

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>
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## **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**

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## LIST OF ABBREVIATIONS

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<b>AIP</b>	Achieved in Practice
<b>APCD</b>	Air Pollution Control District
<b>AQMP</b>	Air Quality Management Plan
<b>BACT</b>	Best available control technology
<b>BRC</b>	BACT Review Committee, South Coast AQMD
<b>CAA</b>	Clean Air Act
<b>CAPCOA</b>	California Air Pollution Control Officers Association
<b>CARB</b>	California Air Resources Board
<b>CEP</b>	Certified Equipment Permit
<b>CFC</b>	Chlorofluorocarbons
<b>CFR</b>	Code of Federal Regulations
<b>CO</b>	Carbon monoxide
<b>DEO</b>	Deputy Executive Officer
<b>H&amp;SC</b>	Health and Safety Code, California State
<b>LAER</b>	Lowest achievable emission rate
<b>LPG</b>	Liquefied petroleum gas
<b>MDAB</b>	Mojave Desert Air Basin
<b>MSBACT</b>	Minor Source BACT
<b>NO<sub>2</sub></b>	Nitrogen dioxide
<b>NO<sub>x</sub></b>	Oxides of nitrogen
<b>NSR</b>	New Source Review
<b>ODC</b>	Ozone depleting compounds
<b>PM<sub>10</sub></b>	Particulate matter less than 10 microns in diameter
<b>RACT</b>	Reasonably available control technology
<b>RECLAIM</b>	Regional Clean Air Incentives Market
<b>ROG</b>	Reactive organic gas
<b>South Coast AQMD</b>	South Coast Air Quality Management District
<b>SIP</b>	State Implementation Plan
<b>SOCAB</b>	South Coast Air Basin
<b>SO<sub>x</sub></b>	Oxides of sulfur
<b>SRC</b>	Scientific Review Committee
<b>SSAB</b>	Salton Sea Air Basin
<b>U.S. EPA</b>	United States Environmental Protection Agency
<b>VOC</b>	Volatile organic compound

## INDEX OF EQUIPMENT CATEGORIES

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### A

Abrasive Blasting  
 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, Non-Sweating, Ingot or non-Contaminated Scrap Charge  
 Aluminum Melting Furnace - Reverberatory, Sweating, Ingot or Contaminated Scrap Charge  
 Aluminum Melting Furnace - Rotary, Sweating, 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)  
 Asphalt Day Tanker  
 Auto Body Shredder

### B

Ball Mill  
 Beryllium Machining Equipment Blender (see Mixer)  
 Boiler  
 Boiler - Refinery Gas Fired  
 Boiler, CO - Refinery  
 Boiler - Agricultural Waste (Biomass) Fired  
 Boiler - Landfill or Digester Gas fired  
 Boiler - Municipal Solid Waste (MSW) Fired  
 Boiler – Natural Gas Fired, > 20 MM Btu/hr  
 Boiler – Fire-Tube, Natural Gas Fired, < 20 MM Btu/hr  
 Boiler - Wood Fired  
 Brake Pad Grinder  
 Brakeshoe Debonder  
 Brass Melting Furnace - Crucible  
 Brass Melting Furnace - Cupola  
 Brass Melting Furnace – Reverberatory, Non-Sweating  
 Brass Melting Furnace – Reverberatory, 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  
 Bulk Solid Material - Ship Loading - Non-White Commodities  
 Bulk Solid Material - Ship Loading - White Commodities  
 Bulk Solid Material Ship Unloading - Except Cement  
 Bulk Solid Material Storage – Non-White Commodities  
 Bulk Solid Material Storage - White Commodities  
 Burnoff or Burnout Furnace (Excluding Wax Burnoff)

## C

Calcined Petroleum Coke Handling  
 Calcined Petroleum Coke Truck Loading and Unloading Calciner  
 Calciner - Petroleum Coke  
 Calciner - Portland Cement  
 Carpet Beating and Shearing  
 Carpet Oven (see Dryer or Oven)  
 Catalyst Manufacturing - Reactor  
 Catalyst Manufacturing - Rotary 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  
 Coffee Roasting – Handling Equipment  
 Commodities Handling and Storage (see Bulk Solid Material Handling and Bulk Solid  
 Material Storage)  
 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  
 Crumb Rubber/Asphalt Oil Blending – Carbon Adsorber

## D

Degreaser - Batch-Loaded or Conveyorized Cold Cleaners

Degreaser - Conveyorized Vapor, Volatile Organic Compounds  
 Degreaser - Vapor Cleaning, Volatile Organic Compounds  
 Degreaser - Other  
 Detergent Manufacturing - Solids Handling  
 Detergent Manufacturing - Spray Dryer  
 Diaphragm (see Fugitive Emission Sources)  
 Diesel Engine (see I.C. Engine – Compression Ignition)  
 Drum Reclamation Furnace  
 Dry Cleaning - Perchloroethylene  
 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  
 Duct Burner - Refinery Fuel Gas

## E

Electric Furnace - Pyrolyzing, Carbonizing and Graphitizing  
 Electrical Wire Reclamation - Insulation Burn-off Furnace  
 Ethylene Oxide Sterilization - 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  
 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

Fuel Cell Electricity Generation, Digester Gas Fueled  
 Fugitive Emission Sources at Natural Gas Plants and Oil and Gas Production Fields  
 Fugitive Emission Sources at Organic Liquid Bulk Loading Facilities  
 Fugitive Emission Sources at Petroleum Refineries  
 Fugitive Emission Sources, Other facilities  
 Fumigation Chamber - Methyl Bromide  
 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 – Combined Cycle/Cogeneration Gas Turbine - Emergency  
 Gas Turbine - Landfill or Digester Gas Fired  
 Gas Turbine – Simple Cycle  
 Gas Turbine – Simple Cycle, Natural Gas  
 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)  
 Heater – Other Process, Natural Draft Operation

## I

I.C. Engine - Emergency, Compression Ignition  
 I.C. Engine - Emergency, Spark Ignition  
 I.C. Engine - Fire Pump  
 I.C. Engine - Portable, Compression Ignition  
 I.C. Engine - Portable, Spark Ignition  
 I.C. Engine - Stationary, Emergency  
 I.C. Engine - Stationary, Non-Emergency  
 I.C. Engine - Stationary, Non-Emergency, Electrical with SCR, NG Fired  
 I.C. Engine - Stationary, Non-Emergency with SCR, NG Fired  
 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 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 - 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 (South Coast AQMD's Rule 462)  
 Liquid Transfer and Handling - Tank Truck and Rail Car Bulk Loading, Class B (South Coast AQMD's Rule 462)  
 Liquid Transfer and Handling - Tank Truck and Rail Car Bulk Loading, Class C (South Coast AQMD's Rule 462)  
 Linear Generator - Non-Emergency Electrical Generator, Natural Gas Fired  
 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

## 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 Roasting

## 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 Process Tanks: Chemical Milling (Etching) and Plating  
 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

Paper and Fiber Handling (see Bulk Solid Material Handling)  
 Perlite Manufacturing System  
 Petroleum Coke Calciner (see Calciner – Petroleum Coke) Pharmaceutical Manufacturing  
 Pharmaceutical - Operations Involving Solvents  
 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 Manufacturing  
 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  
 Rock - Aggregate Processing  
 Rocket Engine Test Cell  
 Roller Coater – Paper and Film, with Regenerative Thermal Oxidizer  
 Rolling Mill  
 Rotary Dryer - Aggregate Facility, Natural Gas Fired  
 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  
 Steam Generator - Oil 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 - External Floating Roof, and VP <= 11 psia  
 Storage Tank - Fixed Roof  
 Storage Tank - Fuming Sulfuric Acid  
 Storage Tank - Grease or Tallow  
 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  
Sulfur Recovery Unit and Tail Gas Treatment Unit followed by a Tail Gas Incinerator and Caustic Scrubber  
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)  
Tank Truck Loading/Unloading Racks  
Tire Buffer  
Tunnel Washer

## V

Vegetable Oil Purification  
Vinegar Manufacturing

## W

Wastewater System  
Wastewater System – Air Stripper  
Wastewater System – Oil/Water Separator  
Wastewater System - Sour Water Stripping  
Wax Burnoff Furnace  
Wet Material Handling (see Bulk Solid Material Handling)  
Wood Processing Equipment  
Woodworking

## Z

Zinc Melting Furnace - Crucible or Pot  
Zinc Melting Furnace - Reverberatory, Non-Sweating Operations  
Zinc Melting Furnace - Reverberatory, Sweating Operations  
Zinc Melting Furnace - Rotary, Sweating Operations