# EMISSION SOURCES -EMISSION CAPS AND RATES (INITIAL CAP) 06/06/02 DRAFT

Permit No. 1176/PSD-TX-782

This table lists the maximum allowable emission caps or rates and all sources of air contaminants 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. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

#### AIR CONTAMINANTS DATA

Emission	Source	Air Contaminant	<u>Emission</u>
<u>Rates</u> *			
Point No.	(1)	Name (2)	Name (3)
	lb/hr	TPY**	

#### CO Sources

#### **Combustion Sources:**

HF-201	PX-1 ISOM HEATER H-101	CO
HF-203	PX-1 REBOILERS H-103/4	CO
F-204	PX-1 LAF/TDP FURNACE H-501	CO
F-251	STYRENE STEAM SUPER HEATER HF-201	CO
BF-151	UTILITIES BOILER B-501	CO
BF-152	UTILITIES BOILER B-601	CO
BF-155	UTILITIES GAS FIRED HEAT	
	RECOVERY STEAM GENERATOR/TURBINE	CO
LPV-152	630 HP DIESEL START-UP ENGINE	CO
HF-501	MX-1 HEATER H-3401	CO
HF-451	PX-2 ISOM HEATER H-1101	CO
HF-452	PX-2 REBOILER H-1102	CO
HF-453	PX-2 H-REBOILERS 1103/4	CO
HF-601	MX-2 HEATER H-101	CO
HF-602	MX-2 HEATER H-602	CO
HF-603	MX-2 HEATER H-603	CO
HF-604	MX-2 HEATER H-604	CO
H-1105	PRU HEATER H-1105	CO
H-1106	PRU HEATER H-1106	CO

#### Flare Systems:

FL-201 PX-1 FLARE

Permit Nos. Page 2	1176/PSD-TX-782				
FL-401 FL-351	PX-2 FLARE POLYB FLARE		C0 C0		
	Emission Cap 342.78		СО		75.56
	342.78	Þ	AIR CO	NTAMINA	NTS DATA
Emission	Source	Air	Conta	minant	<u>Emission</u>
<u>Rates</u> * <u>Point No. (1</u>			me (2	)	Name (3)
	lb/hr		<u> </u>		
NO <sub>x</sub> Sources					
Combustion S	Sources:				
HF-201	PX-1 ISOM HEATER H-101		NOx		
HF-203	PX-1 REBOILERS H-103/4		$NO_X$		
F-204	PX-1 LAF/TDP FURNACE H-501		$NO_X$		
F-251	STYRENE STEAM SUPER HEATER HF-201		$NO_X$		
BF-151	UTILITIES BOILER B-501		$NO_X$		
BF-152	UTILITIES BOILER B-601		$NO_X$		
BF-155	UTILITIES GAS FIRED HEAT				
_	RECOVERY STEAM GENERATOR/TUR	BINE	$NO_X$		
LPV-152	630 HP DIESEL START UP ENGINE			$NO_X$	
HF-501	MX-1 HEATER H-3401		NOx		
HF-451	PX-2 ISOM HEATER H-1101		NOx		
HF-452	PX-2 REBOILER H-1102		$NO_X$		

 $NO_{X} \\$ 

 $NO_X$ 

 $NO_X$ 

 $NO_X$ 

 $NO_{\mathsf{X}}$ 

 $NO_X$ 

 $NO_X$ 

## Flare Systems:

HF-453

HF-601

HF-602

HF-603

HF-604

H-1105

H-1106

FL-201	PX-1 FLARE	$NO_X$
FL-401	PX-2 FLARE	$NO_X$
FL-351	POLYB FLARE	NO <sub>x</sub>

PX-2 H-REBOILERS 1103/4

MX-2 HEATER H-101

MX-2 HEATER H-602

MX-2 HEATER H-603

MX-2 HEATER H-604

PRU HEATER H-1105

PRU HEATER H-1106

Emission Cap NO<sub>X</sub> 424.28 1628.86

Page 3

## PM<sub>10</sub> Sources

## **Combustion Sources:**

HF-201	PX-1 ISOM HEATER H-101	$PM_{10}$
HF-203	PX-1 REBOILERS H-103/4	$PM_{10}$
F –204	PX-1 LAF/TDP FURNACE H-501	$PM_{10}$
F-251	STYRENE STEAM SUPER HEATER HF-201	$PM_{10}$
BF-151	UTILITIES BOILER B-501	$PM_{10}$
BF-152	UTILITIES BOILER B-601	$PM_{10}$
BF-155	UTILITIES GAS FIRED HEAT	
	RECOVERY STEAM GENERATOR/TURBINE	$PM_{10}$
LPV-152	630 HP DIESEL START UP ENGINE	$PM_{10}$
HF-501	MX-1 HEATER H-3401	$PM_{10}$
HF-451	PX-2 ISOM HEATER H-1101	$PM_{10}$
HF-452	PX-2 REBOILER H-1102	$PM_{10}$
HF-453	PX-2 H-REBOILERS 1103/4	$PM_{10}$
HF-601	MX-2 HEATER H-101	$PM_{10}$
HF-602	MX-2 HEATER H-602	$PM_{10}$
HF-603	MX-2 HEATER H-603	$PM_{10}$
HF-604	MX-2 HEATER H-604	$PM_{10}$
H-1105	PRU HEATER H-1105	$PM_{10}$
H-1106	PRU HEATER H-1106	$PM_{10}$

# Cooling Towers:

CT-451	PX-2, MX-2 COOLING TOWER	$PM_{10}$
CT-351	PX-3, POLYB COOLING TOWER	$PM_{10}$

Emission Cap	PM <sub>10</sub>	29.93
404.40		

131.16

## SO<sub>2</sub> Sources

HF-201	PX-1 ISOM HEATER H-101	$SO_2$
HF-203	PX-1 REBOILERS H-103/4	$SO_2$
F-204	PX-1 LAF/TDP FURNACE H-501	$SO_2$
F-251	STYRENE STEAM SUPER HEATER HF-201	$SO_2$
BF-151	UTILITIES BOILER B-501	$SO_2$
BF-152	UTILITIES BOILER B-601	$SO_2$
BF-155	UTILITIES GAS FIRED HEAT	
	RECOVERY STEAM GENERATOR/TURBINE	$SO_2$
LPV-152	630HP DIESEL START-UP ENGINE	$SO_2$

Permit Nos. Page 4	1176/PSD-TX-782			
HF-501 HF-451 HF-452 HF-601 HF-602 HF-603 HF-604 H-1105 H-1106	MX-1 HEATER H-3401 PX-2 ISOM HEATER H-1101 PX-2 REBOILER H-1102 PX-2 H-REBOILERS 1103/4 MX-2 HEATER H-101 MX-2 HEATER H-602 MX-2 HEATER H-603 MX-2 HEATER H-604 PRU HEATER H-1105 PRU HEATER H-1106	SO <sub>2</sub> SO <sub>2</sub> SO <sub>2</sub> SO <sub>2</sub> SO <sub>2</sub> SO <sub>2</sub> SO <sub>2</sub> SO <sub>2</sub> SO <sub>2</sub> SO <sub>2</sub>		
	Emission Cap	SO <sub>2</sub>	17.18	29.41
VOC Sources				
Combustion Sou	ırces:			
HF-201 HF-203 F-204 F-251 BF-151 BF-152 BF-155 LPV-152 HF-501 HF-451 HF-452 HF-453 HF-601 HF-602 HF-603 HF-604 H-1105 H-1106	PX-1 ISOM HEATER H-101 PX-1 REBOILERS H-103/4 PX-1 LAF/TDP FURNACE H-501 STYRENE STEAM SUPER HEATER HF-201 UTILITIES BOILER B-501 UTILITIES BOILER B-601 UTILITIES GAS FIRED HEAT RECOVERY STEAM GENERATOR/TURBINE 630HP DIESEL START-UP ENGINE MX-1 HEATER H-3401 PX-2 ISOM HEATER H-1101 PX-2 REBOILER H-1102 PX-2 H-REBOILERS 1103/4 MX-2 HEATER H-602 MX-2 HEATER H-603 MX-2 HEATER H-604 PRU HEATER H-1105 PRU HEATER H-1106	VOC VOC VOC VOC VOC VOC VOC VOC VOC VOC		
Separators:				
FS-201 S-451	PX-1 SEPARATOR PX-2 SEPARATOR	VOC VOC		

# Regenerator Vent:

LPV-452	PX-2 REGENERATION VENT	VOC
Flare System	15:	
FL-201 FL-401 FL-351		VOC VOC VOC
Loading:		
SP-50 SP-51 SP-52 SP-54 SP-201	MARINE LOADING DOCK 52	VOC VOC VOC VOC
Fugitives:		
FU-451 FU-551 FU-152	PX-1 FUGITIVES PX-2 FUGITIVES PX-3 FUGITIVES DOCK FUGITIVES PX-1 LAF FUGITIVES	VOC VOC VOC VOC
Cooling Towe	ers:	
CT-451 CT-351	PX-2, MX-2 COOLING TOWER PX-3, POLYB COOLING TOWER	VOC VOC
Tanks:		
F-411 ST-201 ST-202 ST-203 ST-204 ST-205 ST-206 ST-207 ST-208 ST-209 ST-210	UTILITIES PX-1 TANK TF-111 PX-1 TANK TF-112 PX-1 TANK TF-113 PX-1 TANK TF-114 PX-1 TANK TF-115 PX-1 TANK TF-117 PX-1 TANK TF-118 PX-1 TANK TF-118 PX-1 TANK TF-120 PX-1 TANK TF-121 PX-1 TANK TF-116	VOC VOC VOC VOC VOC VOC VOC VOC VOC

Permit Nos. Page 6	1176/PSD-TX-782		
ST-451	PX-2 TANK F-1117	VOC	
ST-452	PX-2 TANK F-1111	VOC	
ST-453	PX-2 TANK F-1112	VOC	
ST-454	PX-2 TANK F-1113	VOC	
ST-455	PX-2 TANK F-1114	VOC	
ST-457	PX-2 TANK F-1118	VOC	
ST-2113	PX-3 TANK TF-2113	VOC	
ST-2114	PX-3 TANK TF-2114	VOC	
ST-2118	PX-3 TANK TF-2118	VOC	
ST-151	DOCK TANK TK-201	VOC	
ST-152	DOCK TANK TK-202	VOC	
ST-153	DOCK TANK TK-203	VOC	
ST-154	DOCK TANK TK-204	V0C	
ST-155	DOCK TANK TK-205	V0C	
ST-156	DOCK TANK TK-206	VOC	
ST-157	DOCK TANK TK-207	V0C	
ST-159	DOCK TANK TK-208	VOC	
ST-161	DOCK TANK TK-401	VOC	
ST-162	DOCK TANK TK-402	VOC	
	Emission Cap 394.16	VOC	284.76

#### H<sub>2</sub>SO<sub>4</sub> Source

Loading Operation:

SP-54A DOCK 54A  $H_2SO_4$  Emission Cap  $H_2SO_4$  0.001 0.001

Emission point identification - either specific equipment designation or emission point number from plot plan.

Specific point source name.

VOC - volatile organic compounds as defined in General Rule 101.1

NO<sub>x</sub> - total oxides of nitrogen

SO<sub>2</sub> - sulfur dioxide

PM - particulate matter

CO - carbon monoxide

\* These initial cap emission rates are based on and the facilities are limited by the following maximum

operating schedule:

<u>24</u> Hrs/day <u>7</u> Days/week <u>52</u> Weeks/year or <u>8,760</u> Hrs/year

\*\* Compliance with annual emission limits is based on a rolling 12-month period.

#### EMISSION SOURCES -EMISSION CAPS AND RATES (INTERIM CAP)

Permit No. 1176/PSD-TX-782

This table lists the maximum allowable emission caps or rates and all sources of air contaminants 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 Any proposed increase in emission rates may facilities. require an application for a modification of the facilities covered by this permit.

AIR CONTAMINANTS DATA

Emission	Source	Air Contaminant	<u>Emission</u>
<u>Rates</u> *			
<u>Point No</u>	. (1)	Name (2)	Name (3)
	lb/HR	TPY**	

#### CO Sources

#### **Combustion Sources:**

HF-201 HF-203 F-204 F-251 BF-151 BF-152 BF-155	PX-1 ISOM HEATER H-101 PX-1 REBOILERS H-103/4 PX-1 LAF/TDP FURNACE H-501 STYRENE STEAM SUPER HEATER HF-201 UTILITIES BOILER B-501 UTILITIES BOILER B-601 UTILITIES GAS FIRED HEAT	C0 C0 C0 C0 C0
	RECOVERY STEAM GENERATOR/TURBINE	CO
LPV-152	630 HP DIESEL START-UP ENGINE	CO
HF-501	MX-1 HEATER H-3401	CO
HF-451	PX-2 ISOM HEATER H-1101	CO
HF-452	PX-2 REBOILER H-1102	CO
HF-453	PX-2 H-REBOILERS 1103/4	CO
HF-601	MX-2 HEATER H-101	CO
HF-602	MX-2 HEATER H-602	CO
HF-603	MX-2 HEATER H-603	CO
HF-604	MX-2 HEATER H-604	CO
H-1105	PRU HEATER H-1105	CO
H-1106	PRU HEATER H-1106	CO

#### Flare Systems:

FL-201 PX-1 FLARE

Permit Nos. Page 9	1176/PSD-TX-782				
FL-401 FL-351	PX-2 FLARE POLYB FLARE		C0 C0		
	Emission Cap		СО	75.56	342.78
		,	AIR CONTAM	INANTS D	ATA
Emission	Source	Air	Contaminar	nt <u>Emis</u>	sion_
<u>Rates</u> * <u>Point No</u>	. (1) lb/hr		me (2) TPY**	Name	(3)
NO Source			<u> </u>		
NO <sub>x</sub> Source	<u>es</u>				
Combustion S	Sources:				
HF-201 HF-203 F-204 F-251 BF-151 BF-152 BF-155 LPV-152 HF-501 HF-451 HF-452 HF-453 HF-601 HF-602 HF-603 HF-604 H-1105 H-1106	PX-1 ISOM HEATER H-101 PX-1 REBOILERS H-103/4 PX-1 LAF/TDP FURNACE H-501 STYRENE STEAM SUPER HEATER HF-201 UTILITIES BOILER B-501 UTILITIES BOILER B-601 UTILITIES GAS FIRED HEAT RECOVERY STEAM GENERATOR/TUR 630 HP DIESEL START UP ENGINE MX-1 HEATER H-3401 PX-2 ISOM HEATER H-1101 PX-2 REBOILER H-1102 PX-2 H-REBOILERS 1103/4 MX-2 HEATER H-602 MX-2 HEATER H-603 MX-2 HEATER H-604 PRU HEATER H-1105 PRU HEATER H-1106	BINE	NOx NOx NOx NOx NOx NOx NOx NOx NOx NOx		
Flare Systems:					
FL-201 FL-401 FL-351	PX-1 FLARE PX-2 FLARE POLYB FLARE		NO <sub>X</sub> NO <sub>X</sub> NO <sub>X</sub>		
	Emission Cap		$NO_X$	405.18	1555.56

## PM<sub>10</sub> Sources

Page 10

#### **Combustion Sources:**

HF-201	PX-1 ISOM HEATER H-101	$PM_{10}$
HF-203	PX-1 REBOILERS H-103/4	$PM_{10}$
F –204	PX-1 LAF/TDP FURNACE H-501	$PM_{10}$
F-251	STYRENE STEAM SUPER HEATER HF-201	$PM_{10}$
BF-151	UTILITIES BOILER B-501	$PM_{10}$
BF-152	UTILITIES BOILER B-601	$PM_{10}$
BF-155	UTILITIES GAS FIRED HEAT	
	RECOVERY STEAM GENERATOR/TURBINE	$PM_{10}$
LPV-152	630 HP DIESEL START UP ENGINE	$PM_{10}$
HF-501	MX-1 HEATER H-3401	$PM_{10}$
HF-451	PX-2 ISOM HEATER H-1101	$PM_{10}$
HF-452	PX-2 REBOILER H-1102	$PM_{10}$
HF-453	PX-2 H-REBOILERS 1103/4	$PM_{10}$
HF-601	MX-2 HEATER H-101	$PM_{10}$
HF-602	MX-2 HEATER H-602	$PM_{10}$
HF-603	MX-2 HEATER H-603	$PM_{10}$
HF-604	MX-2 HEATER H-604	$PM_{10}$
H-1105	PRU HEATER H-1105	$PM_{10}$
H-1106	PRU HEATER H-1106	$PM_{10}$

## Cooling Towers:

CT-451	PX-2, MX-2 COOLING TOWER	$PM_{10}$
CT-351	PX-3, POLYB COOLING TOWER	$PM_{10}$

Emission Cap PM<sub>10</sub> 29.93 131.16

## SO<sub>2</sub> Sources

HF-201	PX-1 ISOM HEATER H-101	$SO_2$
HF-203	PX-1 REBOILERS H-103/4	$SO_2$
F-204	PX-1 LAF/TDP FURNACE H-501	$SO_2$
F-251	STYRENE STEAM SUPER HEATER HF-201	$SO_2$
BF-151	UTILITIES BOILER B-501	$SO_2$
BF-152	UTILITIES BOILER B-601	$SO_2$
BF-155	UTILITIES GAS FIRED HEAT	
	RECOVERY STEAM GENERATOR/TURBINE	$SO_2$
LPV-152	630HP DIESEL START-UP ENGINE	$SO_2$
HF-501	MX-1 HEATER H-3401	$SO_2$

Permit Nos. Page 11	1176/PSD-TX-782			
HF-451	PX-2 ISOM HEATER H-1101	$SO_2$		
HF-452	PX-2 REBOILER H-1102	SO <sub>2</sub>		
HF-453	PX-2 H-REBOILERS 1103/4	$SO_2$		
HF-601	MX-2 HEATER H-101	$SO_2$		
HF-602	MX-2 HEATER H-602	$SO_2$		
HF-603	MX-2 HEATER H-603	$SO_2$		
HF-604	MX-2 HEATER H-604	$SO_2$		
H-1105	PRU HEATER H-1105	$SO_2$		
H-1106	PRU HEATER H-1106	$SO_2$		
	Emission Cap	SO <sub>2</sub>	17.18	29.41

## **VOC Sources**

#### **Combustion Sources:**

HF-201	PX-1 ISOM HEATER H-101	VOC
HF-203	PX-1 REBOILERS H-103/4	VOC
F-204	PX-1 LAF/TDP FURNACE H-501	VOC
F-251	STYRENE STEAM SUPER HEATER HF-201	VOC
BF-151	UTILITIES BOILER B-501	VOC
BF-152	UTILITIES BOILER B-601	VOC
BF-155	UTILITIES GAS FIRED HEAT	
	RECOVERY STEAM GENERATOR/TURBINE	VOC
LPV-152	630HP DIESEL START-UP ENGINE	VOC
HF-501	MX-1 HEATER H-3401	VOC
HF-451	PX-2 ISOM HEATER H-1101	VOC
HF-452	PX-2 REBOILER H-1102	VOC
HF-453	PX-2 H-REBOILERS 1103/4	VOC
HF-601	MX-2 HEATER H-101	VOC
HF-602	MX-2 HEATER H-602	VOC
HF-603	MX-2 HEATER H-603	VOC
HF-604	MX-2 HEATER H-604	VOC
H-1105	PRU HEATER H-1105	VOC
H-1106	PRU HEATER H-1106	VOC
_		

## Separators:

FS-201	PX-1 SEPARATOR	VOC
S-451	PX-2 SEPARATOR	VOC

# Regenerator Vent:

Permit Nos.	1176/PSD-TX-782	
Page 12		
LPV-452	PX-2 REGENERATION VENT	VOC
Flare System	ms:	
FL-201 FL-401 FL-351		VOC VOC
Loading:		
SP-50 SP-51 SP-52 SP-54 SP-201		VOC VOC VOC VOC
Fugitives:		
FU-451 FU-551 FU-152		VOC VOC VOC VOC
Cooling Tow	ers:	
CT-451 CT-351	PX-2, MX-2 COOLING TOWER PX-3, POLYB COOLING TOWER	VOC VOC
Tanks:		
F-411 ST-201 ST-202 ST-203 ST-204 ST-205 ST-206 ST-207 ST-208 ST-209 ST-210 ST-451 ST-452 ST-453 ST-454 ST-455	UTILITIES PX-1 TANK TF-111 PX-1 TANK TF-112 PX-1 TANK TF-113 PX-1 TANK TF-114 PX-1 TANK TF-115 PX-1 TANK TF-117 PX-1 TANK TF-118 PX-1 TANK TF-120 PX-1 TANK TF-121 PX-1 TANK TF-121 PX-2 TANK F-1117 PX-2 TANK F-1111 PX-2 TANK F-1112 PX-2 TANK F-1113 PX-2 TANK F-1114	VOC VOC VOC VOC VOC VOC VOC VOC VOC VOC

Permit Nos. 1176/PSD-TX-782 Page 13 ST-457 PX-2 TANK F-1118 V0C ST-2113 PX-3 TANK TF-2113 VOC ST-2114 PX-3 TANK TF-2114 V0C ST-2118 PX-3 TANK TF-2118 V0C ST-151 DOCK TANK TK-201 V0C DOCK TANK TK-202 ST-152 V0C DOCK TANK TK-203 ST-153 VOC ST-154 DOCK TANK TK-204 **VOC** ST-155 DOCK TANK TK-205 VOC DOCK TANK TK-206 ST-156 VOC DOCK TANK TK-207 VOC ST-157 ST-159 DOCK TANK TK-208 VOC DOCK TANK TK-401 ST-161 V0C ST-162 DOCK TANK TK-402 V0C **Emission Cap** VOC 280.53 402.77

#### H<sub>2</sub>SO<sub>4</sub> Source

Loading Operation:

SP-54A DOCK 54A H<sub>2</sub>SO<sub>4</sub>

**Emission Cap**  $H_2SO_4$  0.001 0.001

- (1) Emission point identification either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name.
- (3) VOC volatile organic compounds as defined in General Rule 101.1

NO<sub>x</sub> - total oxides of nitrogen

SO<sub>2</sub> - sulfur dioxide

PM - particulate matter

CO - carbon monoxide

\* These initial cap emission rates are based on and the facilities are limited by the following maximum operating schedule:

24 Hrs/day 7 Days/week 52 Weeks/year or 8,760 Hrs/year

\*\* Compliance with annual emission limits is based on a rolling 12-month period.

Page 14

EMISSION SOURCES - EMISSION CAPS AND RATES (FINAL CAP)

6/06/02 DRAFT

Permit Nos. 1176/PSD-TX-782

This table lists the maximum allowable emission caps or rates and all sources of air contaminants 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. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

#### AIR CONTAMINANTS DATA

Emission	Source	Air Contaminant	<u>Emission</u>
<u>Rates</u>			
Point No.	(1)	Name (2)	Name (3)
	lb/hr	TPY	

#### **CO Sources**

HF-201	PX-1 ISOM HEATER H-101	CO
HF-203	PX-1 REBOILERS H-103/4	CO
F-204	PX-1 LAF/TDP FURNACE H-501	CO
F-251	STYRENE STEAM SUPER HEATER HF-201	CO
BF-151	UTILITIES BOILER B-501	CO
BF-152	UTILITIES BOILER B-601	CO
BF-155	UTILITIES GAS FIRED HEAT	
	RECOVERY STEAM GENERATOR/TURBINE	CO
LPV-152	630 HP DIESEL START-UP ENGINE	CO
HF-501	MX-1 HEATER H-3401	CO
HF-451	PX-2 ISOM HEATER H-1101	CO
HF-452	PX-2 REBOILER H-1102	CO
HF-453	PX-2 H-REBOILERS 1103/4	CO
HF-601	MX-2 HEATER H-101	CO
HF-602	MX-2 HEATER H-602	CO
HF-603	MX-2 HEATER H-603	CO
HF-604	MX-2 HEATER H-604	CO
H-1105	PRU HEATER H-1105	CO

Permit Nos. Page 15	1176/PSD-TX-782		
H-1106	PRU HEATER H-1106	СО	
Flare Systems:			
FL-201 FL-401 FL-351	PX-1 FLARE PX-2 FLARE POLYB FLARE	C0 C0 C0	
	Emission Cap 255.34	СО	55.60
NO <sub>x</sub> Sources			
Combustion S	Sources:		
HF-201 HF-203 F-204 F-251 BF-151 BF-155 BF-155 LPV-152 HF-501 HF-451 HF-452 HF-453 HF-601 HF-602 HF-603 HF-604 H-1105 H-1106	PX-1 ISOM HEATER H-101 PX-1 REBOILERS H-103/4 PX-1 LAF/TDP FURNACE H-501 STYRENE STEAM SUPER HEATER HF-201 UTILITIES BOILER B-501 UTILITIES BOILER B-601 UTILITIES GAS FIRED HEAT RECOVERY STEAM GENERATOR/TURBINE 630HP DIESEL START-UP ENGINE MX-1 HEATER H-3401 PX-2 ISOM HEATER H-1101 PX-2 REBOILER H-1102 PX-2 H-REBOILERS 1103/4 MX-2 HEATER H-602 MX-2 HEATER H-603 MX-2 HEATER H-604 PRU HEATER H-1105 PRU HEATER H-1106	NOx NOx NOx NOx NOx NOx NOx NOx NOx NOx	
Flare Systems:			
FL-201 FL-401 FL-351	PX-1 FLARE PX-2 FLARE POLYB FLARE	NO <sub>X</sub> NO <sub>X</sub> NO <sub>X</sub>	

Page 16

Emission Cap NOx 142.17 512.42

Page 17

## PM<sub>10</sub> Sources

#### **Combustion Sources:**

$\begin{array}{cccccccccccccccccccccccccccccccccccc$
F-251 STYRENE STEAM SUPER HEATER HF-201 PM <sub>10</sub>
BF-151 UTILITIES BOILER B-501 PM <sub>10</sub>
BF-152 UTILITIES BOILER B-601 PM <sub>10</sub>
BF-155 UTILITIES GAS FIRED HEAT
RECOVERY STEAM GENERATOR/TURBINE PM <sub>10</sub>
LPV-152 630 HP DIESEL START_UP ENGINE PM <sub>10</sub>
HF-501 MX-1 HEATER H-3401 PM <sub>10</sub>
HF-451 PX-2 ISOM HEATER H-1101 PM <sub>10</sub>
HF-452 PX-2 REBOILER H-1102 PM <sub>10</sub>
HF-453 PX-2 H-REBOILERS 1103/4 PM <sub>10</sub>
HF-601 MX-2 HEATER H-101 PM <sub>10</sub>
HF-602 MX-2 HEATER H-602 PM <sub>10</sub>
HF-603 MX-2 HEATER H-603 PM <sub>10</sub>
HF-604 MX-2 HEATER H-604 PM <sub>10</sub>
H-1105 PRU HEATER H-1105 PM <sub>10</sub>
H-1106 PRU HEATER H-1106 PM <sub>10</sub>

## **Cooling Towers:**

CT-451	PX-2, MX-2 COOLING TOWER	$PM_{10}$
CT-351	PX-3, POLYB COOLING TOWER	$PM_{10}$

Emission Cap PM<sub>10</sub> 27.40

120.03

## SO<sub>2</sub> Sources

HF-201	PX-1 ISOM HEATER H-101	SO <sub>2</sub>
HF-203	PX-1 REBOILERS H-103/4	$SO_2$
F-204	PX-1 LAF/TDP FURNACE H-501	$SO_2$

Page 18

Combustion Sources (continued):

	Emission Cap	SO <sub>2</sub>	2.01	8.79
H-1106	PRU HEATER H-1106	SO <sub>2</sub>		
H-1105	PRU HEATER H-1105	SO <sub>2</sub>		
HF-604	MX-2 HEATER H-604	$SO_2$		
HF-603	MX-2 HEATER H-603	$SO_2$		
HF-602	MX-2 HEATER H-602	SO <sub>2</sub>		
HF-601	MX-2 HEATER H-101	$SO_2$		
HF-453	PX-2 H-REBOILERS 1103/4	$SO_2$		
HF-452	PX-2 REBOILER H-1102	$SO_2$		
HF-451	PX-2 ISOM HEATER H-1101	$SO_2$		
HF-501	MX-1 HEATER H-3401	$SO_2$		
LPV-152	630 HP DIESEL START_UP ENGINE	$SO_2$		
	RECOVERY STEAM GENERATOR/TURBINE	$SO_2$		
BF-155	UTILITIES GAS FIRED HEAT			
BF-152	UTILITIES BOILER B-601	S02		
BF-151	UTILITIES BOILER B-501	$SO_2$		
F-251	STYRENE STEAM SUPER HEATER HF-201	$SO_2$		

# **VOC Sources**

HF-201 HF-203	PX-1 ISOM HEATER H-101 PX-1 REBOILERS H-103/4	VOC VOC
F-204	PX-1 LAF/TDP FURNACE H-501	VOC
F-251	STYRENE STEAM SUPER HEATER HF-201	VOC
BF-151	UTILITIES BOILER B-501	VOC
BF-152	UTILITIES BOILER B-601	VOC
BF-155	UTILITIES GAS FIRED HEAT	
	RECOVERY STEAM GENERATOR/TURBINE	VOC
LPV-152	630 HP DIESEL START_UP ENGINE	VOC
HF-501	MX-1 HEATER H-3401	VOC
HF-451	PX-2 ISOM HEATER H-1101	VOC
HF-452	PX-2 REBOILER H-1102	VOC
HF-453	PX-2 H-REBOILERS 1103/4	VOC
HF-601	MX-2 HEATER H-101	VOC
HF-602	MX-2 HEATER H-602	VOC
HF-603	MX-2 HEATER H-603	VOC
HF-604	MX-2 HEATER H-604	VOC
H-1105	PRU HEATER H-1105	VOC

	1176/PSD-TX-782			
Page 19 H-1106	PRU HEATER H-1106	VOC		
Separators:	Separators:			
	PX-1 SEPARATOR PX-2 SEPARATOR	VOC VOC		
Regenerator	Vent:			
LPV-452	PX-2 REGENERATION VENT	VOC		
Flare Syster	ns:			
FL-201 FL-401 FL-351	PX-2 FLARE	VOC VOC VOC		
Loading:				
SP-50 SP-51 SP-52 SP-54 SP-201		VOC VOC VOC VOC		
Fugitives:				
FU-201 FU-451 FU-551 FU-152 FU-210	PX-1 FUGITIVES PX-2 FUGITIVES PX-3 FUGITIVES DOCK FUGITIVES PX-1 LAF FUGITIVES	VOC VOC VOC VOC		
Cooling Towers:				
CT-451 CT-351	PX-2, MX-2 COOLING TOWER PX-3, POLYB COOLING TOWER	VOC VOC		
Tanks:				
F-411 ST-201 ST-202 ST-203	UTILITIES PX-1 TANK TF-111 PX-1 TANK TF-112 PX-1 TANK TF-113	VOC VOC VOC		

Permit Nos. Page 20	1176/PSD-TX-782		
ST-204	PX-1 TANK TF-114	VOC	
ST-205	PX-1 TANK TF-115	VOC	
ST-206	PX-1 TANK TF-117	VOC	
ST-207	PX-1 TANK TF-118	VOC	
ST-208	PX-1 TANK TF-120	VOC	
ST-209	PX-1 TANK TF-121	VOC	
ST-210	PX-1 TANK TF-116	VOC	
ST-451	PX-2 TANK F-1117	VOC	
ST-452	PX-2 TANK F-1111	VOC	
ST-453	PX-2 TANK F-1112	VOC	
ST-454	PX-2 TANK F-1113	VOC	
ST-455	PX-2 TANK F-1114	VOC	
ST-457	PX-2 TANK F-1118	VOC	
ST-2113	PX-3 TANK TF-2113	V0C	
ST-2114	PX-3 TANK TF-2114	V0C	
ST-2118	PX-3 TANK TF-2118	VOC	
ST-151	DOCK TANK TK-201	VOC	
ST-152	DOCK TANK TK-202	VOC	
ST-153	DOCK TANK TK-203	VOC	
ST-154	DOCK TANK TK-204	VOC	
ST-155	DOCK TANK TK-205	VOC	
ST-156	DOCK TANK TK-206	VOC	
ST-157	DOCK TANK TK-207	VOC	
ST-159	DOCK TANK TK-208	VOC	
ST-161	DOCK TANK TK-401	VOC	
ST-162	DOCK TANK TK-402	VOC	
F-411	UTILITIES TANK 411	VOC	
	Emission Cap 404.28	VOC	280.28

## H<sub>2</sub>SO<sub>4</sub> Source

Loading Operation:

SP-54A	DOCK 54A	H <sub>2</sub> SO <sub>4</sub> 0.001	0.001
	Emission Cap	H₂SO₄	0.001
			0.001

- (1) Emission point identification either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name.

VOC - volatile organic compounds as defined in General Rule 101.1

NO<sub>x</sub> - total oxides of nitrogen

SO<sub>2</sub> - sulfur dioxide

PM - particulate matter

CO - carbon monoxide

\*These initial cap emission rates are based on and the facilities are limited by the following maximum operating schedule:

24 Hrs/day 7 Days/week 52 Weeks/year or 8,760 Hrs/year

<sup>\*\*</sup>Compliance with annual emission limits is based on a rolling 12-month period.