

EMISSION SOURCES - EMISSIONS CAPS AND INDIVIDUAL EMISSION LIMITATIONS

Permit Numbers 2167 and PSD-TX-985

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

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EMISSION CAPS

Air Contaminant Name (3)		<u>Emission Rates*</u>	
<u>lb/hr</u>	<u>TPY**</u>		
NO _x through 2004		1160.7	3275.9
2005 - 2006		1095.8	2991.5
2007		487.7	1739.3
CO through 2006		1202.2	2128.3
2007		1319.6	2487.4
SO ₂ through 2006		1362.7	2837.0
2007		1478.2	2140.8
PM through 2006		138.4	537.9
2007		185.1	673.3
VOC through 2006		2480.6	3326.7
2007		2528.2	3508.1
Benzene through 2006		149.3	52.5
2007		150.1	56.1

Ammonia 2002		35.9		155.2	
Emission Point No.	Source Name (2)	Emission Point No.	Source Name (2)		
(1)		(1)			
536-F1A	Atmospheric Tower Heater	533DHN-H1	533 H1 Heater		
536-F1B	Atmospheric Tower Heater	533DHN-H2	533 Duotreater Heater		
536-F2	Vacuum Tower Heater	533HF-H101	533 Hydrofinisher Reactor Heater		
		533HT-H102	533 Hydrotreater Reactor Heater		
		534-F5	Depentanizer Tower Heater		
633-PFR	633 Reactor Feed Heater	631A-F1	SR Heater		
633-HR	633 Fractionator Reboiler	631B-F2	LCO Feed Heater		
634-HR	634 Reactor Feed Heater	632-F1	632 Reactor Feed Heater		
635-HR	635 Reactor Feed Heater	632-F2	632 LEF Reboiler		
636FDHTR	636 Reactor Feed Heater	732-H1A	732 East Heater		
636FRHTR	636 Fractionator Feed Heater	732-H1B	732 West Heater		
735-HH10	735 Reactor Charge Heater	733-B5	Heater B5 - 733 LEF Reboiler		
735-HH5	735 No. 4 Reactor Heater	733-B7	733 REF Fractionator Reboiler		
735-HH6	735 Unifiner Stripper Reboiler	735-HH1	735 Unifiner Heater		
735-HH7	735 Stabilizer Heater	735-HH2	735 No. 1 Reactor Heater(A)		
COK-HE	736 Coker East Heater H-101A	735-HH2	735 No. 1 Reactor Heater(B)		
COK-HW	736 Coker West Heater H-101B	735-HH3	735 No. 2 Reactor Heater(A)		
737-HEAT	Heater F001	735-HH3	735 No. 2 Reactor Heater(B)		
737-HEAT	Heater F002	735-HH3	735 No. 2 Reactor Heater(C)		
732-COB	FCCU CO Boiler	735-HH3	735 No. 2 Reactor Heater(D)		
TGU-ICN	Tail Gas Thermal Oxidizer	735-HH4	735 No. 3 Reactor Heater(A)		
TGU-ICN2	Tail Gas Thermal Oxidizer	735-HH4	735 No. 3 Reactor Heater(B)		
MVC-ICN	Marine Vapor Combustor	735-HH4	735 No. 3 Reactor Heater(C)		
FL-3-COK	736 Coker Flare	735-HH4	735 No. 3 Reactor		

FL44SRUSO	SRU South Flare	735-HH4	Heater(D) 735 No. 3 Reactor Heater(E)
FL38	Merox Flare	735-HH4	735 No. 3 Reactor Heater(F)
P-FL-1	No. 1 Plant Flare	735-HH8	735 Naphtha Feed Heater
P-FL-2	No. 2 Plant Flare	735-HH9	Naphtha Fractionator Reboiler
P-FL-3	No. 3 Plant Flare	BTU-HF101	Btu-Depent Heater
P-FL-4	No. 4 Plant Flare	BTU-HF102	HDS Reactor Heater
P-FL-5	No. 5 Plant Flare	BTU-HF108	Btu-Reformate Splitter Reboiler
533-H1	533 Atmospheric Tower Heater	BTU-HF111	Btu-Extract Stripper Reboiler
533-H2	533 Vacuum Tower Heater	UDEX-H1	Heartcut Fractionator Heater
637-SHF	637 SHU/Depent. Feed Heater	HOUST-FL	Houston Street Flare
637-SHR	637 SHU/Depent. Feed Reboiler	638-FR	638 Gasoline HDS Stripper Reboiler
638-RH	638 Gasoline HDS Reactor Heater	639-RH	639 Diesel HDS Reactor Heater
		639-FR	639 Diesel HDS Stripper Reboiler
TK011A	EFR Tank No. 11A	TK257	Fixed Roof Tank No. 257
TK012A	Fixed Roof Tank No. 12A	TK259	Fixed Roof Tank No. 259
TK017A	EFR Tank No. 17A	TK263	Fixed Roof Tank No. 263
TK030A	IFR Tank No. 30A	TK264	Fixed Roof Tank No. 264
TK414	EFR Tank No. 414	TK265	Fixed Roof Tank No. 265
TK416	EFR Tank No. 416	TK266	Fixed Roof Tank No. 266
TK418	EFR Tank No. 418	TK267	Fixed Roof Tank No. 267
TK422A	Fixed Roof Tank No. 422A	TK268	Fixed Roof Tank No. 268
TK423	EFR Tank No. 423	TK269	Fixed Roof Tank No. 269
TK425	EFR Tank No. 425	TK270	Fixed Roof Tank No. 270
TK441	EFR Tank No. 441	TK271	Fixed Roof Tank No. 271
TK442	EFR Tank No. 442	TK272	Fixed Roof Tank No. 272
TK554	EFR Tank No. 554	TK273	Fixed Roof Tank No. 273
TK555	EFR Tank No. 555	TK274	Fixed Roof Tank No. 274
TK556	EFR Tank No. 556	TK275	Fixed Roof Tank No. 275
TK557	EFR Tank No. 557	TK276	Fixed Roof Tank No. 276
TK558	EFR Tank No. 558	TK278	Fixed Roof Tank No. 278
TK559	EFR Tank No. 559	TK282	Fixed Roof Tank No. 282
TK560	EFR Tank No. 560	TK283	Fixed Roof Tank No. 283
TK561	EFR Tank No. 561	TK402A	EFR Tank No. 402A

TK562	EFR Tank No. 562	TK410	Fixed Roof Tank No. 410
TK563	EFR Tank No. 563	TK412A	IFR Tank No. 412A
TK564	EFR Tank No. 564	TK420A	EFR Tank No. 420A
TK565A	EFR Tank No. 565A	TK424A	EFR Tank No. 424A
TK570	EFR Tank No. 570	TK445	Fixed Roof Tank No. 445
TK571	Fixed Roof Tank No. 571	TK446	Fixed Roof Tank No. 446
TK572	Fixed Roof Tank No. 572	TK476	EFR Tank No. 476
TK573	EFR Tank No. 573	TK477	EFR Tank No. 477
TK574	Fixed Roof Tank No. 574	TK509	Fixed Roof Tank No. 509
TK576	EFR Tank No. 576	TK541	Fixed Roof Tank No. 541
TK577	EFR Tank No. 577	TK543	Fixed Roof Tank No. 543
TK578	EFR Tank No. 578	TK553	Fixed Roof Tank No. 553
TK579	EFR Tank No. 579	TK580	EFR Tank No. 580
TK583	EFR Tank No. 583	TK581	EFR Tank No. 581
TK584	EFR Tank No. 584	TK582	EFR Tank No. 582
TK594	EFR Tank No. 594	TK590	EFR Tank No. 590
TK597A	EFR Tank No. 597A	TK591	EFR Tank No. 591
TK599A	EFR Tank No. 599A	TK598	EFR Tank No. 598
TK600	EFR Tank No. 600	TK609A	Fixed Roof Tank No. 609A
TK601	Fixed Roof Tank No. 601	TK633	Fixed Roof Tank No. 633
TK604	Fixed Roof Tank No. 604	TK647	Fixed Roof Tank No. 647
TK607	Fixed Roof Tank No. 607	TK649	Fixed Roof Tank No. 649
TK613A	IFR Tank No. 613A	TK650	Fixed Roof Tank No. 650
TK618	EFR Tank No. 618	TK651	Fixed Roof Tank No. 651
TK619A	EFR Tank No. 619A	TK652	Fixed Roof Tank No. 652
TK674	EFR Tank No. 674	TK653	Fixed Roof Tank No. 653
TK687	IFR Tank No. 687	TK654	Fixed Roof Tank No. 654
TK693	IFR Tank No. 693	TK655	Fixed Roof Tank No. 655
TK694	IFR Tank No. 694	TK656	Fixed Roof Tank No. 656
TK774	EFR Tank No. 774	TK657	Fixed Roof Tank No. 657
TK775	EFR Tank No. 775	TK658	Fixed Roof Tank No. 658
TK776	EFR Tank No. 776	TK659	Fixed Roof Tank No. 659
TK777	EFR Tank No. 777	TK660	Fixed Roof Tank No. 660
TK793	EFR Tank No. 793	TK661	Fixed Roof Tank No. 661
TK797	EFR Tank No. 797	TK662	Fixed Roof Tank No. 662
TK801	Fixed Roof Tank No. 801	TK663	Fixed Roof Tank No. 663
TK802	EFR Tank No. 802	TK664	Fixed Roof Tank No. 664
TK803	EFR Tank No. 803	TK665	Fixed Roof Tank No. 665
TK804	EFR Tank No. 804	TK666	Fixed Roof Tank No. 666
TK805	EFR Tank No. 805	TK667	IFR Tank No. 667
TK806	EFR Tank No. 806	TK668	IFR Tank No. 668
TK807	EFR Tank No. 807	TK669	IFR Tank No. 669
TK808	EFR Tank No. 808	TK670	IFR Tank No. 670
TK809	EFR Tank No. 809	TK671	Fixed Roof Tank No. 671
TK810	EFR Tank No. 810	TK672	IFR Tank No. 672
TK811	EFR Tank No. 811	TK673	IFR Tank No. 673

TK813	Fixed Roof Tank No. 813	TK675	Fixed Roof Tank No. 675
TK814	Fixed Roof Tank No. 814	TK677	IFR Tank No. 677
TK816	IFR Tank No. 816	TK685	IFR Tank No. 685
TK817	EFR Tank No. 817	TK686	IFR Tank No. 686
TK834A	IFR Tank No. 834A	TK688	IFR Tank No. 688
TK835	EFR Tank No. 835	TK689	IFR Tank No. 689
TK838	EFR Tank No. 838	TK690	IFR Tank No. 690
TK850	EFR Tank No. 850	TK691	IFR Tank No. 691
TK854	IFR Tank No. 854	TK692	IFR Tank No. 692
TK855	IFR Tank No. 855	TK697	Fixed Roof Tank No. 697
TK861	IFR Tank No. 861	TK698	Fixed Roof Tank No. 698
TK865	IFR Tank No. 865	TK699	Fixed Roof Tank No. 699
TK867	IFR Tank No. 867	TK700	Fixed Roof Tank No. 700
TK868	IFR Tank No. 868	TK724	Fixed Roof Tank No. 724
TK869	IFR Tank No. 869	TK726	Fixed Roof Tank No. 726
TK870	Fixed Roof Tank No. 870	TK729	Fixed Roof Tank No. 729
TK871	Fixed Roof Tank No. 871	TK732	Fixed Roof Tank No. 732
TK872	IFR Tank No. 872	TK744	Fixed Roof Tank No. 744
TK873	IFR Tank No. 873	TK747	Fixed Roof Tank No. 747
TK874	IFR Tank No. 874	TK759	Fixed Roof Tank No. 759
TK875	IFR Tank No. 875	TK760	Fixed Roof Tank No. 760
TK876	IFR Tank No. 876	TK762	Fixed Roof Tank No. 762
TK878	IFR Tank No. 878	TK763	Fixed Roof Tank No. 763
TK879	IFR Tank No. 879	TK764	Fixed Roof Tank No. 764
TK880	IFR Tank No. 880	TK765	Fixed Roof Tank No. 765
TK881	IFR Tank No. 881	TK767	Fixed Roof Tank No. 767
TK882	IFR Tank No. 882	TK768	Fixed Roof Tank No. 768
TK883	IFR Tank No. 883	TK769	Fixed Roof Tank No. 769
TK884	IFR Tank No. 884	TK771	Fixed Roof Tank No. 771
TK885	EFR Tank No. 885	TK772	Fixed Roof Tank No. 772
TK886	EFR Tank No. 886	TK778	Fixed Roof Tank No. 778
TK887	EFR Tank No. 887	TK779	Fixed Roof Tank No. 779
TK888	EFR Tank No. 888	TK780	Fixed Roof Tank No. 780
TK890	EFR Tank No. 890	TK781	Fixed Roof Tank No. 781
TK891	Fixed Roof Tank No. 891	TK782	Fixed Roof Tank No. 782
TK892	EFR Tank No. 892	TK783	Fixed Roof Tank No. 783
TK893	EFR Tank No. 893	TK784	Fixed Roof Tank No. 784
TK897	Fixed Roof Tank No. 897	TK785	Fixed Roof Tank No. 785
TK911	Fixed Roof Tank No. 911	TK786	Fixed Roof Tank No. 786
TK920	IFR Tank No. 920	TK787	Fixed Roof Tank No. 787
TK921	EFR Tank No. 921	TK788	Fixed Roof Tank No. 788
TK922	EFR Tank No. 922	TK789	Fixed Roof Tank No. 789
TK001A	Fixed Roof Tank No. 1A	TK790	EFR Tank No. 790
T-1	Fixed Roof Tank No. T-1	TK791	EFR Tank No. 791
TK006A	EFR Tank No. 6A	TK792	Fixed Roof Tank No. 792
TK026A	EFR Tank No. 26A	TK793	EFR Tank No. 793

TK027A	Fixed Roof Tank No. 27A	TK794	EFR Tank No. 794
TK069	Fixed Roof Tank No. 69	TK795	EFR Tank No. 795
TK070	Fixed Roof Tank No. 70	TK796	EFR Tank No. 796
TK071	Fixed Roof Tank No. 71	TK798	EFR Tank No. 798
TK073	Fixed Roof Tank No. 73	TK799	EFR Tank No. 799
TK078A	Fixed Roof Tank No. 78A	TK800	EFR Tank No. 800
TK081	Fixed Roof Tank No. 81	TK812	Fixed Roof Tank No. 812
TK082	Fixed Roof Tank No. 82	TK815	IFR Tank No. 815
TK084	Fixed Roof Tank No. 84	TK818	EFR Tank No. 818
TK085	Fixed Roof Tank No. 85	TK819	EFR Tank No. 819
TK091	Fixed Roof Tank No. 91	TK821	IFR Tank No. 821
TK092	Fixed Roof Tank No. 92	TK822	IFR Tank No. 822
TK093	Fixed Roof Tank No. 93	TK825	Fixed Roof Tank No. 825
TK095	Fixed Roof Tank No. 95	TK826	Fixed Roof Tank No. 826
TK096	Fixed Roof Tank No. 96	TK827	Fixed Roof Tank No. 827
TK097	Fixed Roof Tank No. 97	TK836	Fixed Roof Tank No. 836
TK098	Fixed Roof Tank No. 98	TK839	Fixed Roof Tank No. 839
TK099	Fixed Roof Tank No. 99	TK841	Fixed Roof Tank No. 841
TK110	Fixed Roof Tank No. 110	TK842	Fixed Roof Tank No. 842
TK111	Fixed Roof Tank No. 111	TK843	Fixed Roof Tank No. 843
TK112	Fixed Roof Tank No. 112	TK851	Fixed Roof Tank No. 851
TK113	Fixed Roof Tank No. 113	TK852	Fixed Roof Tank No. 852
TK114	Fixed Roof Tank No. 114	TK856	Fixed Roof Tank No. 856
TK115	Fixed Roof Tank No. 115	TK857	Fixed Roof Tank No. 857
TK116	Fixed Roof Tank No. 116	TK860	Fixed Roof Tank No. 860
TK117	Fixed Roof Tank No. 117	TK862	Fixed Roof Tank No. 862
TK118	Fixed Roof Tank No. 118	TK863	Fixed Roof Tank No. 863
TK119	Fixed Roof Tank No. 119	TK866A	Fixed Roof Tank No. 866A
TK137	Fixed Roof Tank No. 137	TK894	Fixed Roof Tank No. 894
TK138	Fixed Roof Tank No. 138	TK895	Fixed Roof Tank No. 895
TK139	Fixed Roof Tank No. 139	TK896	Fixed Roof Tank No. 896
TK140	Fixed Roof Tank No. 140	TK898	Fixed Roof Tank No. 898
TK163	Fixed Roof Tank No. 163	TK901	Horizontal Tank No. 901
TK164	Fixed Roof Tank No. 164	TK902	Horizontal Tank No. 902
TK165	Fixed Roof Tank No. 165	TK7601	Fixed Roof Tank No. 7601
TK166	Fixed Roof Tank No. 166	TK7701	Fixed Roof Tank No. 7701
TK167	Fixed Roof Tank No. 167	533-CT	533 Cooling Tower
TK168	Fixed Roof Tank No. 168	534-CT	534 Cooling Tower
TK169	Fixed Roof Tank No. 169	537-N	535 New Cooling Tower
TK170	Fixed Roof Tank No. 170	537-O	535 Old Cooling Tower
TK171	Fixed Roof Tank No. 171	536-CT	536 Cooling Tower
TK172	Fixed Roof Tank No. 172	732-CT	732 Cooling Tower
TK176	Fixed Roof Tank No. 176	537-X	733 Cooling Tower (2 north cells)
TK180	Fixed Roof Tank No. 180	733-CT	733 Cooling Tower
TK181	Fixed Roof Tank No. 181	735-CT	735 Cooling Tower

TK182	Fixed Roof Tank No. 182	ARU-CT	ARU Cooling Tower
TK183	Fixed Roof Tank No. 183	BRU-CT	BRU Cooling Tower
TK193	Fixed Roof Tank No. 193	FCT-COKE	Coker Cooling Tower (736)
TK194	Fixed Roof Tank No. 194	737-CT	Coker Cooling Tower (737)
TK195	Fixed Roof Tank No. 195	SRU-CT	SRU Cooling Tower (439 TGU)
TK200	Fixed Roof Tank No. 200	LCT-SULF	SRU Cooling Tower (439 Claus)
TK201	Fixed Roof Tank No. 201	FU-SEWER	Wastewater collection system
TK202	Fixed Roof Tank No. 202	FU-API	API Separator
TK203	Fixed Roof Tank No. 203	FU-EQSUMP	EQ Sump
TK204	Fixed Roof Tank No. 204	FU-GCLS	GCWDA Lift Station
TK244	Fixed Roof Tank No. 244	FUGITIVE	Tank Truck/Railcar Loading
TK247	Fixed Roof Tank No. 247	FUGITIVES	Process Fugitives
		LOAD-FUG	Marine Loading Fugitives (A, B, C)

EMISSION SOURCES - EMISSIONS CAPS AND INDIVIDUAL EMISSION LIMITATIONS

SOURCES INCLUDED IN EMISSION CAPS FOR AMMONIA (3)

<u>Emission Point No.</u>	<u>Source Name (2)</u>	<u>Emission Point No.</u>	<u>Source Name (2)</u>
<u>(1)</u>		<u>(1)</u>	
533-H1	533 Atmospheric Tower Heater	735-HH3	735 No. 2 Reactor Heater(C)
534-F5	Depentanizer Tower Heater	735-HH3	735 No. 2 Reactor Heater(D)
536-F1A	Atmospheric Tower Heater	735-HH4	735 No. 3 Reactor Heater(A)
536-F1B	Atmospheric Tower Heater	735-HH4	735 No. 3 Reactor Heater(B)
536-F2	Vacuum Tower Heater	735-HH4	735 No. 3 Reactor Heater(C)
537-HC-1	Crude Heater No. 1	735-HH4	735 No. 3 Reactor Heater(D)
537-HV-1	Vacuum Heater No. 1	735-HH4	735 No. 3 Reactor Heater(E)
633-PFR	633 Reactor Feed Heater	735-HH4	735 No. 3 Reactor Heater(F)
633-HR	633 Fractionator Reboiler	735-HH5	735 No. 4 Reactor Heater
634-HR	634 Reactor Feed Heater	735-HH6	735 Unifiner Stripper Reboiler
635-HR	635 Reactor Feed Heater	735-HH7	735 Stabilizer Heater
636FDHTR	636 Reactor Feed Heater	735-HH8	735 Naphtha Feed Heater
636FRHTR	636 Fractionator Feed Heater	735-HH9	Naphtha Fractionator Reboiler
732-H1A	732 East Heater	735-HH10	735 Reactor Charge Heater
732-H1B	732 West Heater	737-HEAT	Heater F001
733-B5	Heater B5 - 733 LEF Reboiler	737-HEAT	Heater F002
733-B7	733 REF Fractionator Reboiler	BTU-HF101	Btu-Depent Heater
735-HH1	735 Unifiner Heater	BTU-HF102	HDS Reactor Heater
735-HH2	735 No. 1 Reactor Heater	BTU-HF108	Btu-Reformate Splitter Reboiler
735-HH3	735 No. 2 Reactor Heater(A)	BTU-HF111	Btu-Extract Stripper Reboiler

EMISSION SOURCES - EMISSIONS CAPS AND INDIVIDUAL EMISSION LIMITATIONS

SOURCES INCLUDED IN EMISSION CAPS FOR AMMONIA (3)

735-HH3	735 No. 2 Reactor Heater(B)	COK-HE	736 Coker East Heater H-101A
633-FUG	633 DHT Fugitives	COK-HW	736 Coker West Heater H-101B
TK921	Sour Water Tank	UDEX-H1	Heartcut Fractionator Heater
TK922	Sour Water Tank	SRU-FE	Sulfur Plant Fugitives
TK2163	Anhydrous Ammonia Tank	SWS-FE	Sour Water System Fugitives
637-SHF	637 SHU/Depent. Feed Heater	FU66HDS	636 Fugitives
637-SHR	637 SHU/Depent. Feed Reboiler	FU-SCR	SCR Equipment - Ammonia
638-RH	638 Gasoline HDS Reactor Heater	638-FR	638 Gasoline HDS Stripper Reboiler
639-FR	639 Diesel HDS Stripper Reboiler	639-RH	639 Diesel HDS Reactor Heater

SOURCES INCLUDED IN EMISSION CAPS FOR PM ONLY: (3)

COK-LL	Coke Loading Fugitives (4)	737-CL	Coke Loading Fugitives (4)
737-CP	Coke Pit		

EMISSION SOURCES - EMISSIONS CAPS AND INDIVIDUAL EMISSION LIMITATIONS

SOURCES NOT INCLUDED IN EMISSION CAPS - INDIVIDUAL EMISSION
LIMITATIONS

AIR CONTAMINANTS DATA

<u>Emission Rates*</u>	<u>Source</u>	<u>Air Contaminant</u>	<u>Emission</u>
<u>Point No. (1)</u>	<u>Name (2)</u>	<u>Name (3)</u>	<u>lb/hr</u>
	<u>TPY**</u>		
BTU-HF107	Btu-Reformat Stabilizer Reboiler	NO _x - Initial (6)	5.48
	23.99		
	(54.77 MMBtu/hr)	NO _x - Final (7)	2.00
		CO	4.50
		SO ₂	1.40
		PM - Initial (6)	0.41
		PM - Final (7)	0.70
		VOC	0.30
		Benzene	0.03
		Ammonia - Final (7)	0.22
	0.98		
ISOMII-F1	Isom II West Reactor Feed Heater	NO _x - Initial (6)	13.03
	57.08		
	(104.25 MMBtu/hr)	NO _x - Final (7)	3.80
		CO	8.60
		SO ₂	2.70
		PM - Initial (6)	0.78
		PM - Final (7)	1.33
		VOC	0.56
		Benzene	0.05
		Ammonia - Final (7)	0.42
	1.86		

EMISSION SOURCES - EMISSIONS CAPS AND INDIVIDUAL EMISSION LIMITATIONS

SOURCES NOT INCLUDED IN EMISSION CAPS - INDIVIDUAL EMISSION
LIMITATIONS

AIR CONTAMINANTS DATA

<u>Emission Rates*</u>	<u>Source</u>	<u>Air Contaminant</u>	<u>Emission</u>
<u>Point No. (1)</u>	<u>Name (2)</u>	<u>Name (3)</u>	<u>lb/hr</u>
	<u>TPY**</u>		
ISOMII-F2	Isom II Combination Splitter	NO _x - Initial (6)	7.76
	34.00		
	Heater (77.62 MMBtu/hr)	NO _x - Final (7)	2.80
		CO	6.40
		SO ₂	2.00
		PM - Initial (6)	0.58
		PM - Final (7)	0.99
		VOC	0.42
		Benzene	0.04
		Ammonia - Final (7)	0.32
	1.38		
ISOMII-F3	Isom II Xylene Rerun Tower	NO _x - Initial (6)	8.37
	36.66		
	Heater (83.70 MMBtu/hr)	NO _x - Final (7)	3.00
		CO	6.90
		SO ₂	2.20
		PM - Initial (6)	0.62
		PM - Final (7)	1.06
		VOC	0.45
		Benzene	0.04
		Ammonia - Final (7)	0.34
	1.49		
ISOMII-F5	Isom II East Reactor Feed Heater	NO _x - Initial (6)	5.30
	23.00		
	(75 MMBtu/hr)	NO _x - Final (7)	2.70
		CO	6.20
		SO ₂	1.90

EMISSION SOURCES - EMISSIONS CAPS AND INDIVIDUAL EMISSION LIMITATIONS

SOURCES NOT INCLUDED IN EMISSION CAPS - INDIVIDUAL EMISSION
LIMITATIONS

AIR CONTAMINANTS DATA

<u>Emission Rates*</u>	<u>Source</u>	<u>Air Contaminant</u>	<u>Emission</u>
<u>Point No. (1)</u>	<u>Name (2)</u>	<u>Name (3)</u>	<u>lb/hr</u>
	<u>TPY**</u>		
		PM - Initial (6)	0.56
		PM - Final (7)	0.96
		VOC	0.40
		Benzene	0.04
		Ammonia - Final (7)	0.31
	1.34		

EMISSION SOURCES - EMISSIONS CAPS AND INDIVIDUAL EMISSION LIMITATIONS

SOURCES NOT INCLUDED IN EMISSION CAPS - INDIVIDUAL EMISSION
LIMITATIONS

AIR CONTAMINANTS DATA			
Emission Rates*	Source	Air Contaminant	Emission
Point No. (1)	Name (2)	Name (3)	lb/hr
	TPY**		
ORTHOI-H1	Orthoxylene I Heater	NO _x - Initial (6)	9.62
	42.15		
	(96.23 MMBtu/hr)	NO _x - Final (7)	3.50 15.20
		CO	7.90 34.70
		SO ₂	2.50 10.80
		PM - Initial (6)	0.72 3.14
		PM - Final (7)	1.23 5.37
		VOC	0.52 2.27
		Benzene	0.05 0.21
		Ammonia - Final (7)	0.39
	1.72		
ORTHOII-H2	Orthoxylene II Heater	NO _x - Initial (6)	28.30
	123.96		
	(226.42 MMBtu/hr)	NO _x - Final (7)	8.20 35.70
		CO	18.60 81.70
		SO ₂	5.80 25.50
		PM - Initial (6)	1.69 7.39
		PM - Final (7)	2.89 12.65
		VOC	1.22 5.35
		Benzene	0.11 0.49
		Ammonia - Final (7)	0.92
	4.04		
ENG-AIR1 through ENG-AIR5	Totals for Backup Air Compressor Engines 1-5	NO _x	33.94 67.89
	8.51	CO (5)(8)	4.26
		SO ₂	4.72 9.43
		PM	0.56 1.11

EMISSION SOURCES - EMISSIONS CAPS AND INDIVIDUAL EMISSION LIMITATIONS

SOURCES NOT INCLUDED IN EMISSION CAPS - INDIVIDUAL EMISSION
LIMITATIONS

AIR CONTAMINANTS DATA				
Emission Rates*	Source	Air Contaminant	<u>Emission</u>	
Point No. (1)	Name (2)	Name (3)	lb/hr	
	TPY**			
		VOC	1.06	2.13
633-FUG	633 DHT Fugitives (4)	H ₂ S	0.01	0.03
TGU-ICN	Tail Gas Thermal Oxidizer	H ₂ S	0.06	-
TGU-ICN2	Tail Gas Thermal Oxidizer	H ₂ S	0.06	-
-	Total TGU-ICN plus TGU-ICN2			
	0.28			
LL19DOCKD	Barge Loading	H ₂ S	7.79	3.26
LL11TT	Tank Truck Loading	H ₂ S	3.19	2.50
TK921	Sour Water Tank	H ₂ S	0.04	0.11
TK922	Sour Water Tank	H ₂ S	0.04	0.11
TK870	Molten Sulfur Storage Tank	H ₂ S	<0.001	<0.001
TK871	Molten Sulfur Storage Tank	H ₂ S	<0.001	<0.001
VES202	Sulfuric Acid Storage Tank	H ₂ SO ₄	<0.001	<0.001
VES203	Sulfuric Acid Storage Tank	H ₂ SO ₄	<0.001	<0.001
SRU-FE	Sulfur Plant Fugitives (4)	H ₂ S	0.51	2.22
SRU-FE	Sulfur Plant Fugitives (4)	CO ₂	<0.01	<0.01
SRU-FE	Sulfur Plant Fugitives (4)	CS ₂	<0.01	<0.01
SWS-FE	Sour Water System Fugitives (4)	H ₂ S		<0.01
	<0.01			
1415-FE	Amine Treating Units	H ₂ S	0.23	0.99
	No. 14 and 15 Fugitives (4)			
AMINE-FE	New Amine Treating	H ₂ S	0.11	0.49
	Unit Fugitives (4)			
50TN-FE	50-Ton Amine Treating	H ₂ S	0.15	0.66
	Unit Fugitives (4)			
100TN-FE	100-Ton Amine Treating	H ₂ S	<0.01	<0.01

EMISSION SOURCES - EMISSIONS CAPS AND INDIVIDUAL EMISSION LIMITATIONS

SOURCES NOT INCLUDED IN EMISSION CAPS - INDIVIDUAL EMISSION
LIMITATIONS

AIR CONTAMINANTS DATA

<u>Emission Rates*</u>	<u>Source</u>	<u>Air Contaminant</u>	<u>Emission</u>	
<u>Point No. (1)</u>	<u>Name (2)</u>	<u>Name (3)</u>	<u>lb/hr</u>	
	<u>TPY**</u>			
	Unit Fugitives (4)			
732-COB	FCCU CO Boiler	Antimony	0.02	0.10
	Wet Gas Scrubber			
737-FUG	Fugitives (4)	H ₂ S	0.02	0.08
FU66HDS	636 Fugitives (4)	H ₂ S	0.01	0.05
537-FUG	Fugitives (4)	H ₂ S	<0.01	0.01
TK599A	Tank 599A (9)	H ₂ S	0.37	1.61
TK885	Tank 885 (9)	H ₂ S	0.37	1.58
TK886	Tank 886 (9)	H ₂ S	0.37	1.58
TK887	Tank 887 (9)	H ₂ S	0.37	1.58
TK888	Tank 888 (9)	H ₂ S	0.37	1.58
FE	Crude Oil Fugitives (9)	H ₂ S	0.02	0.09
FL-3-COK	736 Coker Flare	H ₂ S	<0.01	<0.01
P-FL-1	No. 1 Plant Flare	SO ₃	0.04	0.02
P-FL-1	No. 1 Plant Flare	H ₂ S	3.95	2.0
FL38	Merox Flare	H ₂ S	<0.01	<0.01
P-FL-2	No. 2 Plant Flare	H ₂ S	1.99	2.17
P-FL-3	No. 3 Plant Flare	H ₂ S	0.03	0.02
P-FL-4	No. 4 Plant Flare	H ₂ S	<0.01	<0.01
HOUST-FL	Houston Street Flare	H ₂ S	<0.01	<0.01

EMISSION SOURCES - EMISSIONS CAPS AND INDIVIDUAL EMISSION LIMITATIONS

- (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) NO_x - nitrogen oxide
CO - carbon monoxide
SO₂ - sulfur dioxide
PM - particulate matter, suspended in the atmosphere, including PM₁₀
PM₁₀ - particulate matter equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no particulate matter greater than 10 microns is emitted.
VOC - volatile organic compounds as defined in Title 30 Texas Administrative § 101.1
H₂S - hydrogen sulfide
H₂SO₄ - sulfuric acid
COS - carbon sulfide
CS₂ - carbon disulfide
SO₃ - sulfur trioxide
- (4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.
- (5) These facilities shall be shut down according to the Shutdown Facilities section of the special conditions.
- (6) Initial - prior to installation of Selective Catalytic Reduction (SCR)
- (7) Final - after installation of SCR
- (8) Total operating time for all five compressor engines shall not exceed 20,000 hours per rolling 12-month period.
- 9) H₂S emissions from crude oil are an estimate only and should not be

EMISSION SOURCES - EMISSIONS CAPS AND INDIVIDUAL EMISSION LIMITATIONS considered as a maximum allowable emission rate. However, at no time shall the emissions cause a nuisance condition.

- * Emission rates are based on and the facilities are limited by the following maximum operating schedule:

8,760 Hrs/year

- ** Compliance with annual emission caps and annual individual emission limitations is based on a rolling 12-month period. Compliance with emission caps during calendar years in which the cap changes shall be determined accordingly.

Dated December 6, 2002