

Appendix H

Screening Analysis

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Appendix H: Screening Analysis

This Appendix summarizes the District's screening and analysis of existing District rules and new rules to determine the best candidates for future control measures. Included by reference as part of Appendix H are the documents supporting this screening analysis, such as: district rules, staff reports, and rule comparison charts.

Table H-1 Screening of Existing and Proposed District NOx and VOC Rules

Rule No.	Rule Title and/or Description of CM	Latest Adoption or Amendment	Current Control Requirements	Opportunity for Strengthening	Control Measure Status
EXISTING RULES					
4103	Open Burning	Amended 5/19/05	Prohibitions on burning certain crops/ materials, Smoke Mgmt program	Rule Development in Progress to incorporate provisions of CH&SC on prohibitions of burning orchard removals. Explore incentivization of biomass as fuel or compost material.	Rule Development in progress/Candidate Incentive Measure
4104	Reduction of Animal Matter	Amended 12/17/02	Incineration at 1200° F for a minimum of 0.3 seconds	None. Controlled at most stringent limit.	Further Study
4106	Prescribed Burning and Hazard Reduction Burning	Adopted 6/21/01	Restrictions on material; burning allocations; prescribed burning req'mts.; permits for hazard reduction burning; smoke management plans for prescribed burning go/no go for natural fire control	This source category is recommended for an incentives program without any changes to rule provisions.	Further Study /Candidate Incentive Measure
4301	Fuel Burning Equipment	Amended 12/17/92	Combustion contaminants – 0.1 grain per cubic foot @ 12% CO2 10 lbs/hour; SO2 – 200 lbs/hour; NO2 – 140 lbs/hour	None. Limits are contained in other source specific rules.	Not recommended
4302	Incinerator Burning	Amended 12/16/93	Multiple-chamber incinerator or APCO-approved equipment	None; only minor rewording for administrative change; very small NOx inventory (0.026 TPD)	Black Box

Rule No.	Rule Title and/or Description of CM	Latest Adoption or Amendment	Current Control Requirements	Opportunity for Strengthening	Control Measure Status
4303	Orchard Heaters		< 1 gm/min. of uncombusted material	None. Non-ozone season activity.	Not recommended
4304	Equipment Tuning Procedure for Boilers, Steam Generators, and Process Heaters	Adopted 10/19/95	Tuning procedures for boilers, steam generators, and process heaters	None; Identical tuning procedures in most districts	Not recommended
4305	Boilers, Steam Generators, and Process Heaters – Phase 2	Amended 7/21/03	Superceded by 4306		Not recommended
4306	Boilers, Steam Generators, and Process Heaters – Phase 3	Amended 3/17/05	15 ppmv for <20 MMBTU/HR; 9 ppmv for >20 MMBTU/HR	Lower emission limit for medium and large units	Candidate CM
4307	Boilers, Steam Generators, and Process Heaters - 2.0 MMBtu/hr to 5.0 MMBtu/hr/	Adopted 4/20/06	30 ppmv for natural gas-fired; 40 ppmv for liquid fuel-fired	Remove exemption for school boilers – incentivize the replacement of these units	Candidate CM/Candidate Incentive Measure
4308	Boilers, Steam Generators, and Process Heaters - 0.075 MMBtu/hr to 2.0 MMBtu/hr	Adopted 10/20/05	.075-0.4 MMBTU/HR: .093 lb NOx/MMBTU @ 3% O ₂ ; > 0.4-< 2.0 MMBTU/HR: .036 lb NOx/MMBTU @ 3% O ₂	Accelerate replacement of older unit by using incentives. Explore possibility of converting to electric boilers	Further Study
4309	Dryers, Dehydrators and Ovens	Adopted 12/15/2005	dehydrators fired on PUC nat. gas; all others 3.5-5.3 ppmv using O ₂ correction factor	No new technologies are currently available at this time	Further Study
4311	Flares	Amended 6/15/2006	Flow sensing devices; subject to 40CFR60.18; VOC & NO _x limits for ground enclosed flares	Evaluate effects of Flare Minimization Plan to determine effects	Candidate CM
4313	Lime Kilns	Adopted 3/27/03	NO _x : 0.12 lb/MMBTU-gaseous fuel; 0.12 lb/MMBTU-distillate fuel oil; 0.20 lb/MMBTU-residual fuel oil	Lower NO _x limit & consider for the AERO (Advanced Emissions Reductions Options) program	Black Box
4351	Boilers, Steam Generators, and Process Heaters – Reasonably Available Control Technology	Amended 8/21/03	Superceded by 4306		Not recommended
4352	Solid Fuel Fired Boilers, Steam Generators and Process Heaters	Amended 5/18/06	MSW: 200 ppmv @ 12% CO ₂ ; all others: 115 ppmv @ 3% O ₂	Further study to determine if SCR is feasible or consider AERO program	Further study CM

Rule No.	Rule Title and/or Description of CM	Latest Adoption or Amendment	Current Control Requirements	Opportunity for Strengthening	Control Measure Status
4354	Glass Melting Furnaces	Amended 8/17/06	Container glass: 5.5 lb NOx/ton of glass pulled; VOC: 20 ppmv for 100% air-dried, 0.1-0.25 lb/ton of glass pulled for oxygen-assisted combustion	Nox limits to leverage best technology at time of furnace rebuild	Candidate CM
4401	Steam-Enhanced Crude Oil Production Well Vents	Amended 1/15/98	Total uncontrolled VOC reduced by 99%; various leak thresholds	Remove some exemptions and lower leak threshold	Completed in 2006
4402	Crude Oil Production Sumps	Amended 12/19/1992	Flexible floating cover, rigid floating cover, or fixed roof cover	Remove exemptions	Further Study
4403	Components Serving Light Crude Oil or Gases at Light Crude Oil and Gas Production Facilities and Components at Natural Gas Processing Facilities	Amended 4/20/05	Superseded by 4409		Not recommended
4404	Heavy Oil Test Station – Kern County	Amended 12/17/92	99% control of VOC	Further study to determine total number of gauge tanks & investigate AERO program	Further study CM
4405	Oxides of Nitrogen Emissions from Existing Steam Generators Used in Thermally Enhanced Oil Recovery – Central and Western Kern County Fields	Amended 12/17/92	Superseded by 4306		Not recommended
4407	In-situ Combustion Well Vents	Adopted 5/19/94	Emissions control device with 85% CE or fuel burning equipment /flare	Further study to determine inventory associated with this source category.	Not recommended
4408	Glycol Dehydration Systems	Adopted 12/19/2002	Vapor recovery systems, flare, incinerator, reboiler, or thermal oxidizer; emission control system with 95% CE	None. Current reqm't fulfills MACT std.	Black Box

Rule No.	Rule Title and/or Description of CM	Latest Adoption or Amendment	Current Control Requirements	Opportunity for Strengthening	Control Measure Status
4409	Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities	Adopted 4/20/05	Maximum allowable number or percent of leaking components; inspection or re-inspection req'mts; maintenance req'mts	None. Recently adopted for BARCT and All Feasible Control Measure	Black Box
4451	Valves, Pressure Relief Valves, Flanges, Threaded Connections and Process Drains at Petroleum Refineries and Chemical Plants	Amended 4/20/05	Superseded by 4455		Not recommended
4452	Pump and Compressor Seals at Petroleum Refineries and Chemical Plants	Amended 4/20/05	Superseded by 4455		Not recommended
4453	Refinery Vacuum Producing Devices or Systems	Amended 12/17/1992	Collect, compress, & add vapors to refinery gas or VOC destruction with 90% CE	No additional reductions are available from this source category	Further Study
4454	Refinery Process Unit Turnaround	Amended 12/17/1993	Organic vapor recovery and combustion; depressurization to < 5 psig.	Further study to determine inventory associated with this source category.	Further study CM
4455	Components at Refineries, Gas Processing Facilities, and Chemical Plants	Adopted 4/20/05	Leak stdns; max. allowable number or % of leaking components; inspection & reinspection req'mts; maintenance req'mts	Recent rule project/no current opportunities.	Black Box
4501	Alternate Compliance For Best Available Retrofit Control Technology (BARCT)	Adopted 6/17/99	Establishes administrative mechanism to allow use of certain emission reduction credits (ERC) in lieu of complying BARCT NOx rules.	None. No sources opted to use ERC in lieu of complying with the provisions of Rules 4305, 4354, 4701 and 4703.	Not recommended
4565	Composting/Biosolids		None. (New rule is currently being developed)	Management practices, aerated static pile, and control device efficiency.	Rule Development in progress
4570	Confined Animal Facilities	Adopted 6/15/2006	Implement several measures from a list	Increase number of practices and control efficiency	Candidate CM
4601	Architectural Coatings	Amended 10/31/01	VOC coating limits from 2000 SCM	Lower VOC limits, similar to SCAQMD. Determine emission	Candidate CM/Further Study

Rule No.	Rule Title and/or Description of CM	Latest Adoption or Amendment	Current Control Requirements	Opportunity for Strengthening	Control Measure Status
				inventory of asphalt roofing material	
4602	Motor Vehicle and Mobile Equipment Coating Operations		VOC coating and solvent limits.	Lower coating limits per state SCM. New Rule 4612 replaces Rule 4602 in 2009. Cleaning solvents VOC is being lowered, as part of general solvents rule change, currently in progress. Incentive to achieve additional reductions.	Rule Development in progress/Black Box/Candidate Incentive Measure
4603	Surface Coating of Metal Parts and Products	Amended 5/18/06	General limit: Baked=275 g/L Air-dried+340 g/L; There are 11 specialty coating categories	Cleaning solvents VOC is being lowered/Lower VOC limits.	Rule Development in progress/ Black Box
4604	Can and Coil Coating Operations	Amended 1/15/04	VOC coating limits; alternative control device w/ 90% CE	Cleaning solvents VOC limit is being lowered. Recent rule change for coating VOC limits.	Rule Development in progress/Black Box
4605	Aerospace Assembly and Component Coating Operations	Amended 12/20/01	VOC coating limits	Cleaning solvents VOC is being lowered/Lower VOC limits.	Rule Development in progress/ Black Box
4606	Wood Products Coating Operations	Amended 12/20/01	VOC coating limits; alternative control device w/ 85% CE	Cleaning solvents VOC is being lowered/Expand coating category and remove some exemptions.	Rule Development in progress/ Black Box
4607	Graphic Arts	Amended 12/20/01	VOC limits for ink, coatings, & adhesives or emission control system w/ different levels of CE	Cleaning solvents VOC is being lowered/Increase control device efficiency, lower coatings' VOC limits, and lower exemption limits	Rule Development in progress/ Candidate CM
4610	Glass Coating Operations	Amended 1/15/04	VOC coating limits or emission control device w/ 90% CE	No additional reductions are available from this source category. Only one facility is applicable and they are already meeting the stringent rule limits thru permit conditions.	Black Box

Rule No.	Rule Title and/or Description of CM	Latest Adoption or Amendment	Current Control Requirements	Opportunity for Strengthening	Control Measure Status
4621	Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants	Amended 6/18/98	Permanent submerged fill pipe & vapor recovery system; pressure relief valve; delivery vessel req'mts	Remove exemptions, apply to aviation fuel/ Explore incentivization to achieve additional reductions from unregulated devicesl.	Rule Development in progress/Candidate Incentive Measure
4622	Gasoline Transfer into Motor Vehicle Fuel Tanks	Amended 12/19/92	Vapor recovery systems-phase II; periodic maintenance inspection program;	Improve effectiveness of compliance with ARB vapor recovery testing and certification standards.	Rule Development in progress
4623	Storage of Organic Liquids	Amended 5/19/05	Pressure-vacuum relief valve, internal floating roof, external floating roof, or vapor recovery system; small producer VOC control system req'mts	Lower tank capacity applicability, lower TVP threshold and leak standard, and make small producers' tank control requirements similar to non-small producers' tanks.	Black Box
4624	Organic Liquid Loading	Amended 12/17/92	Class 1: VOC not to exceed 0.08 lb/1000 gal of organic liquid loaded; class 2: 95% CE	Strengthen leak detection and repair of components, and eliminate exemption for tanks used in agricultural operations.	Rule Development in progress
4625	Wastewater Separators	Amended 12/17/1992	Recovery compartments must have solid cover, floating pontoon or double-deck type cover, or vapor recovery with CE > 90% by weight.	Increase control efficiency to 95% and reduce exemption level	Further study
4641	Cutback, Slow Cure, and Emulsified Asphalt Paving and Maintenance Operations	Amended 12/17/1992	Manufacture & sales prohibition for rapid cure, medium cure, and types of slow cure and emulsified asphalt	Eliminate manufacturing exemption.	Further Study
4642	Solid Waste Disposal Sites	Amended 4/16/1998	20 ppmv VOC or 98% control	Reduce limits, eliminate exemptions for active and uncontrolled facilities, and maintenance	Black Box
4651	Volatile Organic Compound Emissions from Decontamination of Soil	Amended 12/17/92	Excavation & aeration req'ts; VOC collection & control system	Eliminate exemptions and implement more stringent VOC control. No additional reductions available from this source	Rule Development in progress

Rule No.	Rule Title and/or Description of CM	Latest Adoption or Amendment	Current Control Requirements	Opportunity for Strengthening	Control Measure Status
				category	
4652	Coatings and Ink Manufacturing	Amended 12/17/1992	Portable mixing vats are covered, with lid req'ts; APCO-approved cleaning methods.	Further study to determine inventory associated with this source category.	Black Box
4653	Adhesives	Amended 12/20/01	General limits 30 to 850 g/l. HVLP spray equipment	Cleaning solvents VOC is being lowered/Incorporate more stringent limits and re-evaluate justification and need for exemptions.	Rule Development in progress
4661	Organic Solvents	Amended 12/16/02	Allowable VOC emissions from source operations; alternative emission control at 85% CE	Lower VOC limits and exemptions	Rule Development in progress
4662	Organic Solvent Degreasing Operations	Amended 12/20/01		Lower VOC limits	Rule Development in progress
4663	Organic Solvent Cleaning, Storage, and Disposal	Adopted 12/20/01	Various VOC limits ranging from 50 to 900 gr VOC/liter	Lower VOC limits	Rule Development in progress
4671	Perchloroethylene Dry Cleaning System		(Repealed)		Not recommended
4672	Petroleum Solvent Dry Cleaning Operations	Amended 12/17/92	Add-on control devices; solvent recovery dryers; 1kg/100 kg (petroleum waste solvent/dry wt. material)	None. Same level of stringency as other rules.	Black box
4681	Rubber Tire Manufacturing	Amended 12/16/93			Not recommended

Rule No.	Rule Title and/or Description of CM	Latest Adoption or Amendment	Current Control Requirements	Opportunity for Strengthening	Control Measure Status
4682	Polystyrene Foam, Polyethylene, and Polypropylene Manufacturing	Amended 6/16/94	Non-VOC blowing agents, VOC collection w/ 90% CE, or alternative methods; pressure vessel preventing VOC release or VOC control device w/ 95% CE by weight	Lower VOC limits and control emissions from storage and warehousing	Rule Development in progress
4684	Polyester Resin Operations	12/17/2001	Monomer content limits; 60 gm weight loss limit; HVLP or electrostatic spray eqmt.; 1.7 lb/gal VOC limit for cleaning mat.; VOC limits for organic solvents; cleaning, storage & disposal req'mts	Cleaning solvents VOC is being lowered/Lower VOC limits and change operational requirements similar to SCAQMD Rule 1162	Rule Development in progress/Black Box
4691	Vegetable Oil Processing Operations	Amended 12/17/92		No additional reductions available from this source category	Black Box
4692	Commercial Charbroiling	Adopted 3/21/02	Catalytic oxidizer	None. Same level of stringency as other rules. No new BACT technology currently available.	Not recommended
4693	Bakery Ovens	Adopted 5/16/02	Emission collection system and VOC control device with 95% CE	Increase CE by 2% and expand applicability to capture facilities 2lbs VOC/day and greater.	Further Study
4694	Wine Fermentation and Storage Tanks	Adopted 12/15/2005	Reduce fermentation VOC by 35%; pressure vacuum relief valve; wine stored at or below 75 deg.F	Increase the current required 35% annual emissions reduction	Further study CM
4701	Internal Combustion Engines – Phase 1	Amended 8/21/03	Superceded by 4702		Not recommended
4702	Internal Combustion Engines – Phase 2	Amended 4/20/06	NOx limits for AO spark-ignited ICEs are: Rich burn– 90 ppmv or 80% reduction; lean-burn– 150 ppmv or 70% reduction. For non-AO spark-ignition: Rich-burn – 25 ppmv or 96% reduction; lean-burn – 65 ppmv or 90% reduction.	BARCT for Ag spark-ignited engines; expand applicability to regulate engines <50 hp thru incentives	Candidate Incentive Measure/Further Study

Rule No.	Rule Title and/or Description of CM	Latest Adoption or Amendment	Current Control Requirements	Opportunity for Strengthening	Control Measure Status
4703	Stationary Gas Turbines	Amended 4/25/02	Tier 1 & Tier 2 NOx compliance limits	BARCT for small turbines	Rule Development in progress
4902	Residential Water Heaters	Adopted 6/17/93	Natural gas-fired, , 75 KBTU/HR at < 40 nanogram of NOx/joule of heat output	Expand applicability to include non-residential and mobile home water heaters , and lower emission limits, similar to SCAQMD.	Candidate CM
4905	Natural Gas-fired, Fan-type, Residential, Central Furnaces	Adopted 10/20/2005	0.093 lb NOx/mmBTU of heat input	None ozone season activity. Same level of stringency as other rules. No new BACT technology currently available.	Not recommended
PROPOSED NEW RULES					
	Aging of Brandy and Wine		None	Controlled through alternative compliance option for Rule 4694 (Wine Fermentation and Storage Tanks); New rule will serve as a backstop measure to assure that all controls remain in place.	Candidate CM
	Aviation Fuel Transfer/(CM from 1-hr Ozone Extreme Plan)		None	Require VOC control system	Rule Development scheduled
	Aviation Idling		None	Establish VOC limits for idling time limits	Further study CM
	Employer-based Trip Reduction Programs		None	Require rideshare programs for businesses with at least 100 employees	Candidate CM
	Food Products and Manufacturing Operations		None	Limit use of VOC solvents for sterilization of food processing equipment	Further study CM
	Composting - Biosolids		None	Management practices, aerated static pile, and control device efficiency.	Candidate CM

Rule No.	Rule Title and/or Description of CM	Latest Adoption or Amendment	Current Control Requirements	Opportunity for Strengthening	Control Measure Status
	Composting - Greenwaste		None	Management practices, aerated static pile, and control device efficiency.	Candidate CM/Candidate Incentive Measure
	Heavy Crude Oil Components		None	Establish standards to control VOC emissions from leaking components used in heavy crude oil production and processing	Further study CM/Candidate Incentive Measure
	Mastic Removers		None	Establish VOC limits	Defer to ARB
	Methyl Bromide Fumigation		None	Require VOC control system	Further Study
	Municipal Waste Water Treatment Plants (POTW)		None	Reevaluate emissions inventory	Further study CM
	Stationary Internal Combustion Engines - <50 Bhp		None	BARCT for Ag spark-ignited engines; expand applicability to <50 hp	Further study CM