

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 2975 and PSDTX778M2

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 * (6)	
			lbs/hour	TPY
SM01	No. 1 Smelt Tank Scrubber	PM	10.90	47.74
		PM ₁₀	10.90	47.74
		VOC (note a)	1.37	6.02
		SO ₂	3.28	14.37
		H ₂ SO ₄	0.15	0.66
		TRS (note b)	1.80	7.88
		NO _x	1.80	7.88
		NH ₃	2.51	8.99
SM02	No. 2 Smelt Tank Scrubber	PM	19.85	86.94
		PM ₁₀	19.85	86.94
		VOC	2.50	10.95
		SO ₂	6.78	29.70
		H ₂ SO ₄	0.31	1.36
		TRS	3.28	14.35
		NO _x	3.28	14.35
		NH ₃	4.57	16.37
LK01** (A ¹)	Lime Kiln No. 1	PM	27.60	99.80
		PM ₁₀	27.60	99.80
		VOC	2.20	8.10
		SO ₂	2.30	8.40

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		H ₂ SO ₄	0.06	0.13
		TRS	2.60	9.30
		NO _x	18.90	49.50
		CO	6.80	14.20
PB01*** (A ¹ , A ²)	No. 1 Power Boiler (Natural Gas and Fuel Oil Firing)	PM	61.21	185.22
		PM ₁₀	61.21	185.22
		VOC	8.26	16.70
		NO _x	567.60	1717.69
		SO ₂	841.20	1328.25
		CO	264.88	801.59
		H ₂ SO ₄	4.03	4.43
		TRS	0.67	0.26
LK02** (A ¹)	Lime Kiln No. 2	PM	26.30	115.19
		PM ₁₀	26.30	115.19
		NO _x	38.91	145.90
		SO ₂	1.20	5.26
		H ₂ SO ₄	0.25	1.07
		CO	4.44	19.45
		TRS	2.50	10.95
		VOC	4.00	17.52
PB02**** (A ¹ , A ² , A ³)	Power Boiler No. 2 (including MSS) (note c)	PM	108.70	466.58
		PM ₁₀	108.70	466.58
		VOC	54.81	237.80
		NO _x	326.10	1399.75
		SO ₂	770.00	780.66

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		CO	1102.55	4732.57
		H ₂ SO ₄	16.57	71.02
		TRS	1.66	6.74
RB01A** (A ¹ , A ²)	No. 1 Recovery Furnace North Stack (Normal ops)	PM	26.58	116.43
		PM ₁₀	26.58	116.43
		VOC	13.13	57.52
		NO _x	63.12	276.45
		SO ₂	210.94	307.98
		H ₂ SO ₄	9.69	14.14
		CO	122.97	538.61
		TRS	1.87	8.19
RB01A** (A ⁴)	No. 1 Recovery Furnace North Stack (MSS)	PM	52.00	0.65
		PM ₁₀	52.00	0.65
RB01B** (A ¹ , A ²)	No. 1 Recovery Furnace South Stack (Normal Ops)	PM	26.58	116.43
		PM ₁₀	26.58	116.43
		VOC	13.13	57.52
		NO _x	63.12	276.45
		SO ₂	210.94	307.98
		H ₂ SO ₄	9.69	14.14
		CO	122.97	538.61
		TRS	1.87	8.19
RB01B** (A ⁴)	No. 1 Recovery Furnace South Stack (MSS)	PM	52.00	0.65
		PM ₁₀	52.00	0.65
RB02A** (A ¹ , A ²)	No. 2 Recovery Furnace West Stack (Normal Ops)	PM	42.59	177.23
		PM ₁₀	42.59	177.23
		VOC	23.92	99.51

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		NO _x	112.42	467.76
		SO ₂	375.71	521.11
		H ₂ SO ₄	17.25	23.93
		CO	219.02	911.34
		TRS	3.33	13.86
RB02A** (A ⁴)	No. 2 Recovery Furnace West Stack (MSS)	PM	79.00	0.99
		PM ₁₀	79.00	0.99
RB02B** (A ¹ , A ²)	No. 2 Recovery Furnace East Stack (Normal Ops)	PM	42.59	177.23
		PM ₁₀	42.59	177.23
		VOC	23.92	99.51
		NO _x	112.42	467.76
		SO ₂	375.71	521.11
		H ₂ SO ₄	17.25	23.93
		CO	219.02	911.34
		TRS	3.33	13.86
RB02B** (A ⁴)	No. 2 Recovery Furnace East Stack (MSS)	PM	79.00	0.99
		PM ₁₀	79.00	0.99

BG01 (A ¹)	Lime System Baghouse No. 1	PM	0.06	0.21
		PM ₁₀	0.06	0.21
BG02 (A ¹)	Lime System Baghouse No. 2	PM	0.10	0.44
		PM ₁₀	0.10	0.44
LS01	No. 1 Lime Slaker	PM	0.02	0.08
		PM ₁₀	0.02	0.08
		VOC	0.39	1.41
		NH ₃	9.39	33.63

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LS02	No. 2 Lime Slaker	PM	0.02	0.10
		PM ₁₀	0.02	0.10
		VOC	0.68	2.99
		NH ₃	17.10	61.24
BP0351 (A ⁵)	Methanol Storage Tank	CH ₃ OH	19.03	0.73
BP0368 (A ⁵)	Hydrogen Peroxide Tank	H ₂ O ₂	2.21	0.09
NCG01 (A ¹ , A ³)	NCG Oxidation Unit Scrubber	PM	2.57	9.19
		PM ₁₀	2.57	9.19
		PM _{2.5}	2.57	9.19
		VOC (note a)	1.10	3.95
		NO _x	5.57	19.96
		SO ₂	15.84	69.37
		CO	9.94	35.61
		H ₂ SO ₄	6.01	26.28
		TRS	0.99	4.36
NCG02 (A ⁵)	Combined Contaminated Condensate Tank	TRS	<0.10	0.40
NCGF1	NCG Fugitives (4)	TRS	0.36	1.56
DIG1	Batch Digester Fugitives (4)	VOC	4.80	19.19
		TRS	0.87	3.46
WWTS1 (A ⁶ , A ⁷)	Waste Water Treatment Fugitives (4)	VOC	348.16	740.78
		TRS	22.82	81.72
BP14#	B-Line Bleach Plant Scrubber (North)(5)	Cl ₂	0.07	0.32
		ClO ₂	4.23	18.51
		CO	29.22	117.37

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		VOC	3.06	12.28
		TRS	0.09	0.37
BP15#	B-Line Bleach Plant Scrubber (South)(5)	Cl ₂	0.07	0.32
		ClO ₂	4.23	18.51
		CO	29.22	117.37
		VOC	3.06	12.28
		TRS	0.09	0.37
BP16#	A-Line Bleach Plant Scrubber (5)	Cl ₂	0.20	0.86
		ClO ₂	11.31	49.51
		CO	39.00	117.37
		VOC	4.17	12.28
		TRS	0.12	0.37
BP01	Bleach Plant Fugitives (4)	Cl ₂	0.20	1.00
		ClO ₂	0.20	1.00
CLT01 (A ⁵)	No. 1 Concentrated Liquor Storage Tank (5)	VOC	0.11	0.48
		TRS	0.19	0.84
CLT02 (A ⁵)	No. 2 Concentrated Liquor Storage Tank (5)	VOC	0.11	0.48
		TRS	0.19	0.84
WLT01 (A ⁵)	No. 1 Weak Liquor Storage Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
WLT02 (A ⁵)	No. 2 Weak Liquor Storage Tank (5)	VOC	0.54	2.34
		TRS	0.12	0.51
HLT01 (A ⁵)	No. 1 Strong/Heavy Liquor Storage Tank (5)	VOC	0.11	0.48
		TRS	0.19	0.84
HLT02 (A ⁵)	No. 2 Storage/Heavy Liquor Storage Tank (5)	VOC	0.11	0.48

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		TRS	0.19	0.84
SCT01 (A ⁵)	No. 1 Soap Conc. Tank (5)	VOC	0.03	0.12
		TRS	0.05	0.21
SCT02 (A ⁵)	No. 2 Soap Conc. Tank (5)	VOC	0.03	0.12
		TRS	0.05	0.21
SS01 (A ⁵)	No. 1 Soap Separator (5)	VOC	0.03	0.12
		TRS	0.05	0.21
SS02 (A ⁵)	No. 2 Soap Separator (5)	VOC	0.03	0.12
		TRS	0.05	0.21
SST01 (A ⁵)	No. 1 Soap Storage Tank (5)	VOC	0.03	0.12
		TRS	0.05	0.21
SST02 (A ⁵)	No. 2 Soap Storage Tank (5)	VOC	0.03	0.12
		TRS	0.05	0.21
BLDF01 (A ⁵)	Black Liquor Digester Fill Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
CT01 (A ⁵)	Spill Collection Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
ST01 (A ⁵)	Swing Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
SLST01 (A ⁵)	No. 1 Spare Liquor Storage Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
SLST02 (A ⁵)	No. 2 Spare Liquor Storage Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
SLST03 (A ⁵)	No. 3 Spare Liquor Storage Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51

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BOT01 (A ⁵)	Evaporator Boil Out Tank (5)	VOC	0.11	0.48
		TRS	0.19	0.84
DT01 (A ⁵)	Black Liquor Dump Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
WLSC01 (A ⁵)	Weak Liquor Soap Conc. Tank (5)	VOC	0.03	0.12
		TRS	0.05	0.21
FOT (A ⁵)	Fuel Oil Tank (5)	VOC	1.52	6.64
		TRS	0.19	0.84

CPFUG (note d)	Caustic Plant Fugitives (4)	NH ₃	7.31	26.17
		VOC	16.25	68.30
		TRS	3.18	13.91
CP01 (A ⁵)	No. 1 Causticizer Tanks (5)	NH ₃	2.59	9.28
		VOC	0.01	0.03
CP02 (A ⁵)	No. 2 Causticizer Tank (5)	NH ₃	4.72	16.89
		VOC	0.01	0.06
WLOXT1 (A ⁵)	White Liquor Oxidation Tank (5)	NH ₃	0.10	0.44
		VOC	0.26	1.16
		TRS	0.56	2.45
KNCONV	A-and B-Line Knotter Conveyor (4)	VOC	0.01	0.04
AQS	A-Line Quaternary Screen (4)	VOC	<0.01	0.01
		TRS	<0.01	<0.01
BQS	B-Line Quaternary Screen (4)	VOC	0.01	0.03
		TRS	<0.01	<0.01
ASDT (A ⁵)	A-Line Screen Dilution Tank (5)	VOC	0.01	0.02

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		TRS	<0.01	<0.01
BSDT (A ⁵)	B-Line Screen Dilution Tank (5)	VOC	<0.01	0.01
		TRS	<0.01	<0.01
ADHV1/ADSP1	A-Line Decker Hood Vent and A-Line Decker Seal Pit Vent (5)	VOC	9.24	27.20
		TRS	4.06	11.95

BDHV1/BDSP1	B-Line Decker Hood Vent and B-Line Decker Seal Pit Vent (5)	VOC	13.55	54.41
		TRS	5.95	23.89
CPS1 (note e)	Chip/Bark Handling Fugitives (4)	PM	3.35	13.59
		PM ₁₀	1.58	6.43
REJBIN2	Reject Bin	CH ₃ OH	0.03	0.10
LOG-1A	Log Processing 1A (4)	PM	0.73	3.20
		PM ₁₀	0.22	0.96
HDST1 (A ⁵)	No. 1 Brown Stock High Density Stock Tank (5)	VOC	4.80	21.02
		TRS	0.44	1.94
HDST2 (A ⁵)	No. 2 Brown Stock High Density Stock Tank (5)	VOC	4.80	21.02
		TRS	0.44	1.94
ALDST (A ⁵)	A-Line Low Density Chest (5)	VOC	4.80	21.02
		TRS	0.44	1.94
BLDST (A ⁵)	B-Line Low Density Chest (5)	VOC	4.80	21.02
		TRS	0.44	1.94
AWTST (A ⁵)	A-Line Waste Stock Chest (5)	VOC	4.80	21.02
		TRS	0.44	1.94
BWTST (A ⁵)	B-Line Waste Stock Chest (5)	VOC	4.80	21.02
		TRS	0.44	1.94

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(note f)	Extruder No. 5 Vents and Fugitives (4)	PM	3.18	13.91
		PM ₁₀	3.18	13.91
		VOC	2.07	9.05
		NO _x	0.29	1.29
		CO	0.25	1.08
		SO ₂	<0.01	0.01
(note f)	Extruder No. 7 Vents and Fugitives (4)	PM	3.18	13.92
		PM ₁₀	3.18	13.92
		VOC	2.07	9.05
		NO _x	0.30	1.33
		CO	0.26	1.12
		SO ₂	<0.01	0.01
(note g)	Nos. 1 and 3 Paper Machines and Dryer Exhaust (5)	PM	0.19	0.83
		PM ₁₀	0.19	0.83
		VOC	8.74	38.27
		NO _x	2.50	10.93
		CO	2.10	9.18
		SO ₂	0.01	0.07
TNK0115, TNK0116, and TNK0175 (A ¹)	Starch Silo Nos. 1 -3	PM	0.02	0.02
		PM ₁₀	0.02	0.02
PAINTYD (A ⁸)	Sitewide Painting Activities (4)	PM	70.31	32.72
		PM ₁₀	70.31	32.72
		VOC	96.05	28.94
BSS1 – BSS5 (A ⁵)	Nos. 1-5 Bleached Stock Storage Tanks (4)	VOC	0.04	0.17
(note h)	Paper Machine	VOC	0.16	0.68

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	Tanks and Chests (4)			
HVLC-1	HVLC Vent	VOC	157.78	23.09
		CO	3.19	0.51
		TRS	33.30	4.77
AWSST (A ⁵)	A-Line Washed Stock Chest (5)	VOC	0.72	3.16
		TRS	0.28	1.21
BWSST (A ⁵)	B-Line Washed Stock Chest (5)	VOC	0.74	3.26
		TRS	0.28	1.21

- (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) PM - particulate matter, suspended in the atmosphere, including PM₁₀.
 PM₁₀ - 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
 VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code §101.1
 SO₂ - sulfur dioxide
 H₂SO₄ - sulfuric acid
 TRS - total reduced sulfur
 NO_x - nitrogen oxides
 NH₃ - ammonia
 Cl₂ - chlorine
 ClO₂ - chlorine dioxide (chlorine peroxide)
 CO - carbon monoxide
 H₂S - hydrogen sulfide
 CH₃OH - methanol
 H₂O₂ - hydrogen peroxide
 CHCl₃ - chloroform
 CHBrCl₂ - bromodichloromethane
- (4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.
- (5) The VOC and TRS emission rates for this point are considered to be estimates only and are not intended to be enforceable limits.
- (6) Planned startup and shutdown emissions are included, as well as planned maintenance activities identified as part of permit alteration issued on April 24, 2013.

A¹ Emissions from planned startup and shutdown activities included.

A² Emissions from soot blowing included.

A³ Emissions from control device for evaporator and concentrators boil outs included.

A⁴ Emissions from planned MSS activities included.

A⁵ Emissions from draining/degassing included.

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A⁶ Emissions from dredging and other maintenance (e.g., ponds and collection system) included.

A⁷ Emissions from maintenance throughout the mill included.

A⁸ Emissions from maintenance painting included.

- * Unless otherwise specified, emission rates are based on operating 8,760 hours per year or 817,803 air dried unbleached tons per year 736,022 bone dry unbleached tons per year of pulp.
- ** Pound per hour rates, TRS emissions based on a 12-hour averaging time, PM/PM₁₀ and SO₂ based on a 3-hour averaging time, all other pollutants are based on a 24-hour averaging time.
- *** Pound per hour rates, SO₂ and NO_x emissions are based on a 3-hour averaging time while all other pollutants are based on a 24-hour averaging time.
- **** Pounds per hour rates, SO₂ emissions are based on a 3-hour averaging time while all other pollutants are based on a 24-hour averaging time.
- # Emissions from the Bleach Plant Scrubbers (EPNs BP14, BP15, and BP16) should be summed up when determining compliance since individual emissions may vary.

Notes:

- (a) All VOCs are reported as carbon unless otherwise specified.
- (b) All TRS emission rates are reported as H₂S unless otherwise specified.
- (c) The SO₂ hourly rates for the Power Boiler No. 2 include combustion of total reduced sulfur compounds during periods when the NCG oxidizer is inoperable.
- (d) Green liquor clarifiers (2), green liquor storage tanks (3), weak wash storage tanks (2), white liquor clarifiers (2), white liquor storage tanks (4), white liquor/digester fill tank, mud washers (2), mud storage tanks (2), mud precoat filters (2), and dregs filter.
- (e) These fugitives occur from the chip and RDF handling operations.
- (f) Includes the pre-treater stacks (EX5PRE1, EX5PRE2, EX7PRE1, EX7PRE2), the laminator stack (EX5LAM1, EX5LAM2, EX7LAM1, EX7LAM2), the post-treater stack (EX5POSTTR, EX7POSTTR), and fugitives (EXFUG5, EXFUG7) for each extruder.
- (g) The Paper Machine Nos.1 and 3 consist of 18 exhaust vents and fugitive emissions.
- (h) Includes pine tanks (PINETK3, PINETK1S, PINETK1), hardwood tanks (HDWD1, HDWD3), machine chests (MACHCH1, MACHCH3), and broken storage tanks (BRST1A, BRST1B, BRST3A).

Date: January 5, 2017