Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 8996 and PSDTX454M4

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (4)	
			lbs/hour	TPY (5)
7*	Kiln Line 1, Bypass Baghouse, and Coal Mill Baghouse	CO (6)	1,939	3,556
		CO (7)	2,172	--
		$PM/PM_{10}/PM_{2.5}$ (filterable)	24	104
		$PM/PM_{10}/PM_{2.5}$ (condensable)	353	155
		$PM/PM_{10}/PM_{2.5}$ (condensable, 24 hr)	35.37	---
		$PM/PM_{10}/PM_{2.5}$ (total)	377	259
		SO_2 (1-hour)	2,600	--
		SO_2 (3-hour)	2,300	--
		SO_2 (24-hour)	1,900	--
		SO_2 (annual)	--	1,769
		TRS	15	18
		H_2SO_4	180	71
		VOC	292	438
		Total OHAPs (30-operating day rolling ave excluding startup / shutdown [SU/SD]) (7)	63	---
		Speciated Compounds	See Attachment I	
62*	Kiln Line 2, Bypass Baghouse, and Coal Mill Baghouse	CO (6)	1,939	3,556
		CO (7)	1,939	--
		$PM/PM_{10}/PM_{2.5}$ (filterable)	32	138
		$PM/PM_{10}/PM_{2.5}$ (condensable)	353	154

Emission Sources - Maximum Allowable Emission Rates

		$PM/PM_{10}/PM_{2.5}$ (condensable, 24 hr)	35.22	---
		$PM/PM_{10}/PM_{2.5}$ (total)	385	292
		SO_2 (1-hour)	2,600	--
		SO_2 (3-hour)	2,300	--
		SO_2 (24-hour)	1,900	--
		SO_2 (annual)	--	1,769
		TRS	15	18
		H_2SO_4	180	71
		VOC (6)	292	438
		VOC (7)	292	219
		Total OHAPs (30-operating day rolling ave excluding SU/SD) (7)	63	---
		Speciated Compounds	See Attachment I	
7* and 62*	Combined Kiln Lines 1 and 2 Emission Limits	CO (7)	---	4,303
		Compliance Period (8)	**Tons/day**	**Total tons**
		NO_x, November 1 through March 30	15.3	2,310
		NO_x, March 31 through October 31	5.3	1,140
		NO_x, Annual (12-month rolling)	---	3,450

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (4)	
			lbs/hour	TPY (5)
1A*	Primary (Upper Bench) Limestone Crusher	PM	0.28	0.25

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.13	0.12
1B*	Primary (Upper Bench) Limestone Crusher	PM	0.72	3.15
		PM_{10}	0.72	3.15
		CO	11.18	48.97
		NO_x	8.09	35.43
		SO_2	1.08	4.73
		VOC	1.43	6.26
2*	Secondary Crusher Baghouse Stack	PM	0.77	1.69
		PM_{10}	0.77	1.69
3*	Raw Material Transfer Point Baghouse Stack	PM	0.34	0.75
		PM_{10}	0.34	0.75
4*	Conveyor Belt Transfer Baghouse Stack	PM	0.70	1.53
		PM_{10}	0.70	1.53
5*	Line No. 1 Raw Mill Feed Bins Baghouse Stack No. 2	PM	0.93	2.03
		PM_{10}	0.93	2.03
6*	Line No. 1 Raw Mill Feed Bins Baghouse Stack No. 2	PM	0.93	2.03
		PM_{10}	0.93	2.03
8*	Rotary Kiln Feed Silo Upper Baghouse Stack	PM	1.04	2.28
		PM_{10}	1.04	2.28
9*	Rotary Kiln Feed Silo Lower Baghouse Stack	PM	0.87	1.91
		PM_{10}	0.87	1.91
11*	Waste Bypass Dust Baghouse Stack	PM	0.18	0.38
		PM_{10}	0.18	0.38
12*	Coal Handling Baghouse Stack	PM	0.80	1.76
		PM_{10}	0.80	1.76
13*	Coal Storage Bin	PM	0.33	0.71

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.33	0.71
14*	Clinker Conveyor Transfer Point Baghouse Stack	PM	0.22	0.48
		PM_{10}	0.22	0.48
15*	Clinker Conveyor Baghouse Stack	PM	0.29	0.64
		PM_{10}	0.29	0.64
16*	Gypsum Silo Baghouse Stack	PM	0.12	0.27
		PM_{10}	0.12	0.27
17*	Upper Clinker Silos Baghouse Stack	PM	0.45	0.99
		PM_{10}	0.45	0.99
18*	Gypsum Weigh Feeder Baghouse Stack	PM	0.16	0.36
		PM_{10}	0.16	0.36
19*	Clinker Feeder No. 7 Baghouse Stack	PM	0.15	0.32
		PM_{10}	0.15	0.32
20*	Clinker Feeder No. 1 Baghouse Stack	PM	0.15	0.32
		PM_{10}	0.15	0.32
21*	Clinker Feeder No. 6 Baghouse Stack	PM	0.15	0.32
		PM_{10}	0.15	0.32
22*	Clinker Feeder No. 4 Baghouse Stack	PM	0.15	0.32
		PM_{10}	0.15	0.32
23* & 29*	Finish Mill System No. 1 and No. 2 Baghouse Stack	PM	13.62	59.68
		PM_{10}	13.62	59.68
24*	Gypsum Weigh Feeder Baghouse Stack	PM	0.16	0.36
		PM_{10}	0.16	0.36
25*	Clinker Weigh Feeder No. 2 Baghouse Stack	PM	0.15	0.32
		PM_{10}	0.15	0.32
26*	Clinker Weigh Feeder	PM	0.15	0.32

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.15	0.32
27*	Clinker Weigh Feeder No. 3 Baghouse Stack	PM	0.15	0.32
		PM_{10}	0.15	0.32
28*	Clinker Weigh Feeder No. 8 Baghouse Stack	PM	0.15	0.32
		PM_{10}	0.15	0.32
30*	Cement Silo No. 1 Discharge Baghouse Stack	PM	0.25	0.55
		PM_{10}	0.25	0.55
31*	Cement Silo No. 2 Discharge Baghouse Stack	PM	0.37	0.81
		PM_{10}	0.37	0.81
32*	Cement Silo No. 4 Discharge Baghouse Stack	PM	0.25	0.55
		PM_{10}	0.25	0.55
33*	Cement Silo No. 5 Discharge Baghouse Stack	PM	0.46	1.02
		PM_{10}	0.46	1.02
34*	Cement Silo No. 7 Discharge Baghouse Stack	PM	0.25	0.55
		PM_{10}	0.25	0.55
35*	Cement Silo No. 8 Discharge Baghouse Stack	PM	0.37	0.81
		PM_{10}	0.37	0.81
36*	Cement Silo No. 1 Filling Baghouse Stack	PM	1.14	2.49
		PM_{10}	1.14	2.49
37*	Cement Silo No. 7 Filling Baghouse Stack	PM	0.58	1.27
		PM_{10}	0.58	1.27
42*	Shale Crusher Discharge Baghouse Stack	PM	0.38	0.83
		PM_{10}	0.38	0.83
43*	Line No. 2 Raw Mill Feed Bins Baghouse Stack No. 1	PM	0.76	1.67
		PM_{10}	0.76	1.67
44*	Raw Mill Discharge	PM	0.24	0.52

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.24	0.52
45*	Kiln Feed System No. 1 Baghouse Stack	PM	0.29	0.62
		PM_{10}	0.29	0.62
46*	Blending Silo Upper Baghouse Stack	PM	0.24	0.52
		PM_{10}	0.24	0.52
47*	Blending Silo Lower Baghouse Stack	PM	0.48	1.04
		PM_{10}	0.48	1.04
48*	Kiln Feed System No. 2 Baghouse Stack	PM	0.29	0.62
		PM_{10}	0.29	0.62
49*	Pan Conveyor Under Clinker Cooler Baghouse Stack	PM	0.28	0.61
		PM_{10}	0.28	0.61
50*	Dust Bin Baghouse Stack	PM	0.29	0.62
		PM_{10}	0.29	0.62
51*	Clinker Silo No. 1 Discharge Baghouse Stack (North)	PM	0.07	0.15
		PM_{10}	0.07	0.15
52*	Clinker Silo No. 1 Discharge Baghouse Stack (South)	PM	0.07	0.15
		PM_{10}	0.07	0.15
53*	Slag/Gypsum Bins and Belt Discharge Baghouse Stack	PM	0.76	1.67
		PM_{10}	0.76	1.67
54*	Clinker Silo No. 2 Discharge Baghouse Stack (North)	PM	0.07	0.15
		PM_{10}	0.07	0.15
55*	Clinker Silo No. 2 Discharge Baghouse Stack (South)	PM	0.07	0.15
		PM_{10}	0.07	0.15
56*	Clinker Silo Feeder Baghouse Stack	PM	0.76	1.67
		PM_{10}	0.76	1.67
57*	Clinker Conveyor	PM	0.24	0.52

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.24	0.52
58*	Belt-Air-Slide Transfer Point 1 Baghouse Stack	PM	0.38	0.83
		PM_{10}	0.38	0.83
59*	Belt-Air-Slide Transfer Point 2 Baghouse Stack	PM	0.48	1.04
		PM_{10}	0.48	1.04
60*	Bulk Loading 1 Baghouse Stack	PM	0.52	1.15
		PM_{10}	0.52	1.15
61*	Truck Loadout- 1 Baghouse Stack	PM	0.01	0.02
		PM_{10}	0.01	0.02
63*	Rail Loadout- 1 Baghouse Stack	PM	0.01	0.02
		PM_{10}	0.01	0.02
64*	Coal Mill Conveyor Baghouse Stack	PM	0.24	0.52
		PM_{10}	0.24	0.52
65*	Truck Loadout- 2 Baghouse Stack	PM	0.01	0.02
		PM_{10}	0.01	0.02
66*	SKS & Cement Mill Baghouse Stack	PM	14.11	61.79
		PM_{10}	14.11	61.79
67*	Cement Silo Filling Baghouse Stack (North)	PM	0.29	0.64
		PM_{10}	0.29	0.64
68*	Cement Silo Filling Baghouse Stack (South)	PM	0.16	0.35
		PM_{10}	0.16	0.35
69*	Truck/Rail Loadout Baghouse	PM	0.19	0.41
		PM_{10}	0.19	0.41
70*	Truck/Rail Loadout Baghouse (North)	PM	0.19	0.41
		PM_{10}	0.19	0.41
71*	Air-Slide Conveyor	PM	0.48	1.04

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.48	1.04
72*	Pulverized Coal Bin Baghouse Stack	PM	0.02	0.05
		PM_{10}	0.02	0.05
73*	Pulverized Coal Bin CO Analyzer Baghouse Stack	PM	<0.01	<0.01
		PM_{10}	<0.01	<0.01
74*	Scrubber (Reagent-Feed) System 1- Line 1	PM	0.17	0.38
		PM_{10}	0.17	0.38
75A*	Primary (Lower Bench) Limestone Crusher	PM	0.28	0.25
		PM_{10}	0.13	0.12
75B*	Primary (Lower Bench) Limestone Crusher Engine	PM	0.39	1.71
		PM_{10}	0.39	1.71
		CO	8.23	36.05
		NO_x	6.64	29.08
		SO_2	0.90	3.94
		VOC	0.94	4.12
76*	Cooling Tower	PM	2.05	8.98
		PM_{10}	2.05	8.98
77*	Line 1 Kiln Dust Bin Baghouse Stack	PM	0.48	2.1
		PM_{10}	0.48	2.1
78*	Line 2 Dust Bin Baghouse Stack	PM	0.48	2.1
		PM_{10}	0.48	2.1
79*	Line No. 2 Raw Mill Feed Bins Baghouse Stack No. 2	PM	0.27	0.59
		PM_{10}	0.27	0.59
80*	Line No. 1 Raw Mill Feed Bins Baghouse Stack No. 3	PM	0.27	0.59
		PM_{10}	0.27	0.59

Emission Sources - Maximum Allowable Emission Rates

81*	Clinker Silo De-Dusting Baghouse Stack No. 1	PM	0.66	1.45
		PM_{10}	0.66	1.45
82*	Clinker Silo De-Dusting Baghouse Stack No. 2	PM	0.22	0.48
		PM_{10}	0.22	0.48
83*	Clinker Silo De-Dusting Baghouse Stack No. 3	PM	0.22	0.48
		PM_{10}	0.22	0.48
84*	Raw Material Handling Baghouse Stack No. 1	PM	0.54	1.18
		PM_{10}	0.54	1.18
85*	Raw Material Handling Baghouse Stack No. 2	PM	0.27	0.59
		PM_{10}	0.27	0.59
ROADS	Plant-Wide Roads (9)	PM	15.44	67.59
		PM_{10}	7.72	33.82
PLANTFUG	Plant-Wide Fugitives (9)	PM	5.94	15.12
		PM_{10}	2.90	7.43
MSSFUG1	Inherently Low Emitting (ILE) Planned Maintenance Activities (9)	NO_x	0.03	0.02
		CO	0.34	0.04
		SO_2	<0.01	<0.01
		VOC	68.07	0.06
		PM	14.69	0.41
		PM_{10}	6.93	0.16
		$PM_{2.5}$	1.06	0.03
MSSFUG2	Non-ILE Planned Maintenance Activities (Vacuum truck loading and unloading) (9)	PM	6.17	1.78
		PM_{10}	3.19	1.24
		$PM_{2.5}$	0.67	0.45

Emission Sources - Maximum Allowable Emission Rates

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
HAP - hazardous air pollutant as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations (CFR) Part 63, Subpart C
TRS - total reduced sulfur
H_2SO_4 - sulfuric acid
Speciated Compounds - See Attachment I
OHAP - organic hazardous air pollutants as defined in 40 CFR § 63.1341
Total OHAP - sum of concentrations of compounds of formaldehyde, benzene, toluene, styrene, m-xylene, p-xylene, o-xylene, acetaldehyde, and naphthalene as measured by EPA Test Method 320 or Method 18, Appendix A, 40 CFR 60.

(4) Planned maintenance, startup, and shutdown (MSS) emissions are included.
(5) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
(6) Emission limits shall be effective until the oxidation control systems (SCR-THC for Line 1 and RTO for Line 2) are installed and operational.
(7) Emission limits shall become effective after oxidation control systems (SCR-THC for Line 1 and RTO for Line 2) are installed and operational.
(8) Demonstration of compliance with 30-day rolling limit begins on first day of stated period. The control period for the March 31 limit effectively begins on March 1. Reference: 30 TAC § 117.3123.
(9) Emission rate is an estimate and is enforceable through compliance with the applicable special conditions and permit application representations.

Date: _____

ATTACHMENT I: Emission Sources - Maximum Allowable Emission Rates, Speciated Compounds

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
7*	Kiln No. 1 Main Bypass Baghouse, Coal Mill Baghouse and Scrubber Stack	Aluminum	0.12	0.46
		Ammonia (24-hour rolling avg.)	24.46	--
		Ammonia	--	107.15
		Ammonium Chloride	3.86	14.78
		Arsenic	3.53E-03	0.01
		Barium	0.09	0.34
		Benzaldehyde	0.45	1.72
		Benzo(a)pyrene	2.61E-05	9.99E-05
		Beryllium	1.32E-04	5.04E-04
		Boron	0.01	0.04
		Cadmium	4.41E-04	1.69E-03
		Chromium	0.03	0.11
		Copper (fume)	1.06	4.06
		Ethyl Toluene	1.69	6.47
		Ethylbenzene	1.04	3.98
		Fluorene	3.81E-03	0.01
		Fluoride (as HF)	0.18	0.69
		Hydrogen Chloride (30-operating day rolling ave excluding SU/SD)	4.49	--
		Hydrogen Chloride	--	19.66
		Iron	0.17	0.65
		Lead	0.02	0.08
		Manganese (fumes)	0.01	0.04
		Mercury (30-operating day rolling ave excluding SU/SD)	0.01	--
		Mercury	--	0.04

ATTACHMENT I: Emission Sources - Maximum Allowable Emission Rates, Speciated Compounds

7*	Kiln No. 1 Main Bypass Baghouse, Coal Mill Baghouse and Scrubber Stack	Methyl Indene	2.02	7.74
		Methyl Mercaptan	0.46	1.76
		Methyl Styrene	0.01	0.04
		Methylene Chloride	0.10	0.38
		Nickel	0.01	0.04
		OCDD	4.01E-07	1.54E-06
		OCDF	8.33E-08	3.20E-07
		Pentadiene (all isomers)	1.23	4.71
		Phenathrene	0.08	0.31
		Selenium	0.04	0.15
		Silver	5.00E-04	1.91E-03
		Thallium	1.65E-03	0.01
		Total HpCDD	1.69E-07	6.50E-07
		Total HpCDF	5.45E-08	2.10E-07
		Total HxCDD	7.26E-08	2.80E-07
		TotalHxCDF	7.36E-08	2.80E-07
		Total PeCDD	5.41E-06	2.07E-06
		Total PeCDF	5.82E-08	2.20E-07
		Total TCDD	9.26E-09	4.00E-08
		Total TCDF	2.27E-07	8.70E-07
		Zinc	0.07	0.27

ATTACHMENT I: Emission Sources - Maximum Allowable Emission Rates, Speciated Compounds

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
62*	Kiln No. 2 Main Bypass Baghouse, Coal Mill Baghouse and Scrubber Stack	Aluminum	0.12	0.46
		Ammonia (24-hour rolling avg.)	24.46	--
		Ammonia	--	107.15
		Ammonium Chloride	3.86	14.78
		Arsenic	3.53E-03	0.01
		Barium	0.09	0.34
		Benzaldehyde	0.45	1.72
		Benzo(a)pyrene	2.61E-05	9.99E-05
		Beryllium	1.32E-04	5.04E-04
		Boron	0.01	0.04
		Cadmium	4.41E-04	1.69E-03
		Chromium	0.03	0.11
		Copper (fume)	1.06	4.06
		Ethyl Toluene	1.69	6.47
		Ethylbenzene	1.04	3.98
		Fluorene	3.81E-03	0.01
		Fluoride (as HF)	0.18	0.69
		Hydrogen Chloride (30-operating day rolling ave excluding SU/SD)	4.49	--
		Hydrogen Chloride	--	19.66
		Iron	0.17	0.65
		Lead	0.02	0.08
		Manganese (fumes)	0.01	0.04
		Mercury (30-operating day	0.01	--

ATTACHMENT I: Emission Sources - Maximum Allowable Emission Rates, Speciated Compounds

62*	Kiln No. 2 Main Bypass Baghouse, Coal Mill Baghouse and Scrubber Stack	rolling ave excluding SU/SD)		
		Mercury	--	0.04
		Methyl Indene	2.02	7.74
		Methyl Mercaptan	0.46	1.76
		Methyl Styrene	0.01	0.04
		Methylene Chloride	0.10	0.38
		Nickel	0.01	0.04
		OCDD	4.01E-07	1.54E-06
		OCDF	8.33E-08	3.20E-07
		Pentadiene (all isomers)	1.23	4.71
		Phenathrene	0.08	0.31
		Selenium	0.04	0.15
		Silver	5.00E-04	1.91E-03
		Thallium	1.65E-03	0.01
		Total HpCDD	1.69E-07	6.50E-07
		Total HpCDF	5.45E-08	2.10E-07
		Total HxCDD	7.26E-08	2.80E-07
		TotalHxCDF	7.36E-08	2.80E-07
		Total PeCDD	5.41E-06	2.07E-06
		Total PeCDF	5.82E-08	2.20E-07
		Total TCDD	9.26E-09	4.00E-08
		Total TCDF	2.27E-07	8.70E-07
		Zinc	0.07	0.27

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) HF - hydrogen fluoride
OCDD - Octachlorodibenzo- p-dioxin

ATTACHMENT I: Emission Sources - Maximum Allowable Emission Rates, Speciated Compounds

OCDF	- Octachlorodibenzofuran
HpCCD	- Heptachlorodibenzo- p-dioxin
HpCDF	- Heptachlorodibenzofuran
HxCDD	- Hexachlorodibenzo- p-dioxin
HxCDF	- Hexachlorodibenzofuran
PeCDD	- Pentachlorodibenzo- p-dioxin
PeCDF	- Pentachlorodibenzofuran
TCDD	- Tetrachlorodibenzo- p-dioxin
TCDF	- Tetrachlorodibenzofuran

(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.

Date: _____