.S. EPA Pollution Prevention Law and Policies (www.epa.gov/p2/pollution-prevention-law-and-policies#define)

Monitoring and Testing

In order to ensure that LAER determinations continue to meet their initial emission and efficiency standards, periodic or continuous parameter monitoring and testing requirements may be required implemented during the permitting process. Equipment and processes may experience some change over time, due to aging or operational methods of the equipment, which may affect emission rates or control efficiencies. In addition to other rule requirements, additional monitoring and testing requirements may need to focus on aspects directly related to the BACT determination, and may be made enforceable by permit conditions. Monitoring and testing requirements should be specific to characterize operating conditions (e.g. temperatures, pressures, flows, production rates) and measurement techniques when LAER is established to ensure clarity and consistency with the standard.

Capture Efficiency

An integral part of controlling air pollutants emitted from a process with add-on air pollution control equipment is capturing those emissions and directing them to the air pollution control device. Emissions which are designed to be collected by an exhaust system but are vented uncontrolled into the atmosphere can have a much greater impact than controlled emissions. When applicable, the evaluation of a process and its associated control equipment should address the qualification and quantification of capture efficiency. By addressing capture efficiency during LAER determinations, a standard can be established to evaluate the capture efficiency of other systems, as well as ensure that the capture efficiency is maintained consistently over time.

If applicable, LAER determinations may include the percentage capture efficiency and the methods and measurements (e.g. EPA Method 204, capture velocity measurements, design using ACGIH's Industrial Ventilation, static pressures) used to determine and verify it. For various circumstances, several SCAQMD rules (Table 4) already require an assessment of collection efficiency of an emission control system following EPA Method 204, EPA's "Guidelines for Determining Capture Efficiency", SCAQMD's "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency," or other methods approved by the Executive Officer, and are appropriate to include as LAER requirements. The capture efficiency for any LAER Determination shall be no less stringent than any applicable rule requirement. Other considerations that may affect capture, such as cross-drafts, thermal drafts and the volume of combustion products, should also be addressed during this process.

Table 4

SCAQMD Regulation XI and XIV Rules with Capture Efficiency Requirements or Considerations

- | | | | | |
|---------------|-----------------|-----------------|---------------|-----------------|
| • <u>1103</u> | • <u>1125</u> | • <u>1136</u> | • <u>1162</u> | • <u>1420.1</u> |
| • <u>1104</u> | • <u>1126</u> | • <u>1141</u> | • <u>1164</u> | • <u>1420.2</u> |
| • <u>1106</u> | • <u>1128</u> | • <u>1141.2</u> | • <u>1171</u> | • <u>1425</u> |
| • <u>1107</u> | • <u>1130</u> | • <u>1144</u> | • <u>1175</u> | • <u>1469</u> |
| • <u>1115</u> | • <u>1130.1</u> | • <u>1145</u> | • <u>1178</u> | • <u>1469.1</u> |
| • <u>1122</u> | • <u>1131</u> | • <u>1155</u> | • <u>1407</u> | |
| • <u>1124</u> | • <u>1132</u> | • <u>1156</u> | • <u>1420</u> | |

LAER APPLICATION CUT-OFF DATES

For applications submitted by major polluting facilities, LAER requirements will be determined based on information available up to the date the permit to construct is issued. This requirement allows interested parties to comment on possible technologies that could provide lower emissions.

Applications for a Registration Permit for equipment issued a valid Certified Equipment Permit (CEP), which is valid for one year, will only be required to comply with LAER as determined at the time the CEP was issued. However, SCAQMD staff will reevaluate the LAER requirements for the CEP upon ~~annual~~-renewal of the Title V permit. ~~CEP by the equipment manufacturer.~~

LAER UPDATE PROCESS

SCAQMD will update Section I – SCAQMD LAER/BACT Determinations of Part B of the BACT Guidelines on an ongoing basis with actual LAER determinations for SCAQMD permits issued to major polluting facilities. The process will depend on whether or not the LAER requirement is more stringent than previous SCAQMD LAER determinations for the same equipment category.

When SCAQMD permitting staff makes a LAER determination that is no more stringent than previous SCAQMD LAER determinations, the permitting team will issue the permit and forward information regarding this LAER determination to the BACT/~~NSR~~ Team.¹⁴ The BACT/~~NSR~~ Team will review this LAER determination with the BACT SRC prior to listing in the BACT Guidelines.

Whenever permitting staff makes a LAER determination that is more stringent than what SCAQMD has previously required as LAER, the permit to construct may be subject to a public review. In any event depending on Rule 212, ~~the~~ permitting team will forward the preliminary LAER determination to the BACT/~~NSR~~ Team, who will prepare and send a public notice of the preliminary determination to the BACT SRC, potentially interested persons, and anyone else requesting the information. Staff will consider all comments filed during the 30-day review period before making a permit decision. Staff will make every effort to conduct the public review consistent with the requirements of state law. However, if the 30-day review period conflicts with the deadline of the Permit Streamlining Act¹⁵ for issuing the permit, the permit will be issued in accordance with state law. The 30-day public review may also be done in parallel with other public reviews mandated by *Rule 212 - Standards for Approving Permits and Issuing Public Notice or Regulation XXX - Title V Permits* in applicable cases.

On a ~~quarterly~~-periodic basis, the SCAQMD BACT/~~NSR~~ Team will provide standing status reports to the SCAQMD Governing Board's Stationary Source Committee and to the Governing Board.

¹⁴ To reduce the burden on SCAQMD of preparing hundreds of LAER Determination Forms each month, forms will not be prepared for routine LAER determinations after Part B, Section I of the guidelines has sufficient entries to demonstrate typical LAER requirements.

¹⁵ The requirements of the Permit Streamlining Act are also found in SCAQMD's Rule 210.

In summary, as technology advances, many categories in the SCAQMD's BACT Guidelines will be updated with new listings. This on-going process will reflect new lower emitting technologies not previously identified in the Guidelines.

CLEAN FUEL GUIDELINES REQUIREMENTS

In January 1988, the SCAQMD Governing Board adopted a Clean Fuels Policy that included a requirement to use clean fuels as part of BACT/LAER. A clean fuel is one that produces air emissions equivalent to or lower than natural gas for NO_x, SO_x, ROG, and fine respirable particulate matter (PM₁₀). Besides natural gas, other clean fuels are methanol, liquid petroleum gas (LPG), and hydrogen and electricity. Industrial electrification (e.g., replacement of I.C. Engines, etc.) is Utilization of zero and near-zero emission technologies are also integrated into the Clean Fuels Policy. The burning of landfill, digester, refinery and other by-product gases is not subject to the clean fuels requirement. However, the combustion of these fuels must comply with other SCAQMD rules, including the sulfur content of the fuel.

The requirement of a clean fuel is based on engineering feasibility. Engineering feasibility considers the availability of a clean fuel and safety concerns associated with that fuel. Some state and local safety requirements limit the types of fuel, which can be used for emergency standby purposes. Some fire departments or fire marshals do not allow the storage of LPG near occupied buildings. Fire officials have, in some cases, vetoed the use of methanol in hospitals. If special handling or safety considerations preclude the use of the clean fuel, the SCAQMD has allowed the use of fuel oil as a standby fuel in boilers and heaters, fire suppressant pump engines and for emergency standby generators. The use of these fuels must meet the requirements of SCAQMD rules limiting NO_x and sulfur emissions.

Chapter 2 - How to Use Part B of the BACT Guidelines

This chapter explains the LAER information found in Part B - LAER/BACT Determinations for Major Polluting Facilities. Part B is a listing of LAER/BACT determinations for major polluting facilities contained in SCAQMD and other air pollution control agencies' permits, and data on new and emerging technologies. These LAER/BACT determinations and data are guides and will be used, along with other information, to determine LAER as outlined in Chapter 1. For a listing of equipment types, refer to the ~~Index~~ List of Equipment Categories. LAER determination for equipment not found in Part B of the BACT Guidelines is done according to the process outlined in Chapter 1.

GENERAL

Part B is divided into three sections. Section I – SCAQMD LAER/BACT Determinations, contains information on LAER/BACT determinations contained in permits issued by SCAQMD, with permit limits based on achieved in practice technology. Section II – Non-AQMD LAER/BACT Determinations, lists LAER/BACT determinations contained in other air pollution control agencies' permits or BACT Guidelines, with permit limits based on achieved in practice technology. Section III – Other Technologies, consists of information on technologies which have been achieved in practice but are not reflected in a permit limit, and information on emerging technologies or emission limits which have not yet been achieved in practice (i.e., do not qualify as LAER). All three sections are subdivided based on the attached ~~Index~~ List of Equipment Categories. Within each category, the LAER/BACT determinations will be listed in order of stringency.

Each listing includes the following information, in addition to other information detailing the description and operation of the equipment ~~subdivided into the following six sections:~~

- Basic Equipment¹⁶

This provides information on the type, model, style, manufacturer, function, and cost of the basic equipment. It also lists applicable SCAQMD Regulation XI rules. Cost data are generally obtained from the SCAQMD application forms, manufacturer or owner/operator, and are not verified.

- Basic Equipment Rating/Size

This identifies the size, dimensions, capacity, or rating of the basic equipment. It also provides additional information such as fuel type for combustion equipment, weight of parts cleaned per load for degreasers, and the number and size of blowers for spray booths.

- Company Information

This identifies the contact person and owner/operator of the equipment, along with telephone numbers.

¹⁶ Basic equipment is the process or equipment, which emits the air contaminant for which BACT is being determined.

- Permit Information

This identifies the permitting agency and the name and telephone number of the agency's contact person. It also provides information on Permits to Construct/Operate. The SCAQMD is always the issuing agency for LAER determinations listed in Section I.

- Emission Information

This identifies the actual permit limits and LAER/BACT requirements set forth by the issuing agency for the equipment being evaluated. It provides technical, performance, and cost data on the control technology used to achieve the permit limit and the LAER/BACT requirements.

- Comment

This provides additional information relevant to basic equipment and control technology assessment, or further explains or clarifies the LAER/BACT determination.

The above ~~six sections~~ information will enable permit applicants to assess the applicability of each LAER/BACT determination to their particular equipment.

The LAER requirements usually found in ~~section 5A~~ of the LAER Determination listings are in the form of:

- an emission limit;
- a control technology;
- equipment requirements; or
- a combination of the last two-

If the requirement is an emission limit, the applicant may choose any control technology to achieve the emission limit. The SCAQMD prefers to set an emission limit as LAER because it allows an applicant the most flexibility in reducing emissions. If control technology and/or equipment requirements are the only specified LAER, then either emissions from the equipment are difficult to measure or it was not possible to specify an emission limit that applies to all equipment within the category. Where possible, an emission limit or control efficiency condition will be specified on the permit along with the control technology or equipment requirements to ensure that the equipment is properly operated with the lowest emissions achievable.

HOW TO DETERMINE LAER

The Part B LAER determinations are only examples of LAER determinations for equipment that have been issued permits or that have been demonstrated in practice. As described in Chapter 1, LAER is determined on a case-by-case basis. To find out what LAER is likely to be for a particular equipment, the applicant should review the Part B LAER determinations found at the SCAQMD website www.aqmd.gov/home/permits/bact ~~http://www.aqmd.gov/bact~~. The CAPCOA Clearinghouse maintained by the California Air Resources Board and the USEPA RACT/BACT/LAER Clearinghouse should also be reviewed. These compendiums contain information from other districts, local agencies, and states that may not be included in the SCAQMD BACT Guidelines. Finally, the SCAQMD permitting staff may be contacted to discuss LAER prior to submitting a permit application.

As described in Chapter 1, the permit applicant should bring to the attention of the SCAQMD permitting engineer any special permitting considerations that may affect the LAER determination.

PART B - LAER/BACT DETERMINATIONS FOR MAJOR POLLUTING FACILITIES

Part B of the BACT Guidelines is maintained on the SCAQMD Internet website at <http://www.aqmd.gov/home/permits/bact/guidelines> ~~http://www.aqmd.gov/bact~~.

PART C - POLICY AND PROCEDURES FOR NON-MAJOR POLLUTING FACILITIES

Chapter 1 - How Is MSBACT Determined for Minor Polluting Facilities?

This chapter explains the definitions of BACT for non-major polluting facilities (minor source BACT or MSBACT) found in SCAQMD rules and state law and how they are interpreted. It also explains the criteria used for initializing the Part D MSBACT Guidelines and the process for updating the MSBACT Guidelines.

INITIALIZATION OF PART D OF THE MSBACT GUIDELINES

Part D of the MSBACT Guidelines specifies the MSBACT requirements for all of the commonly permitted categories of equipment. (See Chapter 2 for a full explanation of Part D).

~~The initial~~The initial listings in Part D of the MSBACT Guidelines reflected the current BACT determinations at the time for sources at non-major polluting facilities as of April 2000. ~~This~~These initialization ~~does~~did not represent new requirements but rather ~~memorializes~~memorialized ~~current~~ BACT determinations and emission levels at that time. This initialization ~~is~~was necessary to benchmark the transition from federal LAER to MSBACT for non-major polluting facilities. The control technologies and emission levels identified ~~initially will apply~~applied to any non-major source subject to NSR until the Guideline ~~is~~was updated or ~~becomes~~became out of date. The dates listed on the BACT determinations in Part D refer to the date of adoption of the determination. The dates listed do not grandfather the equipment from complying with any new requirements or limits that are implemented after the approval of a BACT determination¹⁷.

CRITERIA FOR NEW MSBACT AND UPDATING PART D

MSBACT requirements are determined for each source category based on the definition of MSBACT. In essence, MSBACT is the most stringent emission limit or control technology that is:

- found in a state implementation plan (SIP), or
- achieved in practice (AIP), or
- is technologically feasible and cost effective.

For practical purposes, nearly all SCAQMD MSBACT determinations will be based on AIP BACT because it is generally more stringent than MSBACT based on SIP, and because state law contains some constraints on SCAQMD from using the third approach. For minor polluting facilities, MSBACT will also take economic feasibility into account.

Based on Governing Board policy, MSBACT also includes a requirement for the use of clean fuels.

Terms such as “achieved in practice” and “technologically feasible” (including technology transfer) have not been defined in the rule, so one of the purposes of this

¹⁷ SCAQMD Rule 1303(a)(3)

section is to explain the criteria SCAQMD permitting staff uses to make a MSBACT determination.

MSBACT Based on a SIP

The most stringent emission limit found in an approved state implementation plan (SIP) might be the basis for MSBACT. This means that the most stringent emission limit adopted by any state as a rule, regulation or permit¹⁸ and approved by USEPA is eligible as a MSBACT requirement. This does not include future emission limits that have not yet been implemented.

Achieved in Practice MSBACT

MSBACT may also be based on the most stringent control technology or emission limit that has been achieved in practice (AIP) for a category or class of source. AIP control technology may be in operation in the United States or any other part of the world. SCAQMD permitting engineers will review the following sources to determine what is the most stringent AIP MSBACT:

- LAER/BACT determinations in Part B of the BACT Guidelines
- CAPCOA BACT Clearinghouse
- USEPA RACT/BACT/LAER Clearinghouse
- Other districts' and states' BACT Guidelines
- Permits to operate issued by SCAQMD or other agencies
- Any other source for which the requirements of AIP can be demonstrated

Achieved in Practice Criteria

A control technology or emission limit found in any of the references above may be considered as AIP if it meets all of the following criteria:

Commercial Availability:

At least one vendor must offer this equipment for regular or full-scale operation in the United States. A performance warranty or guaranty must be available with the purchase of the control technology, as well as parts and service.

Reliability:

The control technology must have been installed and operated reliably for at least twelve months on a comparable commercial operation. If the operator did not require the basic equipment to operate continuously, such as only eight hours per day and 5 days per week, then the control technology must have operated whenever the basic equipment was in operation during the twelve months.

Effectiveness:

The control technology must be verified to perform effectively over the range of operation expected for that type of equipment. If the control technology will be allowed to operate at lesser effectiveness during certain modes of operation, then

¹⁸ Some states incorporate individual permits into their SIP as case-by-case Reasonably Available Control Technology requirements.

those modes must be identified. The verification shall be based on a District-approved performance test or tests, when possible, or other performance data.

Cost Effectiveness:

The control technology or emission rate must be cost effective for a substantial number of sources within the class or category. Cost effectiveness criteria are described in detail in a later section. Cost criteria are not applicable to an individual permit but rather to a class or category of source.

Technology Transfer

MSBACT is based on what is AIP for a category or class of source. However, technology transfer must also be considered across source categories, in view of the other AIP criteria. There are two types of potentially transferable control technologies: 1) exhaust stream controls, and 2) process controls and modifications. For the first type, technology transfer must be considered between source categories that produce similar exhaust streams. For the second type, process similarity governs the technology.

Requirements of Health & Safety Code Section 40440.11

Senate Bill 456 (Kelley) was chartered into state law in 1995 and became effective in 1996. H&SC Section 40440.11 specifies the criteria and process that must be followed by the SCAQMD to establish new MSBACT limits for source categories listed in the MSBACT Guidelines. In general, the provisions require:

- Considering only control options or emission limits to be applied to the basic production or process equipment;
- Evaluating cost to control secondary pollutants;
- Determining the control technology is commercially available;
- Determining the control technology has been demonstrated for at least one year on a comparable commercial operation;
- Calculating total and incremental cost-effectiveness;
- Determining that the incremental cost-effectiveness is less than SCAQMD's established cost-effectiveness criteria;
- Putting BACT Guideline revisions on a regular meeting agenda of the SCAQMD Governing Board;
- Holding a Board public hearing prior to revising maximum incremental cost-effectiveness values;
- Keeping a BACT determination made for a particular application unchanged for at least one year from the application deemed complete date; and
- Considering a longer period for a major capital project (> \$10,000,000)

After consultation with the affected industry, the CARB, and the U.S. EPA, and considerable legal review and analysis, staff concluded that the process specified in SB 456 to update the BACT Guidelines should be interpreted to apply only if the SCAQMD proposes to make BACT more stringent than LAER or where LAER is inapplicable (e.g. in establishing minor source BACT). Staff intends to incorporate

the spirit and intent of the SB 456 provisions into the MSBACT update process, as explained below, because non-major polluting facilities are no longer subject to federal LAER, according to Regulation XIII. Therefore, MSBACT may consider cost as specified herein.

COST EFFECTIVENESS METHODOLOGY

Cost effectiveness is measured in terms of control costs (dollars) per air emissions reduced (tons). If the cost per ton of emissions reduced is less than the maximum required cost effectiveness, then the control method is considered to be cost effective. This section also discusses the updated maximum cost effectiveness values, and those costs, which can be included in the cost effectiveness evaluation.

There are two types of cost effectiveness: average and incremental. Average cost effectiveness considers the difference in cost and emissions between a proposed MSBACT and an uncontrolled case. On the other hand, incremental cost effectiveness looks at the difference in cost and emissions between the proposed MSBACT and alternative control options.

Applicants may also conduct a cost effectiveness evaluation to support their case for the special permit considerations discussed in Chapter 2.

Discounted Cash Flow Method

The discounted cash flow method (DCF) is used in the MSBACT Guidelines. This is also the method used in SCAQMD the 1999 Air Quality Management Plan. The DCF method calculates the present value of the control costs over the life of the equipment by adding the capital cost to the present value of all annual costs and other periodic costs over the life of the equipment. A real interest rate^{19*} of four percent, and a 10-year equipment life is used. The cost effectiveness is determined by dividing the total present value of the control costs by the total emission reductions in tons over the same 10-year equipment life.

Maximum Cost Effectiveness Values

The MSBACT maximum cost effectiveness values, shown in Table 45, are based on a DCF analysis with a 4% real interest rate.

Table 45: Maximum Cost Effectiveness Criteria ~~(Second Quarter 2003)~~ (1st 2nd Quarter 2016)

Pollutant	Average (Maximum \$ per Ton)	Incremental (Maximum \$ per Ton)
ROG	<u>28,370</u> 460 <u>20,200</u>	<u>85,100</u> 380 <u>60,600</u>
NOx	<u>26,820</u> 910 <u>19,100</u>	<u>80,320</u> 590 <u>57,200</u>
SOx	<u>14,180</u> 230 <u>10,100</u>	<u>42,550</u> 690 <u>30,300</u>

¹⁹ The real interest rate is the difference between market interest rates and inflation, which typically remains constant at four percent.

* The real interest rate is the difference between market interest rates and inflation, which typically remains constant at four percent.

Pollutant	Average (Maximum \$ per Ton)	Incremental (Maximum \$ per Ton)
PM ₁₀	<u>6,324</u> 04,500	<u>18,828</u> 013,400
CO	<u>560</u> 400	<u>1,620</u> 1,150

The cost criteria are based on those adopted by the SCAQMD Governing Board in the 1995 BACT Guidelines, adjusted to ~~first~~ second quarter ~~2016~~ 2003-dollars using the Marshall and Swift Equipment Cost Index. Cost effectiveness analyses should use these figures adjusted to the latest Marshall and Swift Equipment Cost Index. Contact the BACT Team for current figures, which is published monthly in Chemical Engineering.

Top-Down Cost Methodology

The SCAQMD uses the top-down approach for evaluating BACT and cost effectiveness. This means that the best control method, with the highest emission reduction, is first analyzed. If it is not cost effective, then the second-best control method is evaluated for cost effectiveness. The process continues until a control method is found to be cost-effective. This process provides a mechanism for all practical and potential control technologies to be evaluated. As part of the permitting process, the applicant is responsible for preparing the BACT analysis, and submitting it to the District for review and approval.

The top-down process consists of five steps:

1. Identify all control technologies

Identify all possible air pollution control options for the emissions unit. In addition to add-on control, control options may include production process methods and techniques. Innovative, transferable technologies, and LAER technologies should also be identified.

2. Eliminate technically infeasible options

The technologies identified in Step 1 should be evaluated for technical feasibility. Elimination of any of the technologies identified in Step 1 should be well-documented and based on physical, chemical and engineering principles.

3. Rank remaining control technologies

Based on overall control effectiveness, all remaining technically feasible control options should be ranked for the pollutants under review. A list should be generated for each pollutant subject to the BACT analysis. This list should include control efficiencies, emission rates, emission reductions, environmental impacts and energy impacts. Environmental impacts may include multimedia impacts and the impacts of the control option on toxic emissions.

4. Evaluation

Evaluate the most effective controls and document the results. For each option, the applicant is responsible for objectively discussing each of the beneficial and adverse impacts. Typically, the analysis should focus on the direct impacts. Calculations for

both incremental and average cost effectiveness should be completed during this step. The MSBACT option must be cost effective for both analyses. In the event that the top option from Step 4 is ruled out after the impacts and cost effectiveness are evaluated, the decision and reasoning should be fully documented. The next most stringent alternative from Step 4, should then be evaluated.

5. Select BACT

The most effective control option not eliminated in Step 4 is proposed as BACT for the pollutant and permit unit and presented to the District for review and approval.

~~The SCAQMD uses the top down approach for evaluating cost effectiveness. This means that the best control method, with the highest emission reduction, is first analyzed. If it is not cost effective, then the second best control method is evaluated for cost effectiveness. The process continues until a control method is found to be cost effective.~~

~~AQMD staff will calculate both incremental and average cost effectiveness. The new MSBACT must be cost effective based on both analyses.~~

Costs to Include in a Cost Effectiveness Analysis

Cost effectiveness evaluations consider both capital and operating costs. Capital cost includes not only the price of the equipment, but the cost for shipping, engineering and installation. Operating or annual costs include expenditures associated with utilities, labor and replacement costs. Finally, costs are reduced if any of the materials or energy created by the process result in cost savings. These cost items are shown in Table 56. Methodologies for determining these values are given in documents prepared by USEPA through their Office of Air Quality Planning and Standards (QAQPS-EPA Air Pollution Control Cost Manual, 4th-Sixth Edition, 2002, USEPA 450452/3B-9002-006-001 and Supplements).

The cost of land will not be considered because 1) add-on control equipment usually takes up very little space, 2) add-on control equipment does not usually require the purchase of additional land, and 3) land is non-depreciable and has value at the end of the project. In addition, the cost of controlling secondary emissions and cross-media pollutants caused by the primary MSBACT requirement should be included in any required cost effectiveness evaluation of the primary MSBACT requirement.

Table 56: Cost Factors

<u>Total Capital Investment</u>	
<u>Purchased Equipment Cost</u> Control Device Ancillary (including duct work) Instrumentation Taxes Freight	<u>Indirect Installation Costs</u> Engineering Construction and Field Expenses Start-Up Performance Tests Contingencies
<u>Direct Installation Cost</u> Foundations and Supports Handling and Erection Electrical Piping Insulation Painting	
<u>Total Annual Cost</u>	
<u>Direct Costs</u> Raw Materials Utilities - Electricity - Fuel - Steam - Water - Compressed Air Waste Treatment/Disposal Labor - Operating - Supervisory - Maintenance Maintenance Materials Replacement Parts	<u>Indirect Costs</u> Overhead Property Taxes Insurance Administrative Charges <u>Recovery Credits</u> Materials Energy

CLEAN FUEL GUIDELINES REQUIREMENTS

In January 1988, the SCAQMD Governing Board adopted a Clean Fuels Policy that included a requirement to use clean fuels as part of BACT. A clean fuel is one that produces air emissions equivalent to or lower than natural gas for NO_x, SO_x, ROG, and fine respirable particulate matter (PM₁₀). Besides natural gas, other clean fuels are ~~methanol~~, liquid petroleum gas (LPG), ~~and hydrogen and electricity~~. Industrial electrification (e.g., replacement of I.C. Engines, etc.) is Utilization of zero and near-zero emission technologies are also integrated into the Clean Fuels Policy. The burning of landfill, digester, refinery and other by-product gases is not subject to the

clean fuels requirement ~~as they are considered industry~~. However, the combustion of these fuels must comply with other SCAQMD rules, including the sulfur content of the fuel.

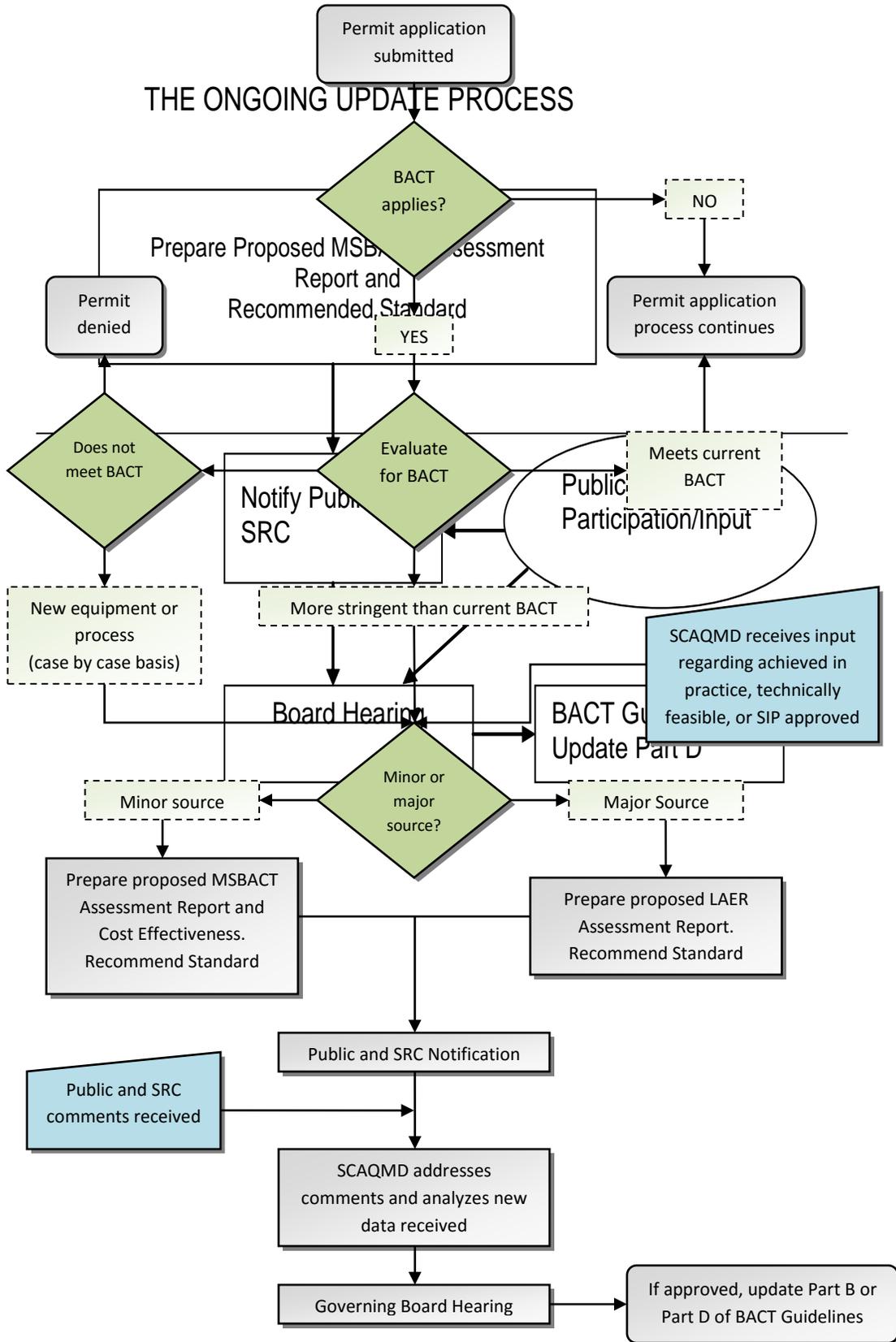
The requirement of a clean fuel is based on engineering feasibility. Engineering feasibility considers the availability of a clean fuel and safety concerns associated with that fuel. Some state and local safety requirements limit the types of fuel, which can be used for emergency standby purposes. Some fire departments or fire marshals do not allow the storage of LPG near occupied buildings. Fire officials have, in some cases, vetoed the use of methanol in hospitals. If special handling or safety considerations preclude the use of the clean fuel, the SCAQMD has allowed the use of fuel oil as a standby fuel in boilers and heaters, fire suppressant pump engines and for emergency standby generators. The use of these fuels must meet the requirements of SCAQMD rules limiting NO_x and sulfur emissions. In addition, the Clean Fuel requirements for MSBACT are subject to the provisions of California Health and Safety Code Section 40440.11.

BACT UPDATE PROCESS

As technology advances, the SCAQMD's MSBACT Part D Guidelines will be updated. Updates will include revisions to the guidelines for existing equipment categories, as well as new guidelines for new categories.

The MSBACT Guidelines will be revised based on the criteria outlined in the previous sections. Once a more stringent emission limit or control technology has been reviewed by staff and is determined to meet the criteria for MSBACT, it will be reviewed through a public process. The process is shown schematically in Figure 2. The public will be notified and the BACT Scientific Review Committee (SRC) will have an opportunity to comment. Following the public process and comment period, the guidelines will be presented to the Governing Board for approval at a public hearing, prior to updates of the MSBACT Guidelines, Part D.

Figure 2: The Ongoing BACT Update Process



Chapter 2 - How to Use Part D of the MSBACT Guidelines

This chapter explains the MSBACT information found in Part D - MSBACT Guidelines. The Guidelines in Part D should be used to determine MSBACT for non-major polluting facilities. For a listing of equipment, refer to the Part D Table of Contents. Determination of MSBACT for equipment not found in Part D of the MSBACT Guidelines is also explained.

GENERAL

Part D includes MSBACT Guidelines for more than 100 categories of equipment commonly processed by SCAQMD. Some guidelines are further subdivided by equipment size, rating, type or the material used, as appropriate.

The MSBACT requirements are in the form of:

- 1) an emission limit;
- 2) a control technology;
- 3) equipment requirements; or
- 4) a combination of the last two.

If the requirement is an emission limit, the applicant may choose any control technology to achieve the emission limit. The SCAQMD prefers to set an emission limit as MSBACT because it allows an applicant the most flexibility in reducing emissions.

If a control technology and/or equipment requirements are the only specified MSBACT, then either emissions from the equipment are difficult to measure or it was not possible to specify an emission limit that applies to all equipment within the category. Where possible, an emission limit or control efficiency condition will be specified in the permit along with the control technology or equipment requirements to ensure that the equipment is properly operated with the lowest emissions achievable. An applicant may still propose to use other ways to achieve the same or better emission reduction than the specified MSBACT.

MSBACT is the control technology or emission limit given in Part D for the basic equipment or process being evaluated, unless the guideline is out of date, or there are special permitting conditions, or the equipment is not identified in Part D. In those cases, the procedures described in the following sections will be used to determine MSBACT. Applicants or other interested parties are encouraged to contact the SCAQMD permitting staff if there are any questions about MSBACT.

SPECIAL PERMITTING CONSIDERATIONS

Although the most stringent, AIP BACT for a source category will most likely be the required MSBACT, SCAQMD staff may consider special technical

circumstances that apply to the proposed equipment which may allow deviation from that MSBACT. The permit applicant should bring any pertinent facts to the attention of the SCAQMD permitting engineer for consideration.

Case-Specific Situations

SCAQMD staff may consider unusual equipment-specific and site-specific characteristics of the proposed project that would warrant a reconsideration of the MSBACT requirement for new equipment.

Technical infeasibility of the control technology:

—A particular control technology may not be required as MSBACT if the applicant demonstrates that it is not technically feasible to install and operate it to meet a specific MSBACT emission limitation in a specific permitting situation.

Operating schedule and project length:

If the equipment will operate much fewer hours per year than what is typical, or for a much shorter project length, it can affect what is considered “AIP”.

Availability of fuel or electricity:

Some MSBACT determinations may not be feasible if a project will be located in an area where natural gas or electricity is not available.

Process requirements:

Some MSBACT determinations specify a particular type of process equipment. SCAQMD staff may consider requirements of the proposed process equipment that would make the MSBACT determination not technically feasible.

Equivalency

The permit applicant may propose alternative means to achieve the same emission reduction as required by BACT. For example, if BACT requires a certain emission limit or control efficiency to be achieved, the applicant may choose any control technology, process modification, or combination thereof that can meet the same emission limit or control efficiency.

Super Clean-Compliant Materials

SCAQMD will accept the use of super clean-compliant materials in lieu of an add-on control device controlling volatile organic compound (VOC) emissions from coating operations. For example-at this time, if a permit applicant uses only surface coatings that meet the super compliant material definition in SCAQMD Rule 109 ~~contain less than 5% VOC by weight~~, it may qualify as VOC MSBACT. This policy does not preclude any other MSBACT requirement for other contaminants.

Equipment Modifications

As a general rule, it is more difficult to retrofit existing equipment with MSBACT as a result of NSR modification when compared to a new source. The equipment being modified may not be compatible with some past MSBACT

determinations that specify a particular process type. There may also be space restrictions that prevent installation of some add-on control technology.

Other Considerations

Although multiple process and control options may be available during the MSBACT determination process, considerations should be made for options that reduce the formation of air contaminants from the process, as well as ensuring that emissions are properly handled. In addition to evaluating the efficiency of the control stage, these additional considerations are needed to ensure that the system is capable of reducing or eliminating emissions from the facility on a consistent basis during the operational life of the equipment. Measures listed in this section for MSBACT are subject to the requirements of California Health and Safety Code Section 40440.11.

Pollution Prevention

The Pollution Prevention Act of 1990 (42 U.S.C. §§13101-13109) established a national policy that pollution should be prevented or reduced at the source whenever feasible. In many cases, air pollution control is a process that evaluates contaminants at the exhaust of the system. Pollution prevention is the reduction or elimination of waste at the source by the modification of the production process. Pollution prevention measures may consist of the use of alternate or reformulated materials, a modification of technology or equipment, or improvement of energy efficiency changes that result in an emissions reduction. These measures should be considered as part of the MSBACT determination process if the measures will result in the elimination or reduction of emissions, but are not required to include projects which are considered to fundamentally redefine the source. New and different emissions created by a process or material change will also need to be considered as part of the MSBACT determination process, in contrast to the overall emissions reductions from the implementation of pollution prevention measures. U.S. EPA policy defined pollution prevention as source reduction and other practices that reduce or eliminate the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other resources, and protection of natural resources by conservation²⁰. U.S. EPA further specifies that pollution prevention does not include recycling (except in-process recycling), energy recovery, treatment or disposal. For purposes of these BACT Guidelines, and to be consistent with federal definitions, source reduction and pollution prevention shall may include, but not be limited to, consideration of the feasibility of:

- equipment or technology modifications,
- process or procedure modifications,
- reformulation or redesign of products,
- substitution of raw materials, or
- improvements in housekeeping, maintenance or inventory control,

²⁰ U.S. EPA Pollution Prevention Law and Policies (www.epa.gov/p2/pollution-prevention-law-and-policies#define)

that reduce the amount of air contaminants entering any waste stream or otherwise released into the environment, including fugitive emissions.

Monitoring and Testing

In order to ensure that MSBACT determinations continue to meet their initial emission and efficiency standards, periodic or continuous parameter monitoring and testing requirements may be implemented required during the permitting process. Equipment and processes may experience some change over time, due to aging or operational methods of the equipment, which may affect emission rates or control efficiencies. In addition to other rule requirements, additional monitoring and testing requirements may need to focus on aspects directly related to the MSBACT determination, and may be made enforceable by permit conditions. Monitoring and testing requirements should be specific to characterize operating conditions (e.g. temperatures, pressures, flows, production rates) and measurement techniques when MSBACT is established to ensure clarity and consistency with the standard.

Capture Efficiency

An integral part of controlling air pollutants emitted from a process with add-on air pollution control equipment is capturing those emissions and directing them to the air pollution control device. Emissions which are designed to be collected by an exhaust system but are vented uncontrolled into the atmosphere can have a much greater impact than controlled emissions. When applicable, the evaluation of a process and its associated control equipment should address the qualification and quantification of capture efficiency. By addressing capture efficiency during MSBACT determinations, a standard can be established to evaluate the capture efficiency of other systems, as well as ensure that the capture efficiency is maintained consistently over time.

If applicable, MSBACT determinations may include the percentage capture efficiency and the methods and measurements (e.g. EPA Method 204, capture velocity measurements, design using ACGIH's Industrial Ventilation, static pressures) used to determine and verify it. For various circumstances, several SCAQMD rules (see Table 5, Part A, Chapter 1) already require an assessment of collection efficiency of an emission control system following EPA Method 204, EPA's "Guidelines for Determining Capture Efficiency", SCAQMD's "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency," or other methods approved by the Executive Officer, and are appropriate to include as BACT requirements. The capture efficiency for any MSBACT Determination shall be no less stringent than any applicable rule requirement. Other considerations that may affect capture, such as cross-drafts, thermal drafts and the volume of combustion products, should also be addressed during this process.

MSBACT Determinations Should the Guidelines Become Out of Date

Should the MSBACT Guideline Part D become out of date with state BACT requirements or permits issued for similar equipment in other parts of the state,

staff will evaluate permits consistent with the definition of BACT considering technical and economic criteria as required by Rule 1303 (a) and Health & Safety Code Section 40405. The technical and economic factors to be considered are those identified in Chapter 1.

BACT APPLICATION CUT-OFF DATES

These guidelines apply to all non-major polluting facility applications deemed complete subsequent to SCAQMD Governing Board adoption of the Regulation XIII amendments in 2000.

Applications for a Registration Permit for equipment issued a valid Certified Equipment Permit (CEP), which is valid for one year, will only be required to comply with MSBACT as determined at the time the CEP was issued. However, SCAQMD staff will reevaluate the MSBACT requirements for the CEP upon annual renewal of the CEP by the equipment manufacturer.

PART D - BACT GUIDELINES FOR NON-MAJOR POLLUTING FACILITIES

Part D of the BACT Guidelines is published as a separate document.

PART E – POLICY AND PROCEDURES
FOR FACILITIES SUBJECT TO
PREVENTION OF SIGNIFICANT
DETERIORATION FOR GREENHOUSE
GASES

Chapter 1 - GHG BACT

This chapter explains the requirements of greenhouse gases (GHG) BACT regulations according to EPA, describes the Top-Down Process, shows how to calculate GHG emissions and explains the Prevention of Significant Deterioration (PSD) Applicability for GHGs for new sources as well as modified sources. Currently, the Tailoring Rule is undergoing a revision to address the U.S. Supreme Court decision in *Utility Air Regulatory Group v. Environmental Protection Agency*, 134 S. Ct. 2427 (2014)²¹. The guidance in this chapter is applicable to the EPA requirements in place as of the date of these guidelines, and takes into consideration the U.S. Supreme Court decision in *Utility Air Regulatory Group v. Environmental Protection Agency*, 134 S. Ct. 2427 (2014)²², as well as SCAQMD Rule 1714.

BACKGROUND

EPA has found that GHG, made of up of six combined compounds, constitute air pollution that endanger public health and welfare. EPA's adopted requirements for GHG under 40 CFR 52.21 Tailoring Rule was issued in May 2010, which were revised in October 2015, to establishing a way to permit GHG emissions under PSD and Title V. Through this rule, permitting focused on the major industrial sources, which emit nearly 70 percent of the greenhouse gas pollution from stationary sources. At this time, smaller businesses and sources are not be subject to these requirements.

The requirements of this rule apply only to GHG as defined by EPA as a total group of six GHG which are: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF₆). All other attainment air contaminants, as defined in SCAQMD Rule 1702 subdivision (a), shall be regulated for the purpose of PSD. PSD is not applicable to air contaminants designated as nonattainment status.

PERMITTING GUIDANCE FOR GHG

EPA's "PSD and Title V Permitting Guidance for Greenhouse Gases" provides the basic information that permit writers and applicants need to address GHG emissions in permits. Although this guidance was issued prior to the revision of 40 CFR 52.21 in 2015, there are parts still applicable to the current requirements. The applicable parts of the guidance document are summarized in these Guidelines. The guidance:

- applies long-standing PSD and Title V permitting requirements and processes to GHG;
- reiterates that BACT determinations will continue to be a state, and project specific decision;

²¹ The UARG v. EPA decision limited the scope originally envisioned by the Tailoring Rule, and now only "anyway sources" are subject to GHG BACT.

²² The UARG v. EPA decision limited the scope originally envisioned by the Tailoring Rule, and now only "anyway sources" are subject to GHG BACT. On October 3, 2016, EPA proposed revising 40 CFR 52.21 to establish a Significant Emissions Rate for GHGs at the same threshold of 75,000 ton per year CO₂e as Step 1 of the Tailoring Rule for "anyway" sources.

- does not prescribe GHG BACT for any source type;
- emphasizes the importance of BACT options that improve energy efficiency;
- points out that Carbon Capture and Sequestration (CCS) is a promising technology in the early stage of demonstration and commercialization (it should be identified as an available control measure in the first step of BACT, it is currently an expensive technology and unlikely to be selected as BACT in most cases);
- clarifies that EPA does not intend to require GHG to be addressed in permits issued before January 2, 2011 that do not become effective until after this date;
- notes that biomass could be considered BACT after taking into account environmental, energy, and economic considerations and state and federal policies that promote biomass for energy-independence and environmental reasons. In its memorandum²³ dated November 19, 2014, EPA states that it is still assessing and monitoring biogenic feedstocks and will provide further guidance. Further updates can be found at EPA's webpage "CO2 Emissions Associated with Biomass Use at Stationary Sources."
- provides flow charts and examples that illustrate the key points of the traditional five-step process for determining BACT for GHG; and
- identifies technical resources related to GHG emissions and controls.

FEDERAL PSD APPLICABILITY FOR GHG

Beginning January 2, 2011, GHG are regulated as a NSR contaminant. GHG BACT applies when a new or modified facility is subject to PSD requirements for GHG. The first step for PSD applicability determination for new or modified sources is listed in the Tables 7 and 8 below that address the Tailoring Rule requirements in 40 CFR 52.21. A second step for PSD applicability is contemporaneous netting. For detailed guidance on this topic, EPA's "PSD and Title V Permitting Guidance for Greenhouse Gases" (March 2011) should be referenced, but should be used in accordance with EPA's clarifying documents regarding the U.S. Supreme Court decision in *Utility Air Regulatory Group v. Environmental Protection Agency*²⁴ and the current requirements under 40 CFR 52.21.

In determining PSD applicability, a differentiation between GHG CO₂e and mass basis must be made. GHG mass basis is simply the sum of all six GHG compound mass emissions. However, to obtain GHG CO₂e, the mass emissions of each individual GHG compound must be multiplied by its 100-year Global Warming Potential (GWP). The individual GHG CO₂e are then summed to obtain the total CO₂e for the source. Current GWP factors should be obtained from EPA's website when performing these calculations.

²³ EPA Memo: "Addressing Biogenic Carbon Dioxide Emissions from Stationary Sources, (2014 November 9)

²⁴ EPA Memo: Next Steps and Preliminary Views on the Application of Clean Air Act Permitting Programs to Greenhouse Gases Following the Supreme Court's Decision, (2014, July 24)

Table 7
GHG PSD Applicability for New Sources

PSD applies to GHG if:
<ol style="list-style-type: none"> 1. <u>The source is otherwise subject to PSD for another regulated NSR pollutant, AND</u> 2. <u>The source has a GHG PTE \geq 75,000 tons per year (TPY) CO₂e;</u>

Table 8
GHG PSD Applicability for Modified Sources

PSD applies to GHG if:
<ol style="list-style-type: none"> 1. <u>The modification is otherwise subject to PSD for another regulated NSR pollutant, AND</u> 2. <u>The modification results in a GHG emissions increase or and net emissions increase:</u> <ol style="list-style-type: none"> a. <u>PTE \geq 75,000 TPY CO₂e, AND</u> b. <u>> zero TPY mass basis</u>

Contemporaneous Netting

Contemporaneous netting is the process of considering all of the creditable emission increases and decreases that have occurred during the period beginning five years before the proposed construction of the modification through the date that the emission increase from the modification occurs. When calculating the net emissions increase in Table 8 above for PSD applicability, it must include all emission increases and decreases during this period.

SCAQMD PSD APPLICABILITY FOR GHG

SCAQMD adopted Rule 1714 in 2010 to implement the PSD GHG requirements set forth by 40 CFR 52.21. SCAQMD Rule 1714 incorporates the provisions of 40 CFR 52.21 by reference, excluding the sections listed under SCAQMD Rule 1714 (c)(1). SCAQMD PSD applicability should be determined following the applicable sections of the Code of Federal Regulation identified in the rule.

TOP-DOWN BACT PROCESS

EPA recommends that permitting authorities continue to use the EPA’s five-step “Top-Down” BACT process to determine BACT for GHG (U.S. EPA, 2011)²⁵. While this section summarizes the steps in the process, further details for each of the steps can be referenced in EPA’s guidance document.

BACT Step 1 – Identify All Available Control Options

The first step in the top-down BACT process is to identify all “available” control options. Available control options are those air pollution control technologies or techniques (including lower-emitting processes and practices) that have the potential for practical application to the emissions unit and the regulated pollutant under evaluation.

Permit applicants and permitting authorities should identify all “available” GHG control options that have the potential for practical application to the source under consideration.

The application of BACT to GHG does not affect the discretion of a permitting authority to exclude options that would fundamentally redefine a proposed source. GHG control technologies are likely to vary based on the type of facility, processes involved, and GHG being addressed. EPA has emphasized the importance of energy efficiency improvements.—The first category of energy efficiency improvement options includes technologies or processes that maximize the efficiency of the individual emissions unit. The second category of energy efficiency improvements includes the options that could reduce emissions from a new greenfield facility by improving utilization of thermal energy and electricity that is generated and used on site.

For the purposes of a BACT analysis for GHG, EPA classifies CCS as an add-on pollution control technology that is “available” for large CO₂-emitting facilities including fossil fuel-fired power plants and industrial facilities with high-purity CO₂ streams (e.g., hydrogen production, ammonia production, natural gas processing, ethanol production, ethylene oxide production, cement production, and iron and steel manufacturing).

BACT Step 2 – Eliminate Technically Infeasible Options

Under the second step of the top-down BACT analysis, a potentially applicable control technique listed in Step 1 may be eliminated from further consideration if it is not technically feasible for the specific source under review. EPA generally considers a technology to be technically feasible if it has been successfully operated on the same type of source under review, or is available and applicable to the source under review.

Assuming CCS has been included in Step 1 of the top-down BACT process for such sources, it now must be evaluated for technical feasibility in Step 2. CCS is composed of three main components: CO₂ capture and/or compression, transport, and storage. CCS may be eliminated from a BACT analysis in Step 2 if it can be shown that there are significant differences pertinent to the successful operation for anyeach of these three main components from what has already

²⁵ U.S. EPA (2011). PSD and Title V Permitting Guidance for Greenhouse Gases

been applied to a differing source type. For example, the temperature, pressure, pollutant concentration, or volume of the gas stream to be controlled, may differ so significantly from previous applications that it is uncertain the control device will work in the situation currently undergoing review. CCS may be eliminated from a BACT analysis in Step 2 if the three components working together are deemed technically infeasible for the proposed source, taking into account the integration of the CCS components with the base facility and site-specific considerations (e.g., space for CO₂ capture equipment at an existing facility, right-of-ways to build a pipeline or access to an existing pipeline, access to suitable geologic reservoirs for sequestration, or other storage options).

BACT Step 3 – Ranking of Controls

After the list of all available controls is winnowed down to a list of the technically feasible control technologies in Step 2, Step 3 of the top-down BACT process calls for the remaining control technologies to be listed in order of overall control effectiveness for the regulated NSR pollutant under review. The most effective control alternative (i.e., the option that achieves the lowest emissions level) should be listed at the top and the remaining technologies ranked in descending order of control effectiveness. The ranking of control options in Step 3 determines where to start the top-down BACT selection process in Step 4.

The options considered in a BACT analysis for GHG emissions will likely include, but not necessarily be limited to, control options that result in energy efficiency measures to achieve the lowest possible emission level. Where plant-wide measures to reduce emissions are being considered as GHG control techniques, the concept of overall control effectiveness will need to be refined to ensure the suite of measures with the lowest net emissions from the facility is the top-ranked measure. Ranking control options based on their net output-based emissions ensures that the thermal efficiency of the control option, as well as the power demand of that control measure, is fully considered when comparing options in Step 3 of the BACT analysis. Finally, to best reflect the impact on the environment, the ranking of control options should be based on the total CO₂e rather than total mass or, mass for the individual GHG.

BACT Step 4 – Economic, Energy, and Environmental Impacts

Under Step 4 of the top-down BACT analysis, permitting authorities must consider the economic, energy, and environmental impacts arising from each option remaining under consideration. Accordingly, after all available and technically feasible control options have been ranked in terms of control effectiveness (BACT Step 3), the permitting authority should consider any specific energy, environmental, and economic impacts identified with those technologies to either confirm that the top control alternative is appropriate or determine it to be inappropriate.

There are compelling public health and welfare reasons for BACT to require all GHG reductions that are achievable, considering economic impacts and the other listed statutory factors. As a key step in the process of making GHG a regulated pollutant, EPA has considered scientific literature on impacts of GHG emissions and has made a final determination that emissions of six GHG endanger both the public health and the public welfare of current and future

generations. Potential impacts that may be considered in this step based on the EPA's January 2010 Endangerment Finding²⁶ are detailed in EPA's guidance document. Among the public health impacts and risks that EPA cited are anticipated increases in ambient ozone and serious ozone-related health effects, increased likelihood of heat waves affecting mortality and morbidity, risk of increased intensity of hurricanes and floods, and increased severity of coastal storm events due to rising sea levels. With respect to public welfare, EPA cited numerous and far-ranging risks to food production and agriculture, forestry, water resources, sea level rise and coastal areas, energy, infrastructure, and settlements, and ecosystems and wildlife. The potentially serious adverse impacts of extreme events such as wildfires, flooding, drought and extreme weather conditions also supported EPA's finding.

When conducting a BACT analysis for GHG, the environmental impact analysis should continue to concentrate on impacts other than the direct impacts due to emissions of the regulated pollutant in question. Where GHG control strategies affect emissions of other regulated pollutants, applicants and permitting authorities should consider the potential trade-offs of selecting particular GHG control strategies.

BACT Step 5 – Selecting BACT

In Step 5 of the BACT determination process, the most effective control option not eliminated in Step 4 should be selected as BACT for the pollutant and emissions unit under review and included in the permit. For energy-producing sources, one way to incorporate the energy efficiency of a process unit into the BACT analysis is to compare control effectiveness in BACT Step 3 based on output-based emissions of each of the control options. Establishing an output-based BACT emissions limit, or a combination of output- and input-based limits, wherever feasible and appropriate to ensure that BACT is complied with at all levels of operation should be considered.

GHG CONTROL MEASURES WHITE PAPERS

EPA has a series of technical “white papers” that summarize readily available information on control techniques and measures to reduce GHG emissions from specific industrial sectors. These papers provide basic technical information which may be useful in a BACT analysis, but they do not define BACT for each sector. The industrial sectors covered include:

- Electric Generating Units (PDF) (48pp, 805k)
EPA Contact: Christian Fellner (919-541-4003 or
fellner.christian@epa.gov)
- Large Industrial/Commercial/Institutional Boilers (PDF) (39pp,
337k)
EPA Contact: Jim Eddinger (919-541-5426 or
edding.jim@epa.gov)
- Pulp and Paper (PDF) (62pp, 421k)
EPA Contact: Bill Schrock (919-541-5032 or schrock.bill@epa.gov)

²⁶ <https://www3.epa.gov/climatechange/endangerment/>

- Cement (PDF) (48pp, 220k)
EPA Contact: Keith Barnett (919-541-5605 or barnett.keith@epa.gov)
- Iron and Steel Industry (PDF) (78pp, 620k)
EPA Contact: Donna Lee Jones (919-541-5251 or jones.donnalee@epa.gov)
- Refineries (PDF) (42pp, 707k)
EPA Contact: Brenda Shine (919-541-3608 or shine.brenda@epa.gov)
- Nitric Acid Plants (PDF) (31pp, 544k)
EPA Contact: Nathan Topham (919-541-0483 or topham.nathan@epa.gov)
- Landfills (PDF) (28pp, 250k)
EPA Contact: Hillary Ward (919-541-3154 or ward.hillary@epa.gov)

PART F – BACT DETERMINATIONS FOR FACILITIES SUBJECT TO PREVENTION OF SIGNIFICANT DETERIORATION FOR GREENHOUSE GASES

(This section is currently under development)

LIST OF ABBREVIATIONS

AIP	Achieved in Practice
APCD	Air Pollution Control District Air Pollution Control District
AQMD	South Coast Air Quality Management District
AQMP	Air Quality Management Plan
BACT	Best available control technology
BRC	BACT Review Committee, <u>SCAQMD</u>
CAA	Clean Air Act
CAPCOA	California Air Pollution Control Officers Association
CARB	<u>California Air Resources Board</u>
CCS	<u>Carbon Capture and Sequestration</u>
CEP	Certified Equipment Permit
CFC	Chlorofluorocarbons
CFR	Code of Federal Regulations
CO	Carbon monoxide
CO₂	<u>Carbon dioxide</u>
CO₂e	<u>Carbon dioxide equivalent</u>
DCF	<u>Discounted Cash Flow Method</u>
DEO	Deputy Executive Officer
GHG	<u>Greenhouse Gas(es)</u>
GWP	<u>Global Warming Potential</u>
H&SC	Health and Safety Code, California State
LAER	Lowest achievable emission rate
LPG	Liquefied petroleum gas
MDAB	Mojave Desert Air Basin
MICR	<u>Maximum Individual Cancer Risk</u>
MSBACT	Minor Source BACT
NO₂	Nitrogen dioxide
NO_x	Oxides of nitrogen
NSR	New Source Review
ODC	Ozone depleting compounds
Pb	<u>Lead</u>
PM₁₀	Particulate matter less than 10 microns in diameter
PM_{2.5}	<u>Particulate matter less than 2.5 microns in diameter</u>
PSD	<u>Prevention of Significant Deterioration</u>
PTE	<u>Potential to Emit</u>
RACT	Reasonably available control technology
RECLAIM	Regional Clean Air Incentives Market
ROG	Reactive organic gas
RTC	<u>RECLAIM trading credit</u>
SCAQMD	<u>South Coast Air Quality Management District</u>
SIP	State Implementation Plan
SOCAB	South Coast Air Basin

SO_x	Oxides of sulfur
SRC	<u>BACT</u> Scientific Review Committee
SSAB	Salton Sea Air Basin
T-BACT	<u>Best available control technology for toxics</u>
TPY	<u>Tons per year</u>
USEPA	United States Environmental Protection Agency
VOC	Volatile organic compound

LISTINDEX OF EQUIPMENT CATEGORIES

A

Abrasive Blasting

Enclosed

Room

Absorption Chiller

Air Start Unit

Air Stripper - Ground Water Treatment

~~Aluminum Melting Furnace—Crucible or Pot (All Charge)~~

~~Aluminum Melting Furnace—Crucible or Pot, Ingot and/or Clean Scrap Charge Only~~

~~Aluminum Melting Furnace—Reverberatory, Non-Sweating, Ingot or Contaminated Scrap Charge~~

~~Aluminum Melting Furnace—Reverberatory or Rotary, Non-Sweating, Ingot or non-Contaminated Scrap Charge~~

~~Aluminum Melting Furnace—Reverberatory, Sweating, Ingot or Contaminated Scrap Charge~~

~~Aluminum Melting Furnace—Rotary, Sweating~~

~~With Air Pre-Heat, Ingot or Contaminated Scrap Charge~~

Ammonium Bisulfate and Thiosulfate Production

~~Animal Feed Manufacturing—Dry Material Handling (see Bulk Solid Material Handling)~~

Asbestos Machining Equipment

Asphalt Batch Plant

Asphalt Roofing Line

~~Asphalt Storage Tank (see Storage Tank—Liquid)~~

Asphalt Day Tanker

Auto ~~body~~ Body Shredder

B

Ball Mill

Beryllium Machining Equipment

~~Blender (see Mixer)~~

Boiler

~~Boiler—Refinery Gas Fired~~

~~Natural Gas or Propane Fired~~

~~Atmospheric Unit~~

~~Landfill Gas Fired~~

~~Digester Gas Fired Boiler, CO—Refinery~~

~~Boiler—Agricultural Waste (Biomass) Fired~~

~~Boiler—Landfill or Digester Gas fired~~

~~Boiler—Municipal Solid Waste (MSW) Fired~~

~~Boiler—Wood Fired~~

Brake Pad Grinder

Brakeshoe Debonder

Brass Melting Furnace
 —Crucible
~~Brass Melting Furnace—Cupola~~
 Brass Melting Furnace—Reverberatory or Rotary, Non-Sweating
 Brass Melting Furnace—Reverberatory or Rotary, Sweating
~~Brass Melting Furnace—Rotary, Non-Sweating~~
~~Brass Melting Furnace—Rotary, Sweating~~
 Brass Melting Furnace—Tilting Induction
Bulk Cement - Ship Unloading
Bulk Solid Material Handling-Other
 Animal Feed Mfg. – Dry Material Handling
 Clay, Ceramic, and Refractories Handling
 Coal, Coke and Sulfur Handling and Storage
 Feed and Grain Handling
 Paper and Fiber Handling
 Pneumatic Conveying - Except Paper and Fibers
 Railcar Dumper

Bulk Solid Material - Ship Loading—
 ___ Non-White Commodities
 ___ ~~Bulk Solid Material—Ship Loading—White Commodities~~
Bulk Solid Material Ship Unloading
 ___ —Except Bulk Cement
 ___ Other Bulk Solid Materials
Bulk Solid Material Storage
 ___ Coal, Coke and Sulfur Handling and Storage
 ___ Other –Non-White Commodities
 ___ ~~Bulk Solid Material Storage—White Commodities~~
 ___ Storage Tank and Silos
 ___ Other Open Storage
Burnoff or Burnout Furnace (Excluding Wax Burnoff Furnace)

C

~~Calcined Petroleum Coke Handling~~
~~Calcined Petroleum Coke Truck Loading and Unloading~~
Calciner
Calciner -
 ___ Petroleum Coke
 ___ Other
 ___ Portland Cement
~~Calciner—Portland Cement~~
Carpet Beating and Shearing
~~Carpet Oven (see Dryer or Oven)~~
Catalyst Manufacturing and Regeneration
 ___ Calcining
 ___ Catalyst Solids Handling
 ___ FCCU
 ___ —Reactor
 ___ Regeneration
 ___ ~~Catalyst Manufacturing—Rotary or Spray Dryer~~

~~Catalyst Manufacturing—Spray Dryer~~
~~Catalyst Regeneration—Fluidized Catalyst Cracking Unit~~
~~Catalyst Regeneration—Hydrocarbon Removal~~
~~Catalyst Regeneration and Manufacturing—Calcining~~
~~Cement Handling (see Bulk Cement—Ship Unloading)~~
~~Charbroiler, Chain-driven (Conveyorized)~~
~~Chemical Milling Tank—~~
~~___Aluminum and Magnesium~~
~~___Chemical Milling Tank—Nickel Alloys, Stainless Steel and Titanium~~
~~Chip Dryer~~
~~Chrome Plating—~~
~~___Decorative Chrome~~
~~___Chrome Plating—Hard Chrome~~
~~Circuit Board Etcher—~~
~~___Batch Immersion Type, Subtractive Process~~
~~___Circuit Board Etcher—Conveyorized Spray Type, Subtractive Process~~
~~Circuit Board Photoresist Developer~~
~~Clay, Ceramic, and Refractories Handling (Except Mixing) (see Bulk Solid Material Handling)~~
~~Cleaning Compound Blender~~
~~CO₂ Plant~~
~~Coal, Coke and Sulfur Handling and Storage (see Bulk Solid Material Handling and Bulk Solid Material Storage)~~
~~Coffee Roasting~~
~~___Roaster~~
~~___Handling Equipment~~
~~Coffee Roasting—Handling Equipment~~
~~Commodities Handling and Storage (see Bulk Solid Material Handling and Bulk Solid Material Storage)~~
~~Composting~~
~~___Co-composting~~

~~Compressors (see Fugitive Emission Sources)~~
~~Connectors—Gas/Vapor and Light Liquid (see Fugitive Emission Sources)~~
~~Concrete Batch Plant~~
~~___—Central Mixed~~

~~___Concrete Batch Plant—Transit-Mixed~~
~~Concrete Blocks and Forms Manufacturing~~
~~Cotton Gin~~
~~Crematory~~

D

~~Degreaser — Other~~
~~___Batch-Loaded or Conveyorized Cold Cleaners~~
~~___Film Cleaning Machine~~
~~___Solvent Spraying~~

~~Degreaser—Conveyorized Vapor, Volatile Organic Compounds_Degreaser - Vapor Cleaning, Volatile Organic Compounds~~

Batch
Conveyorized
~~Degreaser—Other~~
~~Detergent Manufacturing—~~
___ Solids Handling
___ Spray Dryer
~~Detergent Manufacturing—Spray Dryer~~
~~Diaphragm (see Fugitive Emission Sources)~~
~~Diesel Engine (see I.C. Engine—Compression Ignition)~~
~~Drum Reclamation Furnace~~
~~Dry Cleaning —~~
___ Perchloroethylene
___ Petroleum Solvent
~~Dry Cleaning — Petroleum Solvent~~
~~Dry Material Handling (see Bulk Solid Material Handling)~~
~~Dryer - Kiln~~
~~Dryer—Rotary, Spray and Flash~~
~~Dryer — Tenter Frame, Fabric~~
~~Dryer - Tray, Agitated Pan, and Rotary Vacuum~~
~~Dryer or Oven—Direct and Indirect Fired~~
___ Carpet Oven
___ Rotary, Spray and Flash Dryers
___ Tenter Frame Fabric Dryer
___ Tray, Agitated Pan, and Rotary Vacuum Dryers
___ Other - Direct and Indirect Fired

E

~~Electric Furnace - Pyrolyzing, Carbonizing and Graphitizing~~
~~Electrical Wire Reclamation - Insulation Burnoff Furnace~~
~~Ethylene Oxide Sterilization~~
___ Aeration
___ —Quarantine Storage
~~Ethylene Oxide Sterilization/Aeration~~
~~Expanded Polystyrene Manufacturing, Using Blowing Agent (see Polymeric Cellular [Foam] Product Manufacturing)~~
~~Extrusion (see Plastic or Resin Extrusion)~~

F

~~Fatty Acid - Fat Hydrolyzing and Fractionation~~
~~Fatty Alcohol~~
~~Feed and Grain Handling (see Bulk Solid Material Handling)~~
~~Fermentation - Beer and Wine~~
___ All Closed Systems
___ All Open Systems
~~Fertilizer Handling (see Bulk Solid Material Handling)~~
~~Fiber Impregnation~~
~~Fiberglass Fabrication (see Polyester Resin Operations)~~
~~Film Cleaning Machine (see Degreaser)~~
~~Fish Cooker—Edible~~

- Fish Reduction
 - ___ ~~Cooker~~
 - ___ ~~Fish Reduction—Digester, Evaporator and Acidulation Tank~~
 - ___ ~~Fish Reduction—Dryer~~
 - ___ ~~Fish Reduction—Meal Handling~~
 - ___ ~~Fish Rendering - Presses, Centrifuges, Separators, Tank, etc.~~
- Fittings (~~see Fugitive Emission Sources~~)
- Flare -
 - ___ ~~Digester Gas or Landfill Gas from Non-Hazardous Waste Landfill~~
 - ___ ~~Flare—Landfill Gas from Hazardous Waste Landfill~~
 - ___ ~~Flare—Refinery, Non-Emergency~~
- ~~Flexographic Printing (see Printing)~~
- Flow Coater, Dip Tank and Roller Coater
- Fluidized Catalytic Cracking Unit
- Foundry Sand Mold - Cold Cure Process
- Fryer - Deep Fat
- Fugitive Emission Sources at Natural Gas Plants and Oil and Gas Production Fields
 - ___ Compressors, Centrifugal Type
 - ___ Compressors Rotary Type
 - ___ Pressure Relief Valves
 - ___ Pumps - In Heavy Liquid Service
 - ___ Pumps - In Light Liquid Service
 - ___ Sampling Connections
 - ___ Valves, Fittings, Diaphragms, Hatches, Sight-Glasses, Open-Ended Pipes and Meters in VOC Service
- Fugitive Emission Sources at Organic Liquid Bulk Loading Facilities
 - ___ Compressors, Centrifugal Type
 - ___ Compressors Rotary Type
 - ___ Connectors in Gas, Vapor or Light Liquid VOC Service
 - ___ Open-Ended Valves and Pipes
 - ___ Pressure Relief Valves
 - ___ Process Valves – Gate, Globe and Ball
 - ___ Pumps - In Heavy Liquid Service
 - ___ Pumps - In Light Liquid Service
 - ___ Sampling Connections
- Fugitive Emission Sources, Other Facilities
 - ___ Compressors, Fittings, Open-Ended Pipes, Pressure Relief Devices, Valves, Pumps, Sampling Connections, Diaphragms, Hatches, Sight Glasses and Meters in VOC Service
- Fuming Sulfuric Acid Storage Tank (~~see Storage Tank – Fuming Sulfuric Acid~~)

G

- Galvanizing Furnace -
 - ___ ~~Batch Operations~~
 - ___ ~~Galvanizing Furnace—Continuous Sheet Metal Operations~~
 - ___ ~~Galvanizing Furnace—Continuous Wire Operations~~
- Garnetting Equipment
- Gas Turbine
 - ___ Simple Cycle
 - ___ ~~—Combined Cycle/Cogeneration~~

~~___ Gas Turbine—Emergency~~
~~___ Gas Turbine—Landfill or Digester Gas Fired~~
~~___ Gas Turbine—Simple Cycle~~ Natural Gas Fired

Glass Melting Furnace—
 Container Manufacturing
 Glass Melting Furnace—Decorator Glass
 Glass Melting Furnace—Flat Glass
 Graphic Arts (see Printing)

Greenhouse Gas

~~Green Petroleum Coke Handling (see Bulk Solid Material Handling)~~

~~Green Petroleum Coke Truck Loading or Unloading (see Bulk Solid Material Handling)~~

H

Hatches (see Fugitive Emission Sources)

Hazardous Waste Incineration (see Incinerator—Hazardous Waste)

Heater (see Process Heater)

I

I.C. Engine - Portable,-

~~___ Compression Ignition~~

~~___ I.C. Engine—Portable, Spark Ignition~~

I.C. Engine – Stationary, Emergency

Compression Ignition, Fire Pump

Compression Ignition, Other

Spark Ignition

I.C. Engine - I.C. Engine—Stationary, Non-Emergency

< 2064 bhp

> 2064 bhp

~~___ I.C. Engine—Landfill or Digester Gas Fired~~

Incinerator – Hazardous Waste

Incinerator - Infectious Waste

Incinerator - Non-Infectious, Non-Hazardous Waste

Ink Jet Printing

Iron Melting Furnace

~~___—Cupola~~

~~___ Iron Melting Furnace—Induction~~

~~___ Iron Melting Furnace—Reverberatory~~

J

Jet Engine Test Facility—

~~___ Experimental Jet Engine, High Altitude Testing~~

~~___ Jet Engine Test Facility—Experimental Jet Engine, Sea Level (Low Altitude) Testing~~

~~___ Jet Engine Test Facility—Jet engine~~ Engine Performance Testing

L

Laminator with Corona Transfer

Landfill Gas Gathering System

Latex Manufacturing - Reaction

~~Lead Melting Furnace—Cupola, Secondary Melting Operations~~
~~___ Lead Melting Furnace—Pot or Crucible, Non-Refining Operations~~
~~___ Lead Melting Furnace—Pot or Crucible, Refining Operations~~
~~___ Lead Melting Furnace—Cupola or Reverberatory, Secondary Melting Operations~~
Lead Oxide Manufacturing - Reaction Pot Barton Process
~~Letterpress Printing (see Printing)~~
Liquid Transfer and Handling—
~~___ Container Filling~~
~~___ Liquid Transfer and Handling—Marine, Loading~~
~~___ Liquid Transfer and Handling—Marine, Unloading~~
~~___ Liquid Transfer and Handling—Tank Truck and Rail Car Bulk Loading, Class A, B and C (SCAQMD's Rule 462)~~
~~Liquid Transfer and Handling—Tank Truck and Rail Car Bulk Loading, Class B (SCAQMD's Rule 462)~~
~~Liquid Transfer and Handling—Tank Truck and Rail Car Bulk Loading, Class C (SCAQMD's Rule 462)~~
~~Lithographic Printing—Heatset (see Printing)~~
~~Lithographic Printing—Non-Heatset (see Printing)~~

M

Meat Broiler and Barbecue Oven
Metal Forging Furnace
Metal Heating Furnace
Metallizing Spray Gun
~~Meters (see Fugitive Emission Sources)~~
Mixer or Blender—Wet
Mixer, Blender, or Mill—
~~___ Dry~~
~~___ Wet~~

N

~~Natural Fertilizer Handling (see Bulk Solid Material Handling)~~
~~Natural Gas Plants (see Fugitive Emission Sources)~~
Nitric Acid Manufacturing
Non-Metallic Mineral Processing - Except Rock and Aggregate
Nut Roasting—
~~___ Handling Equipment~~
~~___ Nut-Roaster~~

O

~~Offset Printing (see Lithographic Printing)~~
Oil and Gas Production—
~~___ Combined Tankage~~
~~___ Oil and Gas Production—Wellhead~~
~~Oil and Gas Production Fields (see Fugitive Emission Sources)~~
~~Oil/Water Separator (see Wastewater System)~~
~~Open Spraying—Spray Gun~~
~~Open-ended Valves or Lines (see Fugitive Emission Sources)~~
~~Organic Liquid Bulk Loading Facilities (see Fugitive Emission Sources)~~

Oven (see Dryer or Oven)

P

Perlite Manufacturing System

~~Petroleum Coke Calciner (see Calciner—Petroleum Coke)~~

Pharmaceutical Manufacturing

~~Pharmaceutical—Operations Involving Solvents~~

~~Solids Handling~~

~~Solids Storage Tanks~~

Phosphoric Acid - Thermal Process

Phthalic Anhydride

~~Pipe—Open Ended (see Fugitive Emission Sources)~~

Plasma Arc Metal Cutting Torch, Electrical Input Rating

Plastic or Resin Extrusion

~~Pneumatic Conveying—Except Paper and Fibers (see Bulk Solid Material Handling)~~

Polyester Resin Operations—

~~Molding and Casting~~

~~Polyester Resin Operations—Fiberglass Fabrication, Hand and Spray Layup~~

~~Polyester Resin Operations—Fiberglass Fabrication, Panel Manufacturing~~

~~Polyester Resin Operations—Fiberglass Fabrication, Pultrusion~~

~~Polyethylene Manufacturing (see Resin Manufacturing)~~

Polymeric Cellular (Foam) Product Manufacturing

~~Polypropylene Manufacturing (see Resin Manufacturing)~~

~~Polystyrene Extrusion (see Plastic or Resin Extrusion)~~

~~Polystyrene Foam Product Manufacturing (see Polymeric Cellular [Foam] Product Manufacturing)~~

~~Polystyrene Foam Product Manufacturing, Using Blowing Agent (see Polymeric Cellular [Foam] Product Manufacturing)~~

~~Polystyrene Manufacturing (see Resin Manufacturing)~~

Polyurethane Tube ManufacturingMfg.

Powder Coating Booth

Precious Metal Reclamation

~~—Incineration~~

~~Precious Metals Recovery—Chemical Recovery and Chemical Reactions~~

~~Pressure Relief Valve (see Fugitive Emission Sources)~~

Printing (Graphic Arts)—

~~Flexographic~~

~~Printing (Graphic Arts)—Letterpress~~

~~Printing (Graphic Arts)—Lithographic, Heatset~~

~~Printing (Graphic Arts)—Lithographic, Non-Heatset~~

~~Printing (Graphic Arts)—Rotogravure or Gravure – Publication and Packaging~~

~~Printing (Graphic Arts)—Screen Printing and Drying~~

~~Process Drains (see Wastewater System)~~

Process Heater—

~~Non-Refinery~~

~~Process Heater—Refinery~~

~~Process Valves (see Fugitive Emission Sources)~~

~~Pultrusion (see Polyester Resin Operations)~~

~~Pumps (see Fugitive Emission Sources)~~

R

Railcar Dumper (~~see Bulk Solid Material Handling~~)
 Railcar Loading/Unloading, Liquid (~~see Liquid Transfer and Handling~~)
 Reactor with Atmospheric Vent
 Rendering—
 ___ Crax Pressing, filtering and Centrifuging Operations
 ___ Rendering—Evaporators, Cookers and Dryers
 ___ Rendering—Grease and Blood Processing
 ___ Rendering—Metal Grinding and Handling System
 ___ Rendering—Tanks and Miscellaneous Equipment
 Resin Manufacturing
 ___ Continuous Polystyrene Process
 ___ Liquid-Phase, High-Density Polyethylene Slurry Process
 ___ Liquid-Phase, Polypropylene Process
 ___ Other Resin Manufacturing
 Rock - Aggregate Processing
 Rocket Engine Test Cell
 Rolling Mill
 Rotogravure Printing—Publication and Packaging (~~see Printing~~)
 Rubber Compounding—
 ___ Banbury Type Mixer
 ___ Rubber Compounding—Roll Mill

S

~~Sampling Connections (see Fugitive Emission Sources)~~
 Sand Handling System with Shakeout and/or Muller in System
 Screen-Printing and Drying (~~see Printing~~)
 Sewage Treatment Plants
 Sight Glass (~~see Fugitive Emission Sources~~)
 Silo (~~see Bulk Solid Material Storage~~)
 Smokehouse
 Solder Leveling - Hot Oil or Hot Air
 Solid Material Handling—(~~see Bulk Solid Material Handling~~)
 Solid Material Storage—(~~see Bulk Solid Material Storage~~)
 Solid Material Unloading—Railcar Dumper (~~see Bulk Solid Material Handling~~)
 Solids Handling Catalyst (~~see Catalyst Manufacturing and Regeneration~~)
 Solids Handling Pharmaceutical (~~see Pharmaceutical Manufacturing~~)
 Solvent Reclamation
 Spray Booth
 ___ Automotive, Down-Draft Type
 ___ Other Types
 Steam Generator - Oil field Field
 Steel Melting Furnace—
 ___ Basic Oxygen Process
 ___ Steel Melting Furnace—Electric Arc
 ___ Steel Melting Furnace—Induction
 ___ Steel Melting Furnace—Open Hearth
 Storage Tank (~~see also Bulk Solid Material Storage~~)
 Storage Tank — Liquid

Asphalt

External Floating Roof, and VP <= 11 psia

Storage Tank—Fixed Roof

Storage Tank—Fuming Sulfuric Acid

Storage Tank—Grease or Tallow Storage Storage Tank—

Internal Floating Roof

Storage Tank—Liquid

Storage Tank—Spent Sulfuric Acid

Storage Tank—Underground

Sulfur Handling and Storage (see Bulk Solid Material Handling and Bulk Solid Material Storage)

Sulfur Pelletizing and Prilling

Sulfur Recovery Plant

Sulfuric Acid Storage (see Storage Tank—Liquid)

Surfactant Manufacturing

T

Tank Degassing

Tank - Grease or Tallow Processing

Tank Truck Loading/Unloading (see Liquid Transfer and Handling)

Tire Buffer

Tunnel Washer

V

Vegetable Oil Purification

Vinegar Manufacturing

W

Wastewater System

Wastewater System—Air Stripper

Wastewater System—Oil/Water Separator

Other Equipment

Wastewater System—Sour Water Stripping

Wax Burnoff Furnace

Wet Material Handling (see Bulk Solid Material Handling)

Wood Processing Equipment

Woodworking

Pneumatic Conveyance System

Z

Zinc Melting Furnace—

Crucible or Pot

Zinc Melting Furnace—Reverberatory, Non-Sweating Operations

Zinc Melting Furnace—Reverberatory or Rotary, Sweating Operations

Zinc Melting Furnace—Rotary, Sweating Operations

ATTACHMENT C



SCAQMD BACT Determination

Source Type: Major/LAER
 Application No.: 516409
 Equipment Category: I.C. Engine - Emergency, Compression Ignition
 Equipment Subcategory: PM Filter
 Date: **December 10, 2015**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Caterpillar		B. MODEL: C9
C. DESCRIPTION: Diesel fuel, six cylinders, turbocharged and aftercooled,		
D. FUNCTION: Drives an emergency electricity generator located at building 304		
E. SIZE/DIMENSIONS/CAPACITY: 374 BHP		
COMBUSTION SOURCES		
F. MAXIMUM HEAT INPUT: Gross heat input in btu per hour at the higher heating value of the fuel		
G. BURNER INFORMATION		
TYPE	INDIVIDUAL HEAT INPUT	NUMBER
Make and model of burner	Rated heat input of single burner, in btu/hr	Number of burners
Enter additional burner types, as needed, add extra rows		
H. PRIMARY FUEL: DIESEL		I. OTHER FUEL: Supplementary or standby fuels
J. OPERATING SCHEDULE: <1 HRS/DAY 1 DAYS/WEEK 26 WKS/YR		
K. EQUIPMENT INFORMATION COMMENTS: Diesel particulate filter installed		

2. COMPANY INFORMATION

A. COMPANY: US Gov't VA Medical Center		B. FAC ID: 014966
C. ADDRESS: 11301 Wilshire Blvd CITY: West -Los Angeles STATE: CA ZIP: 90073		D. NAICS CODE: <u>8060</u>
E. CONTACT PERSON: Robert Benkeser		F. TITLE: Director, Facilities Management
G. PHONE NO.: 310-268-4677	H. EMAIL: robert.benkeser@va.gov	

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: PO-NO-PC NEW CONSTRUCTION
C. SCAQMD ENGINEER: Roy Olivares	
D. PERMIT INFORMATION: PC ISSUANCE DATE: <u>6/29/11</u> P/O NO.: 6/29/11 PO ISSUANCE DATE: 6/29/2011	
E. START-UP DATE: 6/29/2011	
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. Engine shall not be operated in idle mode for more than 240 consecutive minutes.	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (% O ₂ , % CO ₂ , dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.						
	VOC	NOx+VOC	SOx	CO	PM OR PM₁₀	INORGANIC
BACT Limit		3 g/bhp-hr		2.6 g/bhp-hr	0.15 g/bhp-hr	
Averaging Time						
Correction						
B. OTHER BACT REQUIREMENTS: The filter was required to reduce toxic risk from diesel particulate emissions, but also reduces PM10, VOC and CO.						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice <u>Achieved in Practice</u>						
D. EMISSION INFORMATION COMMENTS: Compliance with rule 404 and Rule 1470. Engine meets applicable Tier 3 BACT limits. <u>The values in Part A are EPA certification standards based on EPA certification test methods.</u>						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Clean Air Systems		B. MODEL: FCA225	
C. DESCRIPTION: Diesel Particulate Filter with hiback data logging and alarm system to automatically shut down engine or switch it to power de-rating when backpressure exceeds setting specified by manufacturer. CARB certified.			
D. SIZE/DIMENSIONS/CAPACITY: An appropriate size parameter such as rated heat input, usable volume, rated filter efficiency, and/or one more characteristic dimensions.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. Click here to enter text. PC ISSUANCE DATE: Click here to enter a date. PO NO.: Click here to enter text. PO ISSUANCE DATE: Click here to enter a date.			
F. REQUIRED CONTROL EFFICIENCIES: Minimum efficiencies of the system control equipment as required by permit, or the most stringent rule requirement. The control or destruction efficiency is determined across the control device (e.g. inlet-outlet). Collection or capture efficiency is based at each point of contaminant collection in the system. Enter each contaminant that applies. Add rows as needed.			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NO _x	___%	___%	___%
SO _x	___%	___%	___%
CO	___%	___%	___%
PM	___%	85%	___%
PM ₁₀	___%	___%	___%
Inorganic	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS Permit condition to regenerate PM filter after every 24 cold engine start-ups or HiBack alarm signal, whichever occurs first. For regeneration run engine until exhaust temp exceeds 572 Deg. F and normal backpressure reading. Engine exhaust temp at inlet to PM filter ≥ 572 Deg. F except during cold engine start-up, not to exceed 10 minutes.			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: <u>Certified Tier 3 engine with CARB verified DPF.</u>
B. DATE(S) OF SOURCE TEST: <u>Not applicable</u>
C. COLLECTION EFFICIENCY METHOD: The method used to determine collection efficiency of the system (e.g., EPA Method 204, mass balance), if applicable. A brief description of the collection efficiency test may be included if there is no applicable method (e.g., OVA measurements, smoke tests)
D. COLLECTION EFFICIENCY PARAMETERS: The quantitative parameters used to verify the method or procedures in Section 6(C). Examples include static pressure measurements, anemometer measurements, and mass balance results.
E. SOURCE TEST/PERFORMANCE DATA: Enter source test results for each criteria contaminant or precursor (mass emissions, concentrations or efficiencies) if they differ from the requirements previously listed. As previously requested in Section 4, identify any corrections or averaging times

F. TEST OPERATING PARAMETERS AND CONDITIONS: List any important operating conditions maintained during the source test or normal operations. Examples include, but may not be limited to, pressure differentials across control devices, feed rates, firing rates, temperatures, flow rates, or other parameters used to evaluate the level of operation of the equipment during the test or operations that may affect emissions from the equipment.
G. TEST METHODS (SPECIFY AGENCY): <u>EPA Nonroad Engine Certification Test Methods</u>
H. MONITORING AND TESTING REQUIREMENTS: <u>Every 5000 hours inspect integrity of PM filter and if necessary replace</u>
I. DEMONSTRATION OF COMPLIANCE COMMENTS: Enter comments for additional information for Demonstration of Compliance.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: <u>43902</u>	B. CCAT: Click here to enter text.	C. APPLICATION TYPE CODE: <u>10</u>	
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	E. TITLE V FAC: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	F. SOURCE TEST ID(S): <u>N/A</u>	
G. SCAQMD SOURCE SPECIFIC RULES: <u>1470, 431.2</u>			
H. HEALTH RISK FOR PERMIT UNIT:			
H1. MICR: <u>2.86 x 10⁻⁸</u>	H2. MICR DATE: <u>11/24/10</u>	H3. CANCER BURDEN: <u>4.84x10⁻³</u>	H4. CB DATE: <u>11/24/10</u>
H5: HIA: <u>N/A</u>	H6. HIA DATE: Click here to enter a date.	H7. HIC: <u>1.8x10⁻⁵</u>	H8. HIC DATE: <u>11/24/10</u>



SCAQMD BACT Determination

Source Type: Major/LAER
 Application No.: 516708
 Equipment Category: I.C. Engine - Emergency, Compression Ignition
 Equipment Subcategory: PM Filter
 Date: **December 10, 2015**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Cummins		B. MODEL: QSK50-g4	
C. DESCRIPTION: Diesel fuel, 16 cylinders, turbocharged and aftercooled,			
D. FUNCTION: Drives an emergency electricity generator			
E. SIZE/DIMENSIONS/CAPACITY: 2220 BHP			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: Gross heat input in btu per hour at the higher heating value of the fuel			
G. BURNER INFORMATION			
TYPE		INDIVIDUAL HEAT INPUT	NUMBER
Make and model of burner		Rated heat input of single burner, in btu/hr	Number of burners
Enter additional burner types, as needed, add extra rows			
H. PRIMARY FUEL: DIESEL		I. OTHER FUEL: Supplementary or standby fuels	
J. OPERATING SCHEDULE: <1 HRS/DAY 1 DAYS/WEEK 26 WKS/YR			
K. EQUIPMENT INFORMATION COMMENTS: Diesel particulate filter installed			

2. COMPANY INFORMATION

A. COMPANY: Los Angeles County Sheriff's Department		B. FAC ID: 068181	
C. ADDRESS: 28380 The Old Road CITY: Saugus STATE: CA ZIP: 91350		D. NAICS CODE: <u>92214</u>	
E. CONTACT PERSON: Daniel Maloney		F. TITLE: Crafts Operations Manager	
G. PHONE NO.: 661-295-8025		H. EMAIL: E-mail address of contact person	

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: PO-NO-PC NEW CONSTRUCTION
C. SCAQMD ENGINEER: Roy Olivares	
D. PERMIT INFORMATION: PC ISSUANCE DATE: <u>11/15/11</u> P/O NO.:G15795 PO ISSUANCE DATE: 11/15/2011	
E. START-UP DATE: 11/15/2011	
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. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (%O ₂ , %CO ₂ , dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.						
	VOC	NOx+VOC	SOx	CO	PM OR PM₁₀	INORGANIC
BACT Limit		4.8 g/bhp-hr		2.6 g/bhp-hr	0.15 g/bhp-hr	
Averaging Time						
Correction						
B. OTHER BACT REQUIREMENTS: The filter was required to reduce toxic risk from diesel particulate emissions, but also reduces PM10, VOC and CO.						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice						
D. EMISSION INFORMATION COMMENTS: Compliance with rule 404 and Rule 1470. Engine meets applicable Tier 2 BACT limits. The values in Part A are EPA certification standards based on EPA certification test methods.						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Johnson Matthey		B. MODEL: CRT(+) _{12-C-BIEO-CS-24-RT}	
C. DESCRIPTION: Diesel Particulate Filter with CRTDM diagnostic module, data logging and alarm system to automatically shut down engine or switch it to power de-rating when backpressure exceeds setting specified by manufacturer. CARB certified.			
D. SIZE/DIMENSIONS/CAPACITY: An appropriate size parameter such as rated heat input, usable volume, rated filter efficiency, and/or one more characteristic dimensions.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. Click here to enter text. PC ISSUANCE DATE: Click here to enter a date. PO NO.: Click here to enter text. PO ISSUANCE DATE: Click here to enter a date.			
F. REQUIRED CONTROL EFFICIENCIES: Minimum efficiencies of the system control equipment as required by permit, or the most stringent rule requirement. The control or destruction efficiency is determined across the control device (e.g. inlet-outlet). Collection or capture efficiency is based at each point of contaminant collection in the system. Enter each contaminant that applies. Add rows as needed.			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NO _x	___%	___%	___%
SO _x	___%	___%	___%
CO	___%	___%	___%
PM	___%	85%	___%
PM ₁₀	___%	___%	___%
Inorganic	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS Permit condition to regenerate PM filter whenever warning signal is received from alarm system. For regeneration run engine until exhaust temp exceeds 464 Deg. F and normal backpressure reading. Engine exhaust temp at inlet to PM filter \geq 464 Deg. F except during cold engine start-up.			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Certified Tier 2 engine with CARB verified DPF.
B. DATE(S) OF SOURCE TEST: <u>Not applicable</u>
C. COLLECTION EFFICIENCY METHOD: The method used to determine collection efficiency of the system (e.g., EPA Method 204, mass balance), if applicable. A brief description of the collection efficiency test may be included if there is no applicable method (e.g., OVA measurements, smoke tests)
D. COLLECTION EFFICIENCY PARAMETERS: The quantitative parameters used to verify the method or procedures in Section 6(C). Examples include static pressure measurements, anemometer measurements, and mass balance results.
E. SOURCE TEST/PERFORMANCE DATA: Enter source test results for each criteria contaminant or precursor (mass emissions, concentrations or efficiencies) if they differ from the requirements previously listed. As previously requested in Section 4, identify any corrections or averaging times

F. TEST OPERATING PARAMETERS AND CONDITIONS: List any important operating conditions maintained during the source test or normal operations. Examples include, but may not be limited to, pressure differentials across control devices, feed rates, firing rates, temperatures, flow rates, or other parameters used to evaluate the level of operation of the equipment during the test or operations that may affect emissions from the equipment.
G. TEST METHODS (SPECIFY AGENCY): <u>EPA Nonroad Engine Certification Test Methods</u>
I. MONITORING AND TESTING REQUIREMENTS: Every six months inspect integrity of PM filter and if necessary replace. Include any monitoring or testing requirements and their frequency that will be enforced to maintain emission levels reported for the BACT Determination.
I. DEMONSTRATION OF COMPLIANCE COMMENTS: Enter comments for additional information for Demonstration of Compliance.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: <u>43902</u>	B. CCAT: Click here to enter text.	C. APPLICATION TYPE CODE: <u>10</u>
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	E. TITLE V FAC: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	F. SOURCE TEST ID(S): <u>N/A</u>
G. SCAQMD SOURCE SPECIFIC RULES: <u>1470, 431.2</u>		
H. HEALTH RISK FOR PERMIT UNIT:		
H1. MICR: <u>6.3x10-8</u>	H2. MICR DATE: <u>6/23/11</u>	H3. CANCER BURDEN: <u>1.06x10-2</u>
H4. CB DATE: <u>6/23/11</u>	H5. HIA: <u>N/A</u>	H6. HIA DATE: Click here to enter a date.
H7. HIC: <u>3.95x10-5</u>	H8. HIC DATE: <u>6/23/11</u>	



SCAQMD BACT Determination

Source Type: Major/LAER
 Application No.: 558397
 Equipment Category: I.C. Engine - Emergency, Compression Ignition
 Equipment Subcategory: PM Filter
 Date: **December 10, 2015**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Cummins		B. MODEL: QSX15-G9	
C. DESCRIPTION: Diesel fuel, six cylinders, turbocharged and aftercooled,			
D. FUNCTION: Drives an emergency electricity generator			
E. SIZE/DIMENSIONS/CAPACITY: 755 BHP			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: Gross heat input in btu per hour at the higher heating value of the fuel			
G. BURNER INFORMATION			
TYPE		INDIVIDUAL HEAT INPUT	
NUMBER			
Make and model of burner		Rated heat input of single burner, in btu/hr	
Number of burners			
Enter additional burner types, as needed, add extra rows			
H. PRIMARY FUEL: DIESEL		I. OTHER FUEL: Supplementary or standby fuels	
J. OPERATING SCHEDULE: <1 HRS/DAY 1 DAYS/WEEK 26 WKS/YR			
K. EQUIPMENT INFORMATION COMMENTS: Diesel particulate filter installed			

2. COMPANY INFORMATION

A. COMPANY: University of Southern California		B. FAC ID: 800265	
C. ADDRESS: McClintock W 34 th Childs Street CITY: Lost Angeles STATE: CA ZIP: 90089		D. NAICS CODE: <u>61131</u>	
E. CONTACT PERSON: Angel Burgos		F. TITLE: Environmental Manager	
G. PHONE NO.: 626-318-7475		H. EMAIL: aburgos@usc.edu	

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: PO-NO-PC NEW CONSTRUCTION
C. SCAQMD ENGINEER: Ken Coats (Laird)	
D. PERMIT INFORMATION: PC ISSUANCE DATE: Click here to enter a date. P/O NO.:G30438 PO ISSUANCE DATE: 3/21/2014	
E. START-UP DATE: 3/21/2014	
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. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (% O₂, % CO₂, dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.

	VOC	NOx+VOC	SOx	CO	PM OR PM ₁₀	INORGANIC
BACT Limit		3 4.8 g/bhp-hr		2.6 g/bhp-hr	0.015 g/bhp-hr	
Averaging Time						
Correction						

B. OTHER BACT REQUIREMENTS: The filter was required to reduce toxic risk from diesel particulate emissions, but also reduces PM10, VOC and CO.

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

D. EMISSION INFORMATION COMMENTS: Compliance with rule 404 and Rule 1470. Engine meets applicable Tier 2 BACT limits. The values in Part A are EPA certification standards based on EPA certification test methods.

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Rypos		B. MODEL: RH-410-L	
C. DESCRIPTION: Diesel Particulate Filter with hiback data logging and alarm system to automatically shut down engine or switch it to power de-rating when backpressure exceeds setting specified by manufacturer. CARB certified.			
D. SIZE/DIMENSIONS/CAPACITY: An appropriate size parameter such as rated heat input, usable volume, rated filter efficiency, and/or one more characteristic dimensions.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. Click here to enter text. PC ISSUANCE DATE: Click here to enter a date. PO NO.: Click here to enter text. PO ISSUANCE DATE: Click here to enter a date.			
F. REQUIRED CONTROL EFFICIENCIES: Minimum efficiencies of the system control equipment as required by permit, or the most stringent rule requirement. The control or destruction efficiency is determined across the control device (e.g. inlet-outlet). Collection or capture efficiency is based at each point of contaminant collection in the system. Enter each contaminant that applies. Add rows as needed.			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NO _x	___%	___%	___%
SO _x	___%	___%	___%
CO	___%	___%	___%
PM	___%	85%	___%
PM ₁₀	___%	___%	___%
Inorganic	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS Permit condition to regenerate PM filter after every 24 cold engine start-ups or HiBack alarm signal, whichever occurs first. For regeneration run engine until exhaust temp exceeds 572 Deg. F and normal backpressure reading. Engine exhaust temp at inlet to PM filter ≥ 572 Deg. F except during cold engine start-up, not to exceed 10 minutes.			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Certified Tier 2 engine with CARB verified DPF.
B. DATE(S) OF SOURCE TEST: An appropriate size parameter such as rated product throughput, usable volume, and/or one more characteristic dimensions.
C. COLLECTION EFFICIENCY METHOD: The method used to determine collection efficiency of the system (e.g., EPA Method 204, mass balance), if applicable. A brief description of the collection efficiency test may be included if there is no applicable method (e.g., OVA measurements, smoke tests)
D. COLLECTION EFFICIENCY PARAMETERS: The quantitative parameters used to verify the method or procedures in Section 6(C). Examples include static pressure measurements, anemometer measurements, and mass balance results.
E. SOURCE TEST/PERFORMANCE DATA: Enter source test results for each criteria contaminant or precursor (mass emissions, concentrations or efficiencies) if they differ from the requirements previously listed. As previously requested in Section 4, identify any corrections or averaging times

F. TEST OPERATING PARAMETERS AND CONDITIONS: List any important operating conditions maintained during the source test or normal operations. Examples include, but may not be limited to, pressure differentials across control devices, feed rates, firing rates, temperatures, flow rates, or other parameters used to evaluate the level of operation of the equipment during the test or operations that may affect emissions from the equipment.
G. TEST METHODS (SPECIFY AGENCY): <u>EPA Nonroad Engine Certification Test Methods</u>
J. MONITORING AND TESTING REQUIREMENTS: Every 5000 hours inspect integrity of PM filter and if necessary replace Include any monitoring or testing requirements and their frequency that will be enforced to maintain emission levels reported for the BACT Determination.
I. DEMONSTRATION OF COMPLIANCE COMMENTS: Enter comments for additional information for Demonstration of Compliance.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: <u>43902</u>	B. CCAT: Click here to enter text.	C. APPLICATION TYPE CODE: <u>10</u>	
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	E. TITLE V FAC: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	F. SOURCE TEST ID(S): <u>N/A</u>	
G. SCAQMD SOURCE SPECIFIC RULES: <u>1470, 431.2</u>			
H. HEALTH RISK FOR PERMIT UNIT:			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.



SCAQMD BACT Determination

Source Type: Major/LAER
 Application No.: 538706
 Equipment Category: Flare
 Equipment Subcategory: Oil and Gas Operations
 Date: **December 10, 2015**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Flare Industries/Bekaert CEB		B. MODEL: CEB 800
C. DESCRIPTION: Enclosed ground flare with Clean Enclosed Burner		
D. FUNCTION: Process gas disposal		
E. SIZE/DIMENSIONS/CAPACITY: 24'H x 7'-9"L x 7'-9"W		
COMBUSTION SOURCES		
F. MAXIMUM HEAT INPUT: 27 MMBtu/hr		
G. BURNER INFORMATION		
TYPE	INDIVIDUAL HEAT INPUT	NUMBER
NIT mesh knitted metal fiber enclosed burner	Rated heat input of single burner, in btu/hr	1
Enter additional burner types, as needed, add extra rows		
H. PRIMARY FUEL: Process gas from Oil and Gas Operations		I. OTHER FUEL: natural gas
J. OPERATING SCHEDULE: 24 HRS/DAY 7 DAYS/WEEK 52 WKS/YR		
K. EQUIPMENT INFORMATION COMMENTS: Continuous pilot burner with thermocouple for flame detection. Propane storage provides fuel for pilot burner.		

2. COMPANY INFORMATION

A. COMPANY: Linn Operating, Inc.		B. FAC ID: 151532
C. ADDRESS: Brea-Olinda Oilfield, 2000 Tonner Canyon CITY: Brea STATE: CA ZIP: 92821		D. NAICS CODE: Click "NAICS" for link
E. CONTACT PERSON: Vince VanDelden		F. TITLE: EH&S Representative
G. PHONE NO.: 714-257-1604	H. EMAIL: vwvandelden@linenergy.com	

3. PERMIT INFORMATION

A. AGENCY: SCAQMD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Maria Vibal	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 1/8/13 P/O NO.:G34773 PO ISSUANCE DATE: 2/24/2015	
E. START-UP DATE: 3/25/2013	
F. OPERATIONAL TIME: The flare will be operational at all times for disposal of process gas from Oil and Gas Operations at the site.	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: All at 3% O ₂ , one hour averaging time.						
	VOC	NOx	SOx	CO	PM OR PM₁₀	INORGANIC
BACT Limit	10 ppmv	15 ppmv		10 ppmv		
Averaging Time	<u>1 HR</u>	<u>1 HR</u>		<u>1 HR</u>		
Correction	<u>3% O₂</u>	<u>3% O₂</u>		<u>3% O₂</u>		
B. OTHER BACT REQUIREMENTS: Concise description of the BACT requirements for each regulated contaminant from the equipment, other than the requirements list in Section 4(A).						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice						
D. EMISSION INFORMATION COMMENTS: Similar flare model CEB 500, 17 MMBtu/hr operating at Oil and Gas operations in Santa Barbara APCD has been included in CARB BACT Clearinghouse with same emission limits. 99.9+% destruction for VOC and BTEX.						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Manufacturer of the equipment		B. MODEL: Model name and number	
C. DESCRIPTION: Additional description of the operation and functions of the control equipment.			
D. SIZE/DIMENSIONS/CAPACITY: An appropriate size parameter such as rated heat input, usable volume, rated filter efficiency, and/or one more characteristic dimensions.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. Click here to enter text. PC ISSUANCE DATE: Click here to enter a date. PO NO.: Click here to enter text. PO ISSUANCE DATE: Click here to enter a date.			
F. REQUIRED CONTROL EFFICIENCIES: Minimum efficiencies of the system control equipment as required by permit, or the most stringent rule requirement. The control or destruction efficiency is determined across the control device (e.g. inlet-outlet). Collection or capture efficiency is based at each point of contaminant collection in the system. Enter each contaminant that applies. Add rows as needed.			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___ 99.9%	___%
NO _x	___%	___%	___%
SO _x	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
Inorganic	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS Enter comments for additional information regarding Control Technology.			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: <u>Source Test</u>
B. DATE(S) OF SOURCE TEST: <u>3/25-26/13 & 4/19/13</u>
C. COLLECTION EFFICIENCY METHOD: <u>N/A</u>
D. COLLECTION EFFICIENCY PARAMETERS: <u>N/A</u>
E. SOURCE TEST/PERFORMANCE DATA: NO _x = 9.87ppmvd; CO=6.15ppmvd; VOC=3.93ppmvd, all at 3% O ₂
F. TEST OPERATING PARAMETERS AND CONDITIONS: Fired on process gas @ approx. 21.73 MMBtu/hr, <u>Process Gas HHV 913 Btu/scf</u>
G. TEST METHODS (SPECIFY AGENCY): ASTM D-1945 & D-3588; SCAQMD 25.3, 10.1, 100.1, 307, 5.1, 4.1, 2.1; CARB 410
K. MONITORING AND TESTING REQUIREMENTS: Include any monitoring or testing requirements and their frequency that will be enforced to maintain emission levels reported for the BACT Determination.
I. DEMONSTRATION OF COMPLIANCE COMMENTS: en

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: Click here to enter text.	B. CCAT: <u>08</u>	C. APPLICATION TYPE CODE: <u>10</u>	
D. RECLAIM FAC? YES <input checked="" type="checkbox"/> <input type="checkbox"/> NO <input type="checkbox"/>	E. TITLE V FAC: YES <input checked="" type="checkbox"/> <input type="checkbox"/> NO <input type="checkbox"/>	F. SOURCE TEST ID(S): <u>PR12635</u>	
G. SCAQMD SOURCE SPECIFIC RULES: <u>1148.1</u>			
H. HEALTH RISK FOR PERMIT UNIT:			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Best Available Control Technology Guidelines

Part D: BACT Guidelines for Non-Major Polluting Facilities

October 20, 2000 (Revised June 6, 2003; December 5, 2003; July 9, 2004; December 3, 2004; July 14, 2006; October 3, 2008; ~~DRAFT October 7, 2008~~ December 2, 2016)

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

10-20-2000 Rev. 0

Equipment or Process: Abrasive Blasting – Enclosed

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse; or Cartridge Dust Collector (07-11-97)	

* Means those facilities that are minor ~~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

Equipment or Process: Absorption Chiller

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		≤ 20 ppmv dry corrected to 3% O ₂ (10-20-2000)	Natural Gas (10-20-2000)	≤50 ppmv for firetube type, ≤ 100 ppmv for watertube type, dry corrected to 3% O ₂ (10-20-2000)	Natural Gas (10-20-2000)	

* Means those facilities that are ~~minor 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

Equipment or Process: Air Stripper – Ground Water Treatment

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All	Carbon Adsorber, Thermal Oxidizer, or Catalytic Oxidizer (10-20-2000)					

* Means those facilities that are minor ~~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

Equipment or Process: Aluminum Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Crucible or Pot		Natural Gas (07-11-97)	Natural Gas (07-11-97)		Natural Gas with Ingots or Non-contaminated Scrap Charge, or Baghouse (10-20-2000)	
Reverberatory, Non-Sweating < 5 MM BTU/HR		Natural Gas (1990)	Natural Gas (1990)		Same as above. (10-20-2000)	
Reverberatory, Non-Sweating ≥ 5 MM BTU/HR		Natural Gas with Low NOx Burner ≤ 60 ppmvd @ 3% O ₂ (10-20-2000)	Natural Gas (1990)		Same as above. (10-20-2000)	
Reverberatory or Rotary, Sweating < 5 MM BTU/HR	Afterburner (≥ 0.3 sec. Retention Time at ≥ 1400° F) or Secondary Combustion Chamber (1990)	Natural Gas (1990)	Natural Gas (1990)		Natural Gas with Baghouse and: - Afterburner (≥ 0.3 sec. Retention Time at ≥ 1400° F); or - Secondary Combustion Chamber (1990)	
Reverberatory or Rotary, Sweating ≥ 5 MM BTU/HR	Same as Above (1990)	Natural Gas with Low NOx Burner ≤ 60 ppmvd @ 3% O ₂ (10-20-2000)	Natural Gas (1990)		Same as above. (1990)	

Note: Some of this equipment may also subject to 40 CFR 63, Subpart RRR – National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production

* Means those facilities that are minor 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

Equipment or Process: Ammonium Bisulfate and Thiosulfate Production

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All					Packed Column Scrubber with Heat Exchanger and Mist Eliminator (1990)	Packed Column Scrubber for NH ₃ (1990)

* Means those facilities that are ~~minor 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

Equipment or Process: Asbestos Machining Equipment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Air Cleaning Equipment (40 CFR Part 61 Subpart M) (07-11-97)	

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

10-20-2000 Rev. 0

Equipment or Process: Asphalt Batch Plant

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All		Natural Gas with Low NOx Burner ≤ 36 ppmvd @ 3% O ₂ (10-20-2000)			Baghouse (1990)	

* Means those facilities that are ~~minor not major polluting~~ minor 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

Equipment or Process: Asphalt Roofing Line

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Natural Gas (1990)	Natural Gas (1990)		Natural Gas with High Velocity Filter and Mist Eliminator (1990)	

* Means those facilities that are ~~minor 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

Equipment or Process: Asphaltic Day Tanker

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Fiberglass or Steel Wool Filter (07-11-97)	

* Means those facilities that are ~~minor 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

Equipment or Process: Auto Body Shredder

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse with Water Sprays in Hammermill (1988)	

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

10-20-2000 Rev. 0

Equipment or Process: Ball Mill

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse (07-11-97)	

* Means those facilities that are ~~minor not major polluting~~ minor 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

Equipment or Process: Beryllium Machining Equipment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					High Efficiency Particulate Air Filter and Compliance with 40CFR Part 61, Subpart D (1988)	

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

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0
 10-03-2008 Rev. 1
~~XX10-0XX7~~12-02-2016 Rev. 2

Equipment or Process: Boiler

Subcategory/Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x ¹⁾	SO _x	CO	PM ₁₀	
Natural Gas or Propane Fired, <u>≥ 2 and < 20</u> MM Btu/HR		<u>Compliance with SCAQMD Rules 1146 or 1146.1 ≤ 912 ppmv dry d corrected to 3% O₂²⁾</u> (10-20-2000)(10-XX07-20156) <u>(12-02-2016)</u>	Natural Gas (10-20-2000)	≤50 ppmvd for firetube type, ≤ 100 ppmvd for watertube type, dry-corrected to 3% O ₂ (04-10-98)	Natural Gas (04-10-98)	
<u>Propane Fired, > 2 and < 20</u> MMBtu/HR		<u>≤ 12 ppmvd corrected to 3% O₂²⁾</u> <u>(10-20-2000)</u>		<u>≤50 ppmvd for firetube type, ≤ 100 ppmvd for watertube type, corrected to 3% O₂</u> <u>(04-10-98)</u>		
Natural Gas or Propane Fired, <u>≥ 20 and < 75</u> MM Btu/HR		<u>With Low-NO_x Burner:</u> <u>≤ 9 ppmv dry corrected to 3% O₂</u> <u>With Add-On Controls:</u> <u>≤ 7 ppmv dry corrected to 3% O₂</u> <u>(10-20-2000)</u>	Natural Gas (10-20-2000)	Same as above. (04-10-98)	Natural Gas (04-10-98)	<u>With Add-On Controls:</u> <u>≤ 5 ppmvd NH₃, corrected to 3% O₂</u> <u>≤ 1 ppmvd ozone, corrected to 3% O₂</u> <u>(10-20-2000)</u>
<u>Natural Gas or Propane Fired, ≥ 75</u> MM Btu/HR		<u>Compliance with SCAQMD ≤ 5 ppmv dry corrected to 3%</u>	<u>Natural Gas (10-20-2000)</u>	<u>Same as above. (04-10-98)</u>	<u>Natural Gas (04-10-98)</u>	<u>With Add-On Controls:</u> <u>≤ 5 ppmvd NH₃,</u>

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Subcategory/Rating/ Size	Criteria Pollutants					Inorganic
	VOC	NO _x ¹⁾	SO _x	CO	PM ₁₀	
		O₂ Rule 1146 (X-10-XX07-20156) (12-02-2016)				corrected to 3% O ₂ ≤ 1 ppmvd ozone, corrected to 3% O ₂ (10-20-2000)

(Continued on next page)

Oil Fired ³⁾		<u>Compliance with SCAQMD Rule 1146 or 1146.1 (10-20-2000)</u>	<u>Fuel Sulfur Content ≤ 0.05% by Weight (10-20-2000) or 0.0015% by weight if purchased after May 31, 2004 (10-03-2008)</u>	≤ 50 ppmvd for firetube type ≤ 100 ppmvd for watertube type, dry corrected to 3% O ₂ (04-10-98)		
<u>Atmospheric Unit, ≥ 2 and ≤ 10 MMBtu/HR</u>		<u>Compliance with ≤ 12 ppmvd dry corrected to 3% O₂ SCAQMD Rules 1146 and 1146.1 (REVISION DATE 10-07-2016) (12-02-2016)</u>		<u>Compliance with SCAQMD Rules 1146 and 1146.1 (REVISION DATE 10-07-2016) (12-02-2016)</u>		
<u>Landfill or Digester Gas Fired, < 75 MMBTU/HR</u>		<u>≤ 30 25 ppmvd at 3% O₂ dry. Compliance with SCAQMD Rules 1146 and 1146.1 (REVISION DATE 10-07-2016) (04-10-98) (12-02-2016)</u>		≤ 100 ppmvd at 3% O ₂ dry. (04-10-98)	≤ 0.1 gr/scf at 12% CO ₂ (Rule 409) (04-10-98)	

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Subcategory/Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x ¹⁾	SO _x	CO	PM ₁₀	
Digester Gas Fired, < 75 MMBTU/Hr		15 ppmvd at 3% O ₂ dry. Compliance with SCAQMD Rules 1146 and 1146.1 (REVISION DATE 10-07-2016) (12-02-2016)		≤ 100 ppmvd at 3% O ₂ dry. (04-10-98)	≤ 0.1 gr/scf at 12% CO ₂ (Rule 409) (04-10-98)	

- 1) Rules 1146 and 1146.1 require that boilers rated >2 and <75 MMBtu/hr meet 9 ppm NO_x beginning 1/1/2012 for some categories, that natural gas fired boilers rated at >75 MMBtu/hr meet 5 ppm by 1/1/2015 (except boilers at schools and universities), that natural draft boilers rated >2 and ≤10 MMBtu/hr with unsealed combustion chambers meet 12 ppm by 1/1/2014, and that boilers firing landfill or digester gas meet 25 or 15 ppm, respectively, by 1/1/15 (all ppm are dry, corrected to 3% O₂). Electric utility boilers, refinery boilers rated >40 MMBtu/hr and sulfur plant reaction boilers rated ≥5 MMBtu/hr are excluded; and there are exceptions for low-use boilers and boilers that met a 12-ppm limit prior to 9/5/08. Applicants are advised to review these rules for further details.
- 2) A higher NO_x limit may be allowed for facilities required to have a standby fuel, where use of a clean standby fuel is not possible and an ultra low-NO_x burner is not available.
- 3) See Clean Fuels Policy in Part C of the BACT Guidelines. Oil firing is only allowed as a standby fuel, and where use of a clean standby fuel is not possible.

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Brakeshoe Debonder

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner or Secondary Combustion Chamber with ≥ 0.3 Second Retention Time at $\geq 1,400^{\circ}\text{F}$ Achieved within 15 Minutes of Primary Burner Ignition (07-11-97)	Natural Gas (07-11-97)	Natural Gas (07-11-97)		Natural Gas (07-11-97)	

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10-20-2000 Rev. 0

Equipment or Process: Brass Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Crucible, ≤ 300 Lbs/Hr Process Rate		Natural Gas (1990)	Natural Gas (1990)		Natural Gas, Charge Clean Metal Only and Maintain Slag Cover Over Entire Melt Surface (1990)	
Crucible, > 300 Lbs/Hr Process Rate		Low-NOx Burner (10-20-2000)	Natural Gas (1990)		Natural Gas, with Baghouse (1990)	
Reverberatory or Rotary, Non- Sweating		Natural Gas and Low NOx Burner (10-20-2000)	Natural Gas (1990)		Natural Gas with Baghouse (1990)	
Reverberatory or Rotary, Sweating	Afterburner (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1990)	Natural Gas with Low NOx Burner (1990)	Natural Gas (1990)	Afterburner (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1990)	Natural Gas with Baghouse (1990)	
Tilting Induction, ≤ 300 Lbs/Hr Process Rate					Charge Clean Metal Only and Slag Cover Maintained Over Entire Melt Surface (1988)	
Tilting Induction, > 300 Lbs/Hr Process Rate					Baghouse (7-11-97)	

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Equipment or Process: Bulk Solid Material Handling – Other

Subcategory ³ /Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Animal Feed Mfg. – Dry Material Handling					Baghouse (07-11-97)	
Clay, Ceramics and Refractories Handling (Except Mixing)					Baghouse (1988)	
Coal, Coke and Sulfur Handling					Compliance with SCAQMD Rule 1158 (10-20-2000)	
Feed and Grain Handling					Baghouse (1988)	
Natural Fertilizer Handling ¹⁾					Baghouse or Equivalent Material Moisture (07-11-97)	
Paper and Fiber Handling					High Efficiency Cyclone with Baghouse (10-20-2000)	
Pneumatic Conveying, Except Paper and Fiber					Baghouse (1988)	
Railcar Dumper					Enclosed Dump Station and Water Spray for Wet Material (1988)	
Other Dry Materials Handling ²⁾					Enclosed Conveyors and Baghouse (7-11-97)	
Other Wet Materials Handling ²⁾					Water Spray or Adequate Material Moisture (1988)	

1. Includes conveying, size reduction, classification and packaging.
2. Includes conveying, size reduction and classification.
3. Also see Catalyst Manufacturing, Coffee Roasting, Non-Metallic Mineral Processing, Nut Roasting, Rendering, Pharmaceutical Operations, and Rock-Aggregate Processing for other bulk solid material handling.

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10-20-2000 Rev. 0

Equipment or Process: Bulk Solid Material Ship Loading

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Non-White Commodities					Enclosed Conveyor and - Water Spray; or - Adequate Material Moisture (1988)	
White Commodities					Enclosed Conveyor and Baghouse Venting Ship Holds and Transfer Points (07-11-97)	

Notes:

1. Non-White commodities include coal, copper concentrate, sulfur, iron slag, iron ore, iron pellets, green petroleum coke and other wet commodities
2. White commodities include soda ash, salt cake, potash and other dry commodities.

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Equipment or Process: Bulk Solid Material Ship Unloading

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Bulk Cement		Shore Utility Power (1988)	Shore Utility Power (1988)		Enclosed, Self- Unloading Ship (1988)	
Other Bulk Solid Materials					Enclosed Hold and Baghouse; or Material Moisture Equivalent to an Enclosed Hold and Baghouse (1988)	

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10-20-2000 Rev. 0

Equipment or Process: Bulk Solid Material Storage

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM10	
Coal, Petroleum Coke, Sulfur					Enclosed Storage in Compliance with SCAQMD Rule 1158 (10-20-2000)	
Other Non-White Commodities					Water Spray and Chemical Additives or Charged Fog Spray (1988)	
White Commodities					Enclosed Storage and Baghouse (1988)	
Storage Tanks and Silos					Baghouse or Filtered Vent for Dry Material; Water Spray or Adequate Moisture for Wet Material (07-11-97)	
Other Open Storage					Water with Chemical Additives (1988)	

Notes:

1. Other non-white commodities include copper concentrate, iron slag, iron ore, and iron pellets.
2. White commodities include cement, gypsum, lime, soda ash, borax and flour.

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Burnoff or Burnout Furnace (Excluding Wax Furnace)

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner or Secondary Combustion Chamber with ≥0.3 Second Retention Time at ≥1,400°F Achieved within 15 Minutes of Primary Burner Ignition (07-11-97)	Natural Gas (07-11-97)	Natural Gas (07-11-97)		Natural Gas (07-11-97)	

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Calciner

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Petroleum Coke	Afterburner (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1988)	44 ppmv, Dry, Corrected to 3% O ₂ (1988)	Natural Gas with Flue Gas Desulfurization (> 90% Removal Efficiency) (1988)	Afterburner (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1988)	0.005 gr/dscf Corrected to 3% O ₂ (1988)	
Other		45 ppmv, Dry, Corrected to 3% O ₂ (1988)	Natural Gas (1988)		Natural Gas with Baghouse (1988)	

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10-20-2000 Rev. 0

Equipment or Process: Carpet Beating and Shearing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse (1988)	

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10-20-2000 Rev. 0

Equipment or Process: Catalyst Manufacturing and Regeneration

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Calcining		Three-Stage NO _x Reduction Scrubber (1990)	Natural Gas (1990)		Baghouse (10-20-2000)	
Reactor		NO _x Scrubber (07-11-97)				
Rotary or Spray Dryer					Baghouse (07-11-97)	
Regeneration, Hydrocarbon Removal	Flare, Firebox, or Afterburner (≥ 0.3 Second Retention Time at ≥ 1,400 °F) (07-11-97)					
Catalyst Solids Handling					Baghouse (07-11-97)	

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Equipment or Process: Charbroiler, Chain-driven (conveyorized)

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Catalytic Oxidizer (12-12-97)				Catalytic Oxidizer (12-12-97)	

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10-20-2000 Rev. 0

Equipment or Process: Chemical Milling Tanks

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Aluminum and Magnesium ¹						
Nickel Alloys, Stainless Steel and Titanium		Packed Chemical Scrubber (10-20-2000)			High Efficiency Mist Eliminator (10-20-2000)	

1) At the date of the last revision for this category, there was no Achieved In Practice BACT Determination for this subcategory. Technologically Feasible options listed in historic SCAQMD BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

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10-20-2000 Rev. 0

Equipment or Process: Chip Dryer

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1400°F) (10-20-2000)	Natural Gas with Low NO _x Burner (10-20-2000)	Natural Gas (1989)		Natural Gas with: - Baghouse and Limestone Filter Coating; or - Baghouse and Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1400°F) (1989)	

Note: This equipment may also subject to 40 CFR 63, Subpart RRR – National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production

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10-20-2000 Rev. 0

Equipment or Process: Chrome Plating

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Decorative Chrome					Packed Scrubber and Mist Suppressant (1988) Compliance with <u>SCAQMD Rule 1469</u> (10-20-2000)	
Hard Chrome					Packed Scrubber and Mist Suppressant (1988) Compliance with <u>SCAQMD Rule 1469</u> (10-20-2000)	

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10-20-2000 Rev. 0

Equipment or Process: Circuit Board Etcher

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Batch Immersion Type, Subtractive Process					Packed Water Scrubber and Etchant Solution Temperature Control (10-20-2000)	
Conveyorized Spray Type, Subtractive Process					Packed Water Scrubber and Etchant Solution Temperature Control (1988)	

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10-20-2000 Rev. 0

Equipment or Process: Cleaning Compound Blender

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse or Wet Centrifugal Collector or Cyclone (07-11-97)	

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10-20-2000 Rev. 0

Equipment or Process: Coffee Roasting

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Roaster, < 110,000 BTU/Hr		Natural Gas (1988)	Natural Gas (1988)		Natural Gas (1988)	
Roaster, ≥ 110,000 BTU/Hr	Afterburner (0.3 Sec Retention Time at 1200 °F) (1990)	Natural Gas, with Heat Recovery on Afterburner Exhaust to Reduce Fuel Consumption (10-20-2000)	Natural Gas (1990)		Natural Gas with Cyclone and Afterburner (≥ 0.3 Second Retention Time at ≥ 1200 °F) (1990)	
Handling Equipment, < 1,590 Lbs/Hr All ¹						
Handling Equipment, ≥ 1,590 Lbs/Hr All					Cyclone (1990)	

1) At the date of the last revision for this category, there was no Achieved In Practice BACT Determination for this subcategory. Technologically Feasible options listed in historic SCAQMD BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

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12-5-2003 Rev. 0

Equipment or Process: Composting

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic (Ammonia)
	VOC	NO _x	SO _x	CO	PM ₁₀	
Co-composting ^{a)}	Compliance with <u>SCAQMD</u> Rule 1133.2 ^{b)} (12-5-2003)					Compliance with <u>SCAQMD</u> Rule 1133.2 ^{b)} (12-5-2003)

a) Co-composting is composting where biosolids and/or manure are mixed with bulking agents to produce compost.

b) Not required for design capacity <1,000 tons per year.

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10-20-2000 Rev. 0

Equipment or Process: Concrete Batch Plant

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Central Mixed, < 5 Cubic Yards/Batch					Water Spray (1988)	
Central Mixed, ≥ 5 Cubic Yards/Batch					Baghouse for Cement Handling and Adequate Moisture in Aggregate (1988)	
Transit-Mixed					Baghouse Venting the Cement Weigh Hopper and the Mixer Truck Loading Station; and Adequate Aggregate Moisture (07-11-97)	

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10-20-2000 Rev. 0

Equipment or Process: Concrete Blocks and Forms Manufacturing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse (1988)	

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10-20-2000 Rev. 0

Equipment or Process: Cotton Gin

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Rotary Drum Filter and Cyclone (1988)	

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10-20-2000 Rev. 0

Equipment or Process: Crematory

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Secondary Combustion Chamber, ≥ 1500 °F (1990)	Natural Gas (1990)	Natural Gas (1990)		Natural Gas with Secondary Combustion Chamber, ≥ 1500 °F (1990)	

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Equipment or Process: Degreaser – Other

Rating/Size	Criteria Pollutants					
	VOC/ODC	NO _x	SO _x	CO	PM ₁₀	Inorganic
Batch-Loaded or Conveyorized Cold Cleaners	Use of solvents containing 50 grams of VOC or less per liter of material (12-12-97)					
Film Cleaning Machine	Carbon Adsorber (10-20-2000)					
Solvent Spraying ¹⁾ , 1,1,1 Trichloroethane	Carbon Adsorber (1990) and Compliance with 40 CFR 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning (10-20-2000)					
Solvent Spraying ¹⁾ , Other VOCs	Compliance with <u>SCAQMD</u> Rule 1171 (10-20-2000)					

Note: Use of certain halogenated solvents is also subject to 40 CFR 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning

1) This subcategory includes solvent spray booths and remote reservoir cleaners.

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10-20-2000 Rev. 0

Equipment or Process: Degreaser –Vapor Cleaning, Volatile Organic Compounds

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Batch	<p>Tier 1: Use of an automatically operated airtight or airless cleaning system that emits no more than $[4.3 \times V^{0.6}]$ lb/month of VOCs, where V is the cleaning chamber volume in cubic feet. Use of alternative equipment is allowed provided such equipment is subject to the same emissions limitation (lb/month of VOCs) as calculated above.</p> <p>Tier 2: Use of equipment that does not exceed $[22 \times A]$ lb/month of VOCs, where A is the solvent surface area in square feet, provided it is technically infeasible to use Tier 1 equipment because of part deformation, inherent part pressure, part type or geometry, soil type or amount, cleanliness sensitivity, or other reasons. (4-10-98)</p>					
Conveyorized	<p>Use of a conveyorized vapor degreaser that does not exceed $[17 \times A]$ lb/month of VOCs, where, A is the solvent surface area in square feet (04-10-98)</p>					

Notes:

1. Use of certain halogenated solvents is also subject to 40 CFR 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning
2. Use of VOCs not subject to the above-described NESHAP is also subject to SCAQMD Rule 1122.
3. Any permit applicant may demonstrate that the Tier 1 BACT may not be technologically feasible for the applicant’s permit unit. For batch-loaded vapor degreasing equipment, SCAQMD will consider the following three factors taken together as a whole, as well as any other technical factors presented by the applicant: a) Part Type and Geometry – In that different parts and part geometries lend themselves to different cleaning methods that may be acceptable to achieve proper cleanliness, SCAQMD will consider information presented by the applicant regarding the type and geometry of the part(s) proposed to be cleaned in determining what cleaning technologies are available for the part(s) in questions; b) Soil Type and Amount – In that different types and quantities of soils being cleaned from parts lend themselves to different cleaning methods, SCAQMD will consider information presented by the applicant regarding the soil type and soil quantity of the part(s) proposed to be cleaned in determining what cleaning technologies are available for the part(s) in question; c) Cleanliness Sensitivity – In that (i) different parts have different levels of sensitivity to cleanliness (e.g., medical and high technology device parts may need to achieve an extremely high level of cleanliness, whereas standard plumbing supplies may tolerate a lower level of cleanliness), and (ii) the integrity of certain parts may be compromised by exposure to the reduced pressure environment of airless cleaning systems; SCAQMD will consider information presented by the applicant regarding the cleanliness sensitivity of the part(s) proposed to be cleaned in determining what cleaning technologies are available for the part(s) in question.

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10-20-2000 Rev. 0

Equipment or Process: Detergent Manufacturing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Solids Handling					Cyclone and Baghouse (07-11-97)	
Spray Dryer		Natural Gas with Low-NO _x Burner (1988)	Natural Gas (1988)		Natural Gas with: - Cyclone and Baghouse; or - Cyclone, Scrubber and Electrostatic Precipitator (1988)	

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Drum Reclamation Furnace

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner (≥ 0.3 Sec. Retention time at ≥ 1400 °F) (1990)	Natural Gas (1990)	Natural Gas (1990)		Natural Gas with After- burner (> 0.3 Sec. Retention Time at ≥ 1400 °F) and Baghouse (1990)	

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

7-9-2004 Rev. 1

Equipment or Process: Dry Cleaning

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC/ODC	NO _x	SO _x	CO	PM ₁₀	
Perchloroethylene	Delisted as a VOC. See SCAQMD Rule 1421 – Control of Perchloroethylene Dry Cleaning Operations ¹ (06-13-97)					
Petroleum Solvent ²	Closed Loop, Dry-to-Dry Machine with a Refrigerated Condenser (10-20-2000) or Evaporatively Cooled Condenser (7-9-2004)					

¹ Rule 1421 implements the federal National Emission Standard for Hazardous Air Pollutant for Perchloroethylene Dry Cleaning Facilities (40 Code of Federal Regulations [CFR] 63.320, *et seq*) and the state Airborne Toxic Control Measure (ATCM) for Emissions of Perchloroethylene from Dry Cleaning Operations (17 California of Regulation [CCR] 93109, *et seq*).

²This Equipment may also be subject to AQMD Rule 1102 – Dry Cleaners Using Solvent Other Than Perchloroethylene.

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Dryer – Kiln

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Natural Gas with Low NO _x Burner (10-20-2000)	Natural Gas (1988)		Natural Gas (1988)	

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Dryer or Oven

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
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 NO _x Burner (10-20-2000)	Natural Gas (1990)		Natural Gas with Baghouse (1990)	
Tray, Agitated Pan, and Rotary Vacuum Dryers		Natural Gas with Low NO _x Burner (10-20-2000)	Natural Gas (1990)		Natural Gas (1990)	
Tenter Frame Fabric Dryer		60 ppmvd Corrected to 3% O₂ (10-20-2000)	Natural Gas (10-20-2000)		Natural Gas (10-20-2000)	
Other Dryers and Ovens – Direct and Indirect Fired		30 ppmvd corrected to 3% O₂ (04-10-98)	Natural Gas (10-20-2000)		Natural Gas (10-20-2000)	

1. Dryers for foodstuff, pharmaceuticals, aggregate & chemicals.

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Electric Furnace – Pyrolyzing, Carbonizing and Graphitizing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1400 °F) (1988)					

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Electrical Wire Reclamation – Insulation Burn-Off Furnace

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Afterburner (≥ 0.3 Second Retention Time at ≥ 1400 °F); Or Secondary Combustion Chamber (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1988)	Natural Gas (1988)	Natural Gas (1988)		Natural Gas with Baghouse and: - Afterburner ((≥ 0.3 Second Retention Time at ≥ 1400 °F) or - Secondary Combustion Chamber (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1988)	

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Ethylene Oxide Sterilization

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Aeration	Recirculation Vacuum Pump-Seal Fluid with Fluid Reservoir Vented to: Chemical Scrubber; or Afterburner (≥ 0.3 second retention time at ≥ 1,400°F); or Catalytic Afterburner (at ≥ 280°F) (07-11-97)					
Quarantine Storage	Unvented Enclosure with Internal Circulation Through Activated Carbon Impregnated with Sulfuric Acid (1989)					

Note: Ethylene Oxide Sterilization may also be Subject to 40 CFR 63, Subpart O – Emission Standards for Ethylene Oxide Sterilization Facilities.

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Expanded Polystyrene Manufacturing Using Blowing Agent

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	For VOC Emissions: Incineration (≥ 0.3 Sec. Retention Time at ≥ 1400 °F) (1990)					

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Fatty Acid – Fat Hydrolyzing and Fractionation

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Condenser or Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1300 °F) (10-20-2000)					

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Fatty Alcohol

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner (≥ 0.3 second retention time at ≥ 1,400°F) (07-11-97)					

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Fermentation, Beer and Wine

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All Closed Systems	Carbon Adsorber (10-20-2000)					
All Open Systems	Scrubber with Approved Liquid Waste Disposal (10-20-2000)					

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

10-20-2000 Rev. 0

Equipment or Process: Fiberglass Operations

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Fabrication – Hand and Spray Layup	Compliance with <u>SCAQMD</u> Rule 1162 (10-20-2000)				Airless Spray Equipment and Spray Booth with Mesh Type Filter (1988)	
Panel Manufacturing	Curing Oven, Impregnation Tables and Mixing Tanks Vented to an Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1400 °F). Storage and Holding Tanks Vented to a Carbon Adsorber (1988)	Natural Gas Fired Curing Oven, Electrically Heated Cellophane Oven and Laminating Table (1988)	Natural Gas (10-20-2000)		Natural Gas Fired Curing Ovens, Cellophane Ovens Vented to an Electrostatic Precipitator and Panel Cutting Saw Vented to Baghouse (1988)	
Pultrusion	Styrene Suppressed Resin (1988), and Compliance with <u>SCAQMD</u> Rule 1162 (10-20-2000)					

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Fish Reduction

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Cooker	Scrubber with Chlorinated Solution (≤ 20 ppmv Cl ⁻ Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1988)					
Digester, Evaporator and Acidulation Tank	Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1200 °F) (1990)				Natural Gas with Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1200 °F) (1990)	
Dryer	Scrubber with Chlorinated Solution (≤ 20 ppmv Cl ⁻ Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1990)				Natural Gas and Scrubber with Chlorinated Solution (≤ 20 ppmv Cl ⁻ Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1990)	
Meal Handling ¹						
Rendering – Presses, Centrifuges, Separators, Tanks, Etc.	Water Condenser and Vent to Dryer Firebox (1988)					

1) At the date of the last revision for this category, there was no Achieved In Practice BACT Determination for this subcategory. Technologically Feasible options listed in historic SCAQMD BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Flare

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Digester Digester Gas or Landfill Gas from Non-Hazardous Waste Landfill	Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1400 °F, Auto Combustion Air Control, Automatic Shutoff Gas Valve and Automatic Re-Start System (1988)	0.06 lbs/MM Btu (1988)		Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1400 °F, and Auto Combustion Air Control (1988)	Knockout Vessel (1988)	
Landfill Gas from Hazardous Waste Landfill	Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1500 °F, Auto Combustion Air Control, Automatic Shutoff Gas Valve and Automatic Re-Start System (1988)	0.06 lbs/MM Btu (1988)		Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1500 °F, and Auto Combustion Air Control (1988)	Knockout Vessel (1988)	

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Flow Coater, Dip Tank and Roller Coater

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
< 36 lbs/day VOC	Compliance with Regulation XI (10-20-2000)					
≥ 36 lbs/day VOC	Coating with Lower VOC Content than Required by Applicable Rules, and Emissions from Coating Area, Flash Off Area, Drying Area , and Oven Vented to Control Device Achieving ≥ 90% Overall Efficiency (1988) Or Super Clean -Compliant Materials with ≤ 5% VOC by Weight (10-20-2000)					

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Foundry Sand Mold – Cold Cure Process

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All			Packed Column Scrubber with pH of Solution Maintained at a Minimum of 8.0 (1988)			

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Fryer – Deep Fat

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
< 2 MM Btu/hr	Integrated Afterburner/Oil Heater (≥ 0.3 Sec. Retention Time at ≥ 1400 °F) (10-20-2000)	Natural Gas (1990)	Natural Gas (1990)		Integrated Afterburner/Oil Heater (≥ 0.3 Sec. Retention Time at ≥ 1400 °F) (10-20-2000)	
≥ 2 MM Btu/hr	Integrated Afterburner/Oil Heater (≥ 0.3 Sec. Retention Time at ≥ 1400 °F) (10-20-2000)	Natural Gas (1990)	Natural Gas (1990)		Integrated Afterburner/Oil Heater (≥ 0.3 Sec. Retention Time at ≥ 1400 °F), and Electrostatic Precipitator or High Efficiency Mist Eliminator (10-20-2000)	

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

12-5-2003 Rev. 1

Equipment or Process: Fugitive Emission Sources at Natural Gas Plants and Oil
 and Gas Production Fields

Subcategory/Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM10	
Compressors, Centrifugal Type	Seal System with a Higher Pressure Barrier Fluid (04-10-98); and Compliance with <u>SCAQMD</u> Rule 1173 (12-5-2003)					
Compressors, Rotary Type	Enclosed Seal System Connected to Closed Vent System (04-10-98); and Compliance with <u>SCAQMD</u> Rule 1173					
Pressure Relief Valves	Connected to Closed Vent System or Equipped with Rupture Disc if Applicable (4-10-98); and Compliance with <u>SCAQMD</u> Rule 1173 (12-5-2003)					
Pumps – In Heavy Liquid Service	Single Mechanical (4-10-1998); and Compliance with <u>SCAQMD</u> Rule 1173 (12-5-2003)					
Pumps – In Light Liquid Service	Sealless Type if Available and Compatible; or Double or Tandem Seals, and Vented to Closed Vent System (4-10-98); and Compliance with <u>SCAQMD</u> Rule 1173 (12-5-2003)					
Sampling Connections	Closed-Purge, Closed-Loop, or Closed-Vent System (4-10-98); and Compliance with <u>SCAQMD</u> Rule 1173 (12-5-2003)					
Valves, Fittings, Diaphragms, Hatches, Sight-Glasses, Open-Ended Pipes and Meters in VOC Service	Compliance with <u>SCAQMD</u> Rule 1173 (12-5-2003)					

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

12-5-2003 Rev. 1

Equipment or Process: Fugitive Emission Sources at Organic Liquid Bulk
 Loading Facilities

Subcategory/Rating/Size	Criteria Pollutants					
	VOC	NOx	SOx	CO	PM10	Inorganic
Compressors, Centrifugal Type	Seal System with a Higher Pressure Barrier Fluid; < 500 ppmv by USEPA Method 21 with Quarterly I&M Program ¹⁾ (04-10-98)					
Compressors, Rotary Type	Enclosed Seal System Connected to Closed Vent System; < 500 ppmv by USEPA Method 21 with Quarterly I&M Program ¹⁾ (04-10-98)					
Connectors ²⁾ in Gas, Vapor or Light Liquid VOC Service	< 500 ppmv by USEPA Method 21 with Quarterly I&M Program ¹⁾ (04-10-98)					
Open Ended Valves and Pipes	Compliance with <u>SCAQMD</u> Rule 1173 where Applicable (10-20-2000)					
Pressure Relief Valves	Connected to Closed Vent System or Equipped with Rupture Disc if Applicable (4-10-98); and Compliance with <u>SCAQMD</u> Rule 1173 (10-20-2000)					
Process Valves – Gate, Globe and Ball	Compliance with <u>SCAQMD</u> Rule 1173, where Applicable (10-20-2000)					
Pumps – In Heavy Liquid Service	Single Mechanical; < 1000 ppmv by USEPA Method 21 with Quarterly I&M (4-10-1998)					
Pumps – In Light Liquid Service	1. Sealless Type if Available and Compatible, or 2. Double or Tandem Seals and Vented to Closed Vent System; < 1000 ppmv by USEPA Method 21 with Approved <u>SCAQMD</u> I&M; <1000 ppmv by USEPA Method 21 with Approved <u>SCAQMD</u> I&M (4-10-98)					
Sampling Connections	Closed-Purge, Closed-Loop, or Closed-Vent System (4-10-98)					

- 1) Quarterly I&M shall be consistent with SCAQMD Rule 1173 and other applicable requirements except that leaks between 500 and 1000 ppmv must be repaired within 14 days after detection.
 2) Connectors include flanges, screwed or other joined fittings

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10-20-2000 Rev. 0
 12-5-2003 Rev. 1

Equipment or Process: Fugitive Emission Sources, Other Facilities

Subcategory/Rating/Size	Criteria Pollutants					
	VOC	NOx	SOx	CO	PM10	Inorganic
Compressors, Fittings, Open Ended Pipes, Pressure Relief Devices, , Valves, Pumps, Sampling Connections, Diaphragms, Hatches, Sight-Glasses and Meters in VOC Service	Compliance with Rule 1173, where Applicable by Rule (12-5-2003)					

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Galvanizing Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Batch Operations		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas (1988)		Natural Gas with Baghouse with Lime Coating (1988)	
Continuous Sheet Metal Operations		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas (1988)		Natural Gas with Packed Column Scrubber Serving the Caustic, Acid Pickling Tanks and/or Metal Preparation Tanks (1988, 2000)	
Continuous Wire Operations		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas (1988)		Natural Gas with Noncombustible Covering on Molten Metal Surface, Baghouse, and Packed Column Scrubber Serving the Metal Preparation Tanks (1988, 2000)	

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10-20-2000 Rev. 0

Equipment or Process: Garnetting Equipment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse or Rotary Drum Filter (1988)	

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0
 12-3-2004 Rev. 1

Equipment or Process: Gas Turbine

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Natural Gas Fired, < 3 MWe		9 ppmvd @ 15% O ₂ (10-20-2000)		10 ppmvd @ 15% O ₂ (10-20-2000)		9 ppmvd ammonia @ 15% O ₂ (10-20-2000)
Natural Gas Fired, ≥ 3 MWe and < 50 MWe		2.5 ppmvd @ 15% O ₂ x <u>efficiency (%)</u> ¹⁾ 34% (6-12-98)		10 ppmvd @ 15% O ₂ (6-12-98)		5.0 ppmvd ammonia @ 15% O ₂ (10-20-2000)
Natural Gas Fired, ≥ 50 MWe	2.0 ppmvd (as methane) @ 15% O ₂ , 1-hour avg. OR 0.0027 lbs/MMBtu (higher heating value) (10-20-2000)	2.5 ppmvd @ 15% O ₂ , 1-hour rolling avg. OR 2.0 ppmvd @ 15 %O ₂ , 3-hour rolling avg. x <u>efficiency (%)</u> ¹⁾ 34% (10-20-2000)		6.0 ppmvd @ 15% O ₂ , 3-hour rolling avg. (10-20-2000)		5.0 ppmvd ammonia @ 15% O ₂ (10-20-2000)
Emergency		See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)	See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)		See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)	
Landfill or Digester Gas Fired		25 ppmv, dry, corrected to 15 %O ₂ (1990)	Compliance with Rule 431.1 (10-20-2000)	130 ppmv, dry, corrected to 15 %O ₂ (10-20-2000)	Fuel Gas Treatment for Particulate Removal (1990)	

Notes: 1) The turbine efficiency correction for NOx is limited to 1.0 as a minimum. The turbine efficiency is the demonstrated percent efficiency at full load (corrected to the higher heating value of the fuel) without consideration of any downstream heat recovery (12-3-2004).

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Glass Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Decorator Glass		Natural Gas with Low NOx Burner (10-20-2000); Cullet in Raw Material Charged > 80% (1988)			Baghouse (10-20-2000)	
Flat Glass		Natural Gas with Heating Modifications: <ul style="list-style-type: none"> - Excess Oxygen in Ports < 5% - Cullet in Raw Material Charged > 15% - Hot Spot Temperature < 2,700 °F (1988) 	Process Modification: Sulfur Content of Batch Charged < 0.25% by Weight of Total Batch (1988)		Baghouse (10-20-2000)	

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

10-20-2000 Rev. 0

Equipment or Process: Incinerator – Hazardous Waste

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Automatic Combustion Air Control, ≥ 2 Sec. Retention Time and ≥ 1800 °F (1988)	Natural Gas Supplemental Fuel with Selective Non-catalytic Reduction (1988)	Natural Gas Supplemental Fuel and Spray Dryer with Lime Injection (1988)	Automatic Combustion Air Control, ≥ 2 Sec. Retention Time and ≥ 1800 °F (1988)	0.002 gr/dscf at 12% CO ₂ (1988)	

Note: The equipment may also be subject to 40 CFR 264, Subpart O--Incinerators

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10-20-2000 Rev. 0

Equipment or Process: Incinerator – Infectious Waste

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
≤ 300 lbs/hr	Multiple Chamber Starved Air Design (≥ 0.5 Sec. Retention Time at ≥ 1800 °F) (1988)	Natural Gas as Auxiliary Fuel (1988)	Natural Gas as Auxiliary Fuel with Wet Scrubber (1988)	Multiple Chamber Starved Air Design (≥ 0.5 Sec. Retention Time at ≥ 1800 °F) (1988)		
> 300 lbs/hr	Same as Above	Same as Above	Same as Above	Same as Above	0.04 gr/dscf Corrected to 12% CO ₂ , with Enclosed Automatic Feed and Ash Removal System (1988)	

Note: The equipment may also be subject to 40 CFR 60, Subpart Ec--Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction Is Commenced After June 20, 1996

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

10-20-2000 Rev. 0

7-9-2004 Rev. 1

Equipment or Process: Incinerator – Non-Infectious, Non-Hazardous Waste

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
≤ 300 lbs/hr	Multiple Chamber Starved Air Design (≥ 0.5 Sec. Retention Time at ≥ 1600 °F) (1988)	Natural Gas as Auxiliary Fuel (1988)	Natural Gas as Auxiliary Fuel with Wet Scrubber (1988)	Multiple Chamber Starved Air Design (≥ 0.5 Sec. Retention Time at ≥ 1600 °F) (1988)	Natural Gas as Auxiliary Fuel with Enclosed Automatic Feed and Fly_ash Removal System (1988)	
> 300 lbs/hr and < 750 lbs/hr	Same as Above	Same as Above	Same as Above	Same as Above	0.04 gr/dscf Corrected to 12% CO ₂ , with Enclosed Automatic Feed and Ash Removal System (1988)	
≥ 750 lbs/hr	Multiple Chamber Starved Air Design (≥ 0.5 Sec. Retention Time at ≥ 1800 °F) (1988)	Same as Above	Same as Above	Multiple Chamber Starved Air Design (≥ 0.5 Sec. Retention Time at ≥ 1800 °F) (1988)	Same as Above	

Note: The equipment may also be subject to 40 CFR 60, Subpart CCCC--Standards of Performance for New Stationary Sources: Commercial and Industrial Solid Waste Incineration Units.

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Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

10-20-2000 Rev. 0
7-14-2006 Rev. 1
~~X10-XX07~~ 12-02-2016 Rev. 2

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

Subcategory/ ²	Rating/Size	Criteria Pollutants					
		VOC	NOx	NOx + NMHC ¹ NMHC ²	SOx	CO	PM
Compression-Ignition ² Ignition ³)	50 ≤ HP < 75 100			Tier 2: 7.5 grams/kW-hr (5.6 grams/bhp-hr) Tier 4 Final: 3 (After 12/31/2007): 4.7 grams/kW-hr (3.5 grams/bhp-hr) (7X10-14XX07- 200620XX16) (12-02- 2016)	Diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2). (6-6-2003)	Tier 4 Final² or Tier 3: 5.0 grams/kW-hr (3.7 grams/bhp-hr) (7X10-14XX07- 200620XX16) (12- 02-2016)	Tier 4 Final² or Tier 3: 0.03 0.40 grams/kW- hr (0.02² 0.30 grams/bhp-hr) and CARB ATCM for portable diesel engines³engines⁴ (7X10-14XX07- 200620XX16) (12- 02-2016)
	75100 ≤ HP < 175 ₅		Tier 4 FinalInterim: 0.3 4 grams/kW-hr (0.32.5 grams/bhp- hr) (X10-XX07- 20XX16) (12-02- 2016)	Tier 4 FinalInterim²: -NMHC only: 0.19 6.6 grams/kW-hr _____ (0.14⁶ 4.9 grams/bhp-hr) Tier 3 (After 12-31- 2006): (X10-XX07- 20XX16)NOx: 0.44.0 grams/kW-hr (0.33.0 grams/bhp-hr) (7-14-2006) (12-02- 2016)	Tier 4 FinalInterim² or Tier 3: 5.0 grams/kW-hr (3.7 grams/bhp-hr) (7X10-14XX07- 200620XX16) (12- 02-2016)	Tier 4 FinalInterim² or Tier 3: 0.02 0.30 grams/kW- hr (0.220.01⁵ grams/bhp-hr) and CARB ATCM for portable diesel engines³engines⁴ (7X10-14XX07- 200620XX16) (12- 02-2016)	

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Subcategory/	Rating/Size	Criteria Pollutants					
		VOC	NO _x	NO _x + NMHC ¹ NMHC ²	SO _x	CO	PM
	175 ≤ HP < 750		Tier 4 Final: 0.40 grams/kW-hr (0.30 grams/bhp-hr) (X10-XX07- 20XX16) (12-02-2016)	Tier 4 Final 3 : NMHC only: 0.19 4.0 grams/kW-hr (0.14 6 3.0-grams/bhp-hr) : (X10-XX07- 20XX16) NO _x : 0.4grams/kW hr (0.3grams/bhp hr) (7-14-2006) (12-02-2016)		Tier 4 Final 3 : 3.5 grams/kW-hr (2.6 grams/bhp-hr) (X10-XX07- 20XX16) (7-14-2006) (12-02-2016)	Tier 4 Final 3 : 0.02-0.20 grams/kW-hr (0.015 0.15 grams/bhp-hr) and CARB ATCM for portable diesel engines ³ engines ⁴ (X10-XX07- 20XX16) (7-14-2006) (12-02-2016)

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<u>Compression-Ignition</u> ²³	≥750 HP ⁵ All	1.5 grams/bhp-hr, or 240 ppmvd as methane @ 15% O ₂ (4-10-1998)	Tier 4 FinalInterim: For Generator Sets > 1200 HP: 0.67 grams/kW-hr (0.50 grams/bhp-hr) For All Engines Except "Generator Ssets > 1200 HP": 3.5 grams/kW-hr (2.6 grams/bhp-hr) (X10-XX07- 20XX16) 1.5 grams/bhp hr, or 80 ppmvd @ 15% O ₂	Tier 4 FinalInterim: NMHC only: 0.494 grams/kW-hr (0.4630 grams/bhp-hr) (X10-XX07-20XX16) (12-02-2016)	Diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2). (6-6-2003)	Tier 4 FinalInterim: 3.5 grams/kW-hr (2.6 grams/bhp-hr) (X10-XX07- 20XX16) 2.0 grams/bhp hr, or 176 ppmvd @ 15% O ₂ (4-10-1998) (12-02-2016)	Tier 4 FinalInterim: For Generator Sets: 0.0310 grams/kW-hr (0.0227 grams/bhp-hr) For All Engines Except Gensets: 0.04 grams/kW hr (0.03 grams/bhp hr) and CARB ATCM for portable diesel engines ³⁴ (X10-XX07- 20XX16) (12-02-2016)
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Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

Subcategory/	Rating/Size	Criteria Pollutants					
		VOC	NO _x	NO _x + NMHC ¹ NMHC ²⁾	SO _x	CO	PM
			(4-10-1998), (12-02-2016)				
Spark Ignition	All	1.5 grams/bhp-hr, or 240 ppmvd as methane @ 15% O ₂ (4-10-1998)	1.5 grams/bhp-hr, or 80 ppmvd @ 15% O ₂ (4-10-1998)			2.0 grams/bhp-hr, or 176 ppmvd @ 15% O ₂ (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.
- 1)2) NMHC + NO_x- means the sum of non-methane hydrocarbons and oxides of nitrogen emissions, unless specified as “NMHC only”, which only includes NMHC emissions.
- 2)3) Limits with an associated “after” date are required for an engine for which the application is deemed complete after that date. Limits without an associated “after” date are required now.—The engine must be certified by U.S. EPA or CARB to meet the Tier ~~2~~ or ~~3~~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 ~~2~~ or ~~3~~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, tThe CARB Airborne Toxic Control Measure (ATCM) for Portable Diesel Engines (see <http://www.arb.ca.gov/diesel/peatcm/peatcm.htm>) requires in-use portable diesel engines to be certified to Tier 1, 2, 3 or 3-4 by ~~1/1/2010~~their respective deadlines, all of which have passed. All exceptions allowed in the ATCM are also allowed in this guideline.
- 3) 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.
- 4) _____
- 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.

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10-20-2000 Rev. 0
 6-6-2003 Rev. 1
 12-3-2004 Rev. 2
 7-14-2006 Rev. 3
 10-3-2008 Rev. 4
~~XX10-XX07~~ 12-02-2016 Rev. 5

Equipment or Process: I.C. Engine, Stationary, Emergency ¹⁾

<u>Subcategory</u>	<u>Rating/Size</u>	<u>Criteria Pollutants</u>					
		<u>NMHC or VOC</u>	<u>NOx</u>	<u>NOx + NMHC²</u>	<u>SOx</u>	<u>CO</u>	<u>PM</u>
Compression Ignition, Fire Pump ^{3, 4, 7}	50 ≤ HP < 100			Compliance with SCAQMD Rule 1470 (XX10-XX07-2015-2016) (12-02-2016) Tier 2: 7.5 grams/kW-hr (5.6 grams/bhp-hr) Tier 3 (After 12/31/2010): 4.7 grams/kW-hr (3.5 grams/bhp-hr) (10-03-2008)	Diesel fuel sulfur content ≤ 0.05% by weight (4-10-98) On or after June 1, 2004 the user may only purchase diesel fuel with a sulfur content no greater than 0.0015% by weight (SCAQMD Rule 431.2). (6-6-2003)	Compliance with SCAQMD Rule 1470 (XX10-XX07-2015-2016) (12-02-2016) Tier 2 or Tier 3: 5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)	Compliance with SCAQMD Rule 1470 (12-3-2004) Tier 2 or Tier 3: 0.40 grams/kW-hr (0.30 grams/bhp-hr) (10-03-2008)
	100 ≤ HP < 175			Compliance with SCAQMD Rule 1470 (XX10-XX07-2015-2016) (12-02-2016) Tier 2: 6.6 grams/kW-hr (4.9 grams/bhp-hr) Tier 3 (After		Compliance with SCAQMD Rule 1470 (XX10-XX07-2015-2016) (12-02-2016) Tier 2 or Tier 3:	Compliance with SCAQMD Rule 1470 (12-3-2004) Tier 2 or Tier 3: 0.30 grams/kW-hr (0.22 grams/bhp-hr)

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<u>Subcategory</u>	<u>Rating/Size</u>	<u>Criteria Pollutants</u>					
		<u>NMHC or VOC</u>	<u>NOx</u>	<u>NOx + NMHC²</u>	<u>SOx</u>	<u>CO</u>	<u>PM</u>
				<u>12/31/2009</u> : 4.0 grams/kW-hr (3.0 grams/bhp-hr) (10-03-2008)		5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)	(10-03-2008)

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<u>Compression Ignition, Fire Pump^{3,4}</u> (continued)	175 ≤ HP < 750			<u>Compliance with SCAQMD Rule 1470</u> (XX10-XX07-20156) (12-02-2016) <u>Tier 2:</u> 6.6 grams/kW-hr (4.9 grams/bhp-hr) <u>Tier 3 (After 12/31/2009):</u> 4.0 grams/kW-hr (3.0 grams/bhp-hr): (10-03-2008)	<u>Diesel fuel with a sulfur content no greater than 0.0015% by weight</u> (SCAQMD Rule 431.2). (6-6-2003)	<u>Compliance with SCAQMD Rule 1470</u> (XX10-XX07-20156) (12-02-2016) <u>Tier 2 or Tier 3:</u> 3.5 grams/kW-hr (2.6 grams/bhp-hr) (10-03-2008)	<u>Compliance with SCAQMD Rule 1470</u> (12-3-2004) <u>Tier 2 or Tier 3:</u> 0.20 grams/kW-hr (0.15 grams/bhp-hr) (10-03-2008)
	≥750 HP			<u>Compliance with SCAQMD Rule 1470</u> (XX10-XX07-20156) (12-02-2016) <u>Tier 2:</u> 6.4 grams/kW-hr (4.8 grams/bhp-hr) (10-03-2008)	Same as above	<u>Compliance with SCAQMD Rule 1470</u> (XX10-XX07-20156) (12-02-2016) <u>Tier 2:</u> 3.5 grams/kW-hr (2.6 grams/bhp-hr) (10-03-2008)	<u>Compliance with SCAQMD Rule 1470</u> (XX10-XX07-20156) (12-02-2016) <u>Tier 2:</u> 0.20 grams/kW-hr (0.15 grams/bhp-hr) (10-03-2008)
<u>Compression-Ignition, Other^{3,4}</u>	50 ≤ HP < 100			<u>Compliance with SCAQMD Rule 1470</u>	Same as above	<u>Compliance with SCAQMD Rule</u>	<u>Compliance with SCAQMD Rule</u>

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<u>Subcategory</u>	<u>Rating/Size</u>	<u>Criteria Pollutants</u>					
		<u>NMHC or VOC</u>	<u>NOx</u>	<u>NOx + NMHC²</u>	<u>SOx</u>	<u>CO</u>	<u>PM</u>
7)				(XX10-XX07-20156) <u>(12-02-2016)</u> Tier 3: 4.7 grams/kW-hr (3.5 grams/bhp-hr) (10-03-2008)		1470 (XX10-XX07-20156) (12-02-2016) <u>(12-02-2016)</u> Tier 3: 5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)	1470 (12-3-2004) Tier 3: 0.20-0.40 grams/kW-hr (-0.15 0.30 grams/bhp-hr) (10-03-2008)

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Compression-Ignition, Other ^{3, 4, 7} (continued)	100 ≤ HP < 175			<u>Compliance with SCAQMD Rule 1470</u> (XX10-XX07-20156) <u>(12-02-2016)</u> Tier 3: 4.0 grams/kW-hr (3.0 grams/bhp-hr) (10-03-2008)	<u>Diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2).</u> (6-6-2003)	<u>Compliance with SCAQMD Rule 1470</u> (XX10-XX07-20156) (12-02-2016) <u>(12-02-2016)</u> Tier 3: 5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)	<u>Compliance with SCAQMD Rule 1470</u> (12-3-2004) Tier 3: 0.30 grams/kW-hr (0.22 grams/bhp-hr) (10-03-2008)
	175 ≤ HP < 300			<u>Compliance with SCAQMD Rule 1470</u> (XX10-XX07-20156) <u>(12-02-2016)</u> Tier 3: 4.0 grams/kW-hr		<u>Compliance with SCAQMD Rule 1470</u> (XX10-XX07-20156) (12-02-2016) <u>(12-02-2016)</u> Tier 3: 0.20 grams/kW-hr	<u>Compliance with SCAQMD Rule 1470</u> (12-3-2004) Tier 3: 0.20 grams/kW-hr

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Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

<u>Subcategory</u>	<u>Rating/Size</u>	<u>Criteria Pollutants</u>					
		<u>NMHC or VOC</u>	<u>NOx</u>	<u>NOx + NMHC²</u>	<u>SOx</u>	<u>CO</u>	<u>PM</u>
				(3.0 grams/bhp-hr) (10-03-2008)		Tier 3: 3.5 grams/kW-hr (2.6 grams/bhp-hr) (10-03-2008)	(0.15 grams/bhp-hr) (10-03-2008)
	300 ≤ HP < 750			Compliance with SCAQMD Rule 1470 (XX10-XX07-20156) (12-02-2016) Tier 3 ⁵ : 4.0 grams/kW-hr (3.0 grams/bhp-hr) (7-14-2006)		Compliance with SCAQMD Rule 1470 (XX10-XX07-20156) (12-02-2016) Tier 3: 3.5 grams/kW-hr (2.6 grams/bhp-hr) (7-14-2006)	Compliance with SCAQMD Rule 1470 (12-3-2004) Tier 3: 0.20 grams/kW-hr (0.15 grams/bhp-hr) (7-14-2006)

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<u>Compression-Ignition, Other^{3,4}</u> (continued)	≥750 HP			Compliance with SCAQMD Rule 1470 (XX10-XX07-20156) (12-02-2016) Tier 2: 6.4 grams/kW-hr (4.8 grams/bhp-hr) (10-03-2008)	Diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2). (6-6-2003)	Compliance with SCAQMD Rule 1470 (XX10-XX07-20156) (12-02-2016) Tier 2: 3.5 grams/kW-hr (2.6 grams/bhp-hr) (10-03-2008)	Compliance with SCAQMD Rule 1470 (12-3-2004) Tier 2: 0.20 grams/kW-hr (0.15 grams/bhp-hr) (10-03-2008)
Spark Ignition ⁵	< 130 HP	VOC: 1.5 grams/bhp-	1.5 grams/bhp-hr		See Clean Fuels Policy in Part C of	2.0 grams/bhp-hr (10-20-2000)	See Clean Fuels Policy in Part C of

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<u>Subcategory</u>	<u>Rating/Size</u>	<u>Criteria Pollutants</u>					
		<u>NMHC or VOC</u>	<u>NOx</u>	<u>NOx + NMHC²</u>	<u>SOx</u>	<u>CO</u>	<u>PM</u>
		hr (10-20-2000)	(10-20-2000)		the BACT Guidelines (10-20-2000)		the BACT Guidelines (10-20-2000)
	≥ 130 HP	VOC: 1.0 grams/bhp- hr ⁶ (X10-XX07- 20156) (12-02- 2016) VOC: 1.5 grams/bhp hr (10-20-2000)	1.5 grams/bhp- hr (10-20-2000)		See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)	2.0 grams/bhp-hr (10-20-2000)	See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)

- 1) An emergency engine is an engine which operates as a temporary replacement for primary mechanical or electrical power sources during periods of fuel or energy shortage or while a primary power source is under repair. This includes fire pumps, emergency electrical generation and other emergency uses.
- 2) NMHC + NOx- means the sum of non-methane hydrocarbons and oxides of nitrogen emissions.
- 3) SCAQMD restricts operation of emergency compression-ignition engines to 50 hours per year, or less if required by Rule 1470, for maintenance and testing and a maximum of 200 hours per year total operation. For engines used to drive standby generators, operation beyond 50 hours per year for maintenance and testing is allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage provided that the electrical grid operator or electric utility has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a control area that is subject to the rotating outage. ~~A new stationary compression-ignition engine will also be subject to a proposed federal New Source Performance Standard Title 40, Part 60, Subpart III of the Code of Federal Regulations.~~
- 4) ~~Limits with an associated “after” date are required for an engine for which the application is deemed complete after that date. Limits without an associated “after” date are required now.~~ The engine must be certified by U.S. EPA or CARB to meet the Tier 1, 2 or 3 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 1, 2 or 3 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. The PM limits apply only to filterable PM.

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- 5) ~~A USEPA settlement with certain engine manufacturers caused Tier 3 engines to become available one year earlier than the date specified in Part 89 for engines in the 300 hp to <750 hp size range.~~
- 6) ~~65) ———SCAQMD restricts operation of emergency spark-ignition engines to 50 hours per year for maintenance and testing and a maximum of 200 hours per year total operation. Emergency spark-ignition engines may be used in a Demand Response Program, however the engine will require additional evaluation and may be subject to more stringent regulatory requirements. ~~For emergency spark-ignition engines used to drive standby generators, operation beyond 50 hours per year for maintenance and testing is allowed only during emergencies resulting in an interruption of service of the primary power supply or during Stage II or III electrical emergencies declared by the electrical grid operator. Operators are allowed to use emergency spark-ignition engines as part of an interruptible electric service program. An interruptible electric service program is a program in which the facility receives payment or reduced rates in return for a requirement to reduce its electric load on the grid when requested to do so by the utility, the grid operator, or other organization.~~~~
- 7) ~~Since some requirements are based upon the California Airborne Toxic Control Measure for Stationary Compression Ignition Engines, applicants are referred to Title 17, Section 93115.3 of the California Code of Regulations for possible exemptions.~~
- 6) VOC limit is based on the requirement listed in Table 1 of 40 CFR 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
- 8) ~~—~~

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

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

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
< 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)		

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~~XX10-XX07~~12-02-2016 Rev. 0

Equipment or Process: I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators¹

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
> 50 bhp < 2064 bhp	30 ppmvd @ 15% O₂, e Compliance with SCAQMD Rule 1110.2 (X10-XX07-20156) 0.15 grams/bhp-hr (4-10-98) (12-02-2016)	11 ppmvd @ 15% O₂, c Compliance with SCAQMD Rule 1110.2 (X10-XX07-20156) 0.15 grams/bhp-hr (4-10-98) (12-02-2016)	See Clean Fuels Policy in Part C of the BACT Guidelines (X10-XX07-20156)(10-20-2000) (12-02-2016)	70 ppmvd, @ 15% O₂, e Compliance with SCAQMD Rule 1110.2 (X10-XX07-20156) 0.60 grams/bhp-hr (4-10-98) (12-02-2016)	See Clean Fuels Policy in Part C of the BACT Guidelines (X10-XX07-20156)(10-20-2000) (12-02-2016) Compliance with Rule 1470- (X10-XX07-20156)(12-3-2004) (12-02-2016)	
Landfill or Digester Gas Fired ² ≥ 2064 bhp	30 ppmvd 0.8 grams/bhp-hr (X10-XX07-20156) Compliance with SCAQMD Rule 1110.2 (4-10-98) 25 ppm @ 15% O ₂	11 ppmvd Compliance with SCAQMD Rule 1110.2 0.60 grams/bhp-hr (X10-XX07-20156) (4-10-98) 9 ppmvd @ 15% O ₂	Compliance with SCAQMD Rule 431.1 (X10-XX07-20156) 10-20-2000) Same as Above (10-20-2000) (12-	250 ppmvd Compliance with SCAQMD Rule 1110.2 2.5 grams/bhp-hr (X10-XX07-20156) 33 ppmvd @ 15% O ₂	Same as Above (7-9-2004)	Ammonia: 10 ppmvd @ 15% O ₂ (7-9-2004)

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	<u>(7-9-2004) (12-02-2016)</u>	<u>(7-9-2004) (12-02-2016)</u>	<u>02-2016)</u>	<u>(5-8-98) (12-02-2016)</u>		
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- 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) 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.

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10-20-2000 Rev. 0

Equipment or Process: Jet Engine Test Facility

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Experimental High Altitude Testing					Venturi Scrubber with Water Spray in Exhaust (1988)	
Experimental Sea Level (Low Altitude) Testing ¹						
Performance Testing ¹						

1) At the date of the last revision for this category, there was no Achieved In Practice BACT Determination for this subcategory. Technologically Feasible options listed in historic SCAQMD BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

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10-20-2000 Rev. 0

Equipment or Process: Landfill Gas Gathering System

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Compliance with SCAQMD Rule 1150.1 - Control of Gaseous Emissions from Municipal Solid Waste Landfills (10-20-2000)					

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10-20-2000 Rev. 0

Equipment or Process: Latex Manufacturing - Reaction

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All	Catalytic Incinerator and Caustic Scrubber (1988)					

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

10-20-2000 Rev. 0

Equipment or Process: Lead Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Pot or Crucible, Non-Refining Operations		Natural Gas (1990)	Natural Gas (1990)		Natural Gas and Melt only Sows, Pigs, Ingots or Clean Scrap (1990)	
Pot or Crucible, Refining Operations		Natural Gas (1990)	Natural Gas with Scrubber; or Natural Gas with Sulfur Free Refining Agents (1990)		Natural Gas with Baghouse (1990)	
Reverberatory, Secondary Melting Operations		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas with Scrubber (1990)		Natural Gas with Baghouse (1990)	

Note: Some secondary lead smelting operations must also comply with the National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63, Subpart X.

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

10-20-2000 Rev. 0

Equipment or Process: Lead Oxide Manufacturing – Reaction Pot Barton Process

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Natural Gas (1988)	Natural Gas (1988)		Natural Gas with Baghouse (1988)	

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0
~~X10-XX07~~12-02-2016 Rev.1

Equipment or Process: Liquid Transfer and Handling

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Marine, Loading	For VOC Emissions: Vapor Collection System Vented to Incinerator (1990)					
Tank Truck and Rail Car Bulk Loading, Class A (SCAQMD Rule 462)	Compliance with <u>SCAQMD</u> Rule 462 (0.08 Lbs/1000 Gals) (10-20-2000)					For Ammonia: Bottom Loading with Vapor Collection System Vented to Packed Column Scrubber (10-20-2000)
Tank Truck and Rail Car Bulk Loading, Classes B and C (SCAQMD Rule 462)	Bottom Loading with Vapor Collection System Vented to: - Incinerator; or - Compression/absorption with Tail Gas Vented to Incinerator; or - Refrigeration System; or - Carbon Adsorption system and Compliance with <u>SCAQMD</u> Rule 462 (10-20-2000)					Same as Above
<u>Gasoline Transfer and Dispensing</u>	<u>Compliance with Rule 461</u> (10-07-2016) (12-02-2016)					

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Metal Heating Furnace

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Natural Gas with Low NO _x Burner ≤ 50 ppmvd at 3% O ₂ , dry. (10-20-2000)	Natural Gas(1990)			Natural Gas(1990)

Note: This category includes metal aging, annealing, forging, heat treating, and homogenizing.

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Metallizing Spray Gun

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Water Wash Spray Booth or Scrubber (1988)	

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10-20-2000 Rev. 0

Equipment or Process: Mixer, Blender or Mill

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Dry					Baghouse (07-11-97)	
Wet	Carbon Adsorber; or Refrigerated Condenser; or Afterburner (VOC Emissions Only); or Vapor Recovery (07-11-97)				Baghouse if Dry Ingredients are Added (07-11-97)	Packed Column Scrubber (07-11-97)

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Nitric Acid Manufacturing

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All		Catalytic Reduction Furnace (07-11-97)				

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Non-Metallic Mineral Processing – Except Rock or Aggregate

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse for Enclosed Operations Water Fog Spray for Open Operations (1988)	

- Notes:
1. Non-metallic Minerals are minerals such as rock salt, sodium compounds, pumice, gilsonite, talc and pyrophyllite, boron, barite, fluorspar, feldspar, diatomite, perlite, vermiculite, mica, carbon black, silicon and kyanite.
 2. This category includes conveying, size reduction and classification.

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Nut Roasting

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Roaster		Natural Gas (1988)			Afterburner (≥ 0.3 second Retention Time at ≥ 1,400 °F) (10-20-2000)	
Handling Equipment					Baghouse (10-20-2000)	

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10-20-2000 Rev. 0
~~X10-XX07~~ 12-02-2016 Rev. 1

Equipment or Process: Oil and Gas Production

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Combined Tankage	All Tanks Vented to: - Vacuum Gas Gathering System; or - Positive Pressure Gas Gathering System; or - Incinerator or Firebox (1988) <u>Compliance with SCAQMD Rules 1148 and 1148.1 (X10-XX07-2015) (12-02-2016)</u>					
Wellhead	All Wellheads Vented to: - Vacuum Gas Gathering System; or - Positive Pressure Gas Gathering System; or - Incinerator or Firebox _____ (10-20-2000) <u>Compliance with SCAQMD Rules 1148 and 1148.1 (X10-XX07-2015) (12-02-2016)</u>					

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10-20-2000 Rev. 0

Equipment or Process: Open Spraying – Spray Gun

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Compliance with Regulation XI (10-20-2000)				Compliance with Regulation XI (10-20-2000)*	

* The open spraying must be conducted in a spray booth where feasible.

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10-20-2000 Rev. 0

Equipment or Process: Perlite Manufacturing System

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Natural Gas with Low NO _x Burner (10-20-2000)	Natural Gas (10-20-2000)		Baghouse (1988)	

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10-20-2000 Rev. 0

7-9-2004 Rev. 1

Equipment or Process: Pharmaceutical Manufacturing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Operations Involving Solvents	Afterburner (≥0.3 second Retention Time at ≥1,400°F), Refrigerated Condenser, or Carbon Adsorber (07-11-97)					
Solids Handling					Baghouse (07-11-97)	
Solids Storage Tanks					Baghouse or Vent Filter (07-11-97)	

Note: This equipment may also be subject to SCAQMD Rule 1103 and 40 CFR 63 Subpart GGG – National Emission Standards Pharmaceuticals Production. (7-9-2004)

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Phosphoric Acid - Thermal Process

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Fiber Mist Filter, Electrostatic Precipitator, or Packed Scrubber with Mist Eliminator (07-11-97)	

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Phthalic Anhydride

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Afterburner (≥0.3 Second Retention Time at ≥1,400°F) or Water Cooled Condenser (07-11-97)	

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Plasma Arc Metal Cutting Torch

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
> 30 KVA Electrical Input					Water Table and Nozzle Water Shroud; or Electrostatic Precipitator (1988)	

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10-20-2000 Rev. 0

Equipment or Process: Polyester Resin Operations - Molding and Casting

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All	Compliance with SCAQMD's Rule 1162 and Use of Aqueous Emulsion Cleaner or Acetone for Clean-Up to Maximum Extent Possible (1988/10-20-2000)					

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10-20-2000 Rev. 0

Equipment or Process: Polystyrene Extruder

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Electrostatic Precipitator or Fiber Mist Filter (07-11-97)	

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10-20-2000 Rev. 0

Equipment or Process: Polystyrene Manufacturing

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All	Water Cooled Condenser (07-11-97)					

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Powder Coating Booth

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
< 37 Lbs/Day Throughput					Pocket or Bag-Type Filters (10-20-2000)	
≥ 37 Lbs/Day Throughput					Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency) (1988/10-20-2000)	

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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10-20-2000 Rev. 0

Equipment or Process: Precious Metal Reclamation

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Incineration		Natural Gas (1988)	Natural Gas (1988)		Natural Gas with Baghouse and: - Afterburner (≥ 0.3 sec. Retention Time at ≥ 1400° F); or -Secondary Combustion Chamber (≥ 0.3 sec. Retention Time at ≥ 1400° F) (1988)	
Chemical Recovery and Chemical Reactions		3-Stage NO _x Reduction Scrubber (07-11-97)				

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

Equipment or Process: Printing (Graphic Arts)

Subcategory	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Flexographic	Inks with ≤ 1.5 Lbs VOC/Gal, Less Water and Less Exempt Compounds (1990) Compliance with <u>SCAQMD</u> Rules 1130 and 1171 (12-5-2003)					
Letterpress	Compliance with <u>SCAQMD</u> 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 <u>SCAQMD</u> Rules 1130 and 1171 (7-14-2006)				Oven Venting to an Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1400 °F; 95% Overall Efficiency) (10-20-2000)	
Lithographic or Offset, Non-Heatset	Same As Above					
Rotogravure or Gravure—Publication and Packaging	Compliance with <u>SCAQMD</u> Rules 1130 and 1171 (10-20-2000)					
Screen Printing and Drying	Compliance with <u>SCAQMD</u> Rules 1130.1 and 1171 (12-5-2003)					

(Continued on Next Page)

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- 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:

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

Where:	PP _c	=	VOC composite partial pressure at 20°C in mm Hg
	W _i	=	Weight of the “i”th VOC compound in grams
	MW _i	=	Molecular weight of “i”th VOC compound in grams per gram-mole
	VP _i	=	Vapor pressure of the “i”th VOC compound at 20°C in mm Hg
	W _w	=	Weight of water in grams
	MW _w	=	Molecular weight of water in grams per gram-mole
	W _e	=	Weight of exempt compound in grams
	MWe	=	Molecular weight of exempt compound in grams per gram-mole

For multiple exempt compounds: $W_e / MWe = \sum_{j=1}^n W_{ej} / MW_{ej}$

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10-20-2000 Rev. 0
 10-03-2008 Rev. 1
~~XX10-XX07~~ 12-02-2016 Rev. 2

Equipment or Process: Process Heater – Non-Refinery

Subcategory/Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x ¹⁾	SO _x	CO	PM ₁₀	
Natural Gas or Propane Fired, < 20 MM Btu/hr		≤ 20 ppmv dry corrected to 3% O₂²⁾ (10-20-2000) <u>Compliance with SCAQMD Rules 1146 and 1146.1 (10-07-2016) (12-02-2016)</u>	Natural Gas (10-20-2000)	≤50 ppmv for firetube type, ≤ 100 ppmv for watertube type, dry corrected to 3% O ₂ (10-20-2000)	Natural Gas (10-20-2000)	
Natural Gas or Propane Fired, ≥ 20 MM Btu/hr		With Low NO_x Burner: ≤ 9 ppmv dry corrected to 3% O₂ <u>With SCR or LTO:</u> ≤ 7 ppmv dry corrected to 3% O₂ (10-20-2000) <u>Compliance with SCAQMD Rules 1146 and 1146.1 (10-07-2016) (12-02-2016)</u>	Natural Gas (10-20-2000)	Same as above. (10-20-2000)	Natural Gas (10-20-2000)	<u>With SCR:</u> ≤ 5 ppmvd NH ₃ , corrected to 3% O ₂ <u>With LTO:</u> ≤ 1 ppmvd ozone, corrected to 3% O ₂ (10-20-2000)

1) Rules 1146 and 1146.1 require that boilers rated >2 and <75 MMBtu/hr meet 9 ppm NO_x beginning 1/1/2012 for some categories, that natural gas-fired boilers rated at ≥75 MMBtu/hr meet 5 ppm by 1/1/2015 (except boilers at schools and universities), that natural-draft boilers rated >2

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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and ≤ 10 MMBtu/hr with unsealed combustion chambers meet 12 ppm by 1/1/2014, and that boilers firing landfill or digester gas meet 25 or 15 ppm, respectively, by 1/1/15 (all ppm are dry, corrected to 3% O₂). Electric utility boilers, refinery boilers rated >40 MMBtu/hr and sulfur plant reaction boilers rated ≥ 5 MMBtu/hr are excluded; and there are exceptions for low-use boilers and boilers that met a 12-ppm limit prior to 9/5/08. Applicants are advised to review these rules for further details.

- 2) A higher NO_x limit may be allowed for facilities required to have a standby fuel, where use of a clean standby fuel is not possible and an ultra low-NO_x burner is not available.

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10-20-2000 Rev. 0
 12-5-2003 Rev. 1

Equipment or Process: Reactor with Atmospheric Vent ^{a)}

Rating/Size	Criteria Pollutants					Inorganic
	VOC/ODC	NO _x	SO _x	CO	PM ₁₀	
All	- Carbon Adsorber; or - Afterburner (VOC Only); or - Refrigerated Condenser; or - Scrubber with Approved Liquid Waste Disposal (VOC only) (1990)					

a) Also see “Resin Manufacturing” and “Surfactant Manufacturing”. (12-5-2003)

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10-20-2000 Rev. 0

Equipment or Process: Rendering

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Processing Equipment ¹⁾					Vent to Afterburner or Boiler Fire Box (≥ 0.3 sec. Retention Time at ≥ 1200 °F) (1988)	
Meal Grinding and Handling System					Enclosed Grinding and Screening Operation with Mechanical Conveyors Transporting Meal (1988)	
Tanks and Miscellaneous Equipment					Maintain Internal Temperature Below 140 °F (1988)	

1) Processing equipment includes crax pressing, filtering, centrifuging, evaporators, cookers, dryers, and grease and blood processing.

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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12-5-2003 Rev. 0

Equipment or Process: Resin Manufacturing

Subcategory	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
Continuous Polystyrene Process	Compliance with SCAQMD Rule 1141: ≤0.12 Pounds VOC per 1000 Pounds Completed Resin Product from Vacuum Devolatilizer and Styrene Recovery Systems (12-5-2003)					
Liquid-Phase, High-Density Polyethylene Slurry Process	Compliance with SCAQMD Rule 1141: ≥98% Reduction from Reactors, Recycle Treaters, Thinning Tanks, Blending Tanks and Product Finishing Section (12-5-2003)					
Liquid-Phase Polypropylene Process	Compliance with SCAQMD Rule 1141: ≥98% Reduction From Organic Resin Reactors, Slurry Vacuum Filter System, Diluent Recovery Section and Product Finishing Section (12-5-2003)					
Other Resin Manufacturing	Compliance with SCAQMD Rule 1141: ≤0.5 Pounds VOC per 1000 Pounds Completed Resin Product, or ≥95% Reduction from Resin Reactors, Thinning Tanks and Blending Tanks (12-5-2003)					

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10-20-2000 Rev. 0

Equipment or Process: Rock – Aggregate Processing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse Venting Jaw Crushers, Cone Crushers, and Material Transfer Points Adjacent to and after these Items; and Water Sprays at Other Material Transfer Points (1990)	

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10-20-2000 Rev. 0

Equipment or Process: Rocket Engine Test Cell

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Chemical Packed Scrubber (1988)			Chemical Packed Scrubber and Water Spray in Exhaust with Steam Ejectors (1988)	

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10-20-2000 Rev. 0

Equipment or Process: Rubber Compounding – Banbury Type Mixer

	Criteria Pollutants					
Rating/Size	VOC	NO_x	SO_x	CO	PM₁₀	Inorganic
All					Baghouse (1988)	

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BACT Guidelines - Part D

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_____Rubber Compounding – Banbury Type Mixer
 _____~~Sand~~
 _____~~Handling System with Shakeout and/or Muller in System~~

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10-20-2000 Rev. 0

Equipment or Process: Sewage Treatment Plants

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Carbon Adsorber or Scrubbing System, Covers for Primary Raw Sewage Processing, and Digester Gas Incineration or Recovery (1988)		Ferrous Chloride Injection and Caustic Scrubber for Hydrogen Sulfide Removal (1988)			

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10-20-2000 Rev. 0

Equipment or Process: Smokehouse

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner (≥ 0.3 sec. Retention Time at ≥ 1200° F) (1990)	Steam Heated Smokehouse and Electrically Heated Smoke Generator (1990)		Afterburner (≥ 0.3 sec. Retention Time at ≥ 1200° F) (1990)	Afterburner (≥ 0.3 sec. Retention Time at ≥ 1200° F) (1990)	

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10-20-2000 Rev. 0

Equipment or Process: Solder Leveling –Hot Oil or Hot Air

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Electrostatic Precipitator (1988)	

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10-20-2000 Rev. 0

Equipment or Process: Solvent Reclamation

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All	Refrigerated or Water Cooled Condenser (07-11-97)					

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

10-20-2000 Rev. 0

Equipment or Process: Spray Booth

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Automotive, Down-Draft Type, < 660 Lbs/Month of VOC Emissions	Compliance with Applicable <u>SCAQMD</u> Regulation XI Rules (10-20-2000)				Dry Filters or Waterwash (1990)	
Other Types, < 1170 Lbs/Month of VOC Emissions	Compliance with Applicable <u>SCAQMD</u> Regulation XI Rules (10-20-2000)				Same as Above (1990)	
Automotive, Down-Draft Type, ≥ 22 Lbs/Day of VOC Emissions	- Compliance with Applicable <u>SCAQMD</u> Regulation XI Rules, and VOC Control System with ≥ 90% Collection Efficiency and ≥ 95% Destruction Efficiency, or - Use of Super Clean -Compliant Materials (< 5% VOC by weight); or - Use of Low-VOC Materials Resulting in an Equivalent Emission Reduction (10-20-2000)				Same as Above (1990)	
Other Types, ≥ 1170 Lbs/Month of VOC Emissions	Same as Above (10-20-2000)				Same as Above (1990)	

Note: The sum of all VOC emissions from all spray booths within the same subcategory applied for in the previous two years at the same facility are considered toward the emission threshold.

* 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

Equipment or Process: Steel Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Electric Arc					Baghouse (1988)	
Induction, ≤ 300 Lb. Capacity					Charge Only Ingots or Clean Returns, or Baghouse (10-20-2000)	
Induction, > 300 Lb. Capacity					Baghouse (07-11-97)	

* 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

Equipment or Process: Storage Tanks - Liquid

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Asphalt					Cool Gases to < 120 °F and Vent to a Fiberglass or Steel Wool Filter. (07-11-97)	
External Floating Roof, VP ≤ 11 psia	Category A Tank Seals and Compliance with Rule 463 (10-20-2000)					
Fixed Roof	Vapor Recovery System with an Overall System Efficiency of ≥ 95% (7-11-97)					
Fuming Sulfuric Acid					Scrubber Followed by Fiber Mist Filter; or Water Spray Followed by Fiber Mist Filter (1988)	
Grease or Tallow					Maintain Temperature ≤ 140 °F (1988)	
Internal Floating Roof	Category A Tank Seals and Compliance with Rule 463 (10-20-2000)					
Sulfuric Acid			Caustic Scrubber and Mist Eliminator (1988)			
Underground, > 250 Gallons	≥ 95% Removal Efficiency for VOC (1990)					

* 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*

12-5-2003 Rev. 0

Equipment or Process: Surfactant Manufacturing

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Compliance with <u>SCAQMD</u> Rule 1141.2 ^{a)} : ≤0.5 Pounds per 1000 Pounds of Surfactant Product, or ≥95% (Wt.) Reduction From All Surfactant Manufacturing Equipment Vented to Atmosphere (12-5-2003)					

a) Does not apply to soap manufacturing operations or facilities that only blend and package surfactants.

* 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

Equipment or Process: Tank – Grease or Tallow Processing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Water Cooled or Atmospheric Condenser and Afterburner (≥ 0.3 sec. Retention Time at ≥ 1200 °F) (1990)	

* 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

Equipment or Process: Tire Buffer

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Cyclone and Water Spray at Rasp (07-11-97)	

* 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

Equipment or Process: Vegetable Oil Purification

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Scrubber and Barometric Condenser (1988)					

* 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

Equipment or Process: Vinegar Manufacturing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Scrubber with SCAQMD- and Sanitation District- Approved Liquid Disposal (1988)					

* 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
 12-5-2003 Rev. 1

Equipment or Process: Wastewater System

Subcategory	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Oil/Water Separator	Cover and Vent to Vapor Disposal System (1988); and Compliance with <u>SCAQMD</u> Rule 1176 (12-5-2003)					
Other Equipment	Compliance with <u>SCAQMD</u> Rule 1176 if Applicable by Rule ^{a)} (12-5-2003)					

a) Not required for sanitary sewer system.

* 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

Equipment or Process: Wax Burnoff Furnace

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Natural Gas with Low Nox Burner (1988)]	Natural Gas (1988)		Natural Gas with Afterburner or Secondary Combustion Chamber (≥ 0.3 sec. Retention Time at ≥ 1200° F) (1988)	

* 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

Equipment or Process: Wood Processing Equipment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse (1988)	

* 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*

12-5-2003 Rev. 0

Equipment or Process: Woodworking

Subcategory	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Pneumatic Conveyance System					Compliance with SCAQMD Rule 1137 ^{a)} : Baghouse with No Visible Emissions Except During Startup and Shutdown (12-5-2003)	

a) Not required if system vents solely to stand-alone control device or into a closed room.

* 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

Equipment or Process: Zinc Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Crucible or Pot		Natural Gas (1990)	Natural Gas (1990)		Natural Gas with Ingot and/or Clean Scrap Charge Only, or Baghouse (1988/2000)	
Reverberatory, Non-Sweating Operations		Natural Gas (1990)	Natural Gas (1990)		Same as Above (10-20-2000)	
Reverberatory, Sweating Operations		Natural Gas (1990)	Natural Gas (1990)		Natural Gas with Baghouse and: Afterburner (≥ 0.3 sec. Retention Time at ≥ 1400° F); or Secondary Combustion (≥ 0.3 sec. Retention Time at ≥ 1400° F); (1990)	
Rotary, Sweating Operations		Natural Gas (1990)	Natural Gas (1990)		Same as Above (1990)	

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

ATTACHMENT E

South Coast Air Quality Management District Best Available Control Technology Scientific Review Committee Charter

~~October~~December 2016

History

In March 1994, the SCAQMD Governing Board initiated a program to update and revise the Best Available Control Technology (BACT) Guidelines. As part of this update, the Board established requirements for public review and comment. The BACT Scientific Review Committee (BACT SRC) was created to assist SCAQMD staff with the policy issues used to develop and implement BACT procedures in the BACT Methodology Report. The BACT SRC was initially convened in July 1994 and participated in a series of public meetings. Due to their contributions to the BACT Methodology Report, the BACT SRC was officially established by the Governing Board as a standing committee on September 8, 1995 to review matters dealing with BACT.

This BACT SRC Charter has been adopted to formalize the BACT SRC membership and its role in the development of the BACT Guidelines.

Mission of the BACT Scientific Review Committee

The BACT SRC shall consist of experts in the field of air quality who shall assist and advise SCAQMD staff to ensure the BACT Guidelines are developed in a public process that is clear, consistent, and based on sound, technical information and data.

Goals

1. Contribute to the development of the BACT Guidelines through the public process;
2. Provide SCAQMD staff with technical expertise regarding issues pertinent to the proposed BACT updates; and
3. Advise SCAQMD staff to create a more certain and predictable BACT determination process.

Objectives

The BACT Scientific Review Committee shall achieve its goals by meeting periodically when BACT Guidelines updates are under development by:

1. Providing verbal and written comments to SCAQMD staff regarding proposed BACT Guidelines presented at the BACT SRC meetings;
2. Providing technical knowledge and promoting discussion regarding technologies for proposed BACT Guidelines;
3. Assisting SCAQMD staff to ensure proposed BACT Guidelines are clear and consistent with local, state, and federal air quality requirements; and
4. Advising SCAQMD staff on the development, interpretation and implementation of policies and procedures of the BACT Guidelines.

All objectives shall be achieved by members in a manner consistent with the Ethics Training pursuant to Assembly Bill 1234. In addition, the objectives shall adhere to the requirements of California Health and Safety Code 40440.11.

Membership Qualifications and Composition

The BACT SRC shall consist of up to 19 members currently or previously practicing their profession in the technical or scientific field of air quality. The original BACT SRC consisted of public and private professionals from industry, trade associations, academia, air quality practitioners, other governmental agencies, and SCAQMD Advisory personnel. The members of the BACT SRC shall consist of:

- Four members from regulated industries
- Three members from trade associations
- Five members from other governmental agencies
- Three members from academic institutions
- Four members who are air quality practitioners (industry consultants or environmental groups)

The membership will be recommended to and appointed by the Executive Officer. If a suitable member cannot be found for one of the membership categories, then that spot shall remain vacant. BACT SRC members will serve a two-year term with the possibility of being reappointed for additional two-year terms.

~~In their absence,~~ BACT SRC members may propose alternate members within their same organization to serve when the primary member is absent. Alternates must be approved by the Executive Officer.

SCAQMD shall post a list of BACT SRC membership on the SCAQMD website. To expedite the filling of vacancies, SCAQMD staff shall maintain a list of interested parties for the BACT SRC membership.

Operational Guidelines

Agendas for meetings will be prepared, posted and distributed to BACT SRC members and the public in accordance with legal requirements (Brown Act). Teleconference locations shall also be noticed in accordance with legal requirements. When applicable, SCAQMD staff shall provide proposed BACT Guidelines updates to the members seven days prior to the BACT SRC meeting. Proposed BACT Guidelines updates will also be made available to the attending public at the BACT SRC meeting.

During BACT SRC meetings:

- SCAQMD staff shall present proposed BACT determinations and proposed BACT Guidelines amendments, as well as address any continuing or unresolved items from the previous BACT SRC meeting,

- The BACT SRC members may comment on the proposed design, process and procedures of the BACT Guidelines, as well as contribute knowledge and experience to discuss related technical issues;
- The public will also have an opportunity to provide comments regarding the proposed BACT determinations and Guidelines updates; however,
- Past permitting decisions shall not be discussed at the BACT SRC meeting unless it is pertinent to the current proposal.

The BACT SRC meeting shall commence a 30-day public comment period for the proposed BACT Guidelines during which written comments may be submitted to SCAQMD BACT staff.

All BACT SRC members and alternates shall be required to maintain current AB 1234 biennial Ethics Training.

Reporting

The Governing Board's Stationary Source Committee shall be the BACT and BACT SRC Committee Board's liaison. SCAQMD BACT staff shall provide a report to the Stationary Source Committee subsequent to each BACT SRC meeting.

Brown Act

As a standing committee created by the SCAQMD Governing Board, the BACT Scientific Review Committee meetings and its membership are subject to the requirements of the Brown Act. All SCAQMD public meeting and notification protocols will be followed.

ATTACHMENT F



South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • <http://www.aqmd.gov>

SUBJECT: NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

PROJECT TITLE: AMENDMENTS TO 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 will prepare a Notice of Exemption for the project identified above. The SCAQMD has reviewed the proposed project pursuant to CEQA Guidelines §15002 (k)(1), the first step of a three-step process for deciding which document to prepare for a project subject to CEQA.

SCAQMD's New Source Review (NSR) regulations require applicants to use Best Available Control Technology (BACT) for new sources, relocated sources, and for 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 – New Source Review also requires the Executive Officer to periodically publish BACT Guidelines that establish the procedures and the BACT requirements for commonly permitted equipment.

The proposed project is to update the Overview, Parts A, B, C and D, and to add Parts E and F to the BACT Guidelines in order to maintain consistency with recent changes to SCAQMD rules, and state and federal requirements. The proposed amendments will not result in more stringent requirements than those already required by current regulations. Therefore, it was not necessary for staff to evaluate the achieved-in-practice status nor cost effectiveness of the underlying technologies required for updates to BACT. Since the proposed amendments are only updating the BACT Guidelines with current, already existing requirements, it can be seen with certainty that the proposed project has no potential to adversely impact air quality or any other environmental topic area. As such, the proposed project is exempt from CEQA pursuant to CEQA Guidelines §15061(b)(3).

Any questions regarding this Notice of Exemption should be sent to Jeff Inabinet (c/o Planning, Rule Development & Area Sources) at the above address. Mr. Inabinet can also be reached at 909.396.2453. Questions regarding the proposed amendments to the BACT Guidelines should be directed to Mr. Al Baez at 909.396.2516.

Date: October 25, 2016

Signature: *Jillian Wong*

Jillian Wong, Ph.D.
Program Supervisor - CEQA
Planning, Rule Development &
Area Sources

NOTICE OF EXEMPTION

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

Amendments to Best Available Control Technology (BACT) Guidelines

Project Location:

The proposed amendments to the BACT Guidelines will affect facilities within the SCAQMD's boundary. The SCAQMD has jurisdiction over all of Orange County, the urban portions of Los Angeles and San Bernardino counties southwest of the San Bernardino and San Gabriel mountains, and nearly all of Riverside county, with the exception of communities near the state border.

Description of Nature, Purpose, and Beneficiaries of Project:

SCAQMD's New Source Review (NSR) regulations require applicants to use Best Available Control Technology (BACT) for new sources, relocated sources, and for 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 – New Source Review also requires the Executive Officer to periodically publish BACT Guidelines that establish the procedures and the BACT requirements for commonly permitted equipment. The proposed project is to update the Overview, Parts A, B, C and D, and to add Parts E and F to the BACT Guidelines in order to maintain consistency with recent changes to SCAQMD rules, and state and federal requirements. The proposed amendments will not result in more stringent requirements than those already required by current regulations. Therefore, it was not necessary for staff to evaluate the achieved-in-practice status nor cost effectiveness of the underlying technologies required for updates to BACT.

Public Agency Approving Project:

South Coast Air Quality Management District

Agency Carrying Out Project:

South Coast Air Quality Management District

Exempt Status:

General Rule Exemption [CEQA Guidelines §15061 (b)(3)]

Reasons why project is exempt:

The proposed project is to update the Overview, Parts A, B, C and D, and to add Parts E and F to the BACT Guidelines in order to maintain consistency with recent changes to SCAQMD rules, state and federal requirements. The proposed amendments will not result in more stringent requirements than those already required by current regulations. Therefore, it was not necessary for staff to evaluate the achieved-in-practice status nor cost effectiveness of the underlying technologies required for updates to BACT. Since the proposed amendments are only updating the BACT Guidelines with current, already existing requirements, it can be seen with certainty that the proposed project has no potential to adversely impact air quality or any other environmental topic area. As such, the proposed project is exempt from CEQA pursuant to CEQA Guidelines §15061(b)(3).

Certification Date:

December 2, 2016, 9:00 a.m.; SCAQMD Headquarters

SCAQMD Governing Board Hearing:

CEQA Contact Person:

Mr. Jeff Inabinet

Phone Number:

(909) 396-2453

Fax Number:

(909) 396-3324

Email:

jinabinet@aqmd.gov

Rule Contact Person:

Mr. Al Baez

Phone Number:

(909) 396-2516

Fax Number:

(909) 396-3324

Email:

abaez@aqmd.gov

Date Received for Filing _____

Signature _____



Jillian Wong, Ph.D.
Program Supervisor - CEQA
Planning, Rule Development and Area Sources

ATTACHMENT G

COMMENTS AND RESPONSES TO PROPOSED AMENDMENTS OF THE BACT GUIDELINES

~~At~~ Public meetings ~~were~~ held on May 11, September 27, and November 9, 2016 with the BACT Scientific Review Committee to present and discuss the proposed amendments to the BACT Guidelines. The following comments and questions, and staff responses, are from letters and e-mails received as well as comments made at the BACT SRC meetings:

Overview

Comment O1:

Page 1, Recommend that AQMD differentiate between state vs federal requirements in this overview. (LADWP– BACT SRC member)

Response O1:

The Overview section is designed to provide an introduction to the BACT Guidelines and a summary of how BACT is implemented in the SCAQMD. Applicable state and federal requirements are addressed within the respective five chapters of the Overview.

Comment O2:

Page 2, Chapter 1-Introduction, Paragraph 1.

“The South Coast Air Quality Management District (SCAQMD) Regulation XIII – New Source Review (NSR) **and Regulation XX – RECLAIM**, require applicants to use Best Available Control Technology (BACT) for new sources, relocated sources, and for modifications to existing sources that may result in an emission increase of any nonattainment air contaminant, any ozone depleting compound (ODC), or ammonia.”

Do these guidelines apply to RECLAIM facilities? If not, I suggest deleting it.

(OCSD– BACT SRC member)

Response O2:

Yes, SCAQMD Rule 2005 – New Source Review for RECLAIM sets forth pre-construction New Source Review requirements for facilities subject to the RECLAIM program for new or modified sources which increase their allocations. BACT will apply to every emission source located at a RECLAIM facility.

Comment O3:

Page 3, Chapter 1-Introduction.

“During the (BACT SRC) meeting someone asked the question whether a BACT determination is at the time a permit is issued or at the same time the application is determined complete. We had a situation in Region 9 that I thought I should pass along. An EPA Region 9 permit was vacated because the source was not required to demonstrate compliance with a new NAAQS that became effective after Region 9 had determined the application was complete. (US 9th Circuit Court of Appeals case no. 11-73342). The federal statutory preconstruction permitting requirements for BACT and LAER are at sections 165(a)(4) and 173(a)(2) of the Clean Air Act.”

(EPA Region 9- BACT SRC member)

Response O3:

~~Staff acknowledges comment~~In accordance with the BACT Guidelines, LAER is determined at the time the permit is issued and BACT is determined at the time the permit is deemed complete for a minor source.

Comment O4:

Page 2, Chapter 1-Introduction, Paragraph 1.

“PSD BACT is incorporated into these BACT Guidelines. As of the publication date of these guidelines, there is **not a** requirement for SCAQMD to publish T-BACT guidelines and T-BACT must be established during the permitting process. ~~The BACT Guidelines were first published in May 1983, and later revised in October 1988.~~”

Change “not a” to “no” (OCSD– BACT SRC member)

Response O4:

Staff agrees and has made revision.

Comment O5:

Page 3, Chapter 1-Introduction, Paragraph 5.

“As a result of amendments ~~being proposed~~ to SCAQMD’s ~~New Source Review (NSR)~~ regulations in September 2000, the BACT Guidelines ~~was~~ ~~will~~ be separated into two sections: one for **major polluting facilities and another for non-major (minor polluting facilities)**. (See Chapter 2 in the Overview for how to determine if a facility is major or minor).”

The use of different terms to describe a minor source (e.g. non-major, minor polluting facilities, minor source, etc.) should be avoided. (OCSD– BACT SRC member)

Response O5:

Non-major facility, minor polluting facility and minor source are used interchangeably in the BACT Guidelines.

Comment O6:

Page 4, Chapter 1- Introduction, Paragraph 1.

“In order to distinguish between BACT for ~~major sources and BACT for minor~~ **various** sources, this document will use the following nomenclature for BACT:”

Explain what this means. (OCSD– BACT SRC member)

Response O6:

This statement clarifies definitions for LAER, minor source BACT (MSBACT) and greenhouse gas BACT (GHG BACT). The definitions are dependent on the type and amount of emissions.

Comment O7:

Page 4, Chapter 1- Introduction.

“LAER for BACT at major polluting facilities”

Also need PSD BACT for BACT at Major Sources. (Sierra Research– BACT SRC member)

Response O7:

PSD BACT has been addressed in Chapter 1, page 1 of the Overview section.

Comment O8:

Page 5, Chapter 2, Major Polluting Facility Emission Thresholds, Paragraph 1.

“A facility is a major polluting facility (or a major stationary source as it is called in the federal Clean Air Act [CAA]) if it emits, or has the potential to emit (PTE), a criteria air pollutant at a level that equals or exceeds emission thresholds **specified** ~~given~~ in the CAA **based on the attainment or nonattainment status.** Table 1 **presents** ~~shows~~ those emission thresholds for each criteria air pollutant for each air basin in the SCAQMD.”

Recommend edits as shown. (WSPA– BACT SRC member)

Response O8:

Staff agrees and has made revisions.

Comment O9:

Page 5, Chapter 2, Major Polluting Facility Emission Thresholds, Paragraph 1.

“**Although Table 1 is part of determining GHG BACT applicability,** Table 1 does not include emission thresholds that trigger GHG BACT for SCAQMD Rule 1714 and 40 CFR 52.21. Subpart E of the Guidelines should be referenced for a detailed explanation of how GHG BACT emission thresholds are determined.”

The first Part of the statement is not correct; Table 1 shows non-attainment new source review (NANSR) thresholds, and not PSD thresholds. The latter are related to GHG PSD applicability, but not the former. In addition, should you be adding PM_{2.5} thresholds to Table 1? (Sierra Research – BACT SRC member, OCSD– BACT SRC member)

Response O9:

Staff agrees and has made revisions. To be consistent with federal requirements staff has also updated the threshold levels for SO_x to 70 tons/year for the SCAB and Riverside County Portion of Salton Sea Air Basin.

Comment O10:

Page 5, Chapter 2, Major Polluting Facility Emission Thresholds, Paragraph 2.

“A facility includes all sources located within contiguous properties owned or operated by the same person, or persons under common control. Contiguous means in actual contact or separated only by a public roadway or other public right-of-way. However on-shore crude oil and gas production facilities under the same ownership entitlement must be included with offshore crude oil and gas production facilities located in Southern California Coastal or Outer Continental Shelf waters.”

Similar to my previous comment, I recommend that the guidelines be structured to differentiate between SCAQMD policy, State, and federal requirements.

(LADWP– BACT SRC member)

Response O10:

The Overview section is designed to provide an introduction to the BACT Guidelines and a summary of how BACT is implemented in the SCAQMD. Applicable SCAQMD, State and federal requirements are addressed within the respective five chapters of the Overview.

Comment O11:

Page 6, Chapter 2, Table 1.

Add PM_{2.5} thresholds here. (LADWP)

Table 1 should be revised to include PM_{2.5}. (WSPA– BACT SRC member)

Response O11:

Staff agrees and has included revisions. To be consistent with federal requirements staff has also updated the threshold levels for SO_x to 70 tons/year for the SCAB and Riverside County Portion of Salton Sea Air Basin.

Comment O12:

Page 8, Chapter 2, Potential to Emit.

“The PTE must include fugitive emissions associated with the source. RECLAIM emission allocations are not considered emission limits because RECLAIM facilities may purchase RTCs and increase their emissions without modifying the permit.”

This statement is not universally correct for PSD applicability. For PSD purposes, fugitive emissions are included only for source categories specifically identified in (40CFR) 52.21. (Sierra Research– BACT SRC member)

Response O12:

Staff agrees and has included revisions for major sources.

Comment O13:

Page 8, Chapter 2, Potential to Emit.

Do these guidelines apply to RECLAIM facilities? If not, I suggest deleting this.

(OCSD– BACT SRC member)

Response O13:

Yes, Rule 2005 sets forth pre-construction New Source Review requirements for facilities subject to the RECLAIM program for new or modifications which increase their allocations. BACT will apply to every emission source located at a RECLAIM facility.

Comment O14:

Page 9, Chapter 3, “Pollutants Subject to NSR, PSD and BACT”.

“AND BACT” should be deleted. (OCSD– BACT SRC member)

Response O14:

Under this section references are made to pollutants that are subject to BACT, therefore the text “and BACT” will be remain for consistency.

Comment O15:

Page 9, Chapter 3, Pollutants Subject to NSR, PSD and BACT, Paragraph 2.

“Therefore, SO_x, and NO_x are treated as non-attainment air pollutants as well, **including ozone.**”

This phrase doesn't add anything to this sentence. Suggest deleting it. (Sierra Research–BACT SRC member)

Suggest deletion of “including ozone.” (LADWP– BACT SRC member)

This does not belong here. (WSPA)

Response O15:

Staff agrees and has included revisions.

Comment O16:

Page 9, Chapter 3, Pollutants Subject to NSR, PSD and BACT, Paragraph 2.

The net results is that **VOC, NO_x, SO_x, and PM₁₀**, are subject to NSR in all of SCAQMD, while **CO** is only subject to NSR in the South Coast Air Basin (SOCAB).

PM_{2.5}? (LADWP– BACT SRC member)

Response O16:

Staff agrees and has included revision to add PM_{2.5}. During review of this comment, staff also realized that the statement “CO is only subject to NSR in the South Coast Air Basin,” is no longer applicable since CO is now in attainment. This phrase has been removed. CO is now subject to the PSD requirements. NSR applicability for CO has also been removed from Table 3 in Chapter 3 of the Overview section. To be consistent with federal requirements staff has also updated the threshold levels for SO_x to 70 tons/year for the SCAB and Riverside County Portion of Salton Sea Air Basin.

Comment O17:

Page 9, Chapter 3, Pollutants Subject to NSR, PSD and BACT, Paragraph 2.

Should CO be only subject to PSD as CO is in attainment of the standard?

(LADWP– BACT SRC member)

Response O17:

Staff is in agreement and has made the revisions discussed in Response O16.

Comment O18:

Page 9, Chapter 3, Pollutants Subject to NSR, PSD and BACT, Paragraph 3:

“The South Coast Basin has historically had a persistent CO problem.”

Suggest rewording the sentence to read, “The South Coast Air Basin has historically been designated nonattainment for CO”. (LADWP– BACT SRC member)

Response O18:

Staff agrees and has included revisions.

Comment O19:

Page 9, Chapter 3, Pollutants Subject to NSR, PSD and BACT, Paragraph 4.

“Similar to the Regulation XIII NSR requirements, precursors to attainment air contaminants, would also be treated as attainment air contaminants, **unless they also qualify as a nonattainment air contaminant, or nonattainment precursor as well. As explained in the SCAQMD Staff Report for Regulation XVII dated September 28, 1988.**”

This is not consistent with federal PSD rules. For example, in an ozone nonattainment area, NO_x may be regulated under NANSR (Non-Attainment New Source Review) as an ozone precursor, and under PSD as a Precursor to the attainment pollutant NO₂. (Sierra Research– BACT SRC member)

Response O19:

Staff agrees and has made revision.

Comment O20:

Page 9, Chapter 3, Pollutants Subject to NSR, PSD and BACT, Paragraph 4.

“As explained in the SCAQMD Staff Report for Regulation XVII dated September 28, 1988, the PSD BACT requirement is applicable to all permit units regardless if the source is classified as a minor or major facility.”

This is not quite correct; the BACT requirement applies to new major sources, significant increases at existing major sources, and specified modifications that are not significant increases. (See Rule 1701(b).) (Sierra Research– BACT SRC member)

Response O20:

In accordance with The applicability of Rule 1701 has three criteria. First, for BACT Rule 1701(b)(1), states “The BACT requirement applies to a net emission increase of a criteria air contaminant from a permit unit at any stationary source.”—Second, applicability of PSD for stationary sources and thirdly definition of a major stationary source with a significant increase. In addition, the BACT requirement which applies to any permit unit is further clarified in the staff report dated 8/25/88 for the 9/28/88 Board adoption of Regulation XVII. It states that “Except for the BACT requirement, which applies to any permit unit, this regulation is only applicable to new or existing major stationary sources.”

Comment O21:

Page 9, Chapter 3, Pollutants Subject to NSR, PSD and BACT, Paragraph 4.

BACT for minor sources would be different from BACT for major sources so this sentence could cause confusion. Perhaps this statement can be clarified. (LADWP)

Response O21:

Please see response O20.

Comment O22:

Page 10, Chapter 3, Pollutants Subject to NSR, PSD and BACT, Paragraph 5.

“BACT for Pb will be BACT for PM₁₀ or compliance with Rules 1420 or, 1420.1, or 1401.2, whichever is more stringent.”

Why is this declaration being made here? Such guidance would be saved for the source specific guidelines or case-by-case determinations of BACT. (WSPA– BACT SRC member)

Response O22:

This language is part of Chapter 3 of the Overview to clarify the relation between lead (Pb) and PM₁₀ BACT. Pb is a criteria pollutant that is a particulate and is typically controlled in a similar manner to PM₁₀.

Comment O23:

Page 12, Chapter 3, Table 3.

“Applicability of NSR and BACT to Various Pollutants in South Coast Air Basin (SOCAB), Salton SEA Air Basin (SSAB), and Mojave Desert Air Basin (MDAB)”

This table has gotten confusing with the addition of PSD requirements to the Guideline. I’d suggest having two tables- one showing NANSR (of NSR) applicability, you also need to add GHGs to these tables, (Not applicable to NANSR; applicable to certain PSD projects. (Sierra Research– BACT SRC member)

Response O23:

PM_{2.5} column was added to Table 3. Staff has also included clarifying language regarding PSD and GHG applicability.

Comment O24:

Page 12, Chapter 3, Permit Actions Subject to NSR, PSD and BACT.

BACT and LAER applicability are determined within NSR and PSD. No need to list it here. (WSPA– BACT SRC member)

Response O24:

As part of the Overview, a brief summary of BACT and LAER applicability was deemed appropriate by staff.

Comment O25:

Page 12, Chapter 3, Permit Actions Subject to NSR, PSD and BACT, Paragraph 5.

“It is SCAQMD policy that BACT is required only for **emission increases greater than or equal to one (1.0) pound per day.**”

For sake of clarity, should state “uncontrolled” emission increase. (OCSD– BACT SRC member)

Response O25:

Uncontrolled emission increase would apply only to new sources or modified sources without control equipment. BACT applicability for emission increases from new or modified sources is determined in accordance with Rule 1306(d).-

Comment O26:

Page 12, Chapter 3, Calculation Procedures for Emission Increases, Paragraph 1.

“The calculation procedures for determining whether there is an increase in emissions from an equipment modification that triggers BACT are different for NO_x and SO_x pollutants from RECLAIM facilities ~~and~~ than for all other cases. In general, the calculation procedures for RECLAIM facilities are less likely to result in an emission increase that requires BACT.”

See my previous comments regarding the BACT guidelines’ applicability to RECLAIM facilities. (OCSD– BACT SRC member)

Response O26:

SCAQMD Rule 2005 sets forth pre-construction New Source Review requirements for facilities subject to the RECLAIM program for new sources or modified sources which increase their allocations. BACT will apply to every emission source located at a RECLAIM facility.

Comment O27:

Page 14, Chapter 4, NSR Rules.

Each of these sections (i.e. NSR Rules, etc.) should start with an explicit reference to the applicable rule in the SCAQMD Rules and Regulations and direct the reader to that Rule for details. These summaries run the risk of oversimplifying or conflicting with the adopted rule language especially as those rules are amended from time to time. (WSPA–BACT SRC member)

Response O27:

Staff agrees and has included revisions.

Comment O28:

Page 14, Chapter 4, PSD Rules.

Pursuant to Rule 1701, the BACT requirement applies to a net emission increase from a permit unit located at minor and major stationary sources. The intention of the PSD requirements is to implement a similar requirement as Regulation XIII to maintain national ambient air quality standards for attainment air contaminants.

This is not correct; Rule 1701 limits applicability to federal major sources, and specified modifications to federal major sources. (Sierra Research – BACT SRC member)

Rule 1701 appears to apply to major stationary sources only. With respect to the last sentence, NSR rules apply to nonattainment emissions so recommend this sentence be clarified. (LADWP– BACT SRC member)

This is incorrect. Rule 1701 limits applicability to federal major sources, and specified modifications to federal major sources. (WSPA– BACT SRC member)

Response O28:

Please see response O20.

Comment O29:

Page 16, Chapter 5, Scientific Review Committee (SRC).

“The overall purpose of the Scientific Review Committee (SRC) is to:

- Comment on proposed new ~~&~~and more stringent BACT determination in permit applications under 30-day public review.”

Is this a new step in the process? Will the SRC be tasked to review permit applications during the 30-day public review? (LADWP– BACT SRC member)

Response O29:

No, this is not a new step in the process for review of new and more stringent BACT determinations. From time to time the BACT SRC has traditionally been tasked with reviewing BACT determinations which have been based on achieved in practice permitted equipment with the permit application as supporting documentation.

Comment O30:

Page 17. Chapter 5, Meeting with SCAQMD Management.

“Managers and the Assistant Deputy Executive Officers are **empowered** to make case-by-case decisions on an individual permit. Further review can be obtained through a meeting with the Deputy Executive Officer (DEO) of Engineering and Compliance. Ultimately, all permitting decisions are the responsibility of the Executive Officer.”

Suggest replacing “empowered” with “authorized” (OCSD– BACT SRC member)

Response O30:

Staff agrees and has included revision.

Comment O31:

Page 18, Chapter 5, The SCAQMD Governing Board.

“Any applicant may petition the SCAQMD Governing Board to review a pending application pursuant to SCAQMD Regulation XII and Health and Safety Code Section 40509. **While the Governing Board had the authority to hear and consider any pending permit application, it has rarely done so. but this circumstance is extremely rare and cases has only agreed to consider two pending permit applications in the last sixteen years are typically handled during the prior stages.**”

What’s the purpose of this statement? I suggest deleting it. (??)

Response O31:

Staff agrees and has included revision.

Comment O32:

Page 4, Chapter 1, Introduction

“GHG BACT for BACT at facilities subject to PSD GHG requirements”

While you indicated that BACT for PSD is addressed on page 2 (and it is), there remains potential confusion regarding terminology in the list of shorthand notations you create at pp. 3-4.

Suggest the following: PSD~~GHG~~ BACT for BACT at facilities subject to PSD~~GHG~~ BACT requirements for criteria pollutants

(Sierra Research– BACT SRC member)

Response O32:

Staff agrees and has included revision.

Comment O33:

Page 6, Chapter 2, Table 1

Page 6, Table 1: should the threshold for PM2.5 be 70 tpy instead of 100 tpy? (See footnote 3 on that page.) (Sierra Research– BACT SRC member)

Response O33:

Staff agrees and has included revision.

Comment O34:

Page 9, Chapter 3, paragraph 3

It is stated that "Therefore, CO is no longer a nonattainment pollutant, since the state standard for CO is the same as the federal." I believe we are talking about State AAQS and NAAQS. As I understand, 1-hour average CO state AAQS is lower than 1-hr average NAAQS. Please clarify. (Public member)

Response O34:

Staff agrees and has included revision stating that CO is in attainment with state and federal ambient air quality standards.

Comment O35:

Page 13, Chapter 3, possible cases

Not clear how to identify the BACT requirement for CO emissions for a facility which was permitted before SCAB became CO attainment, and modifications are being proposed now. Since we are now in attainment for CO, Reg XIII NSR analysis for CO emissions will not apply. It appears that Case 1 (described on page 13) may apply in this case. In addition, BACT analysis will be required only if emission increases by more than 1 lb/day (see page 12 of Section 3. (Public member)

Response O35:

Regulation XVII – Prevention of Significant Deterioration sets forth BACT requirements for stationary sources that emit attainment air contaminants such as CO. The BACT requirement applies to any net emission increase of an attainment criteria pollutant from a permit unit at any source.

Comment O36:

General comment

As discussed at the last BACT Scientific Review Committee (SRC) meeting, it would be helpful to update the BACT Guidelines to improve the clarity of this document and to update the major source BACT determinations. It is our understanding that such an effort will be made immediately after the adoption of the proposed update, which is only focused on incorporating existing requirements.

(Southern California Alliance of Publicly Owned Treatment Works (SCAP))

Response O36:

Yes, staff is committed with the ongoing development of a clear, user friendly BACT Guidelines with updates to both major and minor source BACT determinations. After the current amendment, staff intends to meet with SCAQMD Engineering and Permitting and SCAQMD management to discuss recommendations and establish priorities for potential new BACT and LAER listings for subsequent BACT amendments. The clarity of the document, as well as overall BACT group operational improvements will be addressed in parallel with these efforts.

Comment O37:

BACT SRC Meeting

During the May 11, 2016 BACT SRC meeting, a public member commented about the availability of information, and by not having current information it wastes a lot of time, and also that full disclosure needs to occur. (Public Member)

Response O37:

During the meeting staff responded that BACT is a dynamic process and what the commenter stated is in line with staff's plan, but prioritization needs to occur. Staff would like to expand on the explanation of the process. Staff agrees that not having the current information is a burden to staff's and the public's time to determine what BACT is for a piece of equipment. Staff is dedicated to making the BACT Guidelines current, as well as making new and more stringent BACT determinations. The prioritization was in reference to meeting with SCAQMD permitting staff and management to prioritize BACT staff's approach by analyzing relevant sources with new technologies for BACT that is in the permitting process. This current round of BACT Guidelines updates was necessary to address parts of the Guidelines that had become outdated, and to add applicable requirements that had been adopted since the last update. Once a prioritization is set, staff intends to moves forward with analyzing potential BACT and LAER determinations for more stringent requirements. After a potential BACT Determination is vetted, staff then presents that proposal to the public and the BACT SRC for discussion and comment. Staff also accepts recommendations from the public for other potential BACT determinations for analysis. Minor Source BACT is also required by California Health and Safety Code 40440.11, to be presented and approved by the Governing Board in a public process. Staff appreciates the time the public and the BACT SRC members have dedicated to this process, and encourages all public members to continue to participate in the BACT Guideline process.

Comment O38:

BACT SRC Meeting

During the May 11, 2016 BACT SRC meeting, a public member stated he supported having cost-benefit analyses performed whenever there is a question of viability of a technology so there is not an extra strain on the business and economy, but the formula of feasibility doesn't include all cost factors. (Public Member)

Response O38:

During the meeting staff responded that the BACT process can incorporate all cost considerations in accordance with the H&S code but if the technology will impact the environment SCAQMD will look at that as well. In addition, H&SC 40440.11 calls for identifying alternative technologies that would meet BACT requirements. Staff wishes to expand on this explanation. Regarding environmental impacts of a BACT determination, if staff proposes a new and more stringent BACT determination, then the proposal will need to undergo a CEQA analysis that will address potential environmental impacts. Regarding cost factors, a list of cost factors is presented in Chapter 1, Part C of the Guidelines that includes capital and operating costs. In this section it is stated that “the cost of controlling secondary emissions and cross-media pollutants caused by the primary MSBACT requirement should be included in any required cost effectiveness evaluation of the primary MSBACT requirement.”

Part A

Comment (BACT SRC Meeting) A1:

A committee member mentioned that for major source LAER determination cost is not a consideration but facilities still have to do cost-effective analysis, which the guidelines don't specify. Can facilities use the minor source guidelines for cost effectiveness. (Ramboll-Environ – Public member; OCSD, Sierra Research-BACT SRC members)

Response A1:

Staff stated that in accordance with the BACT Guidelines, U.S. EPA guidelines do not allow for routine consideration of the cost of control in LAER determinations. However, the guidelines state that LAER is not considered achievable if the cost of control is so great that a new source could not be built or operated with a particular control technology. If a major polluting facility needs to perform a cost effectiveness analysis for informational or other purposes, the minor source guidance can be useful tool to conduct the analysis. However, a different analysis may be needed to demonstrate the limited cost-exception to LAER.

Comment (BACT SRC Meeting) A2:

A public member stated that when the technology changes right before you get your permit, what are the options? (Member of the public)

Response A2:

Staff stated that in accordance with the BACT Guidelines, once a minor source BACT determination is made at the time for an application is deemed complete, at the time of completion of a permit to construct it cannot be changed for a year. However, for major sources, federal LAER is determined at the time of permit issuance. Refer to the discussion in Comment O3 for LAER requirements. It is also true that requirements for a new or modified major source under applicable rules could change between the time the application is deemed complete and the permit decision.

Comment A3:

Page 21, Chapter 1, Regulatory Documents.

“An emission limit or control technology may be considered achieved in practice (AIP) 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
- USEPA RACT/BACT/LAER Clearinghouse
- Other districts’ and states’ BACT Guidelines
- BACT/LAER requirements in New Source Review Permits issued by SCAQMD or other agencies”

These documents are not easily accessible and the completeness is questionable. The complete documents should be easily accessible for facilities to include them in their engineering design process before the application submittal. Ultimately, who is responsible for determining what is BACT? (OCSD- BACT SRC member)

Response A3:

These documents and programs represent the traditionally referenced sources for achieved in practice BACT which are readily available on line on the SCAQMD BACT webpage. In the SCAQMD, BACT is determined in accordance with the BACT Guidelines which includes case-by-case BACT determinations by permit engineering.

Comment A4:

Page 21, Chapter 1, New Technologies/Emission Levels; Commercial Availability.

“**At least one vendor** must offer this equipment for regular or full-scale operation in the United States. A Performance warranty or guaranty must be available with the purchase of the control technology, as well as parts and service.”

This could potentially trigger a sole source procurement which for public agencies require strict justification. (OCSD- BACT SRC member)

Response A4:

For our agency, as well as other public agencies, it is common to have a procurement policy which provides and allows for justification when the desired services are available from only a sole source.

Comment A5:

Page 21, Chapter 1, New Technologies/Emission Levels; Reliability.

“All control technologies must have been installed and operated reliably for at least six months. If the operator did not require the basic equipment to operate daily, then the equipment must have at least 183 cumulative days of operation.”

The reliability analysis should also consider the effect of the control technology on the reliability of the basic equipment. (OCSD- BACT SRC member)

Response A5:

Staff agrees.

Comment A6:

Page 22, Chapter 1, Federal PM_{2.5} New Source Review and SCAQMD Rule 1325.

“A major polluting facility would be a facility located in areas federally designated pursuant to 40 CFR 81.305 as non-**attainment** for the South Coast Air Basin (SOCAB) which has actual emissions of, or the potential to emit, 100 tons or more per year of PM_{2.5}, or its precursors.”

“as non-attainment for PM_{2.5}”. (Sierra Research- BACT SRC member)

Response A6:

Staff agrees and has included revision. To be consistent with federal requirements staff has also updated the threshold levels for SO_x to 70 tons/year for the SCAB and Riverside County Portion of Salton Sea Air Basin. In addition, the future PM_{2.5} major source threshold level is planned to be lowered to 70 tons/year to be consistent with federal standards.

Comment A7:

Page 24, Chapter 1, Technical Infeasibility of the Control Technology.

“A particular control technology may not be required as LAER if the applicant demonstrates that it is not technically feasible to install and operate it to meet a specific LAER emission limitation in a specific permitting situation.”

Suggested addition: “Furthermore, EPA has recognized that a control technology may not be required if it would fundamentally redefine a source proposed to meet a specific business objective”. (WSPA- BACT SRC member)

Response A7:

Staff believes current language adequately addresses technical infeasibility of control technology as LAER.

Comment A8:

Page 24, Chapter 1, Process Requirements.

“Some LAER determinations specify a particular type of process equipment. SCAQMD staff may consider requirements of the proposed process equipment that would make the LAER determinations not technically feasible.”

This sentence is confusing. LAER must be technically feasible. (WSPA- BACT SRC member)

Response A8:

Staff believes current language adequately addresses the requirement for process equipment to be technically feasible.

Comment A9:

Page 25, Chapter 1, Other Considerations.

“Although multiple process and control options may be available during the LAER determination process, considerations should be made for options that reduce the formation of air contaminants from the process, as well as ensuring that emissions are properly handled. In addition to evaluating the efficiency of the control stage, these additional considerations are needed to ensure that the system is capable of reducing or eliminating emissions from the facility on a consistent basis during the operational life of the equipment.”

Suggested addition: “This policy is subject to the provisions of H&SC 40440.11.” This provision precludes the adoption of LAER that would require a change to the “basic production or process equipment.” The same caveat applies to the “Pollution Prevention” discussion in the next paragraphs. (Sierra Research- BACT SRC member)

Suggested addition: “This policy is subject to the provisions of Health & Safety Code section 40440.11. (WSPA- BACT SRC member)

Response A9:

In accordance with the discussion of H&SC Section 40440.11 in Chapter 1 of Part C of the BACT Guidelines, the requirements of this section are incorporated into establishing new minor source BACT determinations where federal LAER is no longer applicable. H&SC 40440.11 applicability to a section under Part A- Policy and Procedures for Major Polluting Facilities would not be in line with federal requirements in establishing LAER for major polluting facilities.

Comment A10:

Page 25, Chapter 1, Pollution Prevention.

“improvements in housekeeping, maintenance or inventory control, that reduce the amount of air contaminants entering any waste stream of otherwise released into the environment, including fugitive emissions.”

Suggested addition: “This policy is subject to the provisions of Health & Safety Code section 40440.11. (WSPA- BACT SRC member)

Response A10:

See Response A9.

Comment A11:

Page 26, Chapter 1, Monitoring and Testing.

“In order to ensure that LAER determinations continue to meet their initial emission and efficiency standards, periodic or continuous parameter monitoring and testing requirements may be **implemented** during the permitting process.”

“required,” not “implemented”. (Sierra Research- BACT SRC member, WSPA- BACT SRC member)

Response A11:

Staff agrees and has included revision.

Comment A12:

Page 27, Chapter 1, LAER Update Process, Paragraph 3.

“Whenever permitting staff makes a LAER determination that is more stringent than what SCAQMD has previously required as LAER, the permit to construct **may be** subject to a public review.”

What “may” trigger the public review? (OCSD- BACT SRC member)

Response A12:

A permit to construct may be subject to a public review per Rule 212(c) for being located near a school, increase health risk or emission increases exceeding the thresholds in Rule 212(g).~~In accordance with the BACT Guidelines, the permit to construct for equipment or process that is implementing a more stringent LAER determination than what was previously required by SCAQMD.~~

Comment A13:

Page 28, Chapter 1, Clean Fuel Requirements, Paragraph 1.

Clean Fuel Requirements – Electrification should not be included in this section until it has been demonstrated as BACT for specific categories of equipment and industries. Additionally. This policy is subject to the provisions of Health & Safety Code section 40440.11. (WSPA- BACT SRC member)

Response A13:

Natural gas was included in the BACT Guidelines as a clean fuel option to diesel as originally identified in the Clean Fuels Policy. Similarly, as part of the original Clean Fuels Policy electrification was also identified, and as result, Industrial Electrification is being included by staff, subject to engineering feasibility and the major source BACT/LAER determination criteria in Part A, Chapter1 of the BACT Guidelines. For minor source BACT please refer to response C6.

Regarding the applicability of Health and Safety Code 40440.11 to the Clean Fuel Requirements section of Part A, please refer to Response A9.

Comment A14:

In the proposed Clean Fuel Requirements, the District has copied verbatim the phrase “Industrial electrification (e.g. replacement of I.C Engines etc.)” from the December 15, 1987 Governing Board document titled “Recommendation to Adopt a Five-Year Clean Fuels Program” and inserted into the May 4, 2016 draft revised BACT Guidelines without providing any analysis regarding this language/amendment and how or why it is pertinent or applicable now (versus back in 1987-88). Industrial electrification, as discussed within the 1987 document, was part of the 1987-88 District’s Clean Fuels Program strategy to replace conventional petroleum fuels, particularly diesel fuel, with alternative fuels for (particularly) mobile and stationary sources. As the basin’s air quality is much improved today, air quality challenges are much different now than in the late 80’s and 90’s, with the advent of greenhouse gas and climate change programs in California, it seems prudent that this proposed inclusion of “Industrial Electrification” be evaluated under today’s challenges and air quality programs and strategies, and the District’s position regarding fuel neutrality.

While electrification has always been an option for consideration by the District and the regulated community, SoCalGas believes the current proposal to insert “Industrial Electrification” into the existing BACT Clean Fuel Requirements, and verbatim from a nearly 30 year old document, deserves some analysis and discussion, including its pertinence today and the specific language of the proposed amendment. While SoCalGas understands the District’s goal to have these current BACT updates, including the update of the BACT Guidelines Clean Fuels Requirements, go before the Governing Board as early as July. SoCalGas believes it would be prudent for staff to take the time necessary to provide both the opportunity for public discussion for this proposed amendment and adequate analysis and data to support such discussion. As staff has noted that there will be additional BACT updates in the near future, SoCalGas believes there will be ample opportunity for the District to propose a future amendment to the BACT Guidelines Clean Fuel Requirements should this amendment not be included in the current BACT update. (Southern California Gas Company- BACT SRC member)

Response A14:

Natural gas was included in the BACT Guidelines as a clean fuel option to diesel as originally identified in the Clean Fuels Policy. Similarly, as part of the original Clean Fuels Policy electrification was also identified, and as result, Industrial Electrification is being included by staff, subject to engineering feasibility and the major source BACT/LAER determination criteria in Part A, Chapter 1 of the BACT Guidelines. For minor source BACT please refer to response C6.

Comment A15:

Page 28, Chapter 1, Clean Fuel Requirements, Paragraph 1.

Additionally, SoCalGas Requests that the District provide discussion and analysis regarding whether this proposal is exempt from, or otherwise does not require, an analysis under the California Environmental Quality Act (CEQA). As proposed, the amendment to the Clean Fuel Requirements in the BACT Guidelines specifically calls out the industrial equipment as one example that could be targeted. SoCalGas believes that the District should provide input to the public and regulated community regarding whether this proposed amendment could be significant or not (or is otherwise exempt) under CEQA). (Southern California Gas Company- BACT SRC member)

Response A15:

Industrial electrification was part of the original 1989 Clean Fuels Policy (CFP) that was previously adopted into the BACT Guidelines. However, a review of the original document indicated that industrial electrification was a component of the CFP that was not included in the original Clean Fuel Requirements section of the BACT Guidelines. The proposed addition of the statement regarding industrial electrification into the Clean Fuels Requirements section of the BACT Guidelines will correct this omission and maintain consistency with state and federal requirements. Since the proposed amendments are only updating the BACT Guidelines with current, already existing requirements, it can be seen with certainty that the proposed project has no potential to adversely impact air quality or any other environmental topic area. As such, the proposed project is statutorily exempt from CEQA pursuant to CEQA Guidelines §15061(b)(3) ~~and categorically exempt from CEQA pursuant to CEQA Guidelines §15308.~~

Comment A16:

Page 28, Chapter 1, Clean Fuel Requirements, Paragraph 2.

“The use of these fuels must meet the requirements of SCAQMD rules limiting NOx and sulfur emissions.”

Suggested addition: This policy is also subject to the provisions of Health & Safety Code section 40440.11. (WSPA- BACT SRC member)

Response A16:

Refer to Response A9.

Comment A17:

Page 30, Chapter 2.

“The above ~~six sections~~ information will enable permit applicants to assess the applicability of each LAER/BACT determination to their particular equipment.

The LAER requirements usually found in section 5A of the LAER Determination listings are in the form of:

- An emission limit;
- A control technology;
- Equipment; or
- A combination of the last two.”

Please add a bullet for work practice requirements. (LADWP- BACT SRC member)

Response A17:

Staff agrees that work practice requirements are considered to be part of LAER/BACT requirements, but it is currently considered part of the “Control Technology Comment~~equipment requirements~~” category. Staff is in the process of developing a new BACT Determination Form and will be addressing this topic in the Form, and will consider adding work practice requirements to this list in future updates.

Comment A18:

Page 28, Chapter 1, Clean Fuel Requirements, Paragraph 1.

Proposed the following language: “Besides natural gas, other clean fuels are ~~methanol,~~ liquid petroleum gas (LPG), ~~and~~ hydrogen and electricity. ~~Industrial electrification (e.g., replacement of I.C. Engines, etc.) is~~ Utilization of zero and near-zero emission technologies are also integrated in the Clean Fuels Policy.

(Southern California Gas Company- BACT SRC member)

Response A18:

Staff agrees and has included revision.

Comment A19:

Page 28, Chapter 1, Clean Fuel Requirements, Paragraph 1.

WSPA appreciates the District’s responses to our June 13, 2016 letter as well as the September 27, 2016 meeting to discuss our remaining concerns. Based on the discussion regarding clean fuels, WSPA supports your suggestion to remove the word “Requirements” from the title, “Clean Fuel Requirements” and replace it with “Guidance”.

Additionally, WSPA supports the following language modifications to pages 28 and 41 of the October 2016 draft of the BACT Guidelines:

Comment A20:

Page 28, Ch. 1, Clean Fuels Requirements

“Besides natural gas, other clean fuels are ~~methanol, liquid petroleum gas (LPG), and~~ hydrogen, and electricity. Utilization of zero and near-zero emission technologies are ~~Industrial electrification (e.g., replacement of I.C. Engines, etc.)~~ is also integrated into the Clean Fuels Policy.” (WSPA – BACT SRC member)

Response A20:

Staff agrees and has replaced “Requirements” with “Guidance”. Staff also agrees with suggested Clean Fuels language, however “gas (LPG)” will be retained for consistency.

Comment A21:

Page 25, Ch. 1, Pollution Prevention

Thanks for the opportunity to comment on the Oct. 7 version of the BACT Guidelines. LADWP has the following concerns related to the proposed inclusion of pollution prevention as a control option for consideration in the BACT/LAER standard-setting process.

First, the federal Clean Air Act (CAA) contains a detailed and lengthy definition of BACT that makes no reference to pollution prevention as a control measure that must be considered in setting the technology-based performance standard (CAA Section 169(3)). Rather, the statutory definition only makes reference to the “application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such pollutant.” By including reference to the Pollution Prevention Act of 1990, SCAQMD is adding an extra step to the BACT-standard setting process that is not required by the federal CAA by requiring the consideration of pollution prevention and source reduction projects. Although SCAQMD has authority to do so, SCAQMD has not provided any justification or need to go beyond statutory requirements, particularly given that for the pollutants of concern (such as NO_x and PM), the nonattainment requirements for lowest achievable emission limit (LAER) also apply. LAER requires the permit authority to set the emission limit at the lowest level that has been set for any similar source by any state or has been achieved in practice (CAA Section 171(3)).

Second, the definition of pollution prevention and source reduction is very broad and includes projects “that reduce amount of air contaminants entering any waste stream or otherwise released into the environment.” It could, for example, require SCAQMD (as well as the permit applicant) to survey of all possible pollution prevention and source reduction projects and then demonstrate why these possible projects should be eliminated as an emissions control option. To avoid having to deal with this issue, SCAQMD should add clarifying language that excludes projects that redefine the source if pollution prevention must be included in the BACT guidelines. (LADWP – BACT SRC Member)

Response A21:

Staff acknowledges the comment requesting clarification of pollution prevention measures and will propose adding language to specify that pollution prevention measures are not required to include measures that will fundamentally redefine a source in Parts A and C. The Pollution Prevention subsection is located under the “Other Considerations” section to complement the “Special Permitting Considerations” section and is not intended to apply to every permit evaluation. These other considerations are items that may be implemented to allow for different permitting scenarios. Similarly, as an example, the “Super Compliant Materials” under the “Special Permitting Considerations” subsection does not require every source to use Super Compliant Materials, but it is intended to provide another method to achieve emissions reductions to comply with BACT requirements. Pollution Prevention is not a separate, additional step under the Top-Down process. Pollution Prevention measures should be considered under Step 1 of

the Top-Down Process, “Identify all control technologies,” which is specified to include production process methods and techniques. Pollution Prevention measures identified in Step 1 shall continue to Step 2 of the Top-Down Process with the other available options. In addition, for minor sources, Pollution Prevention measures are subject to the requirements of California Health and Safety Code 40440.11 which has been proposed to be specified in the “Other Considerations” section in Part C of the BACT Guidelines.

Comment A22:

Page 28, Chapter 1, Clean Fuel Requirements

As discussed at the last SRC meeting, the Clean Fuel Requirement provision is rather confusing by interchanging the terms “Policy”, “Requirement” and “Guidelines”. SCAP understands that the purpose of the BACT Guidelines is to provide general guidance regarding major and minor source BACT. Accordingly, the term “requirement” should be replaced by “guideline” throughout the entire document. (SCAP)

Response A22:

Staff agrees and has included revision to replace “requirement” with “guidelines” where appropriate.

Comment A23:

Page 28, Chapter 1, Clean Fuel Requirements

Considering the Clean Fuels Program was adopted by the Governing Board in 1988, the SRC should revisit this provision in its entirety. For example, the December 15, 1997 recommendation to adopt a Five-Year Clean Fuels Program was clearly a program intended for a limited duration. Moreover, the Governing Board adopted an Energy Policy in 2011, which should supersede the outdated Clean Fuels Program. Rather than performing a complete revision of the Clean Fuel Requirement at this time, it is recommended to remove the term “requirement” as explained above. The subsequent update of the BACT Guidelines should address replacing the outdated Clean Fuel Requirement with a summary of the Energy Policy. (SCAP)

Response A23:

Under Section IV- Program Management of the Board Letter dated 12/15/87, which was adopted on 1/8/88, the Board approved a recommendation to adopt an ongoing policy which established clean fuels as BACT based on engineering feasibility. The Clean Fuel Policy and Energy Policy, adopted by the Governing Board on 9/9/11, are two different policies with unique and complementary objectives. As adopted, the Energy Policy was not intended to supersede other policies, rather it was intended to complement policies, guiding principles, and initiatives previously adopted by the Governing Board. Staff looks forward to working with the BACT SRC, stakeholders, regulated community and the public in the review of the Energy Policy and how it could complement the BACT Guidelines. Staff agrees and has included revision to replace “requirement” with “guidelines” where appropriate.

Comment A24:

Page 25, Chapter 1, Pollution Prevention

The draft guidelines indicate that pollution prevention should be considered as part of the LAER and MSBACT determination processes, if the measures will result in the elimination or reduction of emissions. While pollution prevention should be considered by every facility, the Pollution Prevention Act of 1990 (42 U.S.C. §§13101-13109) does not require pollution prevention measures to be implemented without considering feasibility or cost effectiveness. As drafted the major and minor source provisions are vague and do not provide clarity to SCAQMD permit engineers or applicants. Our membership believes that these provisions should be excluded at this time. At minimum, to avoid confusion, the minor source provisions should be removed and the major provisions should be amended as follows:

For purposes of these BACT Guidelines, and to be consistent with federal definitions, source reduction and pollution prevention shall include, **but not be limited to a consideration of the feasibility of:**

- equipment or technology modifications,
- process or procedure modifications,
- reformulation or redesign of products,
- substitution of raw materials, or
- improvements in housekeeping, maintenance or inventory control, that reduce the amount of air contaminants entering any waste stream or otherwise released

into the environment, including fugitive emissions, **if deemed to be cost-effective.** (SCAP)

Response A24:

Staff acknowledges the comment and will clarify the Pollution Prevention section. The Pollution Prevention subsection is located under the “Other Considerations” section to complement the “Special Permitting Considerations” section and is not intended to apply to every permit evaluation. These other considerations are items that may be implemented to allow for different permitting scenarios. Similarly, as an example, the “Super Compliant Materials” under the “Special Permitting Considerations” subsection does not require every source to use Super Compliant Materials, but it is intended to provide another method to achieve emissions reductions to comply with BACT requirements. Staff will change the wording of the section to state “For purposes of these BACT Guidelines, and to be consistent with federal definitions, source reduction and pollution prevention ~~shall~~ **may include, but not be limited to, a consideration of the feasibility of:**”

It should be noted that Pollution Prevention is not a separate, additional step under the Top-Down process, and therefore any Pollution Prevention measures identified in Step 1 of the Top-Down process will be analyzed for technical feasibility in Step 2. In addition, for minor sources, Pollution Prevention measures are subject to the requirements of California Health and Safety Code 40440.11, which includes cost effectiveness, that has been proposed to be specified in the “Other Considerations” section in Part C of the BACT Guidelines. LAER does not allow for consideration of cost effectiveness in the same manner as minor sources. If a proposed pollution prevention measure is deemed to be technically feasible, then it will be evaluated for the remainder of the Top-Down process prior to a determination for LAER.

Comment A25:

Page 21, Chapter 1, Achieved in Practice LAER

Three proposed LAER determinations are included in draft BACT Guidelines for emergency compression ignition engines and list operating schedules of < 1 hrs/day; 1 days/week; 26 wks/yr. However, the achieved in practice reliability provision states, “All control technologies must have been installed and operated reliably for at least six months. If the operator did not require the basic equipment to operate daily, then the equipment must have at least 183 cumulative days of operation. 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.” If these emergency engines did not conform with the reliability standards, then these determinations should not be included in the updated BACT Guidelines. (SCAP)

Response A25:

The control technology (diesel particulate filter) for the three proposed Part B BACT determinations was installed to meet the requirements of SCAQMD Rule 1470 – Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines, as well as Title 17 California Code of Regulations Section 93115, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, and the engines were issued permits with DPFs to meet those requirements. DPFs are identified in both regulations as a control option and have been established as a reliable control option for diesel PM emissions during the rulemaking process.

Under Part A, Chapter 1, “Achieved in Practice LAER” there are three different headings to establish LAER: Regulatory Documents, New Technologies/Emission Levels, and Technology Transfer. These proposed listings have been issued New Source Review permits with DPF requirements. Two of the permits to operate were issued in 2011 and the third was issued in 2014, and all three engines began service at the same respective times. The commenter is referring to the reliability requirement under the New Technologies/Emission Levels. The reliability provision is in place for the scenario where “New Technologies and innovations of existing technologies occasionally evolve without a regulatory requirement, but still deserve consideration.” The New Technology section is another option to establish LAER in addition to the other two sections. Since the section is for new technologies, a reliability provision is included under this section to ensure the equipment will consistently perform prior to establishing LAER, but the reliability provision does not apply to LAER established under the Regulatory Documents section. In this case, an emission limit is established in Rule 1470 and the Stationary Diesel ATCM, and the equipment identified in the rule was installed to meet that requirement. In addition, SJVAPCD has established the same PM₁₀ emission limit in their BACT Guidelines for Emergency Diesel IC engines as SCAQMD Rule 1470 and the Stationary CI Engine ATCM that requires the use of DPF. Another item under Regulatory Documents that can establish LAER is another Air District’s BACT Guidelines. Therefore staff is proposing to add the three Emergency IC Engines as LAER due to current regulatory requirements, as well as the SJVAPCD BACT Guidelines.

Comment A26:

Page 26, Chapter 1, Monitoring and Testing

While the inclusion of monitoring and testing requirements at major stationary sources may be required, such provisions can be burdensome for minor sources. Permits should not contain monitoring requirements that are not relevant to air emissions. Moreover, the guidelines should clarify that required monitoring and testing should be feasible standard, industry recognized measurement techniques and test methods. At minimum, as a permit streamlining issue, such provisions tend to unnecessarily complicate and slow the permitting process and should be omitted. SCAP requests that this provision be removed from the minor source provision and the major source provision be modified to omit the operating conditions sentence. (SCAP)

Response A26:

The proposed Monitoring and Testing sections under Parts A and C of the BACT Guidelines are not requirements to perform testing. These sections discuss existing monitoring and testing conditions that may be established during the permitting process due to rule requirements and how those requirements may affect BACT determinations. The section is intended to clarify that when monitoring and/or testing are required by permit conditions, that steps should be taken to ensure that resulting BACT determinations consider and identify operating conditions or test methodology of the initial assessment of the equipment, so the same BACT requirement can be properly implemented in the future with consistency. As an example, if inward air flow or differential pressure is measured during the permitting process, then those parameters may be included in the BACT determination form to provide a quantitative measurement of the process. Equally, if applicable, exact source test methods and averaging times should be identified for consistency. A new BACT Determination Form which is being developed allows for these items to be included.

Part B

Comment B1:

Page 2, I.C. Engine – Emergency Compression Engine (A/N: 516409), Section 4, Part A
“BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits on the permit(s) that affects the equipment, Include units, averaging times and corrections (% O₂, % CO₂, dry, etc.) For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ration, if applicable.”

Should clarify that these values are EPA certification values (or standards) based on EPA certification test methods. These values may not be achieved during a single-mode field test. (Sierra Research- BACT SRC member)

Response B1:

Staff agrees and has made revision.

Comment B2:

Page 2, I.C. Engine - Emergency, Compression Ignition (A/N 516409), Section 4, Part C
“BASIS OF THE BACT/LAER DETERMINATION: ~~Achieved~~ Achieved in Practice”
(WSPA- BACT SRC member)

Response B2:

Staff agrees and has made revision.

Comment B3:

Page 2, I.C. Engine – Emergency, Compression Ignition (A/N 516409), Section 4, Part D
EPA certification levels are based on EPA certification test methods. Thus, actual performance in the field may vary. These values should not be used as limits for a compliance source test under conditions varied from that of the EPA certification test protocol. (WSPA- BACT SRC member)

Response B3:

Staff agrees and has made revision.

Comment B4:

Page 3, I.C. Engine–Emergency, Compression Ignition (A/N: 516409), Section 5, Part G
“CONTROL TECHNOLOGY COMMENTS: Permit conditions to regenerate PM filter after every 24 cold engine start-ups of HiBack alarm signal, whichever occurs first. For regeneration run engine until exhaust temp exceeds 57 Deg. F and normal backpressure reading, Engine exhaust temp at inlet to PM filter \geq 572 Deg. F except during cold engine start-up, not to exceed 10 minutes.”

Has the District calculated or accounted for the increased emissions associated with regeneration as compared with the emissions reduced by the DPF?

(Sierra Research- BACT SRC member)

Response B4:

The District has not conducted specific studies on emissions associated with regeneration of DPFs however, CARB has conducted studies on emissions from both active and parked regeneration of a diesel particulate filter from heavy duty trucks. CARB has determined that more information is needed concerning the nature and a clearer understanding of the particulate matter composition, toxicity and exposure potential to better understand possible impacts.

Comment B5:

Page 3, I.C. Engine–Emergency, Compression Ignition (A/N: 516409), Section 6, Part A
“COMPLIANCE DEMONSTRATED BY: Source test or other method that was used to demonstrate compliance”

Should indicate that compliance is demonstrated through the use of a certified Tier 3, engine in combination with a CARB-verified DPF. (Sierra Research- BACT SRC member)

Response B5:

Staff agrees and has made revision.

Comment B6:

Page 2, I.C. Engine–Emergency, Compression Ignition (A/N: 516708), Section 4, Part A
“BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits on the permit(s) that affects the equipment, Include units, averaging times and corrections (%O₂, %CO₂, dry, etc.) For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ration, if applicable.”

Should clarify that these values are EPA certification values (or standards) based on EPA certification test methods. These values may not be achieved during a single-mode field test. (Sierra Research- BACT SRC member)

Response B6:

Staff agrees and has made revision.

Comment B7:

Page 3, I.C. Engine–Emergency, Compression Ignition (A/N: 516708), Section 5, Part G

“CONTROL TECHNOLOGY COMMENTS: Permit condition to regenerate PM filter whenever warning signal is received from alarm system. For regeneration run engine until exhaust tem exceeds 464 Deg. F and normal backpressure reading. Engine exhaust temp at inlet to PM filter \geq 464 Deg. F except during cold engine star-up.”

Has the district calculated and accounted for the increased emissions associated with regeneration as compared with the emissions reduced by the DPF?

(Sierra Research- BACT SRC member)

Response B7:

Please see response B4.

Comment B8:

Page 3, I.C. Engine–Emergency, Compression Ignition (A/N: 516708), Section 6, Part A

“COMPLIANCE DEMONSTRATED BY: Source test or other method that was used to demonstrate compliance”

Should indicate that compliance is demonstrated through the use of a certified Tier 2 engine in combination with a CARB-verified DPF. (Sierra Research- BACT SRC member)

Response B8:

Staff agrees and has made revision.

Comment B9:

Page 2, Flare, Oil and Gas Operations (A/N538706), Section 4, Part C.

“BASIS OF THE BACT/LAER DETERMINATION: ~~Achieved~~ **Achieved**”

(WSPA- BACT SRC member)

Response B9:

Staff agrees and has made revision.

Comment B10:

Page 3, Flare, Oil and Gas Operations (A/N: 538706), Section 6, Part D.

“COLLECTION EFFICIENCY PARAMETERS: 99.9+% **destruction** for VOC and BTEX”

Line 6D is for collection efficiency, not destruction efficient. The BACT limit is stated as the concentrations in Section 4, and not as a destruction efficiency.

(Sierra Research- BACT SRC member)

Collection efficiency is not destruction efficiency. (WSPA- BACT SRC member)

Response B10:

Staff agrees and has made revision.

Comment B11:

Page 2, I.C. Engine–Emergency, Compression Ignition (A.N: 558397), Section 4, Part C

“BASIS OF THE BACT/LAER DETERMINATION: ~~Achieved~~ **Achieved**”

(WSPA- BACT SRC member)

Response B11:

Staff agrees and has made revision.

Comment B12:

Page 2, I.C. Engine–Emergency, Compression Ignition (A.N: 558397), Section 4, Part A

“BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits on the permit(s) that affects the equipment, Include units, averaging times and corrections (% O₂, % CO₂, dry, etc.) For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ration, if applicable.”

Should clarify that these values are EPA certification values (or standards) based on EPA certification test methods. These values may not be achieved during a single-mode field test. (Sierra Research- BACT SRC member)

Response B12:

Staff agrees and has made revision. Staff also made a correction to the values in this section to be consistent with Permit Condition No. 14 in Permit G30438 (Application No. 558397). The values are now:

NO _x +VOC	CO	PM OR PM ₁₀
4.8 g/bhp-hr	2.6 g/bhp-hr	0.01 g/bhp-hr

Comment B13:

Page 3, I.C. Engine–Emergency, Compression Ignition (A/N: 558 97), Section 5, Part G

“CONTROL TECHNOLOGY COMMENTS: Permit condition to regenerate PM filter whenever warning signal is received from alarm system. For regeneration run engine until exhaust tem exceeds 464 Deg. F and normal backpressure reading. Engine exhaust temp at inlet to PM filter \geq 464 Deg. F except during cold engine star-up.”

Has the district calculated and accounted for the increased emissions associated with regeneration as compared with the emissions reduced by the DPF?

(Sierra Research- BACT SRC member)

Response B13:

Please see response B4.

Comment B14:

Page 3, I.C. Engine–Emergency, Compression Ignition (A/N 558397), Section 6, Part A
“COMPLIANCE DEMONSTRATED BY: Source test or other method that was used to demonstrate compliance”

Should indicate that compliance is demonstrated through the use of a certified Tier 2 engine in combination with a CARB-verified DPF. (Sierra Research- BACT SRC member)

Response B14:

Staff agrees and has made revision.

Comment B15:

I.C. Engine – Emergency, Compression Ignition (A/N 516409, 516708 and 558397)

Three proposed LAER determinations are included in draft BACT Guidelines for emergency compression ignition engines and list operating schedules of < 1 hrs/day; 1 days/week; 26 wks/yr. However, the achieved in practice reliability provision states, “All control technologies must have been installed and operated reliably for at least six months. If the operator did not require the basic equipment to operate daily, then the equipment must have at least 183 cumulative days of operation. 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.” If these emergency engines did not conform with the reliability standards, then these determinations should not be included in the updated BACT Guidelines. (SCAP)

Response B15:

Refer to Response A25

Comment B16:

BACT SRC Meeting

In the May 11, 2016, Scientific Review Committee meeting, SRC member David Rothbart requested a list of all LAER Determinations that had been made since the last BACT update. Staff responded that it is their goal to update the listings to current standards in the current and future rounds of BACT updates. David Rothbart later clarified his request in the September 27, 2016 SRC meeting that he wanted a response to a situation he had be made aware of regarding recent BACT Determinations. He stated

he had heard of a list of LAER Determinations that District permitting staff had been using since the last BACT update in 2008.

Response B16:

Staff questioned various levels of staff in four different SCAQMD permitting groups and none of them had any listings of new LAER determinations since the 2008 update. The only document that was discovered that was similar to Mr. Rothbart's claim was a summary, created by the AQACS Brian Yeh on January 24, 2003, of approved LAER and BACT listings from the approved BACT Guidelines that were frequently used by the Coatings permitting unit. The summary was created as a streamlining tool to be used as an initial assessment for permit evaluations. Although some listings are still applicable, the document has not been updated since it was created and is considered outdated. Staff is not aware of any other lists of LAER or BACT Determinations made since the 2008 BACT Guideline update. Staff is still committed to expeditiously updating the LAER and BACT listings to reflect current rules and new technologies, as well as making new and more stringent BACT determinations.

Part C

Comment C1:

Page 34, Chapter 1- How is MSBACT Determined for Minor Polluting Facilities?

This chapter explains the definitions of BACT for non-major polluting facilities (minor source BACT or MSBACT) found in SCAQMD rules and state law and how they are interpreted. It also explains the criteria used for initializing the Part D MSBACT Guidelines and the process for updating the MSBACT Guidelines.

Recommend providing more of an overview focusing on the difference between LAER and BACT requirements. (LADWP- BACT SRC Member)

Response C1:

Chapter 2 of the Overview section of the BACT Guidelines titled “Applicability Determination” discusses how to determine if a facility is a major polluting facility and subject to LAER or MSBACT. Part A and Part C discuss the details of LAER and MSBACT respectively. In addition, the proposed updated Figure 2 “The Ongoing BACT Update” has two branches for minor source and major source.

Comment C2:

Page 34, Chapter 1, Part D of the MSBACT Guidelines, Paragraph 2:

The ~~initial~~ listings in Part D of the MSBACT Guidelines **reflect current BACT determinations for sources at non-major polluting facilities as of April 2000. This initialization does not represent new requirements but rather memorializes current BACT determinations and emission levels.**

Having the words “current” is somewhat confusing. The BACT determinations which have been replaced with new determinations should be clearly indicated to be no longer “current.”(OCSD- BACT SRC member)

Response C2:

Staff agrees and has included the revision.

Comment C3:

Page 37, Chapter 1, Table 5:

The heading for the nonincremental cost-effectiveness threshold is “Average.” It might be clearer to label it “Regular” or something similar since “Average” might imply there are several different thresholds being averaged. (SDAPCD-BACT SRC Member)

Response C3:

Average Cost Effectiveness ratio is referenced according to its economic definition, which is defined as the total cost of a project divided by the effectiveness of the project in comparison to doing nothing.

Comment C4:

Page 37, Chapter 1:

When cost effectiveness is a consideration for a BACT determination, it would be useful to make the detailed cost-effectiveness analysis readily available (i.e., posted online). Other districts may have different cost effectiveness methodologies, cost effectiveness thresholds, or be determining BACT for a slightly different source category. Making the detailed cost-effectiveness analysis available would provide other districts with information, including itemized equipment and operating costs, to make appropriate adjustments when addressing BACT. (San Diego APCD, BACT SRC Member)

Response C4:

The cost effectiveness procedures applicable to minor source BACT in Part D under California Health and Safety Code 40440.11 are triggered for a BACT Determination that is more stringent than the existing BACT Guidelines. For this update, all Part D listings are being updated to be consistent with current requirements already in effect by either federal, State or SCAQMD requirements. Therefore, cost effectiveness analyses were not required for these Part D updates. Further details about these requirements can be obtained from the applicable staff reports for each rule or regulation. When required by H&SC 40440.11, staff intends to provide and present to the BACT SRC a detailed cost effectiveness analysis for each minor source BACT Determination that is new or more stringent than the current BACT Guidelines. Posting of detailed cost-effectiveness analysis online is being considered for future development.

Comment C5:

Page 39, Chapter 1, Costs to Include in a Cost Effectiveness Analysis, Paragraph 1:

Methodologies for determining these values are given in documents prepared by USEPA through their Office of Air Quality Planning and Standards (OAQPS EPA Air Pollution Control Cost Manual, 4th Sixth Edition, 2002, USEPA through 450452/3B-9002-006 001 and Supplements).

You may want to change the link to https://www3.epa.gov/ttn/ecas/cost_manual.html so as to capture any updates. Since this link just addresses the methodology for cost estimation, rather than identifying specific costs of technology conclusions, I think you can use a live link here. (Sierra Research - BACT SRC Member)

Change link to https://www3.epa.gov/ttn/ecas/cost_manual.html

(WSPA - BACT SRC Member)

Response C5:

Staff agrees and has included revision.

Comment C6

Page 40, Chapter 1, Clean Fuel Requirements, Paragraph 1:

Clean Fuel Requirements – Electrification should not be included in this section until it has been demonstrated as BACT for specific categories of equipment and industries. Additionally. This policy is subject to the provisions of Health & Safety Code section 40440.11. (WSPA- BACT SRC Member)

Response C6

Natural gas was included in the BACT Guidelines as a clean fuel option to diesel as originally identified in the Clean Fuels Policy. Similarly, as also identified by the original Clean Fuels Policy Industrial Electrification is being included by staff, subject to engineering feasibility and compliance with California Health and Safety Code section 40440.11 in establishing minor source BACT.

Comment C7:

Page 41, Chapter 1, Clean Fuel Requirements, Paragraph 2:

The use of these fuels must meet the requirements of SCAQMD rules limiting NOx and sulfur emissions. Suggested addition: “This policy is subject to the provisions of Health & Safety Code section 40440.11. (WSPA – BACT SRC Member)

Response C7:

The current section in Chapter 1 of Part C already states that the new determinations under MSBACT are subject to the provisions of H&SC 40440.11, and staff agrees to provide additional clarification that the Clean Fuels Policy for MSBACT is subject those provisions.

Comment C8:

Page 42, Chapter 1, Figure 2:

Is the updated flow chart the one on top? (LADWP - BACT)

Response C8:

Correct, the updated flowchart is on top with the first cell titled “Permit Application Submitted.”

Comment C9:

Page 43, Chapter 2, General:

The MSBACT requirements are in the form of:

- 1) an emission limit;
- 2) a control technology;
- 3) equipment requirements; or
- 4) a combination of the last two.

Add a bullet for work practice standards requirements. (LADWP – BACT SRC Member)

Response C9:

Staff agrees that work practice requirements are considered to be part of MSBACT requirements, but it is currently considered part of the “equipment requirements” category. Staff is in the process of developing a new BACT Determination Form and will be addressing this topic in the Form, and will consider adding work practice requirements to this list in future updates.

Comment C10:

Page 45, Chapter 2, Other Considerations:

Although multiple process and control options may be available during the **MSBACT determination process, considerations should be made for options that reduce the formation of air contaminants from the process, as well as ensuring that emissions are properly handled. In addition to evaluating the efficiency of the control stage, these additional considerations are needed to ensure that the system is capable of reducing or eliminating emissions from** the facility on a consistent basis during the operational life of the equipment. Same caveat as above w/re H&SC 40440.11 (Sierra Research – BACT SRC Member)

Response C10:

The current section in Chapter 1 of Part C already states that the new determinations under MSBACT are subject to the provisions of H&SC 40440.11, and staff agrees to provide additional clarification that this section for MSBACT is subject those provisions for BACT considerations.

Comment C11:

Page 45, Chapter 2, Pollution Prevention:

- improvements in housekeeping, maintenance or inventory control, that reduce the amount of air contaminants entering any waste stream or otherwise released into the environment, including fugitive emissions.

Suggested addition: “This policy is subject to the provisions of Health & Safety Code section 40440.11. (WSPA – BACT SRC Member)

Response C11:

Staff agrees and has included revision.

Comment C12:

Page 40, Chapter 1, Clean Fuel Requirements, Paragraph 1.

Proposed the following language: “Besides natural gas, other clean fuels are ~~methanol,~~ liquid petroleum gas (LPG), ~~and~~ hydrogen and electricity. ~~Industrial electrification (e.g., replacement of I.C. Engines, etc.) is~~ Utilization of zero and near-zero emission technologies are also integrated in the Clean Fuels Policy.

(Southern California Gas Company- BACT SRC member)

Response C12:

Staff agrees and has included revision.

Comment C13:

Page 28, Chapter 1, Clean Fuel Requirements, Paragraph 1.

WSPA appreciates the District’s responses to our June 13, 2016 letter as well as the September 27, 2016 meeting to discuss our remaining concerns. Based on the discussion regarding clean fuels, WSPA supports your suggestion to remove the word “Requirements” from the title, “Clean Fuel Requirements” and replace it with “Guidance”.

Additionally, WSPA supports the following language modifications to pages 28 and 41 of the October 2016 draft of the BACT Guidelines:

“Besides natural gas, other clean fuels are ~~methanol~~, liquid petroleum ~~gas (LPG)~~, and hydrogen, and electricity. Utilization of zero and near-zero emission technologies are ~~Industrial electrification (e.g., replacement of I.C. Engines, etc.)~~ is also integrated into the Clean Fuels Policy.” (WSPA – BACT SRC member)

Response C13:

Staff agrees and has replaced “Requirements” with “Guidance”. Staff also agrees with suggested Clean Fuels language, however “gas (LPG)” will be retained for consistency.

Comment C14:

Page 40, Chapter 1, Clean Fuel Requirements

As discussed at the last SRC meeting, the Clean Fuel Requirement provision is rather confusing by interchanging the terms “Policy”, “Requirement” and “Guidelines”. SCAP understands that the purpose of the BACT Guidelines is to provide general guidance regarding major and minor source BACT. Accordingly, the term “requirement” should be replaced by “guideline” throughout the entire document. (SCAP)

Response C14:

Staff agrees and has included revisions to replace “requirement” with “guidelines” where appropriate.

Comment C15:

Page 40, Chapter 1, Clean Fuel Requirements

Considering the Clean Fuels Program was adopted by the Governing Board in 1988, the SRC should revisit this provision in its entirety. For example, the December 15, 1997 recommendation to adopt a Five-Year Clean Fuels Program was clearly a program intended for a limited duration. Moreover, the Governing Board adopted an Energy Policy in 2011, which should supersede the outdated Clean Fuels Program. Rather than performing a complete revision of the Clean Fuel Requirement at this time, it is recommended to remove the term “requirement” as explained above. The subsequent update of the BACT Guidelines should address replacing the outdated Clean Fuel Requirement with a summary of the Energy Policy. (SCAP)

Response C15:

Under Section IV- Program Management of the Board Letter dated 12/15/87, which was adopted on 1/8/88, the Board approved a recommendation to adopt an ongoing policy which established clean fuels as BACT based on engineering feasibility. The Clean Fuel Policy and Energy Policy, adopted by the Governing Board on 9/9/11, are two different policies with unique and complimentary objectives. As adopted, the Energy Policy was not intended to supersede other policies, rather it was intended to complement policies, guiding principles, and initiatives previously adopted by the Governing Board. Staff looks forward to working with the BACT SRC, stakeholders, regulated community and the public in the review of the Energy Policy and how it could compliment the BACT Guidelines. Staff agrees and has included revision to replace “requirement” with “guidelines” where appropriate.

Comment C16:

Page 45, Chapter 2, Pollution Prevention

The draft guidelines indicate that pollution prevention should be considered as part of the LAER and MSBACT determination processes, if the measures will result in the elimination or reduction of emissions. While pollution prevention should be considered by every facility, the Pollution Prevention Act of 1990 (42 U.S.C. §§13101-13109) does not require pollution prevention measures to be implemented without considering feasibility or cost effectiveness. As drafted the major and minor source provisions are vague and do not provide clarity to SCAQMD permit engineers or applicants. Our membership believes that these provisions should be excluded at this time. At minimum, to avoid confusion, the minor source provisions should be removed and the major provisions should be amended as follows:

For purposes of these BACT Guidelines, and to be consistent with federal definitions, source reduction and pollution prevention shall include, **but not be limited to a consideration of the feasibility of:**

- equipment or technology modifications,
- process or procedure modifications,
- reformulation or redesign of products,
- substitution of raw materials, or
- improvements in housekeeping, maintenance or inventory control, that reduce the amount of air contaminants entering any waste stream or otherwise released into the environment, including fugitive emissions, **if deemed to be cost-effective.** (SCAP)

Response C16:

Refer to Response A24

Comment C17:

Page 46, Chapter 2, Monitoring and Testing

While the inclusion of monitoring and testing requirements at major stationary sources may be required, such provisions can be burdensome for minor sources. Permits should not contain monitoring requirements that are not relevant to air emissions. Moreover, the guidelines should clarify that required monitoring and testing should be feasible standard, industry recognized measurement techniques and test methods. At minimum, as a permit streamlining issue, such provisions tend to unnecessarily complicate and slow the permitting process and should be omitted. SCAP requests that this provision be removed from the minor source provision and the major source provision be modified to omit the operating conditions sentence. (SCAP)

Response C17:

Please refer to Response A26

Comment C18:

Page 45, Chapter 2, Pollution Prevention

Thanks for the opportunity to comment on the Oct. 7 version of the BACT Guidelines. LADWP has the following concerns related to the proposed inclusion of pollution prevention as a control option for consideration in the BACT/LAER standard-setting process.

First, the federal Clean Air Act (CAA) contains a detailed and lengthy definition of BACT that makes no reference to pollution prevention as a control measure that must be considered in setting the technology-based performance standard (CAA Section 169(3)). Rather, the statutory definition only makes reference to the “application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such pollutant.” By including reference to the Pollution Prevention Act of 1990, SCAQMD is adding an extra step to the BACT-standard setting process that is not required by the federal CAA by requiring the consideration of pollution prevention and source reduction projects. Although SCAQMD has authority to do so, SCAQMD has not provided any justification or need to go beyond statutory requirements, particularly given that for the pollutants of concern (such as NO_x and PM), the nonattainment requirements for lowest achievable emission limit (LAER) also apply. LAER requires the permit authority to set the emission limit at the lowest level that has been set for any similar source by any state or has been achieved in practice (CAA Section 171(3)).

Second, the definition of pollution prevention and source reduction is very broad and includes projects “that reduce amount of air contaminants entering any waste stream or otherwise released into the environment.” It could, for example, require SCAQMD (as well as the permit applicant) to survey of all possible pollution prevention and source reduction projects and then demonstrate why these possible projects should be eliminated as an emissions control option. To avoid having to deal with this issue, SCAQMD should add clarifying language that excludes projects that redefine the source if pollution prevention must be included in the BACT guidelines. (LADWP – BACT SRC Member)

Response C18:

Please refer to Response A21

Part D

Comment D1:

Page 68, Part D, I.C Engine, Portable BACT Determination

BACT SRC committee member stated it might be appropriate for the BACT Guidelines to specify that it is also applicable to prime portable engines. Anticipates that there are a lot of portable engines brought in in an emergency capacity but still subject to South Coast permitting rather than PERP (Portable Equipment Registration Program) program. It doesn't seem these standards should be more stringent than what you would be applying to stationary engines in the same application. Suggested it be worded ICE portable prime power. (Montrose Environmental; Sierra Research- BACT SRC Members)

Response D1:

BACT requirements for an engine whether portable or emergency would be determined based on the permit it is operating under. A portable ICE that is being operated as a prime power ICE and requires a permit will no longer be considered a portable ICE and will be subject to the stationary ICE BACT requirements. Under PERP and Portable ATCM, there are allowances for short term operation of portable engines providing prime power. However, once the portable engine is no longer eligible for PERP registration it will be subject to stationary non-emergency engine requirements of Rule 1110.2.

Comment D2:

Page 68, Part D, I.C Engine, Portable BACT Determination

BACT SRC committee members stated there are plenty of applications and instances where an engine is operating and registered in PERP which might still be portable engine but possibly require local permit. Those engines today operating in PERP program – Tier 2 or 3 engines - but that technology should be allowed temporarily in the basin short term for emergency applications, and for that should specify subject to only prime power. More concerned about application of this BACT standard to a portable engine brought into the South Coast Basin and subject to a South Coast permit but the portable engine is only being used in emergency applications. SCAQMD's BACT guidelines specify Tier 2 or 3, but now current proposed update is making it more stringent than the emergency requirements. (Montrose Environmental; Sierra Research)

Response D2:

Please see response D1.

Comment D3:

Page 68 & 71, Part D, I.C Engine, Portable and Stationary Emergency BACT Determination

BACT SRC committee members asked if SCAQMD regulations allow fleet averaging. If SCAQMD's BACT for portable and stationary emergency engines is mirroring CARB's requirements does SCAQMD accept a legally manufactured flexed engine?

(Montrose Environmental; OCSD – BACT SRC Members)

Response D3:

SCAQMD BACT does not allow for fleet averaging and just looks at the engine itself.

Comment D4:

Part D Listing

Where applicable, add emissions averaging times to the Part D BACT Guideline table. This is consistent with the information provided on the Part B BACT form (section 4) that requests averaging times. (Sue Gornick, WSPA)

Response D4:

Staff agrees. This is demonstrated by the current Part D listing for Gas Turbines that indicates averaging times. However, in the case where the Part D listing references a rule or regulation, the Part D listing will defer to the rule language for averaging time.

Comment D5 (BACT SRC meeting):

Part D Listing

As discussed in the meeting, referencing rules for the BACT Standards rather than the actual standard may be suitable in many cases and may be necessary in some cases (e.g., coating categories). However, it would be helpful to state the actual BACT standard (e.g., 5.0 ppmvd at 3% O₂) whenever feasible. The BACT tables are much more transparent to use without the need to continually look-up, read, and interpret one or more rules. In some cases, the interpretation of a rule may be clear to SCAQMD practitioner but not to

someone in another district that is not familiar with SCAQMD rules. (San Diego APCD – BACT SRC Member)

Response D5:

Multiple responses have been received from the public preferring the rule to be referenced in the Guidelines if it qualifies as BACT. This topic was also discussed in the BACT SRC meeting on May 11, 2016. A case was made that as a rule changes, BACT will change with it if the rule is identified in the listing, whereas stating a specific rule emission limit may become outdated. Staff agrees with referencing the rule in the listing to provide the BACT Guidelines more flexibility. If an emission rate or control technology is ever found to be more stringent than the rule, then the listing will be updated with that new limit.

Comment D6:

Page 13, Boiler BACT Determination Form

What are the bases for these proposed changes? We typically see the individual BACT determinations supporting Part D revisions. (Sierra Research – BACT SRC Member)

Include references to individual BACT determinations supporting Part D revisions. (WSPA – BACT SRC Member)

Response D6:

When a more stringent BACT Listing for Part D was proposed for BACT, staff provides examples of permitted equipment that demonstrated the BACT requirements can be met, as well as demonstrating cost effectiveness and reliability pursuant to H&SC 40440.11. For this update, the proposed Part D listings are becoming current with existing rule requirements and there are no proposals that are more stringent than would otherwise be required by existing federal, State and SCAQMD rules and regulations. As previously mention in Response D4, where feasible the rule will be cited in the listing which will clarify the bases of the listings.

Comment D7:

Page 68, I.C. Engine Portable BACT Determination Form

The proposed guidelines are appropriate for new prime power portable engines that would enter the District, but some portable engines are operated strictly as emergency unit. As such, “Prime Power” should be incorporated into the title of this guidelines.

Doing so allows the same engine technology that is allowed for stationary emergency engines to also be allowed for temporary, portable emergency engines.

(Montrose Environmental- BACT SRC member)

Response D7:

Please see response D1.

Comment D8:

Page 71, I.C. Engine, Stationary, Emergency BACT Determination Form

Delete references to Tier 2 under CO and PM for engine sizes where the NO_x+ NMHC determination requires Tier 3, engines. (Sierra Research – BACT SRC member)

Eliminate inconsistencies, between Tier 3 and 2. Higher tier will govern. (WSPA – BACT SRC member)

Response D8:

Staff agrees and has included revision.

Comment D9:

Page 71, I.C. Engine, Stationary, Emergency BACT Determination Form

In keeping with NSPS standards for emergency engines, SCAQMD proposes to delete provisions that allow spark ignition emergency engines from being used in demand response programs. However, rich burn engines permitted by SCAQMD for emergency applications generally meet NSPS standards for prime power engines. It seems that instead of deleting the DRP allowance entirely, SCAQMD should revise Footnote #5 to this guideline to specify that spark ignition engines permitted SCAQMD for emergency can be used in DRP applications only if the engine meets NSPS emission, reporting and compliance demonstration standards of 40 CFR 60, Subpart JJJJ for prime power engines. (Montrose Environmental – BACT SRC member)

Response D9:

Allowing engines that are permitted as stationary emergency spark ignition to be used in DRP applications would be contrary to Title 40, Part 60, Subpart JJJJ~~current federal law~~. Also, sStationary Prime power engines for electrical generation which are permitted by SCAQMD are required to comply with applicable Rule 1110.2 emission standards which are more stringent than NSPS standards.

Comment D9a: **BACT SRC Meeting**

In the September 27, 2016 BACT SRC meeting, Committee Member Karl Lany asked for further analysis and clarification regarding his comment at the previous BACT SRC meeting and staff's response. The comment was labeled as Comment D9 in the comment response section:

Comment D9:

Page 71, I.C. Engine, Stationary, Emergency BACT Determination Form

In keeping with NSPS standards for emergency engines, SCAQMD proposes to delete provisions that allow spark ignition emergency engines from being used in demand response programs. However, rich burn engines permitted by SCAQMD for emergency applications generally meet NSPS standards for prime power engines. It seems that instead of deleting the DRP allowance entirely, SCAQMD should revise Footnote #5 to this guideline to specify that spark ignition engines permitted SCAQMD for emergency can be used in DRP applications only if the engine meets NSPS emission, reporting and compliance demonstration standards of 40 CFR 60, Subpart JJJJ for prime power engines. (Montrose Environmental – BACT SRC member)

Response D9:

Allowing engines that are permitted as stationary emergency spark ignition to be used in DRP applications would be contrary to [Title 40, Part 60, Subpart JJJJ current federal law](#). [Also, stationary Prime power engines for electrical generation which are permitted by SCAQMD are required to comply with applicable Rule 1110.2 emission standards which are more stringent than NSPS standards.](#)

Response D9a

Staff agrees with Mr. Lany's request to revise Footnote No. 5 rather than deleting it. This footnote is located in the "I.C. Engine, Stationary, Emergency" listing under Part D of the guidelines. Staff feels it is appropriate to clarify the potential requirements for a spark-ignition, stationary, emergency engine to be used in a Demand Response Program as part of an interruptible electric service program. EPA's Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60.4243(d) states "If you do not operate the engine according to the requirements in paragraphs (d)(1) through (3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines." 40 CFR 60.4243(d)(3) further specifies that the allowance of the operation of an emergency engine for "50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity." There is one specific allowance in this section, however an evaluation for compliance with District rules must also be conducted. The BACT SRC member states that for rich-burn engines, the emissions of the engines can still meet the prime power requirements of the NSPS, and therefore should still be allowed to participate in a DRP. However, this statement does not acknowledge SCAQMD rule applicability. SCAQMD Rule 1110.2, "Emissions from Gaseous- and Liquid-Fueled Engines", as well as SCAQMD Rule 1304, (New Source Review) "Exemptions," allow for exemptions for emergency standby engines. For emergency standby engines, SCAQMD Rule 1110.2(i)(1)(B) allows for an exemption from the emission requirements of 1110.2(d), and SCAQMD Rule 1304(a)(4) allows for

exemptions from New Source Review modeling and emission offset requirements. The definition under Rule 1110.2(c)(5) states that an emergency standby engine is “an engine which operates as a temporary replacement for primary mechanical or electrical power during periods of fuel or energy shortage or while the primary power supply is under repair.” Depending on how the engine is operated under the DRP, an engine may not meet this definition, and therefore may be subject to the requirements of the BACT category “I.C. Engine, Stationary, Non-Emergency,” as well as the requirements of SCAQMD Rule 1110.2(d) and the modeling and offset requirements of SCAQMD Rule 1303(b).

The proposed revision of the footnote, as well as current rule requirements, do not prohibit a stationary engine from operating in a demand response program. Although it may meet the NSPS prime power requirements, the engine will need to undergo additional evaluation to ensure it is not circumventing existing SCAQMD rule requirements. In addition, for BACT purposes it may be classified as “I.C. Engine, Stationary, Non-Emergency.”

Comment D10:

Page 68&71, I.C. Engine Portable BACT & I.C. Engine, Stationary, Emergency BACT Determination Forms

It is not clear how BACT is addressed for portable and emergency engines that are relocated or modified rather than new. Although the District would consider Tier 4 the appropriate BACT for new engines, the District could potentially determine that BACT to be Tier 3 or Tier 2 based on cost-effectiveness considerations for a relocated or modified engine or for an existing PERP engine needing a District permit. (SDAPCD – BACT SRC Member)

Response D10:

Please see response D1.

Comment D11:

Page 74, I.C. Engine, Stationary, Emergency BACT Determination Form, Spark Ignition \geq 130 HP

VOC: 1.0 grams/bhp-hr (X-XX-2015)
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VOC: 1.5 grams/bhp-hr (10-20-2000)

I don't believe the SRC has seen this determination. (Sierra Research – BACT SRC Member)

Response D11:

This listing is based on the requirement listed in Table 1 in 40 CFR 60 Subpart JJJJ for Stationary Emergency Spark Ignition Engines with a horsepower rating of greater than or equal to 130 HP.

Comment D12:

Page 75, Footnote 4

4) The engine must be certified by U.S. EPA or CARB to meet the Tier 1, 2 or 3 emission requirements of 40 CFR Part 89—Control of Emissions from the New and In-use Nonroad Compression –Ignition Engines shown in the table—or otherwise demonstrate that it meets the Tier 1, 2 or 3 emission limits. **If, because of the averaging banking, and trading program, there is no new engine from any manufacturer that meets the above standards, the engine must meet the family emission limits established by the manufacturer and approved by U.S. EPA. The PM limits apply only to filterable PM.**

While I understand that this language is not proposed for change, since ABT engines meet the applicable Subpart IIII requirements, why shouldn't they also meet the District BACT requirements? (Sierra Research – BACT SRC Member)

Response D12:

For this update, staff is focusing on bringing the Guidelines current with existing rule requirements. Any proposal under Part D that will be considered more stringent will need to be further evaluated in accordance with H&SC 40440.11. Staff is continually

evaluating new technologies and will research this item to determine if more stringent emissions limits have been achieved.

Comment D13:

Page 76, I.C. Engine, Stationary, Non-Emergency BACT Determination Form

The biogas engine emission standards of Rule 1110.2 that will become effective in 2017 for existing engines are likely already implemented as BACT for new engines. SCAQMD should consider incorporating those standards into the proposed guidelines, rather than the existing Part D guidelines. (ES Engineering Services – BACT SRC Member)

Response D13:

The focus of this amendment of the BACT Guidelines is to make them consistent with recent changes to SCAQMD rules and regulations as well as state and federal requirements. Staff will research this category for the subsequent amendment to the BACT Guidelines if it is expected to occur before the Rule 1110.2 deadline for these engines.

Comment D14:

Page 77, I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generator BACT Determination Form

These determinations sometimes, but not always, match the requirements of Rule 1110.2. Suggest replacing the numeric limits with a requirement to comply with Rule 1110.2. If the Staff's intention is to impose more stringent requirements than those established in Rule 1110.2, I don't believe the SRC has seen the BACT determinations supporting this guideline change. (Sierra Research, BACT SRC member)

Replace the numeric limits with a requirement to comply with Rule 1110.2. (WSPA, BACT SRC Member)

Response D14:

Staff agrees with referencing the rule in the listing to provide the BACT Guidelines more flexibility.

Comment D15:

SCAQMD also suggests in Footnote 1 of this guideline that until guidelines are established for stationary power generating engines, those engines will be subject to the standards for stationary emergency engines. (I believe SCAQMD intended to reference “stationary, Non-Emergency, Non-electrical Generators”) Regardless, the distributed generation standards of Rule 1110.2 have been in effect for new installations since the year 2008 and should be incorporated into the guidelines.

(ES Engineering Services – BACT SRC Member)

Response D15:

Staff is currently analyzing multiple permit units under this future proposed listing to ensure the proper emission limit or rule reference is adopted. Staff is committed to addressing this listing in the subsequent amendment of these Guidelines.

Staff has corrected the reference in the footnote to “Stationary, Non-Emergency, Non-Electrical Generators.”

Comment D16:

SCAQMD permitting staff commented regarding the values presented for Tier 4 Interim under the Part D listing for Portable Engines. For the Portable Compression Ignition categories for the ranges of 75-175 HP and greater than 750 HP, the Tier 4 Interim value of 0.19 grams/kW-hr is listed for NMHC emissions. The converted value of 0.16 grams/bhp-hr is incorrect however, and should be corrected to 0.14 grams/bhp-hr. range.

(SCAQMD Permitting Staff)

Response D16:

Staff agrees and has included the revision in both horsepower ranges.

Comment D17:

Page 68 Part D Listing for I.C Engine, Portable

I am not sure that we are in agreement regarding the use of portable engines under SCAQMD permit, versus the use of such engines under the portable equipment registration program. In my initial comments to you I suggested that the BACT table in Part D of the guidelines for portable engines should differentiate between emergency and prime power units.

In your response to my comments, you suggested that PERP includes allowances for a portable engine to be operated as a prime power unit, but once PERP no longer serves as a valid authorization to operate, the engine becomes subject to Rule 1110.2 requirements for stationary engines. This is not necessarily the case. The issue is often simply the authorization to operate the engine, rather than the transition from a portable device to one that becomes stationary. Transitioning from PERP registration to SCAQMD permit, does not necessarily mean that the engine becomes a stationary unit or a prime power unit; it simply means that the engine must be operated under SCAQMD permit. Additionally, for portable diesel engines, Rule 1110.2 specifies compliance with the portable engine ATCM, rather than more stringent standards for stationary engines. The portable engine ATCM recognizes differences between emergency and prime power applications and allows for different technologies to be used, accordingly. Proposed amendments to the portable engine ATCM will further clarify this distinction. Those amendments are expected to be adopted in early 2017. Additionally, the portable engine ATCM does not mandate Tier 4 final technology for all new prime power portable engines. Even for new engines entering California, the ATCM will continue to allow Tier 2, Tier 3 and Tier 4I flexibility engines in both prime and emergency applications even after it is amended (the current regulation also allows Tier 1 flexibility engines in prime power applications). Also, the ATCM does not mandate new technology simply because a portable engine is relocated or because authorization to operate the engine is transferred from a PERP registration to SCAQMD.

I believe the complication we face with this class of emission sources is due to its portability combined with the opportunity to operate under both PERP and local district permit. Traditionally, stationary equipment that is relocated is subject to BACT requirements as discussed in the guideline summary. Portable engines, however, are designed and permitted under both PERP and SCAQMD permit to be repeatedly dispatched and used at various locations on a temporary basis. Transferring from PERP to local district authority to operate a portable engine does not change the function of the engine as a portable device, nor should it invalidate the technology standard that was applied when the engine was initially permitted or registered. If SCAQMD is suggesting that BACT is triggered only when a stationary engine is relocated but not when a portable is relocated and the BACT guideline applies only to new units, then I certainly agree with that suggestion (although we may to better understand the circumstances that otherwise allow non-Tier 4 technology to be delivered into California as well as the general availability of Tier 4 technology). In this case, I would suggest a footnote to specify that the BACT table applies to portable engines that are not currently operated under SCAQMD permit or PERP registration. If, however, SCAQMD is suggesting that BACT is triggered simply because the operation of a portable engine occurs either voluntarily or pursuant to regulation under SCAQMD permit, rather than PERP registration, then we must continue to discuss the practicality of that interpretation as well

the applicability of portable emergency engine standards. It is because of emergency engine operations that many portable engines would be transferred from PERP to SCAQMD permit. The portable engines being selected for these applications are operating under PERP without being Tier 4 technology, just as stationary emergency engines and portable emergency engines are operated under SCAQMD permit without being Tier 4 technology.

I suggest additional discussion regarding this topic due to the nuances of federal, state and local regulations affecting these engines, as well as the unique circumstances surrounding their portability. If such discussion cannot occur within the timeframe of SCAQMD's desired presentation of the guidelines to its Governing Board, then I suggest deleting the portable engine BACT guideline until amendments to the portable engine ATCM are adopted in early 2017. (ES Engineering – BACT SRC Member)

Response D17:

A BACT SRC member requested clarification of how BACT is applied if a facility operates a portable engine registered in ARB's PERP program and wants to apply for an SCAQMD portable engine permit. Permitting policy is not addressed in the BACT Guidelines. BACT guidance and applicability are addressed in the I.C. Engine Portable BACT determination. An operator seeking an SCAQMD permit for an engine deemed to meet the definition of portable is subject to evaluation under the Clean Fuels Requirements. The Clean Fuels process is discussed separately, but in summary an evaluation is performed to determine if it is technologically feasible, and cost effective for minor sources, to switch to a clean-fueled engine (e.g. natural gas), if the equipment is not already fired on a clean fuel. If a clean-fueled engine is not feasible, then the evaluation process continues to determine compliance with applicable state, federal and SCAQMD requirements. For a portable engine at a minor source, like other minor source permit applications, BACT is determined at the time the application is deemed complete by SCAQMD Engineering & Permitting (E&P). The proposed BACT Guidelines for portable engines will be in line with the most stringent requirements for new engines being registered under PERP. Permit applications submitted for diesel-fueled, compression-ignition (CI) portable engines will be evaluated for BACT in accordance with ARB "ATCM for Diesel Particulate Matter from Portable Engines Rated at 50 HP and Greater." Typically, pursuant to Title 13 of the California Code of Regulations (CCR), Section 93116.3(b)(2), a portable, diesel-fueled engine shall not be initially permitted or registered unless it meets the most stringent federal or state standard for non-road engines. The proposed Part D BACT listing for "I.C. Engine, Portable" for these engines is in line with the most stringent requirements. There are some exceptions to this requirement under Section 93116.3(b)(2)(A) through (E). A footnote in the Part D

BACT Guidelines for Portable CI Engines allows for these exceptions that are identified in the ATCM. In determining BACT applicability, E&P currently evaluates any exceptions pertinent to the engine on a case by case basis. Although the ATCM is currently in the amendment process, the footnote wording will apply to any future ATCM allowances, but will also be interpreted in accordance with any future E & P portable engine permitting policy. It should be noted that after January 1, 2017, the current version of the ATCM does not allow for the issuance of permits for portable CI engines not meeting the most stringent of the federal or California emission standards for nonroad engines under 17 CCR Section 93116.3(b)(2)(E).

Staff acknowledges the commenter's request to clarify the difference between prime power and emergency applications for portable I.C. engines. If an existing portable engine with an SCAQMD permit operates for prime power purposes outside of allowances for emergencies under Rule 1110.2(d)(2), then it is subject to the stationary engine requirements of Rule 1110.2 and the requirements of Table 1 in Rule 1110.2. Additionally, if such engine is a new, prime portable engine, it will be subject to the electrical generation standards in Table IV of Rule 1110.2. If a portable I.C. engine operates within the allowances of Rule 1110.2(d)(2), then it will not be subject to the stationary engine requirements. Additionally, as previously discussed in the May 11, 2016 SRC meeting, staff will be developing a future BACT listing for "I.C. Engine, Stationary, Non-Emergency, Electrical Generators," that will further clarify requirements for prime power I.C. engines.

Regarding BACT requirements due to relocations, the requirements are not dependent on BACT Guidelines categories. The requirements for relocations of permitted equipment within the District are subject to SCAQMD Rules 1303(a)(1) for equipment requiring a permit, and 1306(d)(3) for relocated minor facilities. Any equipment operated under a various locations permit are allowed to operate at different locations without triggering BACT as long as they are operated in compliance with the conditions on the permit, as well as other applicable local, state and federal requirements. In addition to new permit units, BACT may also be triggered by a modification of any permit unit or permit conditions that results in an increase of emissions of greater than or equal to 1.0 lb/day.

These scenarios only discuss situations in which the engine is deemed to meet the definition of portable and do not discuss the process of how an engine is initially determined to be portable or stationary, nor does it discuss the reasons why an engine operating under PERP would need to obtain a permit. Due to the vast array of different scenarios and facts needed to determine if a PERP engine requires a permit, or if it is classified as a stationary or portable engine, those situations are handled on a case-by-case basis by SCAQMD Engineering & Permitting and Compliance & Enforcement divisions, and are beyond the purview of the BACT Guidelines.

Comment D18:

Page 68, I.C. Engine Portable BACT Determination Form

As operators of essential public services, SCAP members are concerned about the ability of Tier 4 engines to perform during an extended emergency (e.g., the depletion of urea). We are discussing these special circumstances with CARB staff and request that the BACT Guidance adequately reference CARB’s anticipated relief to avoid a revision of this document. (SCAP)

Response D18:

Staff agrees and acknowledges the ongoing discussions between SCAP and ARB. The current footnote number 3 under Part D, minor source BACT determination for compression ignition portable engines, will remain. This footnote specifies that the BACT listing allows for the exceptions of ARB’s Portable Engine ATCM (17 CCR 93116). It is staff’s intention that the future exceptions will still apply when the proposed ATCM is amended. It should be noted that these engines may be separately subject to any SCAQMD Engineering and Permitting policy in regards to the permitting discretion afforded to local Districts under 17 CCR 93116(b)(2)(E).

Comment D19:

Page 68, I.C. Engine Portable BACT Determination Form

Another issue that should be addressed is the SCAQMD policy regarding BACT for existing PERP-registered diesel engines. As discussed at the last SRC meeting, SCAQMD staff has been requesting operators to obtain SCAQMD permits for their existing PERP emergency diesel engines. SCAP believes that NSR is not triggered by merely transferring permitted equipment from CARB to SCAQMD’s jurisdiction. To avoid confusion, it is recommended that this situation be addressed in the updated BACT Guidelines. (SCAP)

Response D19:

Permitting policy is not addressed in the BACT Guidelines. BACT guidance and applicability is addressed in the I.C. Engine Portable BACT determination.

Comment D20

Page 40, Chapter 1, Clean Fuels Requirements

I am hoping that during our meeting today we can discuss the nuisance and implications of SCAQMD's desire to include electrification as a clean fuels policy alternative. We only touched upon the subject in our prior meeting and the draft board package does not offer much additional information.

It seems that an alternative technology analysis of electrification would be more complex and site specific than what would be conducted for other clean fuel alternatives. As such, the consideration of electrification as a basic equipment alternative seems to negate the certainty that the minor source BACT guidelines were intended to provide. While the implementation of electrification as an alternative clean fuel may not be debatable for major sources, its implementation may conflict with the intent of the BACT process for minor sources.

The proposed package suggests that the addition of electrification simply corrects an past omission. Even if this is correct, it seems that the proposed board package does not do much to truly explain its justification or implications. The regulated community faces the same lack of clarification. With so much time passing since the passage of SB456, combined with significant turnover on the Governing Board, more information should be shared. Committee meeting discussion and the board package should include the following concepts:

1. How does the policy complement or conflict with SB456 prohibitions on BACT determinations that alter basic equipment or processes?
2. If implemented for minor sources, what steps can or will SCAQMD take to minimize uncertainty prior to application submittal or to ensure that permit processing is streamlined for minor sources?
3. What processes will SCAQMD propose for an electrification analysis?
4. Given the applicability of the standard to PM and Sox emissions, what types and sizes of sources are likely to be affected and what is the typical permitting volume of such sources?
5. Historically, we depend upon default data such as AER and AP-42 emission factors to permit combustion PM sources, but those data sources are not always reflective of local conditions or test programs and often overstate potential emissions. How will SCAQMD ensure that minor sources are not drawn into an electrification analysis simply due to the use of incomplete or inaccurate data?

Response D20

1. How does the policy complement or conflict with SB456 prohibitions on BACT determinations that alter basic equipment or processes?

The proposed addition of electricity and zero and near-zero emission technologies as clean fuel options complement both major and minor source Clean Fuels Policy guidance

in the BACT Guidelines as alternatives to conventional petroleum-based fuels. For minor source BACT, staff is including a recommendation made by the BACT SRC to include a clarification that the implementation of the Clean Fuels requirements are subject to the provisions of California Health and Safety Code Section 40440.11 (SB 456). Section 40440.11(a) states that in establishing BACT, “the south coast district shall consider only control options or emission limits to be applied to the basic production or process equipment existing in that source category or a similar source category. This language is not a prohibition from altering the basic equipment or process from a non-clean fuel to a clean fuel as a control option that has been demonstrated to be feasible in the same or similar source category. The implementation of the Clean Fuels policy is remaining the same and will continue to be conducted in accordance with H&SC 40440.11 for minor sources. The policy complements the H&SC 40440.11 procedures since it allows for the analysis of alternative, cleaner fuels as a control option that are evaluated to be technologically feasible and cost effective rather than only requiring add-on control equipment. The inclusion and clarification of electricity as one of the options for clean fuel further complements the H&SC 40440.11 requirement. In addition, the use of zero and near-zero emission technologies is consistent with the District’s 2011 Air Quality-Related Energy Policy that complements policies previously adopted by the Governing Board.

2. If implemented for minor sources, what steps can or will SCAQMD take to minimize uncertainty prior to application submittal or to ensure that permit processing is streamlined for minor sources?

The Clean Fuels Policy is already implemented for BACT determinations for minor sources, and electricity is being added as a clean fuel option for clarification purposes. To minimize uncertainty, staff encourages applicants that are planning to submit applications for equipment proposed to be fired on non-clean fuels (e.g. diesel oil) to meet with permitting and BACT staff prior to submittal. Many BACT listings already incorporate clean fuel usage into the requirements, so the majority of permit applications do not require additional Clean Fuels analyses. In addition, based on engineering feasibility some common allowances are identified in the Clean Fuels Requirements sections in the BACT Guidelines (e.g. emergency standby generators).

3. What processes will SCAQMD propose for an electrification analysis?

The proposed addition of electricity as a clean fuel is not a requirement to have certain permit units subject to a required “electrification analysis.” The proposal is clarifying that electricity will be included as a clean fuel option as part of a Clean Fuels analysis. The Governing Board adopted the Clean Fuels Policy and included a requirement that clean fuels be included as part of BACT. In the BACT Guidelines, a clean fuel is a fuel that produces criteria pollutant emissions equivalent to or less than natural gas, which includes electricity. The current process of a Clean Fuels analysis may include the

evaluation of multiple clean fuels, including electricity, and is based on engineering feasibility and cost effectiveness (for minor sources). A Clean Fuels analysis does not solely focus on electrification, therefore staff is not proposing any specific processes that will be subject to an “electrification analysis.” As previously mentioned, typically any processes proposing to use a fuel that is not a clean fuel will undergo a Clean Fuels analysis.

4. Given the applicability of the standard to PM and SO_x emissions, what types and sizes of sources are likely to be affected and what is the typical permitting volume of such sources?

No additional sources will be affected by the proposal than are already subject to the existing Clean Fuels requirements. A clarification is being proposed that electricity qualifies as an option for a clean fuel. A Clean Fuels analysis is triggered when a proposed permit unit will be fired on a fuel that produces criteria pollutant emissions greater than had the unit been fired on natural gas. Since the trigger for the analysis is not changing, an evaluation was not completed regarding how many sources are currently evaluated under the existing Clean Fuel requirements.

5. Historically, we depend upon default data such as AER and AP-42 emission factors to permit combustion PM sources, but those data sources are not always reflective of local conditions or test programs and often overstate potential emissions. How will SCAQMD ensure that minor sources are not drawn into an electrification analysis simply due to the use of incomplete or inaccurate data?

The need for a Clean Fuels analysis is based on the criteria pollutant emission rate of a fuel relative to the rate for natural gas. For this purpose, these emission factors are well established to determine if the proposed fuel will result in greater emissions and require a Clean Fuels analysis. This process does not directly cause an “electrification analysis.” During a Clean Fuels analysis and evaluation, in addition to engineering feasibility, these emission factors may be used to determine the relative cost effectiveness for several clean fuels (e.g. propane, natural gas and electricity) compared to the proposed fuel. For this scenario, all of the different cost effectiveness values will be calculated using the same emission rate, so any uncertainty in the emission factor of the proposed fuel will be equally applied to each option.

Comment D20:

Page 52, Fiberglass Operations, Fabrication-Hand and Spray Layup

On 9/27/06 BAAQMD determined (determination attached) that material with a monomer content of no greater than 34 percent by weight, was achieved in practice. We urge the district to update its guidelines based on the BAAQMD determination and include UV/EB technology as an equivalent method to achieve the standard. (Radtech)

Response D20:

Staff appreciates bringing this potential BACT determination to our attention and look forward to working with BAAQMD and Radtech in the evaluation of this technology for compliance with California Health and Safety Code, Section 40440.11 in order to be considered for proposed addition to Part D, minor source BACT in the SCAQMD BACT Guidelines.

Comment D21:

Page 104, Printing (Graphic Arts), Flexographic

On 11/09/04, the San Joaquin Valley Air Pollution Control District listed (determination attached) UV technology as “Achieved in Practice” for “Flexographic UV Printing - High End Printing of Labels, Tags, and Forms”. The substrates, covered by this guideline, are low-porosity papers, plastic films, and metalized paper/foil. We urge the district to update its guidelines based on the SJVAPCD determination and include UV/EB technology as an equivalent method to achieve the standard. (Radtech)

Response D21:

Staff appreciates bringing this potential BACT determination to our attention and look forward to working with San Joaquin Valley Air Pollution Control District and Radtech in the evaluation of this technology for compliance with California Health and Safety Code, Section 40440.11 in order to be considered for proposed addition to Part D, minor source BACT in the SCAQMD BACT Guidelines.

Comment D22:

Page 104, Printing (Graphic Arts), Screen Printing and Drying

On 6/20/95, BAAQMD determined (determination attached) that use of ultraviolet light curable inks was technologically feasible and cost effective for screen printing operations. Furthermore, BAAQMD found that the UV technology is the typical technology used. We urge the district to update its guidelines to reflect the BAAQMD’s determination. (Radtech)

Response D22:

Staff appreciates bringing this potential BACT determination to our attention and look forward to working with BAAQMD and Radtech in the evaluation of this technology for compliance with California Health and Safety Code, Section 40440.11 in order to be considered for proposed addition to Part D, minor source BACT in the SCAQMD BACT Guidelines.

Comment D23:

Page 119, Spray Booth, Other Types

On 12/16/03 BAAQMD determined (determination attached) that emissions controlled to overall capture/ destruction efficiency >90% was cost effective for Miscellaneous Metal Parts and Products Spray Booths with uncontrolled emissions of greater than or equal to 50 lbs/day. The determination notes that the typical technology is low VOC coatings. Furthermore, for operations with uncontrolled emissions of 50 lbs/day or greater, BAAQMD determined that 90% control was achieved in practice. We urge the district to update its guidelines to reflect the BAAQMD determinations and include UV/EB technology as an equivalent strategy to achieve 90% emissions control for the category of “Spray Booth, other types”. (Radtech)

Response D23:

Staff appreciates bringing this potential BACT determination to our attention and look forward to working with BAAQMD and Radtech in the evaluation of this technology for compliance with California Health and Safety Code, Section 40440.11 in order to be considered for proposed addition to Part D, minor source BACT in the SCAQMD BACT Guidelines.

Part E

Comment E1:

Page 502, Chapter 1- GHG BACT:

This chapter explains the requirements of greenhouse gases (GHG) BACT regulations according to EPA, describes the Top-Down Process, shows how to calculate GHG emissions and **explains the Prevention of Significant Deterioration (PSD) Applicability for GHGs for new sources as well as modified sources.**

I don't believe you need to discuss PSD applicability in this document. You run the risk of inconsistencies with your rules, EPA rules, and/or Court decisions. PSD applicability is addressed directly in Rule 1714. (Sierra Research – BACT SRC member)

Instead of paraphrasing parts of EPA's PSD and Title V Permitting Guidance for GHGs, recommend attaching the entire document as an appendix. (LADWP – BACT SRC Member)

By attempting to discuss PSD applicability in this document it runs the risk of oversimplifying or being inconsistent with Rule 1714. (WSPA – BACT SRC Member)

Response E1:

Similar to the Applicability Determination section in Part A that describes major source thresholds for LAER, due to the unique applicability requirements of “Anyways Sources” and the history of the development of the requirements, staff feels it is important that this topic is discussed in the Guidelines specific to the requirements to determine BACT for PSD for GHG.

Comment E2:

Page 502, Chapter 1-GHG BACT:

The first paragraph suggest that EPA's Tailoring Rule is in the process of being revised to reflect the Supreme Court's Decision. However, this has already happened: <https://www.federalregister.gov/articles/2015/08/19/2015-20501/prevention-of-significant-deterioration-and-title-v-permitting-for-greehouse-gases-removal-of>. (EPA Region 9 - BACT SRC Member)

The guidance in this chapter is applicable to the EPA requirements in place as of the date of these guidelines, as well as SCAQMD Rule 1714.

EPA's rule is at OMB so this may have to be corrected. (LADWP - BACT SRC Member)

Response E2:

Staff agrees and has included revision.

Comment E3:

Page 502, Chapter 1, Background, Paragraph 2:

All other attainment air contaminants, as defined in SCAQMD Rule 1702 subdivision (a), shall be regulated for the purpose of PSD. **PSD is not applicable to air contaminants designated as nonattainment status.**

As discussed above, this statement is too broad, (e.g., NO_x regulated as a nonattainment precursor to O₃ and as an attainment precursor to NO₂.) (Sierra Research – BACT SRC Member)

This is an oversimplification. NO_x is an attainment pollutant which is also regulated as a nonattainment pollutant based on nonattainment precursor status.

(WSPA – BACT SRC Member)

Response E3:

Staff agrees and has included revision.

Comment E4:

Page 502, Chapter 1, Permitting Guidance for GHG:

EPA's "PSD and Title V Permitting Guidance for Greenhouse Gases" provides the basic information that permit writers and applicants need to address GHG emissions in permits. The guidance:

- **Applies long-standing PSD and Title V permitting requirements and processes to GHG;**

The guidance pre-dates the UARG court decision; a reference to the guidance could suggest that the District intends to implement the pre-UARG Tailoring Rule. Suggest deleting the reference, or clarifying that to the extent the guidance is inconsistent with UARG or EPA's Tailoring Rule update, the provisions of those decisions/rules govern. (Sierra Research – BACT SRC Member)

This guidance pre-dates the Utility Air Regulatory Group (UARG) v. EPA court decision (No.12-1146, June 23, 2014); a reference to this guidance could suggest that the District intends to implement the pre-UARG Tailoring Rule, which was invalidated in the Supreme Court Decision. WSPA suggest deleting this reference, or clarifying that to the extent the guidance is inconsistent with the Supreme Court's UARG decision or EPA's Tailoring Rule update, the provisions of that decision and current rules govern. (WSPA – BACT SRC Member)

Response E4:

Staff has updated the language to clarify the requirements. The language is not intended to implement requirements that pre-dated the Supreme Court's UARG Decision that have since been removed. Some references to the Tailoring Rule will remain, but staff will include most PSD for GHG requirements in the Guidelines.

Comment E5:

Page 53, Chapter 1, Permitting Guidance for GHG, Bullet Point 7:

- Notes that biomass could be considered BACT after taking into account environmental, energy, and economic considerations and state and federal policies that promote biomass for energy-independence and environmental reasons.

EPA is reassessing the biomass issue so you may want to reword this so that the statement is not so definitive. (LADWP – BACT SRC Member)

Response E5:

Staff agrees and will add advisory language that EPA is considering revisions that will affect BACT determinations for these sources. A footnote will be added referencing U.S. EPA's memo dated November 19, 2014 regarding this topic (<https://www3.epa.gov/climatechange/downloads/Biogenic-CO2-Emissions-Memo-111914.pdf>).

Comment E6:

Page 513, Chapter 1, Federal PSD Applicability for GHG:

Beginning January 2, 2011, GHG regulated as a **NSR** contaminant.

Not quite correct; GHGs are regulated for PSD and Title V purposes, but not for all NSR purposes. (Sierra Research – BACT SRC Member)

This statement is not correct. GHG are regulated under PSD based on the endangerment finding. But GHG are not subject to PSD NSR the same way as criteria pollutants.

(WSPA – BACT SRC Member)

Response E6:

Staff agrees and has included revision.

Comment E7:

Page 513, Chapter 1, Federal PSD Applicability for GHG, Paragraph 1:

The first step for PSD applicability determination for new or modified sources is listed in the Tables 7 and 8 below that address the Tailoring Rule Requirements.

This entire discussion needs to be revised. As noted above, the Tailoring Rule was vacated by the court. Under the court's decision, GHG PSD is not triggered unless PSD has been triggered for an attainment criteria pollutant. (WSPA – BACT SRC Member)

Response E7:

Staff agrees and has included revision.

Comment E8:

Page 513, Chapter 1, Federal PSD Applicability for GHG:

EPA is developing a proposed rule to address this issue. (LADWP – BACT SRC Member)

Response E8:

Staff is updating this section to be consistent the most recent amendment of 40 CFR 52.21 on August 19, 2015.

Comment E9:

Page 51~~3~~, Chapter 1, Federal PSD Applicability for GHG, Paragraph 1:

GHG BACT applies when a new or modified facility is subject to **PSD requirements**.

“...PSD requirements for GHG.” (Sierra Research – BACT SRC Member)

Response E9:

Staff agrees and has made the correction.

Comment E10:

Page 51~~3~~, Chapter 1, Federal PSD Applicability for GHG:

A second step for PSD applicability is contemporaneous netting. **For detailed guidance on this topic, EPA’s “PSD and Title V Permitting Guidance for Greenhouse Gases” (March 2011) should be referenced, but should be used in accordance with EPA’s clarifying documents regarding the U.S. Supreme Court decision in Utility Air Regulatory Group v. Environmental Protection Agency²⁰.**

This language addresses my concern above; should be used there as well.

(Sierra Research, BACT SRC Member)

Response E10:

Staff will update the remainder of Part E to be consistent with the UARG Court Decision and the recent amendment of 40 CFR 52.21 dated August 19, 2015.

Comment E11:

Page ~~524~~, Chapter 1, Table 8:

PSD applies GHG if:

2. The modification results in a GHG emissions increase **or** net emissions increase:

“and” not “or” (Sierra Research; WSPA – BACT SRC Members)

Response E11:

Staff agrees and has included revision.

Comment E12:

Page ~~524~~, Chapter 1, Table 8:

PSD applies GHG if:

2a. **PTE** \geq 75,000 TPY CO₂e, AND

Delete “PTE”. The terms “emissions increase” and “net emissions increase” are defined, and do not always reflect a PTE. (Sierra Research; WSPA – BACT SRC Members)

Response E12:

The term Potential to Emit (PTE) is used in the language in 40 CFR 52.21(j)(2) for applying BACT to a new major stationary source. In addition, Potential to Emit is used in the definition for major stationary source in 40 CFR 52.21(b)(1)(i). To stay consistent with federal guidance, staff will keep PTE in the applicability description in Table 7 for a new source. However, staff will remove PTE from the description for modified sources in Table 7, and only use the terms emissions increase or net emissions increase since the term PTE is not used to determine emissions from a modified source in this section.

Comment E13:

Page ~~524~~, Chapter 1, SCAQMD PSD Applicability for GHG:

SCAQMD PSD applicability should be determined following the applicable sections of the Code of Federal Regulation identified in this rule.

Yes. In fact most this preceding discussion could be eliminated in favor of this reference to the application regulations. That would minimize the potential for oversimplification and/or conflict. (WSPA – BACT SRC Member)

Response E13:

Proposed Part E was added to the Guidelines to summarize new BACT requirements for the PSD GHG program under 40 CFR 52.21 and SCAQMD Rule 1714. Proposed Part F is being introduced as the section that will contain the future GHG BACT listings that will be adopted following the procedures summarized in proposed Part E. The format extends the same practices that are used for LAER and MSBACT in Parts A, B, C and D of the Guidelines.

Comment E14:

Page ~~524~~, Chapter 1, Contemporaneous Netting:

Contemporaneous netting is the process of considering all of the creditable emission increases and decreases that have occurred during the period beginning five years **before the proposed construction of the modification through the date that the emission increase from the modification occurs. When calculating the net emissions in Table 8 above for the PSD applicability, it must include all emission increases and decreases during this period.**

Use the phrase “net emissions increase”, not “net emissions”, to maintain parallel construction. (Sierra Research – BACT SRC Member)

Response E14:

Staff agrees and has included revision.

Comment E15:

Page ~~535~~, Chapter 1, BACT Step 1: Identify All Available Control Options, Paragraph 3:

EPA has emphasized the importance of energy efficiency improvements. **The first category of energy efficiency improvement options includes technologies of processes that maximize the efficiency of the individual emissions unit. The second category of energy efficiency improvements includes the options that could reduce**

emissions from a new greenfield facility by improving utilization of thermal energy and electricity that is generated and used on site.

This is an accurate quote from EPA's guidance, but there is a lot of context missing. One has to be careful about crossing the line between establishing BACT for an emission unit, and using GHG emission reductions elsewhere at a facility to avoid (or lessen the stringency of) a BACT determination for an emission unit. I'd suggest deleting the highlighted language, and let us review the complete EPA guidance.

(Sierra Research – BACT SRC Member)

Delete in favor of a reference to the actual EPA guidance.

(WSPA – BACT SRC Member)

Response E15:

Staff agrees to simplify the language to focus the discussion on the BACT determination procedure. A reference to the EPA Guidance will be inserted.

Comment E16:

Page ~~546~~, Chapter 1, BACT Step 4—Economic, Energy, and Environmental Impacts, Paragraph 2:

There are compelling public health and welfare reasons for BACT to require all GHG reductions that are achievable, considering economic impacts and other listed statutory factors. As a key step in the process of making GHG a regulated pollutant, EPA has considered scientific literature on impacts of GHG emissions and has made a final determination that emissions of six GHG endanger both the public health and the public welfare of current and future generations. Among the public health impacts and risks that EPA cited are anticipated increases in ambient ozone and serious ozone-related health impacts and risks that EPA cited are anticipated increases in ambient ozone and serious ozone-related health effects, increased likelihood of heat waves affecting mortality and morbidity, risked of increased intensity of hurricanes and floods, and increased severity of coastal storm events due to rising sea levels. With respect to public welfare, EPA cited numerous and far-ranging risks to food production and agriculture, forestry, water resources, sea level rise and coastal areas, energy, infrastructure, and settlements, and ecosystems and wildlife. The potentially serious adverse impacts of extreme events such

as wildfires, flooding, drought and extreme weather conditions also supported EPA’s finding.

I’m not convinced the language is appropriate here. One can make similar statements about criteria pollutants, but consideration of the adverse health impacts of those pollutants is not a part of a top-down analysis. EPA’s endangerment finding is the reason why a GHG BACT assessment is required; the discussion under Step 4 should address the environmental impacts of the candidate BACT options, and not the environment in which the source is proposed to be built. (Sierra Research – BACT SRC Member)

Recommend deletion of this paragraph as it seems it does not seem appropriate
(LADWP – BACT SRC Member)

This opinion is out of place and does not belong in Step 4. EPA made an endangerment finding which is what triggers the potential consideration of GHG emissions under PSD.
(WSPA – BACT SRC Member)

Response E16:

Staff has removed some of the detailed language in this section regarding adverse impacts, and staff has added a reference to the U.S. EPA’s Endangerment Finding. The section will still include instructions to evaluate environmental impacts as part of Step 4 of the Top Down GHG BACT process, but will state that detailed impacts can be found through U.S. EPA’s GHG website.

Comment E17:

Page ~~557~~, Chapter 1, GHG Control Measures White Papers:

EPA has a series of technical “white papers” that summarize readily available information on control techniques and measures to reduce GHG emissions from specific industrial sectors. These papers provide basic technical information which may be useful in a BACT analysis, but they do not define BACT for each sector. The industrial sectors covered include:

- **Electric Generating Units (PDF) (48pp, 805k) EPA Contact: Christian Fellner (919-541-4003)**

Check all of the links below; they do not point to the BACT documents, but as a web page two levels higher. (Sierra Research – BACT SRC Member)

Response E17:

Staff agrees and has included revision.

BACT SCIENTIFIC REVIEW COMMITTEE
CHARTER

Comment Charter1:

BACT SRC Charter

We reiterate our request for membership on the Scientific Review Committee (SRC). The currently proposed charter for the SRC states that the “The BACT SRC shall consist of experts in the field of air quality who shall assist and advise SCAQMD staff”. We believe that BACT affects virtually every business regulated by the district and therefore the SRC should advice the SCAQMD board. (Radtech)

Response Charter1:

The BACT Scientific Review Committee (BACT SRC) was established as a standing committee by an action of the SCAQMD Governing Board on September 8, 1995. The BACT SRC was intended to enhance the public participation process with technical review and comments by a focused committee at periodic intervals, prior to the updates of the SCAQMD BACT Guidelines. CARB and U.S. EPA Region IX were each asked to designate representatives to the committee, and neighboring San Diego APCD was invited to participate. The balance of the committee was created by invitation of recognized experts from industry, consultants to industry, public utilities, suppliers of air pollution control equipment, academia and environmental advocacy groups. Whenever committee members are no longer able to participate or resign, SCAQMD seeks out an appropriate replacement to join the committee and are appointed by the Executive Officer. The proposed charter is consistent with the original operational intent of the BACT SRC. Ms. Rita Loof, Director of Environmental Affairs for Radtech has previously expressed her interest to SCAQMD staff in serving as a member of the BACT SRC and is on the list of interested parties for future consideration to be appointed to the BACT SRC.



Amend BACT Guidelines and Approve Charter for BACT Scientific Review Committee

Governing Board Meeting
December 2, 2016

Public Process

- **Held first public BACT Scientific Review Committee meeting on 5/11/16**
- **9/16/16 SSC meeting staff directed to hold second BACT SRC meeting held on 9/27/16**
- **Additional 30-day comment period provided on proposed amended BACT Guidelines with third BACT SRC meeting held on 11/9/16**
- **Comments addressed in Attachment G of Board Letter Package**
 - **Received 8 additional comment letters with total of 33 comments**
 - **Overall 139 comments received and addressed**
 - **For most comments staff agreed to revisions**

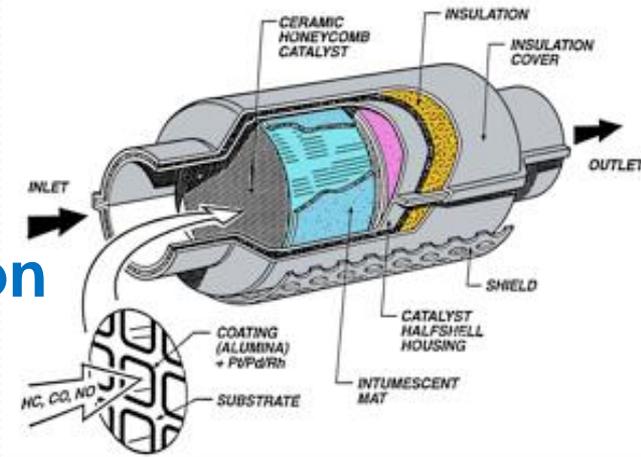
Background

- **BACT required for new and relocated sources and for modifications that increase emissions**
- **SCAQMD required to periodically publish BACT Guidelines which were first published in 1983**
- **Major facilities - Federal CAA requirement for LAER implemented through BACT**
- **Minor Source - BACT determined in accordance with State law H&SC 40440.11 (SB 456, 1995)**
- **This report summarizes proposed updates to the BACT Guidelines**



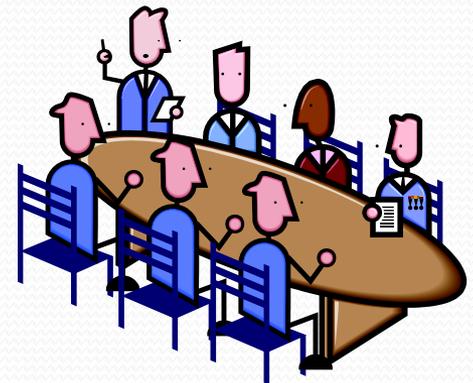
Best Available Control Technology

- BACT is the most stringent emission limitation or control technique that is
 - achieved in practice, or
 - contained in a State Implementation Plan (SIP), or
 - technologically feasible and cost effective
- Technologically feasible and cost effective criterion for non-major sources allows for more flexible controls than LAER



BACT Scientific Review Committee

- Established in 1995 to increase public participation
- Made up of members from industry, government agencies, trade organizations, academia and consultants
- Review and comment on the appropriateness of proposed new and more stringent BACT determinations
- Not to comment on past permitting decisions or change them
- Meets periodically
- Reviews revisions to BACT Guidelines



Proposed Updates to BACT Guidelines

- **Overview, Parts A, B, C, D and new Parts E & F (GHG BACT) to maintain consistency with recent changes to SCAQMD rules, State and Federal requirements**
- **Intent is for amendments to reflect current requirements with future updates planned**
- **Meets criteria for MS BACT**
- **Comments received**
 - **Clarification, Corrections and make BACT Guidelines more User Friendly**

Overview updates

- **Hyperlinks on Table of Contents**
- **Chapter 1**
 - T-BACT reference
 - BACT Docket info updated
 - Hyperlinks added for web pages and e-mail
- **Chapter 2**
 - Updated map of SCAQMD, Fig. 1
 - PM_{2.5} added & SOx updated Table 1- Major Facility Threshold
- **Chapter 3**
 - CO attainment and BACT requirement
 - PSD Requirements
 - Reference to Rules 1420.1 and 1420.2
 - Chlorobromomethane added to ODCs, Table 2
 - PM_{2.5} added Table 3- NSR Applicability, CO n/a



Overview updates (cont'd)

- **Chapter 4**
 - PSD Rules section
 - BACT Docket info updated
 - Hyperlinks added for web pages and e-mail
- **Chapter 5**
 - Background and role of SRC
 - Link to list of current SRC members



Major Sources – Parts A & B updates

Part A – Policy & Procedures

- **Hyperlinks on Table of Contents**
- **Chapter 1**
 - **Federal PM 2.5 NSR and Rule 1325**
 - **Super “Compliant” Materials**
- **Other Considerations**
 - **Capture Efficiency**
 - **Pollution Prevention**
 - **Monitoring and Testing**
- **Clean Fuel Guidance – Electricity, Zero & Near-Zero technologies added. Fire suppressant pump ICE allowance**



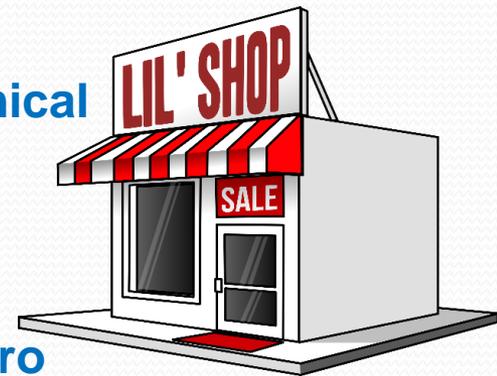
Part B – LAER/BACT Determinations

- **Continue working with Engineering and Compliance to update listings**
- **Flare Oil and Gas Production**
- **IC Engine, CI Emergency with DPF**

Minor Sources

Part C – Policy & Procedures

- Chapter 1
 - Part D BACT Determinations adoption date clarification
 - Updated Cost Effectiveness values - Marshall & Swift Equipment Cost Index
 - Updated quarterly – no longer published in Chemical Engineering Magazine
 - Top-Down cost methodology
 - Link reference to EPA Control Cost Manual
 - Clean Fuel Guidance - Electricity, Zero & Near-Zero technologies added. Fire suppressant pump ICEs exempt
 - Updated BACT Update Process flowchart, Fig. 2
 - Same “Other Considerations” section as Part A
- Chapter 2
 - Super “Compliant” Materials
 - Other Considerations – same as Part A

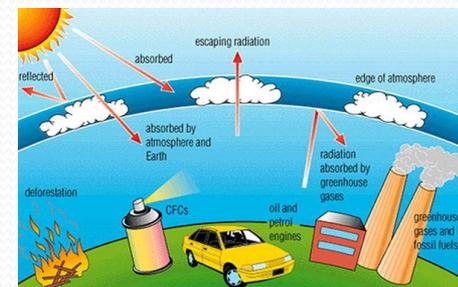


Minor Sources (cont'd)

- **Part D – BACT Determinations**
 - **Hyperlinks on Table of Contents**
 - **Boiler**
 - **IC Engine, Stationary, Emergency**
 - **IC Engine, Portable**
 - **IC Engine, Stationary, Non-Emergency, Non-Electrical Generators**
 - **IC Engine, Stationary, Non-Emergency, Electrical Generators**
 - **Liquid Transfer and Handling – Gasoline station**
 - **Process Heater – Non-Refinery**
 - **Oil and Gas Production**

Part E – Policy and Procedures for Facilities Subject to PSD for Greenhouse Gases (GHG)

- Regulation XVII applicability – Prevention of Significant Deterioration
- Facilities are subject to GHG BACT if:
 - Have potential to emit >75,000 tons/year of carbon dioxide equivalent (CO_{2e})
- Must be subject to PSD for a pollutant other than GHG - U.S. Supreme Court decision in Utility Air Regulatory Group v. Environmental Protection Agency, 134 S. Ct. 2427 (2014)
- EPA's PSD and Title V permitting guidance



Part F – BACT Determinations for Facilities Subject to PSD for GHG

- **Work in Progress**
- **EPA Guidance emphasizes options that improve energy efficiency and possibly biomass**
- **Carbon Capture and Sequestration may be considered but likely cost prohibitive**
- **Potential impacted sources include:**
 - ✓ **Electricity Generation**
 - ✓ **Large industrial/commercial boilers**
 - ✓ **Cement industry**
 - ✓ **Refineries**
 - ✓ **Iron and Steel industry**

List of Abbreviations & Index of Equipment Categories

- Included new or previously omitted terms
- Changed title to “List of Equipment Categories”
- Updated categories

Proposed Charter for BACT Scientific Review Committee

- **Mission – Assist and advise SCAQMD staff in updating BACT Guidelines**
- **Goals – Provide technical expertise on proposed BACT updates through the public process**
- **Objectives**
 - **Meet periodically to provide verbal and written comments**
 - **Contribute experience, knowledge and promote discussion regarding proposed technologies**
- **Membership qualifications, composition and operational guidelines**
- **Term limits – 2 years**

Issues

- **Why rush to update BACT Guidelines**
 - No update in 8 years; provide public and engineering with updated document
- **Transparency of BACT update process**
 - 3 BACT SRC meetings, 2 public comment periods
- **Role of BACT Scientific Review Committee**
 - Comment and advise, not approve
- **Permitting policy**
 - Outside scope of BACT Guidelines policy
- **Intent of the BACT Guidelines**
 - Per Rule 1303 to be periodically published with updated BACT determinations and policy

Recommended Actions

- **Determine that proposed amendments to the BACT Guidelines are exempt from CEQA;**
- **Approve Proposed Amendments to BACT Guidelines; and**
- **Approve Proposed Charter for the SCAQMD BACT Scientific Review Committee that details the role and membership of the BACT Scientific Review Committee, which provides advice and input to SCAQMD staff on proposed new and more stringent BACT determinations and amendments to the BACT Guidelines.**