

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 7.1.1*

Last Update: 12/30/2020

Thermally Enhanced Oil Recovery - Steam Enhanced Crude Oil Production Wells

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Vapor control system and leak detection and repair program meeting the requirements of Rule 4401		Vapor control system with transfer of vapors to gas pipeline or re-injection to formation and leak detection and repair program meeting the requirements of Rule 4401
SOx		SOx scrubber with 95% sulfur removal or sulfur compounds reduced to no more than 1 gr S/100 dscf	Vapor control system with either transfer vapors to gas pipeline or re-injection to formation

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San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 7.1.2*

Last Update: 8/11/1995

**Thermally Enhanced Oil Recovery - Small Producer, Cyclic Injected Steam
Enhanced Oil Well Pilot Test, < or = 10 Cyclic Wells, < or = 180 days of Total
Operation**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC		1. Collection and incineration of casing vapors 2. Closed casing vents 3. Fugitive emissions inspection & maintenance program	

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.1.3*

Last Update: 9/5/1996

Petroleum Production - Small Producers, Cyclic Wells, < or = 4 Cyclic Wells

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC		Casing vent collection system and incineration OR Transfer of non-condensable vapors to gas pipeline OR Re-injection of non-condensable vapors to underground formation OR Closed casing vents with produced fluids handled in vapor controlled tankage	

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.1.6*

Last Update: 4/21/2020

Petroleum Production - Sand Removal Basin for Heavy Crude Oil *RESCINDED*

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.1.7*

Last Update: 6/15/2020

Petroleum Production - Sludge Dewatering, Various Locations

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	<p>Sludge tanks, vapor piping and processing equipment (except roll-off bins handling dewatered sludge) maintained leak free (as defined in Rule 4623) and vented to a vapor collection and control system that is designed and operated to reduce the VOC in the vapor by 98 weight percent or to an VOC outlet concentration of less than 20 ppmv, dry basis as hexane at 3% O₂.</p> <p>VOC control device shall be carbon adsorption (at least two carbon canister in series), thermal or catalytic oxidizer, smokeless flare or IC engine with three-way catalyst. Auxiliary fuel used in any control device shall be either natural gas or LPG fuel.</p>		
SOx	<p>Reduction in H₂S in collected vapors by a minimum of 95% or to no greater than 2.0 lb SOx/day through the use of treated carbon canisters, caustic scrubber or an equivalent control device.</p>		

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.1.8*

Last Update: 2/4/2021

Petroleum Production - Mobile Degassing Operation for Storage Tanks and Pipelines

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	<p>Tanks, vapor piping and processing equipment maintained leak free (as defined in Rule 4623) and vented to a vapor collection and control system that is designed and operated to reduce the VOC in the vapor by 98 weight percent or to an VOC outlet concentration of less than 20 ppmv, dry basis as hexane at 3% O₂.</p> <p>VOC control device shall be carbon adsorption (at least two carbon canister in series), thermal or catalytic oxidizer, smokeless air assist flare or IC engine with three-way catalyst. Auxiliary fuel used in any control device shall be either natural gas or LPG.</p>		
SO _x	<p>Reduction in collected vapors by a minimum of 95% or to no greater than 2.0 lb-SO_x/day through the use of treated carbon canisters, caustic scrubber or an equivalent control device.</p>		

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.1.9*

Last Update: 2/4/2021

**Petroleum Production - Mobile Degassing Operation for Storage
Tank with low H₂S content, using a Thermal Oxidizer as a control device**

****RESCINDED, refer to guideline 7.1.8****

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.1.10*

Last Update: 7/19/2018

Organic Liquid Loading Rack

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Bottom fill loading (submerged pipe fill loading) with dry break couplers, or equivalent, and VOC emissions from the vapor collection and control system less than or equal to 0.015 pounds per 1,000 gallons of organic liquid transferred		

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.1.13*

Last Update: 2/4/2021

Petroleum Storage Tank and Pipeline De-Gassing - Mobile Operation
****RESCINDED, refer to guideline 7.1.8****

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.1.14*

Last Update: 9/21/2006

Light Crude Oil Unloading Rack

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	use of dry-break couplers or equivalent on unloading lines with an average disconnect loss of no greater than 10 ml liquid per disconnect, and fugitive components subject to Rules 4409 or 4455 as applicable	use of dry-break couplers or equivalent on unloading lines with an average disconnect loss of no greater than 8 ml liquid per disconnect, and fugitive components subject to Rules 4409 or 4455 as applicable	

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.1.15*

Last Update: 9/15/2021

Biodiesel/Glycerol Production Operation

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	100% capture (feedstock drying tanks, reactor vessels, acid treatment tanks, neutralization tanks, fatty acid tanks, and surge tanks all fully enclosed and vented to control device) and 99.5% VOC control by weight		

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.2.1*

Last Update: 4/21/2020

**Petroleum/Gas Processing - Induced Draft Evaporative Cooling
Tower, 18,000 gpm *RESCINDED***

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.2.2*

Last Update: 7/22/2020

Petroleum Refining - Valves & Connectors

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Leak defined as a dripping rate of more than three (3) drops per minute of liquid containing VOC or as a reading of methane, in excess of 100 ppmv above background when measured per EPA Method 21, for all components, and an Inspection and Maintenance Program pursuant to District Rule 4455		

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Best Available Control Technology (BACT) Guideline 7.2.3*

Last Update: 7/22/2020

Petroleum Refining - Pump and Compressor Seals

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Leak defined as a dripping rate of more than three (3) drops per minute of liquid containing VOC or as a reading of methane, in excess of 500 ppmv above background when measured per EPA Method 21, for all components, and an Inspection and Maintenance Program pursuant to District Rule 4455		

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.2.4*

Last Update: 5/11/2020

Petroleum Refineries and Chemical Plants - Swivel Joints Handling Volatile Organic Compounds, > 20,000 gallons/day Throughput *RESCINDED, refer to guideline 7.1.10*

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.2.5*

Last Update: 12/30/2020

**Petroleum Refineries and Chemical Plants - Diesel Fuel Processing,
Sulfur Recovery Plant**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
SOx	Sulfur recovery unit with tail gas treating unit to treat gas to ≤ 10 ppmv H ₂ S (based on a three-hour, moving average) and a standby incinerator - except during startup and shutdown	Sulfur recovery unit with two tail gas treating units in parallel (one as standby) to treat gas to ≤ 10 ppmv H ₂ S (based on a three-hour, moving average) and a standby incinerator - except during startup and shutdown	

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Best Available Control Technology (BACT) Guideline 7.2.6*

Last Update: 12/30/2020

**Petroleum Refineries and Chemical Plants - Diesel Fuel
Processing, Sulfur Recovery Plant, = or > 20 tons Sulfur/day *RESCINDED, refer
to guideline 7.2.5***

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Best Available Control Technology (BACT) Guideline 7.2.7*

Last Update: 8/24/2020

Natural Gas Processing Plant - Valves, Connectors, Flanges, Pressure Relief Device, Compressor Seals, and Pump Seals

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	<p>Inspection and maintenance program pursuant to District Rule 4409, with the following leak repair thresholds:</p> <p>Leak defined as a dripping rate of more than three (3) drops per minute of liquid containing VOC,</p> <p>and</p> <p>A reading of methane in excess of 100 ppmv above background when measured per EPA Method 21 for valves, flanges, compressor seals and pressure relief devices,</p> <p>and</p> <p>A reading of methane in excess of 500 ppmv above background when measured per EPA Method 21 for pump seals.</p>		

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Last Update: 4/21/2020

Catalyst Regeneration - Fluid Catalytic Cracking Unit *RESCINDED*

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.3.1*

Last Update: 10/1/2002

**Petroleum and Petrochemical Production - Fixed Roof Organic
Liquid Storage or Processing Tank, < 5,000 bbl Tank capacity ****

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	PV-vent set to within 10% of maximum allowable pressure	99% control (Waste gas incinerated in steam generator, heater treater, or other fired equipment and inspection and maintenance program; transfer of noncondensable vapors to gas pipeline; reinjection to formation (if appropriate wells are available); or equal).	

** Converted from Determinations 7.1.11 (10/01/02).

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San Joaquin Valley
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Best Available Control Technology (BACT) Guideline 7.3.2*

Last Update: 10/1/2002

**Petroleum and Petrochemical Production - Fixed Roof Organic
Liquid Storage or Processing Tank, = or > 5,000 bbl Tank capacity ****

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	99% Control (Waste gas incinerated in steam generator, heater treater or other fired equipment and inspection and maintenance program, or equal)	99% control (Transfer of noncondensable vapors to gas pipeline; reinjection to formation (if appropriate wells are available); thermal or catalytic oxidizer; carbon adsorption; or equal).	
SOx		95% control (Vapor collection system and either a) sulfur removal by scrubber with inspection and maintenance program or b) vapors no greater than 0.2 gr S/100 dscf; transfer of non-condensable vapors to gas pipeline; reinjection to formation (if appropriate wells are available), or equal)	
PM10	50% control, (Waste gas incinerated at scrubbed steam generator, heater treater or incinerator or compressed and injected in injection wells and inspection and maintenance program, or equal)	99% control (Transfer of noncondensable vapors to gas pipeline; reinjection to formation (if appropriate wells are available); or equal).	

** Converted from Determinations 7.1.4 and 7.1.12 (10/01/02).

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Best Available Control Technology (BACT) Guideline 7.3.3*

Last Update: 9/1/2021

Floating Roof Organic Liquid Storage or Processing Tank

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Internal Floating Roof Tank meeting requirements of District Rule 4623 or External Domed Floating Roof Tank meeting requirements of District Rule 4623		

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