

SJVAPCD Best Available Control Technology (BACT) Guideline 1.6.31*
Last Update: 5/14/2024

Chain-driven Charbroiler

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
PM10	Catalytic Oxidizer (83% control for PM10)		
VOC	Catalytic Oxidizer (86% control for VOC)		

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source**

Proactive Best Available Control Technology (BACT) Determination

District BACT Guideline 1.6.31

Chain-driven Charbroiler

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I. Introduction

The objective of this project is to proactively establish Best Available Control Technology (BACT) Guideline 1.6.31 (see Appendix A), which applies to chain-driven charbroilers.

The current analysis will incorporate any applicable and more stringent emission control standards that have been achieved in practice or determined to be technologically feasible. Any corrections and/or changes needed to ensure consistency with the District's BACT policy and other District practices will also be made.

The discussion in this analysis will be limited to the following topics:

- Source of emissions
- Top-down BACT analysis for all pollutants
- Recommendation

II. Source of emissions

A chain-driven charbroiler is a semi-enclosed natural gas-fired cooking device that provides heat to cook food as it moves through the device while resting on the moving, chain-driven grated grill. In this operation, natural gas combustion results in emissions of NO_x, SO_x, PM₁₀, CO, and VOC, and cooking of meat results in PM₁₀ and VOC emissions.

III. Top-Down BACT Analysis

A. BACT analysis for PM₁₀ and VOC Emissions

Step 1 - Identify All Possible Control Technologies

The following BACT clearinghouse references were reviewed to determine what controls chain driven charbroiler operations have been required to employ:

- EPA RACT/BACT/LAER clearinghouse
- CARB BACT clearinghouse
- South Coast AQMD (SCAQMD) BACT clearinghouse
- Bay Area AQMD (BAAQMD) BACT clearinghouse
- Sacramento Metro AQMD (SMAQMD) BACT clearinghouse
- San Diego APCD (SDAPCD) BACT clearinghouse
- San Joaquin Valley APCD (SJVAPCD) BACT clearinghouse

The EPA RACT/BACT/LAER clearinghouse does not include general guidelines, only determinations made by individual agencies. No information was found for chain-driven charbroilers.

The CARB BACT clearinghouse does not include general guidelines, only individual determinations made by individual air districts. No information was found for chain-driven charbroilers.

The SCAQMD clearinghouse has one BACT guideline for chain-driven charbroilers at non-major polluting facilities. The PM10 and VOC requirements are shown in the table below:

Guideline	Equipment	Control Technology
Non-Major Polluting Facilities	Charbroiler, Chain-driven (conveyorized)	<u>PM10 & VOC</u> Catalytic Oxidizer

Other AQMDs did not have any BACT guidelines for chain-driven charbroilers.

Summary of BACT Guidelines:

Based on the above information, the current, most stringent achieved in practice BACT emissions limitation for PM10 and VOC for chain-driven charbroilers would be:

- PM10 & VOC: Catalytic Oxidizer

Based on the above information, there is no existing technologically feasible control technology for PM10 and VOC emissions from chain-driven charbroilers that is not achieved in practice.

Additionally, the following rules and regulations were searched to identify if the agencies currently had any regulations that specifically applied to chain-driven charbroilers that could be considered more stringent:

- South Coast AQMD
- Bay Area AQMD
- Sacramento Metro AQMD
- San Diego APCD
- Colusa County APCD (CCAPCD)
- Yolo-Solano AQMD (YSAQMD)
- San Joaquin Valley APCD

SCAQMD Rule 1138, Control of Emissions from Restaurant Operations, requires existing and new chain-driven charbroilers to be equipped and operated with a catalytic oxidizer or other control device/method found to be as or more effective than catalytic oxidizers in reducing PM and VOC emissions.

SJVAPCD Rule 4692, Commercial Charbroiling, requires the use of a catalytic oxidizer with at least an 83% control efficiency for PM10 emissions and an 86% control efficiency for VOC emissions in order to operate a chain-driven charbroiler.

Summary of Rules and Regulations:

Option 1: Catalytic Oxidizer with at least an 83% control efficiency for PM10 emissions and an 86% control efficiency for VOC emissions

This option is required by SCAQMD's BACT guideline and Rule 1138 as well as SJVAPCD Rule 4692, so it is considered to be achieved in practice.

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed control technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control effectiveness

1. Catalytic Oxidizer with at least an 83% control efficiency for PM10 emissions and an 86% control efficiency for VOC emissions

Step 4 - Cost Effectiveness Analysis

The highest ranking option is the use of a catalytic oxidizer with at least an 83% control efficiency for PM10 emissions and an 86% control efficiency for VOC emissions, which is achieved in practice. A cost effectiveness analysis is not required for achieved in practice control options.

Step 5 - Select BACT

BACT for PM10 and VOC emissions from chain-driven charbroilers is the use of a catalytic oxidizer with at least an 83% control efficiency for PM10 emissions and an 86% control efficiency for VOC emissions.

IV. Recommendation

Upon approval, the attached guideline is recommended to be adopted into District's BACT Clearinghouse.

Appendix

Appendix A: Draft BACT Guideline 1.6.31

Appendix A
Draft BACT Guideline 1.6.31

SJVAPCD Best Available Control Technology (BACT) Guideline 1.6.31*
Last Update: TBD

Chain-Driven Charbroiler

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
PM10	Catalytic Oxidizer (83% control for PM10)		
VOC	Catalytic Oxidizer (86% control for VOC)		

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

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