Appendix C - Control Measure Summary List by Source Category - Sorted alphabetically by Pollutant and Source Category

Source Category	Control Measure Name	Pollutant(s) Affected (√ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced)										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant in 1999$)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Cattle Feedlots	Chemical Additives to Waste								√*				50%			228	
Hog Operations	Chemical Additives to Waste								√*				50%			73	
Poultry Operations	Chemical Additives to Waste								√*				75%			1,014	
Agricultural Burning	Seasonal Ban (Ozone Season Daily)					√*							100%			N/A	
Ammonia - Natural Gas - Fired Reformers - Small Sources	Oxygen Trim + Water Injection					√*							65%			680	
Ammonia - Natural Gas - Fired Reformers - Small Sources	Low NOx Burner					√*							50%			820	
Ammonia - Natural Gas - Fired Reformers - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%		2,900	3,870	3,870
Ammonia - Natural Gas - Fired Reformers - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				80%		2,230	2,230	2,860
Ammonia - Natural Gas - Fired Reformers - Small Sources	Low NOx Burner (LNB) + Flue Gas Recirculation (FGR)					√*							60%		2,470	2,560	2,560
Ammonia Products; Feedstock Desulfurization - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							60%		2,470	2,560	2,560
Asphaltic Conc; Rotary Dryer; Conv Plant - Small Sources	Low NOx Burner					√*							50%			2,200	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
By-Product Coke Manufacturing; Oven Underfiring	Selective Non-Catalytic Reduction (SNCR)					√*			X				60%			1,640	
Cement Kilns	Biosolid Injection					√*							23%			310	
Cement Manufacturing - Dry	Low NOx Burner					√*							25%		300	440	620
Cement Manufacturing - Dry	Mid-Kiln Firing					√*							25%		-460	55	730
Cement Manufacturing - Dry	Selective Catalytic Reduction (SCR)					√*			X				80%			3,370	
Cement Manufacturing - Dry	Selective Non-Catalytic Reduction (SNCR) Ammonia Based					√*			X				50%			850	
Cement Manufacturing - Dry	Selective Non-Catalytic Reduction (SNCR) Urea Based					√*			X				50%			770	
Cement Manufacturing - Wet	Low NOx Burner					√*							25%		300	440	620
Cement Manufacturing - Wet	Mid-Kiln Firing					√*							25%		-460	55	730
Cement Manufacturing - Wet - Large Sources	Selective Catalytic Reduction (SCR)					√*			X				80%			2,880	
Cement Manufacturing - Wet - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				80%			2,880	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Ceramic Clay Manufacturing; Drying - Small Sources	Low NOx Burner					√*							50%			2,200	
Coal Cleaning-Thrml Dryer; Fluidized Bed - Small Sources	Low NOx Burner					√*							50%			1,460	
Coal-fired Plants with Production Capacities>100MW	Combustion Optimization					√*							20%			-25	
Combustion Turbines - Jet Fuel - Small Sources	Selective Catalytic Reduction (SCR) + Water Injection					√*							90%			2,300	
Combustion Turbines - Jet Fuel - Small Sources	Water Injection					√*							68%			1,290	
Combustion Turbines - Natural Gas - Large Sources	Dry Low NOx Combustors					√*							50%		100	100	140
Combustion Turbines - Natural Gas - Small Sources	Water Injection					√*							76%			1,510	
Combustion Turbines - Natural Gas - Small Sources	Selective Catalytic Reduction (SCR) + Steam Injection					√*			X				95%		2,010	2,010	8,960
Combustion Turbines - Natural Gas - Small Sources	Selective Catalytic Reduction (SCR) + Low NOx Burner (LNB)					√*			X				94%		2,570	2,570	19,120
Combustion Turbines - Natural Gas - Small Sources	Dry Low NOx Combustors					√*							84%		490	490	540
Combustion Turbines - Natural Gas - Small Sources	Steam Injection					√*							80%			1,040	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Combustion Turbines - Natural Gas - Small Sources	Selective Catalytic Reduction (SCR) + Water Injection					√*							95%			2,730	
Combustion Turbines - Oil - Small Sources	Selective Catalytic Reduction (SCR) + Water Injection					√*							90%			2,300	
Combustion Turbines - Oil - Small Sources	Water Injection					√*							68%			1,290	
Commercial/Institutional - Natural Gas	Water Heaters + LNB Space Heaters					√*							7%			1,230	
Commercial/Institutional - Natural Gas	Water Heater Replacement					√*							7%			N/A	
Commercial/Institutional Incinerators	Selective Non-Catalytic Reduction (SNCR)					√*			X				45%			1,130	
Conv Coating of Prod; Acid Cleaning Bath - Small Sources	Low NOx Burner					√*							50%			2,200	
Fiberglass Manufacture; Textile-Type; Recuperative Furnaces	Low NOx Burner					√*							40%			1,690	
Fluid Catalytic Cracking Units - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							55%		1,430	3,190	3,190
Fuel Fired Equipment - Process Heaters	Low Nox Burner + Flue Gas Recirculation					√*							50%			570	

Source Category	Control Measure Name	PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Control Efficiency (% from baseline) Low	Typical	High	Average Annual Cost Effectiveness ($/ton primary pollutant) Low	Typical	High
Fuel Fired Equipment; Furnaces; Natural Gas	Low NOx Burner					√*							50%			570	
Glass Manufacturing - Containers	Selective Catalytic Reduction (SCR)					√*			X				75%			2,200	
Glass Manufacturing - Containers	Electric Boost					√*							10%			7,150	
Glass Manufacturing - Containers	Cullet Preheat					√*							25%			940	
Glass Manufacturing - Containers	Low NOx Burner					√*							40%			1,690	
Glass Manufacturing - Containers	Selective Non-Catalytic Reduction (SNCR)					√*			X				40%			1,770	
Glass Manufacturing - Containers	OXY-Firing					√*							85%			4,590	
Glass Manufacturing - Flat	Low NOx Burner					√*							40%			700	
Glass Manufacturing - Flat	OXY-Firing					√*							85%			1,900	
Glass Manufacturing - Flat	Electric Boost					√*							10%			2,320	
Glass Manufacturing - Flat - Large Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				40%			740	

Pollutant(s) Affected: √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Glass Manufacturing - Flat - Large Sources	Selective Catalytic Reduction (SCR)					√*			X				75%			710	
Glass Manufacturing - Flat - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				75%			710	
Glass Manufacturing - Flat - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				40%			740	
Glass Manufacturing - Pressed	OXY-Firing					√*							85%			3,900	
Glass Manufacturing - Pressed	Selective Catalytic Reduction (SCR)					√*			X				75%			2,530	
Glass Manufacturing - Pressed	Low NOx Burner					√*							40%			1,500	
Glass Manufacturing - Pressed	Cullet Preheat					√*							25%			810	
Glass Manufacturing - Pressed	Electric Boost					√*							10%			8,760	
Glass Manufacturing - Pressed	Selective Non-Catalytic Reduction (SNCR)					√*			X				40%			1,640	
ICI Boilers - Coke - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				70%			1,260	
ICI Boilers - Coke - Small Sources	Low NOx Burner					√*							50%			1,460	
ICI Boilers - Distillate Oil - Large Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%			1,890	

ICI Boilers - Distillate Oil - Small Sources	Low NOx Burner	√*	50%	1,180

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
ICI Boilers - Distillate Oil - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							60%		1,090	2,490	2,490
ICI Boilers - Distillate Oil - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%		3,470	4,640	4,640
ICI Boilers - Distillate Oil - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				80%		2,780	2,780	3,570
ICI Boilers - Liquid Waste	Selective Catalytic Reduction (SCR)					√*			X				80%		1,480	1,480	1,910
ICI Boilers - Liquid Waste - Small Sources	Low NOx Burner					√*							50%			400	
ICI Boilers - Liquid Waste - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							60%		1,120	1,120	1,080
ICI Boilers - Liquid Waste - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%		1,940	2,580	2,580
ICI Boilers - LPG - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				80%		2,780	2,780	3,570
ICI Boilers - LPG - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%		3,470	4,640	4,640
ICI Boilers - LPG - Small Sources	Low NOx Burner					√*							50%			1,180	
ICI Boilers - LPG - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							60%		1,090	2,490	2,490

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
ICI Boilers - MSW/Stoker - Small Sources	Selective Non-Catalytic Reduction (SNCR) Urea Based					√*			X				55%			1,690	
ICI Boilers - Natural Gas - Large Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%			1,570	
ICI Boilers - Natural Gas - Small Sources	Oxygen Trim + Water Injection					√*							65%			680	
ICI Boilers - Natural Gas - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				80%		2,230	2,230	2,860
ICI Boilers - Natural Gas - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%		2,900	3,870	3,870
ICI Boilers - Natural Gas - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							60%		2,470	2,560	2,560
ICI Boilers - Natural Gas - Small Sources	Low NOx Burner					√*							50%			820	
ICI Boilers - Process Gas - Small Sources	Low NOx Burner					√*							50%			820	
ICI Boilers - Process Gas - Small Sources	Oxygen Trim + Water Injection					√*							65%			680	
ICI Boilers - Process Gas - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				80%		2,230	2,230	2,860
ICI Boilers - Process Gas - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							60%		2,470	2,560	2,560

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
ICI Boilers - Residual Oil - Large Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%			1,050	
ICI Boilers - Residual Oil - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				80%		1,480	1,480	1,910
ICI Boilers - Residual Oil - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							60%		1,120	1,120	1,080
ICI Boilers - Residual Oil - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%		1,940	2,580	2,580
ICI Boilers - Residual Oil - Small Sources	Low NOx Burner					√*							50%			400	
ICI Boilers - Wood/Bark/Stoker - Large Sources	Selective Non-Catalytic Reduction (SNCR) Urea Based					√*			X				55%			1,190	
ICI Boilers - Wood/Bark/Stoker - Small Sources	Selective Non-Catalytic Reduction (SNCR) Urea Based					√*			X				55%			1,440	
Industrial Coal Combustion	RACT to 50 tpy (LNB)					√*							21%			1,350	
Industrial Coal Combustion	RACT to 25 tpy (LNB)					√*							21%			1,350	
Industrial Incinerators	Selective Non-Catalytic Reduction (SNCR)					√*			X				45%			1,130	
Industrial Natural Gas Combustion	RACT to 50 tpy (LNB)					√*							31%			770	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Industrial Natural Gas Combustion	RACT to 25 tpy (LNB)					√*							31%			770	
Industrial Oil Combustion	RACT to 50 tpy (LNB)					√*							36%			1,180	
Industrial Oil Combustion	RACT to 25 tpy (LNB)					√*							36%			1,180	
In-Proc; Process Gas; Coke Oven/Blast Ovens	Low NOx Burner + Flue Gas Recirculation					√*							55%		1,430	3,190	3,190
In-Process Fuel Use - Bituminous Coal - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				40%			1,260	
In-Process Fuel Use; Natural Gas - Small Sources	Low NOx Burner					√*							50%			2,200	
In-Process Fuel Use; Residual Oil - Small Sources	Low NOx Burner					√*							37%			2,520	
In-Process; Bituminous Coal; Cement Kilns	Selective Non-Catalytic Reduction (SNCR) Urea Based					√*			X				50%			770	
In-Process; Bituminous Coal; Lime Kilns	Selective Non-Catalytic Reduction (SNCR) Urea Based					√*			X				50%			770	
In-Process; Process Gas; Coke Oven Gas	Low NOx Burner					√*							50%			2,200	
Internal Combustion Engines - Gas	L-E (Medium Speed)					√*							87%			380	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Internal Combustion Engines - Gas - Large Sources	Air/Fuel + Ignition Retard					√*							30%		150	460	460
Internal Combustion Engines - Gas - Large Sources	Air/Fuel Ratio Adjustment					√*							20%			380	
Internal Combustion Engines - Gas - Large Sources	Ignition Retard					√*							20%			550	
Internal Combustion Engines - Gas - Small Sources	Air/Fuel + Ignition Retard					√*							30%		270	1,440	1,440
Internal Combustion Engines - Gas - Small Sources	Air/Fuel Ratio Adjustment					√*							20%			1,570	
Internal Combustion Engines - Gas - Small Sources	Ignition Retard					√*							20%			1,020	
Internal Combustion Engines - Oil - Small Sources	Ignition Retard					√*							25%			770	
Internal Combustion Engines - Oil - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				80%			2,340	
Iron & Steel Mills - Annealing	Low NOx Burner (LNB) + SCR					√*			X				80%		1,320	1,720	1,720
Iron & Steel Mills - Annealing	Selective Non-Catalytic Reduction (SNCR)					√*			X				60%			1,640	
Iron & Steel Mills - Annealing	Low NOx Burner					√*							50%			570	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Iron & Steel Mills - Annealing	Low NOx Burner + Flue Gas Recirculation					√*							60%		250	750	750
Iron & Steel Mills - Annealing - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				85%			3,830	
Iron & Steel Mills - Annealing - Small Sources	Low NOx Burner (LNB) + Selective Catalytic Reduction (SCR)					√*			X				90%		3,720	4,080	4,080
Iron & Steel Mills - Galvanizing	Low NOx Burner					√*							50%			490	
Iron & Steel Mills - Galvanizing	Low NOx Burner + Flue Gas Recirculation					√*							60%		190	580	580
Iron & Steel Mills - Reheating	Low NOx Burner + Flue Gas Recirculation					√*							77%		150	380	380
Iron & Steel Mills - Reheating	Low NOx Burner					√*							66%			300	
Iron & Steel Mills - Reheating	Low Excess Air (LEA)					√*							13%			1,320	
Iron Production; Blast Furnaces; Blast Heating Stoves	Low NOx Burner + Flue Gas Recirculation					√*							77%			380	
Lime Kilns	Selective Non-Catalytic Reduction (SNCR) Urea Based					√*			X				50%			770	
Lime Kilns	Selective Catalytic Reduction (SCR)					√*			X				80%			3,370	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Lime Kilns	Selective Non-Catalytic Reduction (SNCR) Ammonia Based					√*			X				50%			850	
Lime Kilns	Mid-Kiln Firing					√*							30%			460	
Lime Kilns	Low NOx Burner					√*							30%			560	
Medical Waste Incinerators	Selective Non-Catalytic Reduction (SNCR)					√*			X				45%			4,510	
Municipal Waste Combustors	Selective Non-Catalytic Reduction (SNCR)					√*			X				45%			1,130	
Natural Gas Production; Compressors - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				20%			1,651	
Nitric Acid Manufacturing - Small Sources	Extended Absorption					√*							95%			480	
Nitric Acid Manufacturing - Small Sources	Non-Selective Catalytic Reduction (NSCR)					√*			X				98%		510	550	710
Nitric Acid Manufacturing - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				97%			590	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Open Burning	Episodic Ban (Daily Only)					√*							100%			N/A	
Plastics Prod-Specific; (ABS) - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							55%		1,430	3,190	3,190
Process Heaters - Distillate Oil - Small Sources	Ultra Low NOx Burner					√*							74%			2,140	
Process Heaters - Distillate Oil - Small Sources	Low NOx Burner (LNB) + Selective Catalytic Reduction (SCR)					√*			X				92%		9,120	9,120	15,350
Process Heaters - Distillate Oil - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				75%			9,230	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Process Heaters - Distillate Oil - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				60%			3,180	
Process Heaters - Distillate Oil - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							48%		4,250	4,250	19,540
Process Heaters - Distillate Oil - Small Sources	Low NOx Burner - Selective Non-Catalytic Reduction (SNCR)					√*			X				78%		3,620	3,620	3,830
Process Heaters - Distillate Oil - Small Sources	Low NOx Burner					√*							45%			3,470	
Process Heaters - LPG - Small Sources	Low NOx Burner (LNB) + SNCR					√*			X				78%		3,620	3,620	3,830
Process Heaters - LPG - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				60%			3,180	
Process Heaters - LPG - Small Sources	Ultra Low NOx Burner					√*							74%			2,140	
Process Heaters - LPG - Small Sources	Low NOx Burner (LNB) + Selective Catalytic Reduction (SCR)					√*			X				92%		9,120	9,120	15,350
Process Heaters - LPG - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							48%		4,250	4,250	19,540
Process Heaters - LPG - Small Sources	Low NOx Burner					√*							45%			3,470	
Process Heaters - LPG - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				75%			9,230	

Source Category	Control Measure Name	Pollutant(s) Affected (√ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced)										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Process Heaters - Natural Gas - Small Sources	Ultra Low NOx Burner					√*							75%			1,500	
Process Heaters - Natural Gas - Small Sources	Low NOx Burner (LNB) + Selective Catalytic Reduction (SCR)					√*			X				88%		11,560	11,560	27,910
Process Heaters - Natural Gas - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				60%			2,850	
Process Heaters - Natural Gas - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							55%		3,190	3,190	15,580
Process Heaters - Natural Gas - Small Sources	Low NOx Burner					√*							50%			2,200	
Process Heaters - Natural Gas - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				75%			12,040	
Process Heaters - Natural Gas - Small Sources	Low NOx Burner (LNB) + SNCR					√*			X				80%		3,520	3,520	6,600
Process Heaters - Other Fuel - Small Sources	Low NOx Burner (LNB) + Selective Catalytic Reduction (SCR)					√*			X				91%		5,420	5,420	7,680
Process Heaters - Other Fuel - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				75%			5,350	
Process Heaters - Other Fuel - Small Sources	Low NOx Burner (LNB) + SNCR					√*			X				75%		2,230	2,300	2,860
Process Heaters - Other Fuel - Small Sources	Ultra Low NOx Burner					√*							73%			1,290	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Process Heaters - Other Fuel - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				60%			1,930	
Process Heaters - Other Fuel - Small Sources	Low NOx Burner					√*							37%			2,520	
Process Heaters - Other Fuel - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							34%			3,490	
Process Heaters - Process Gas - Small Sources	Low NOx Burner					√*							50%			2,200	
Process Heaters - Process Gas - Small Sources	Low NOx Burner (LNB) + Selective Catalytic Reduction (SCR)					√*			X				88%		11,560	11,560	27,910
Process Heaters - Process Gas - Small Sources	Low NOx Burner (LNB) +Selective Reduction SNCR					√*			X				80%		3,520	3,520	6,600
Process Heaters - Process Gas - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				75%			12,040	
Process Heaters - Process Gas - Small Sources	Ultra Low NOx Burner					√*							75%			1,500	
Process Heaters - Process Gas - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				60%			2,850	
Process Heaters - Process Gas - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							55%		1,430	3,190	3,190
Process Heaters - Residual Oil - Small Sources	Ultra Low NOx Burner					√*							73%			1,290	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Process Heaters - Residual Oil - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							34%			3,490	
Process Heaters - Residual Oil - Small Sources	Low NOx Burner					√*							37%			2,520	
Process Heaters - Residual Oil - Small Sources	Low NOx Burner (LNB) + SCR					√*			X				75%		2,230	2,300	2,860
Process Heaters - Residual Oil - Small Sources	Low NOx Burner (LNB) + Selective Catalytic Reduction (SCR)					√*			X				91%		5,420	5,420	7,680
Process Heaters - Residual Oil - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				60%			1,930	
Process Heaters - Residual Oil - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				75%			5,350	
Residential Natural Gas	Water Heater Replacement					√*							7%			N/A	
Residential Natural Gas	Water Heater + LNB Space Heaters					√*							7%			1,230	
Rich-Burn Stationary Reciprocating Internal Combustion Engines	Non-selective catalytic reduction					√*							90%			342	
Rich-Burn Stationary Reciprocating Internal Combustion Engines	Non-selective catalytic reduction					√*							90%			342	
Rich-Burn Stationary Reciprocating Internal Combustion Engines (RICE)	Non-selective catalytic reduction (NSCR)					√*	√			√			90%			342	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Sand/Gravel; Dryer - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							55%		1,430	3,190	3,190
Secondary Aluminum Production; Smelting Furnaces	Low NOx Burner					√*							50%			570	
Solid Waste Disposal; Government; Other	Selective Non-Catalytic Reduction (SNCR)					√*			X				45%			1,130	
Space Heaters - Distillate Oil - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							60%		1,090	2,490	2,490
Space Heaters - Distillate Oil - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				80%		2,780	2,780	3,570
Space Heaters - Distillate Oil - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%		3,470	4,640	4,640
Space Heaters - Distillate Oil - Small Sources	Low NOx Burner					√*							50%			1,180	
Space Heaters - Natural Gas - Small Sources	Low NOx Burner					√*							50%			820	
Space Heaters - Natural Gas - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%		2,900	3,870	3,870
Space Heaters - Natural Gas - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				80%		2,230	2,230	2,860
Space Heaters - Natural Gas - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							60%		2,470	2,560	2,560

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Space Heaters - Natural Gas - Small Sources	Oxygen Trim + Water Injection					√*							65%			680	
Starch Manufacturing; Combined Operation - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							55%		1,430	3,190	3,190
Steel Foundries; Heat Treating	Low NOx Burner					√*							50%			570	
Steel Production; Soaking Pits	Low NOx Burner + Flue Gas Recirculation					√*							60%		250	750	750
Sulfate Pulping - Recovery Furnaces - Small Sources	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%		2,900	3,870	3,870
Sulfate Pulping - Recovery Furnaces - Small Sources	Low NOx Burner					√*							50%			820	
Sulfate Pulping - Recovery Furnaces - Small Sources	Oxygen Trim + Water Injection					√*							65%			680	
Sulfate Pulping - Recovery Furnaces - Small Sources	Selective Catalytic Reduction (SCR)					√*			X				80%		2,230	2,230	2,860
Sulfate Pulping - Recovery Furnaces - Small Sources	Low NOx Burner + Flue Gas Recirculation					√*							60%		2,470	2,560	2,560
Surface Coat Oper; Coating Oven Htr; Nat Gas - Small Sources	Low NOx Burner					√*			X				50%			2,200	
Utility Boiler - Coal/Tangential	Low Nox Coal-and-Air Nozzles with separated Overfire Air (LNC2)					√*							48%			N/A	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Utility Boiler - Coal/Tangential	Low Nox Coal-and-Air Nozzles with cross-Coupled Overfire Air (LNC1)					√*							33%			N/A	
Utility Boiler - Coal/Tangential	Low Nox Coal-and-Air Nozzles with separated Overfire Air (LNC2)					√*							38%			N/A	
Utility Boiler - Coal/Tangential	Low Nox Coal-and-Air Nozzles with Close-Coupled and Separated Overfire Air (LNC3)					√*							53%			N/A	
Utility Boiler - Coal/Tangential	Low Nox Coal-and-Air Nozzles with cross-Coupled Overfire Air (LNC1)					√*							43%			N/A	
Utility Boiler - Coal/Tangential	Low Nox Coal-and-Air Nozzles with Close-Coupled and Separated Overfire Air (LNC3)					√*							58%			N/A	
Utility Boiler - Coal/Tangential	Selective Non-Catalytic Reduction (SNCR)					√*			X				35%			N/A	
Utility Boiler - Coal/Tangential	Selective Catalytic Reduction (SCR)					√*			X		√		90% (Hg 95%)			N/A	
Utility Boiler - Coal/Tangential	Natural Gas Reburn (NGR)					√*							50%			N/A	
Utility Boiler - Coal/Wall	Low Nox Burner without Overfire Air					√*							41			N/A	
Utility Boiler - Coal/Wall	Low Nox Burner with Overfire Air					√*							56%			N/A	
Utility Boiler - Coal/Wall	Low Nox Burner with Overfire Air					√*							55%			N/A	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Utility Boiler - Coal/Wall	Low Nox Burner without Overfire Air					√*							40%			N/A	
Utility Boiler - Coal/Wall	Selective Catalytic Reduction (SCR)					√*			X				90%			N/A	
Utility Boiler - Coal/Wall	Selective Non-Catalytic Reduction (SNCR)					√*			X				35%			N/A	
Utility Boiler - Coal/Wall	Natural Gas Reburn (NGR)					√*							50%			N/A	
Utility Boiler - Cyclone	Selective Non-Catalytic Reduction (SNCR)					√*			X				35%			N/A	
Utility Boiler - Cyclone	Natural Gas Reburn (NGR)					√*							50%			N/A	
Utility Boiler - Cyclone	Selective Catalytic Reduction (SCR)					√*			X				80%			N/A	
Utility Boiler - Oil-Gas/Tangential	Natural Gas Reburn (NGR)					√*							50%			N/A	
Utility Boiler - Oil-Gas/Tangential	Selective Catalytic Reduction (SCR)					√*			X				80%			N/A	
Utility Boiler - Oil-Gas/Tangential	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%			N/A	
Utility Boiler - Oil-Gas/Wall	Selective Non-Catalytic Reduction (SNCR)					√*			X				50%			N/A	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Utility Boiler - Oil-Gas/Wall	Natural Gas Reburn (NGR)					√*							50%			N/A	
Utility Boiler - Oil-Gas/Wall	Selective Catalytic Reduction (SCR)					√*			X				80%			N/A	
Agricultural Burning	Bale Stack/Propane Burning	√	√*	√	√							49%	63%	63%		2,591	
Agricultural Tilling	Soil Conservation Plans	√	√	√	√								11.7%			138	
Asphalt Manufacture	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Asphalt Manufacture	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Asphalt Manufacture	Paper/Nonwoven Filters - Cartridge Collector Type	√	√*	√	√								99%		85	147	256
Asphalt Manufacture	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Asphalt Manufacture	Fabric Filter (Pulse Jet Type)	√	√*	√	√								99%		42	117	266
Asphalt Manufacture	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Beef Cattle Feedlots	Watering	√	√*	√	√								50%			307	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Control Efficiency (% from baseline) Low	Typical	High	Average Annual Cost Effectiveness ($/ton primary pollutant) Low	Typical	High
Chemical Manufacture	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Chemical Manufacture	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Chemical Manufacture	Wet ESP - Wire Plate Type	√	√*	√	√								99%		55	220	550
Commercial Institutional Boilers - Coal	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Commercial Institutional Boilers - Coal	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Commercial Institutional Boilers - Coal	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Commercial Institutional Boilers - Coal	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Commercial Institutional Boilers - Coal	Fabric Filter (Pulse Jet Type)	√	√*	√	√								99%		42	117	266
Commercial Institutional Boilers - Liquid Waste	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Commercial Institutional Boilers - Liquid Waste	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Commercial Institutional Boilers - LPG	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Commercial Institutional Boilers - LPG	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Commercial Institutional Boilers - Natural Gas	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Commercial Institutional Boilers - Natural Gas	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Commercial Institutional Boilers - Oil	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Commercial Institutional Boilers - Oil	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Commercial Institutional Boilers - Oil	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Commercial Institutional Boilers - Process Gas	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Commercial Institutional Boilers - Process Gas	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Commercial Institutional Boilers - Solid Waste	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Commercial Institutional Boilers - Solid Waste	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Commercial Institutional Boilers - Wood	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Commercial Institutional Boilers - Wood	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Commercial Institutional Boilers - Wood/Bark	Fabric Filter (Pulse Jet Type)	√	√*	√	√								99%		42	117	266
Commercial Institutional Boilers - Wood/Bark	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Commercial Institutional Boilers - Wood/Bark	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Construction Activities	Dust Control Plan	√	√*	√	√								62.5%			3,600	
Conveyorized Charbroilers	Catalytic Oxidizer	√*	√*				√					80%	83%	90%		2,966	
Electric Generation - Coke	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Electric Generation - Coke	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Electric Generation - Bagasse	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Electric Generation - Bagasse	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Electric Generation - Coal	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Control Efficiency (% from baseline) Low	Typical	High	Average Annual Cost Effectiveness ($/ton primary pollutant) Low	Typical	High
Electric Generation - Coal	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Electric Generation - Liquid Waste	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Electric Generation - Liquid Waste	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Electric Generation - LPG	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Electric Generation - LPG	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Electric Generation - Natural Gas	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Electric Generation - Natural Gas	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Electric Generation - Oil	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Electric Generation - Oil	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Electric Generation - Solid Waste	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Electric Generation - Solid Waste	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Electric Generation - Wood	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Electric Generation - Wood	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Fabricated Metal Products - Abrasive Blasting	Paper/Nonwoven Filters - Cartridge Collector Type	√	√*	√	√								99%		85	142	256
Fabricated Metal Products - Welding	Paper/Nonwoven Filters - Cartridge Collector Type	√	√*	√	√								99%		85	142	256
Ferrous Metals Processing - Coke	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Ferrous Metals Processing - Coke	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Ferrous Metals Processing - Coke	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Ferrous Metals Processing - Coke	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Ferrous Metals Processing - Coke	Venturi Scrubber	√	√*	√	√								93%		75	751	2,100
Ferrous Metals Processing - Ferroalloy Production	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Ferrous Metals Processing - Ferroalloy Production	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Ferrous Metals Processing - Ferroalloy Production	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Ferrous Metals Processing - Ferroalloy Production	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Ferrous Metals Processing - Ferroalloy Production	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Ferrous Metals Processing - Gray Iron Foundries	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Ferrous Metals Processing - Gray Iron Foundries	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Ferrous Metals Processing - Gray Iron Foundries	Impingement-Plate Scrubber	√	√*	√	√								64%		46	431	1,200
Ferrous Metals Processing - Gray Iron Foundries	Venturi Scrubber	√	√*	√	√								94%		76	751	2,100
Ferrous Metals Processing - Gray Iron Foundries	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Ferrous Metals Processing - Gray Iron Foundries	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Ferrous Metals Processing - Gray Iron Foundries	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Ferrous Metals Processing - Iron & Steel Production	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Ferrous Metals Processing - Iron & Steel Production	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Ferrous Metals Processing - Iron and Steel Production	Venturi Scrubber	√	√*	√	√								73%		76	751	2,100
Ferrous Metals Processing - Iron and Steel Production	Fabric Filter (Pulse Jet Type)	√	√*	√	√								99%		42	117	266
Ferrous Metals Processing - Iron and Steel Production	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Ferrous Metals Processing - Iron and Steel Production	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Ferrous Metals Processing - Iron and Steel Production	Wet ESP - Wire Plate Type	√	√*	√	√								99%		55	220	550
Ferrous Metals Processing - Iron and Steel Production	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Ferrous Metals Processing - Other	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Ferrous Metals Processing - Other	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Ferrous Metals Processing - Steel Foundries	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Ferrous Metals Processing - Steel Foundries	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Ferrous Metals Processing - Steel Foundries	Venturi Scrubber	√	√*	√	√								73%		76	751	2,100
Ferrous Metals Processing - Steel Foundries	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Ferrous Metals Processing - Steel Foundries	Wet ESP - Wire Plate Type	√	√*	√	√								99%		55	220	550
Ferrous Metals Processing - Steel Foundries	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Ferrous Metals Processing - Steel Foundries	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Ferrous Metals Processing - Steel Foundries	Fabric Filter (Pulse Jet Type)	√	√*	√	√								99%		42	117	266
Grain Milling	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Grain Milling	Fabric Filter (Pulse Jet Type)	√	√*	√	√								99%		42	117	266
Grain Milling	Paper/Nonwoven Filters - Cartridge Collector Type	√	√*	√	√								99%		85	142	256

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Industrial Boilers - Coal	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Industrial Boilers - Coal	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Industrial Boilers - Coal	Fabric Filter (Pulse Jet Type)	√	√*	√	√								99%		42	117	266
Industrial Boilers - Coal	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Industrial Boilers - Coal	Venturi Scrubber	√	√*	√	√								82%		76	751	2,100
Industrial Boilers - Coal	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Industrial Boilers - Coke	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Industrial Boilers - Coke	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Industrial Boilers - Liquid Waste	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Control Efficiency (% from baseline) Low	Typical	High	Average Annual Cost Effectiveness ($/ton primary pollutant) Low	Typical	High
Industrial Boilers - Liquid Waste	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Industrial Boilers - Liquid Waste	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Industrial Boilers - LPG	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Industrial Boilers - LPG	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Industrial Boilers - Natural Gas	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Industrial Boilers - Natural Gas	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Industrial Boilers - Oil	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Industrial Boilers - Oil	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Industrial Boilers - Oil	Venturi Scrubber	√	√*	√	√								92%		76	751	2,100
Industrial Boilers - Oil	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Industrial Boilers - Process Gas	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Industrial Boilers - Process Gas	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Industrial Boilers - Solid Waste	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Industrial Boilers - Solid Waste	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Industrial Boilers - Wood	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Industrial Boilers - Wood	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Industrial Boilers - Wood	Venturi Scrubber	√	√*	√	√								93%		76	751	2,100
Industrial Boilers - Wood	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Industrial Boilers - Wood	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Industrial Boilers - Wood	Fabric Filter (Pulse Jet Type)	√	√*	√	√								99%		42	117	266
Mineral Products - Cement Manufacture	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Mineral Products - Cement Manufacture	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	

Source Category	Control Measure Name	PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Control Efficiency (% from baseline) Low	Typical	High	Average Annual Cost Effectiveness ($/ton primary pollutant) Low	Typical	High
Pollutant(s) Affected: √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced																	
Mineral Products - Cement Manufacture	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Mineral Products - Cement Manufacture	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Mineral Products - Cement Manufacture	Paper/Nonwoven Filters - Cartridge Collector Type	√	√*	√	√								99%		85	142	256
Mineral Products - Cement Manufacture	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Mineral Products - Cement Manufacture	Fabric Filter (Pulse Jet Type)	√	√*	√	√								99%		42	117	266
Mineral Products - Coal Cleaning	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Mineral Products - Coal Cleaning	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Mineral Products - Coal Cleaning	Venturi Scrubber	√	√*	√	√								99%		76	751	2,100
Mineral Products - Coal Cleaning	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Mineral Products - Coal Cleaning	Fabric Filter (Pulse Jet Type)	√	√*	√	√								99%		42	117	266
Mineral Products - Coal Cleaning	Paper/Nonwoven Filters - Cartridge Collector Type	√	√*	√	√								99%		85	142	256

√ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced

Source Category	Control Measure Name	Pollutant(s) Affected: PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Control Efficiency (% from baseline): Low	Typical	High	Average Annual Cost Effectiveness ($/ton primary pollutant): Low	Typical	High
Mineral Products - Coal Cleaning	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Mineral Products - Other	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Mineral Products - Other	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Mineral Products - Other	Paper/Nonwoven Filters - Cartridge Collector Type	√	√*	√	√								99%		85	145	256
Mineral Products - Other	Wet ESP - Wire Plate Type	√	√*	√	√								99%		55	220	550
Mineral Products - Other	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Mineral Products - Other	Fabric Filter (Pulse Jet Type)	√	√*	√	√								99%		42	117	266
Mineral Products - Other	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Mineral Products - Other	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Mineral Products - Stone Quarrying & Processing	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Mineral Products - Stone Quarrying & Processing	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	

Source Category	Control Measure Name	PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Control Efficiency (% from baseline) Low	Typical	High	Average Annual Cost Effectiveness ($/ton primary pollutant) Low	Typical	High
		Pollutant(s) Affected: √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced															
Mineral Products - Stone Quarrying and Processing	Fabric Filter (Pulse Jet Type)	√	√*	√	√								99%		42	117	266
Mineral Products - Stone Quarrying and Processing	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Mineral Products - Stone Quarrying and Processing	Venturi Scrubber	√	√*	√	√								95%		76	751	2,100
Mineral Products - Stone Quarrying and Processing	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Mineral Products - Stone Quarrying and Processing	Paper/Nonwoven Filters - Cartridge Collector Type	√	√*	√	√								99%		85	142	256
Mineral Products - Stone Quarrying and Processing	Wet ESP - Wire Plate Type	√	√*	√	√								99%		55	220	550
Mineral Products - Stone Quarrying and Processing	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Municipal Waste Incineration	Dry ESP-Wire Plate Type	√	√*	√									98%		40	110	250
Non-Ferrous Metals Processing - Aluminum	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Non-Ferrous Metals Processing - Aluminum	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Non-Ferrous Metals Processing - Aluminum	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Non-Ferrous Metals Processing - Aluminum	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Non-Ferrous Metals Processing - Aluminum	Wet ESP - Wire Plate Type	√	√*	√	√								99%		55	220	550
Non-Ferrous Metals Processing - Aluminum	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Non-Ferrous Metals Processing - Copper	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Non-Ferrous Metals Processing - Copper	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Non-Ferrous Metals Processing - Copper	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Non-Ferrous Metals Processing - Copper	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Non-Ferrous Metals Processing - Copper	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Non-Ferrous Metals Processing - Copper	Wet ESP - Wire Plate Type	√	√*	√	√								99%		55	220	550
Non-Ferrous Metals Processing - Lead	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Non-Ferrous Metals Processing - Lead	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Non-Ferrous Metals Processing - Lead	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Non-Ferrous Metals Processing - Lead	Wet ESP - Wire Plate Type	√	√*	√	√								99%		55	220	550
Non-Ferrous Metals Processing - Lead	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Non-Ferrous Metals Processing - Lead	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Non-Ferrous Metals Processing - Other	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	
Non-Ferrous Metals Processing - Other	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Non-Ferrous Metals Processing - Other	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
Non-Ferrous Metals Processing - Other	Wet ESP - Wire Plate Type	√	√*	√	√								99%		55	220	550
Non-Ferrous Metals Processing - Other	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Non-Ferrous Metals Processing - Other	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	1,260	303
Non-Ferrous Metals Processing - Zinc	Increased Monitoring Frequency (IMF) of PM Controls	√*	√*										6.5%			620	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Non-Ferrous Metals Processing - Zinc	CEM Upgrade and Increased Monitoring Frequency of PM Controls	√*	√*										7.7%			5,200	
Non-Ferrous Metals Processing - Zinc	Fabric Filter (Mech. Shaker Type)	√	√*	√	√								99%		37	126	303
Non-Ferrous Metals Processing - Zinc	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Non-Ferrous Metals Processing - Zinc	Wet ESP - Wire Plate Type	√	√*	√	√								99%		55	220	550
Non-Ferrous Metals Processing - Zinc	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√								99%		53	148	337
		√	√*	√	√												
Paved Roads	Vacuum Sweeping	√	√*	√	√								50.5%			485	
Prescribed Burning	Increase Fuel Moisture	√	√*	√	√								50%			2,617	
Residential Wood Combustion	Education and Advisory Program	√	√*	√	√								50%			1,320	
Residential Wood Stoves	NSPS compliant Wood Stoves	√*	√*										98%			2,000	
Unpaved Roads	Chemical Stabilization	√	√*	√									37.5%			2,753	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Unpaved Roads	Hot Asphalt Paving	√	√*	√	√								67.5%			537	
Utility Boilers - Coal	Fabric Filter (Mech. Shaker Type)	√	√*	√	√						√		99.5%		37	126	303
Utility Boilers - Coal	Dry ESP-Wire Plate Type	√	√*	√	√						√	(Hg 3%)	98% (Hg 20%)	(Hg 36%)	40	110	250
Utility Boilers - Coal	Fabric Filter	√	√*	√	√						√		95% (Hg 80%)			N/A	
Utility Boilers - Coal	Fabric Filter (Pulse Jet Type)	√	√*	√	√						√		99%		42	117	266
Utility Boilers - Coal	Fabric Filter (Reverse-Air Cleaned Type)	√	√*	√	√						√		99%		53	148	337
Utility Boilers - Gas/Oil	Fabric Filter	√	√*	√	√						√		95%			N/A	
Wood Pulp & Paper	Wet ESP - Wire Plate Type	√	√*	√	√								99%		55	220	550
Wood Pulp & Paper	Dry ESP-Wire Plate Type	√	√*	√	√								98%		40	110	250
Bituminous/Subbituminous Coal	Flue Gas Desulfurization							√*					90%			N/A	
Bituminous/Subbituminous Coal	Flue Gas Desulfurization							√*					90%			N/A	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Bituminous/Subbituminous Coal (Industrial Boilers)	Wet Flue Gas Desulfurization							√*					90%		1,027	1,536	1,980
Bituminous/Subbituminous Coal (Industrial Boilers)	Spray Dryer Abosrber							√*					90%		804	1,341	1,973
Bituminous/Subbituminous Coal (Industrial Boilers)	In-duct Dry Sorbent Injection							√*					40%		1,111	1,526	2,107
By-Product Coke Manufacturing	Vacuum Carbonate Plus Sulfur Recovery Plant							√*					82%			N/A	
Distillate Oil (Industrial Boiler)	Wet Flue Gas Desulfurization							√*					90%		2,295	3,489	4,524
Inorganic Chemical Manufacture	Flue Gas Desulfurization							√*					90%			N/A	
In-process Fuel Use - Bituminous Coal	Flue Gas Desulfurization							√*					90%			N/A	
Lignite (Industrial Boiler)	Wet Flue Gas Desulfurization							√*					90%		1,027	1,536	1,980
Lignite (Industrial Boiler)	Spray Dryer Abosrber							√*					90%		804	1,341	1,973
Lignite (Industrial Boiler)	In-duct Dry Sorbent Injection							√*					40%		1,111	1,526	2,107
Lignite (Industrial Boilers)	Flue Gas Desulfurization							√*					90%			N/A	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Mineral Products Industry	Flue Gas Desulfurization							√*					90%			N/A	
Petroleum Industry	Flue Gas Desulfurization (FGD)							√*					90%			N/A	
Primary Lead Smelters - Sintering	Dual Absorption							√*					99%			N/A	
Primary Metals Industry	Flue Gas Desulfurization							√*					90%			N/A	
Primary Zinc Smelters - Sintering	Dual Absorption							√*					99%			N/A	
Process Heaters (Oil and Gas Production)	Flue Gas Desulfurization							√*					90%			N/A	
Pulp and Paper Industry (Sulfate Pulping)	Flue Gas Desulfurization							√*					90%			N/A	
Residual Oil (Commercial/Institutional Boilers)	Wet Flue Gas Desulfurization							√*					90%		2,295	3,489	4,524
Residual Oil (Commercial/Institutional Boilers)	Flue Gas Desulfurization							√*					90%			N/A	
Residual Oil (Industrial Boilers	Flue Gas Desulfurization							√*					90%			N/A	
Secondary Metal Production	Flue Gas Desulfurization							√*					90%			N/A	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Steam Generating Unit-Coal/Oil	Flue Gas Desulfurization							√*					90%			N/A	
Sulfur Recovery Plants - Elemental Sulfur	Amine Scrubbing + Flue Gas Desulfurization							√*					99.7%			N/A	
Sulfur Recovery Plants - Elemental Sulfur	Amine Scrubbing							√*					97.8%			N/A	
Sulfur Recovery Plants - Elemental Sulfur	Amine Scrubbing + Flue Gas Desulfurization							√*					99.8%			N/A	
Sulfur Recovery Plants - Elemental Sulfur	Amine Scrubbing + Flue Gas Desulfurization							√*					99.8%			N/A	
Sulfur Recovery Plants - Elemental Sulfur	Amine Scrubbing							√*					97.1%			N/A	
Sulfur Recovery Plants - Elemental Sulfur	Amine Scrubbing							√*					98.4%			N/A	
Sulfur Recovery Plants - Elemental Sulfur	Flue Gas Desulfurization							√*					90%			N/A	
Sulfur Recovery Plants - Sulfur Removal	Flue Gas Desulfurization							√*					90%			N/A	
Sulfuric Acid Plants - Contact Absorbers	Increase Absorption Efficiency from Existing to NSPS Level (99.7%) + Flue Gas Desulfurization							√*					85%			N/A	
Sulfuric Acid Plants - Contact Absorbers	Increase Absorption Efficiency from Existing to NSPS Level (99.7%)							√*					75%			N/A	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Sulfuric Acid Plants - Contact Absorbers	Increase Absorption Efficiency from Existing to NSPS Level (99.7%) + Flue Gas Desulfurization							√*					75%			N/A	
Sulfuric Acid Plants - Contact Absorbers	Increase Absorption Efficiency from Existing to NSPS Level (99.7%)							√*					95%			N/A	
Sulfuric Acid Plants - Contact Absorbers	Increase Absorption Efficiency from Existing to NSPS Level (99.7%)							√*					85%			N/A	
Sulfuric Acid Plants - Contact Absorbers	Increase Absorption Efficiency from Existing to NSPS Level (99.7%) + Flue Gas Desulfurization							√*					95%			N/A	
Sulfuric Acid Plants - Contact Absorbers	Flue Gas Desulfurization							√*					90%			N/A	
Sulfuric Acid Plants - Contact Absorbers	Increase Absorption Efficiency from Existing to NSPS Level (99.7%)							√*					90%			N/A	
Sulfuric Acid Plants - Contact Absorbers	Increase Absorption Efficiency from Existing to NSPS Level (99.7%) + Flue Gas Desulfurization							√*					90%			N/A	
Utility Boilers - Coal-Fired	Fuel Switching - High-Sulfur Coal to Low-Sulfur Coal	√	√					√*					60%		113	140	167
Utility Boilers - Coal-Fired	Coal Washing	√	√					√*			√		40%		70	320	563
Utility Boilers - Coal-Fired	Repowering to IGCC					√		√*			√		99%			N/A	
Utility Boilers - High Sulfur Content	Flue Gas Desulfurization (Wet Scrubber Type)							√*			√	(Hg 29%)	90% (Hg 64%)	(Hg 98%)		N/A	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	**PM10**	**EC**	**OC**	**NOx**	**VOC**	**SO2**	**NH3**	**CO**	**Hg**	**Low**	**Typical**	**High**	**Low**	**Typical**	**High**
Utility Boilers - Medium Sulfur Content	Flue Gas Desulfurization (Wet Scrubber Type)							√*			√	(Hg 29%)	90% (Hg 64%)	(Hg 98%)		N/A	
Utility Boilers - Very High Sulfur Content	Flue Gas Desulfurization (Wet Scrubber Type)							√*			√		90%			N/A	
Adhesives - Industrial	SCAQMD Rule 1168						√*						73%			2,202	
Aircraft Surface Coating	MACT Standard						√*						60%			165	
Architectural Coatings	OTC AIM Coating Rule						√*						55%			6,628	
Architectural Coatings	South Coast Phase I						√*						34%		3,300	1,443	4,600
Architectural Coatings	South Coast Phase III						√*						73%			10,059	
Architectural Coatings	AIM Coating Federal Rule						√*						20%			228	
Architectural Coatings	South Coast Phase II						√*						47%			4,017	
AREA	OTC Mobile Equipment Repair and Refinishing Rule						√*						61%			2,534	
AREA	OTC Solvent Cleaning Rule						√*						66%			1,400	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
AREA	OTC Consumer Products Rule						√*						39.2%			1,032	
AREA	OTC Mobile Equipment Repair and Refinishing Rule						√*						61%			2,534	
AREA	OTC Mobile Equipment Repair and Refinishing Rule						√*						61%			2,534	
AREA	OTC Consumer Products Rule						√*						39.2%			1,032	
AREA	OTC Mobile Equipment Repair and Refinishing Rule						√*						61%			2,534	
Automobile Refinishing	Federal Rule						√*						37%			118	
Automobile Refinishing	California FIP Rule (VOC content & TE)						√*						89%			7,200	
Automobile Refinishing	CARB BARCT Limits						√*						47%			750	
Bakery Products	Incineration >100,000 lbs bread						√*						39.9%			1,470	
Commercial Adhesives	CARB Long-Term Limits						√*						85%			2,880	
Commercial Adhesives	CARB Mid-Term Limits						√*						55%			2,192	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Commercial Adhesives	Federal Consumer Solvents Rule						√*						25%			232	
Consumer Solvents	CARB Long-Term Limits						√*						85%			2,880	
Consumer Solvents	CARB Mid-Term Limits						√*						55%			2,192	
Consumer Solvents	Federal Consumer Solvents Rule						√*						25%			232	
Cutback Asphalt	Switch to Emulsified Asphalts						√*						100%			15	
Electrical/Electronic Coating	SCAQMD Rule						√*						70%			5,976	
Electrical/Electronic Coating	MACT Standard						√*						36%			5,000	
Fabric Printing, Coating and Dyeing	Permanent Total Enclosure (PTE)						√*									N/A	
Flexographic Printing	Permanent Total Enclosure (PTE)						√*						95			9,947	
Graphic Arts	Use of Low or No VOC Materials						√*						65%		3,500	4,150	4,800
Highway Vehicles - Gasoline Engine	Federal Reformulated Gasoline (RFG)					X	√*			√		0%	7.65%	15.3%	2,498	25,093	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Highway Vehicles - Light Duty Gasoline Engines	Basic Inspection and Maintenance Program	√	√			√	√*	√	√	√						N/A	
Industrial Maintenance Coating	South Coast Phase III						√*						73%			10,059	
Industrial Maintenance Coating	AIM Coating Federal Rule						√*						20%			228	
Industrial Maintenance Coating	South Coast Phase II						√*						47%			4,017	
Industrial Maintenance Coating	South Coast Phase I						√*						34%		3,300	1,443	4,600
Machinery, Equipment, and Railroad Coating	SCAQMD Limits						√*						55.2%			2,027	
Marine Surface Coating (Shipbuilding)	Add-On Controls						√*						90%			8,937	
Marine Surface Coating (Shipbuilding)	MACT Standard						√*						24%			2,090	
Metal Can Surface Coating Operations	Permanent Total Enclosure (PTE)						√*						95			8,469	
Metal Coil & Can Coating	Incineration						√*						90%			8,937	
Metal Coil & Can Coating	BAAQMD Rule 11 Amended						√*						42%			2,007	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Metal Coil & Can Coating	MACT Standard						√*						36%			1,000	
Metal Furniture Surface Coating Operations	Permanent Total Enclosure (PTE)						√*						95			19,321	
Metal Furniture, Appliances, Parts	MACT Standard						√*						36%			1,000	
Metal Furniture, Appliances, Parts	SCAQMD Limits						√*						55.2%			2,027	
Miscellaneous Metal Products Coatings	MACT Standard						√*						36%			1,000	
Motor Vehicle Coating	Incineration						√*						90%			8,937	
Motor Vehicle Coating	MACT Standard						√*						36%			118	
Municipal Solid Waste Landfill	Gas Collection (SCAQMD/BAAQMD)						√*						70%			700	

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High

Source Category	Control Measure Name	Pollutant(s) Affected √ = pollutant reduction, X = pollutant increase, * = primary pollutant reduced										Control Efficiency (% from baseline)			Average Annual Cost Effectiveness ($/ton primary pollutant)		
		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Open Top Degreasing	Title III MACT Standard						√*						31%			-69	
Open Top Degreasing	SCAQMD 1122 (VOC content limit)						√*						76%			1,248	
Open Top Degreasing	Airtight Degreasing System						√*						98%			9,789	
Paper and other Web Coating Operations	Permanent Total Enclosure (PTE)						√*						95			1,503	
Paper Surface Coating	Incineration						√*						78%			4,776	
Pesticide Application	Reformulation - FIP Rule						√*						20%			9,300	
Portable Gasoline Containers	OTC Portable Gas Container Rule						√*						33%			581	
Product and Packaging Rotogravure and Screen Printing	Permanent Total Enclosure (PTE)						√*						95			12,770	
Publication Rotogravure Printing	Permanent Total Enclosure (PTE)						√*						95			2,422	
Rubber and Plastics Manufacturing	SCAQMD - Low VOC						√*						60%			1,020	
Stage II Service Stations	Low Pressure/Vacuum Relief Valve						√*						91.6%		930	1,080	1,230

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		PM2.5	PM10	EC	OC	NOx	VOC	SO2	NH3	CO	Hg	Low	Typical	High	Low	Typical	High
Stage II Service Stations - Underground Tanks	Low Pressure/Vacuum Relief Valve						√*						73%		930	1,080	1,230
Traffic Markings	South Coast Phase III						√*						73%			1,059	
Traffic Markings	AIM Coating Federal Rule						√*						20%			228	
Traffic Markings	South Coast Phase I						√*						34%		8,600	1,443	12,800
Traffic Markings	South Coast Phase II						√*						47%			4,017	
Wood Furniture Surface Coating	Add-On Controls						√*					67%	75%	98%	468	20,000	22,100
Wood Furniture Surface Coating	New CTG						√*						47%		462	967	22,100
Wood Furniture Surface Coating	MACT Standard						√*						30%			446	
Wood Product Surface Coating	Incineration						√*						86%			4,202	
Wood Product Surface Coating	SCAQMD Rule 1104						√*						53%			881	
Wood Product Surface Coating	MACT Standard						√*						30%			446	