

# Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 5631 and N054

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	
			lbs/hour	TPY (4)
27-14	IFR Tank 27-14 (7)	VOC	13.49	3.14
		BZ	3.66	0.90
27-15	IFR Tank 27-15 (7)	VOC	13.49	3.14
		BZ	3.66	0.90
80-4	IFR Tank 80-4 (7)	VOC	8.16	6.12
		BZ	2.43	1.71
80-7	IFR Tank 80-7 (7)	VOC	9.02	5.87
		BZ	2.63	1.70
		H <sub>2</sub> S	0.03	0.07
80-10	IFR Tank 80-10 (7)	VOC	8.31	6.20
		BZ	2.47	1.73
		H <sub>2</sub> S	0.03	0.08
80-12	IFR Tank 80-12 (7)	VOC	8.24	4.07
		BZ	2.34	1.29
		H <sub>2</sub> S	0.02	0.05
80-43	IFR Tank 80-43 (7)	VOC	8.24	4.02
		BZ	2.33	1.28
80-44	IFR Tank 80-44 (7)	VOC	8.24	4.02
		BZ	2.33	1.28
80-45	IFR Tank 80-45 (7)	VOC	8.24	4.02
		BZ	2.33	1.28
80-46	IFR Tank 80-46 (7)	VOC	8.24	4.02
		BZ	2.33	1.28
100-47	IFR Tank 100-47 (7)	VOC	7.58	5.76
		BZ	2.25	1.70

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100-48	IFR Tank 100-48 (7)	VOC	7.58	5.76
		BZ	2.25	1.70
100-49	IFR Tank 100-49 (7)	VOC	7.58	5.76
		BZ	2.25	1.70
100-54	IFR Tank 100-54 (7)	VOC	7.58	5.87
		BZ	2.26	1.73
		H <sub>2</sub> S	0.01	0.05
100-55	IFR Tank 100-55 (7)	VOC	7.58	5.91
		BZ	2.26	1.74
		H <sub>2</sub> S	0.03	0.07
150-9	IFR Tank 150-9 (7)	VOC	6.49	10.58
		BZ	2.22	2.82
		H <sub>2</sub> S	0.01	0.11
150-40	IFR Tank 150-40 (7)	VOC	6.30	6.27
		BZ	1.95	1.94
150-41	IFR Tank 150-41 (7)	VOC	6.30	6.27
		BZ	1.95	1.94
150-42	IFR Tank 150-42 (7)	VOC	6.30	6.27
		BZ	1.95	1.94
200-8	IFR Tank 200-8 (7)	VOC	5.70	12.65
		BZ	2.13	3.35
		H <sub>2</sub> S	0.06	0.16
200-11	IFR Tank 200-11 (7)	VOC	5.69	12.60
		BZ	2.12	3.33
		H <sub>2</sub> S	0.06	0.16
200-51	IFR Tank 200-51 (7)	VOC	5.52	7.19
		BZ	1.79	2.22
		H <sub>2</sub> S	0.03	0.09
200-53	IFR Tank 200-53 (7)	VOC	5.52	7.19
		BZ	1.79	2.22
		H <sub>2</sub> S	0.03	0.09
250-50	IFR Tank 250-50 (7)	VOC	5.23	10.13
		BZ	1.86	2.94
		H <sub>2</sub> S	0.05	0.12

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250-52	IFR Tank 250-52 (7)	VOC	5.23	10.13
		BZ	1.86	2.94
		H <sub>2</sub> S	0.05	0.12
260-5	IFR Tank 260-5 (7)	VOC	5.20	9.38
		BZ	1.81	2.82
		H <sub>2</sub> S	0.04	0.11
260-6	IFR Tank 260-6 (7)	VOC	5.21	10.35
		BZ	1.87	3.02
		H <sub>2</sub> S	0.05	0.13
300-1	IFR Tank 300-1 (7)	VOC	4.74	11.37
		BZ	1.80	3.26
		H <sub>2</sub> S	0.05	0.14
300-2	IFR Tank 300-2 (7)	VOC	4.88	10.76
		BZ	1.80	3.17
		H <sub>2</sub> S	0.05	0.13
300-3	IFR Tank 300-3 (7)	VOC	4.96	13.22
		BZ	1.96	3.66
		H <sub>2</sub> S	0.06	0.16
300-4	IFR 300-4 Tank (7)	VOC	4.94	13.05
		BZ	1.94	3.63
		H <sub>2</sub> S	0.06	0.16
300-21	IFR Tank 300-21 (7)	VOC	6.32	18.56
		BZ	2.25	4.73
		H <sub>2</sub> S	0.09	0.23
300-22	IFR Tank 300-22 (7)	VOC	4.74	11.10
		BZ	1.79	3.20
		H <sub>2</sub> S	0.05	0.14
TH-501	IFR Tank TH-501 (7)	VOC	10.34	2.75
		BZ	2.83	0.71
TH-502	IFR Tank TH-502 (7)	VOC	10.34	2.75
		BZ	2.83	0.71
IFR Hourly and Annual Tank Compliance Caps		VOC	397.64 (8)	177.60 (10)
		BZ	34.53 (9)	8.64 (11)

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MSS Operations				
MSS-1	IFR Hourly and Annual Maintenance, Start-up, Shutdown (MSS) Compliance Caps	VOC	(12)	137.00 (14)
		BZ	59.82 (13)	6.91 (15)
		H <sub>2</sub> S (19)	127.97 (20)	4.68 (21)
PORTVC	Portable Vapor Combustors Thermal Oxidizer	VOC	180.74	(14)
		BZ	29.30	(15)
		NO <sub>x</sub>	1.80	4.99
		CO	23.16	9.96
		PM	0.68	0.93 (18)
		PM <sub>10</sub>	0.68	0.93 (18)
		PM <sub>2.5</sub>	0.68	0.93 (18)
		SO <sub>2</sub>	46.65	15.00 (18)
		H <sub>2</sub> S	0.12	(19)
Domed External Floating Roof (DEFR) Tanks				
390-6001	DEFR Tank 390-6001 (17)	VOC	7.88	---
		BZ	0.09	---
		H <sub>2</sub> S	0.32	---
390-6002	DEFR Tank 390-6002 (17)	VOC	7.88	---
		BZ	0.09	---
		H <sub>2</sub> S	0.32	---
390-6003	DEFR Tank 390-6003 (17)	VOC	7.88	---
		BZ	0.09	---
		H <sub>2</sub> S	0.32	---
390-6004	DEFR Tank 390-6004 (17)	VOC	7.88	---
		BZ	0.09	---
		H <sub>2</sub> S	0.32	---
390-6001, 390-6002, 390-6003, 390-6004	DEFR Annual CAPs (17)	VOC	---	18.97
		BZ	---	0.19
		H <sub>2</sub> S	---	0.31

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VCT-1 VCT-2 VCT-3	Vapor Combustor (VC) for product change of service roof landings and MSS Activities of DEFR Tanks (17)	VOC	3.13	0.96
		BZ	0.04	<0.01
		NO <sub>x</sub>	6.88	1.73
		CO	12.51	3.85
		PM	0.47	0.14
		PM <sub>10</sub>	0.47	0.14
		PM <sub>2.5</sub>	0.47	0.14
		H <sub>2</sub> S	0.08	<0.01
		SO <sub>2</sub>	152.51	3.20
TKS-MSS	DEFR Tank MSS – Forced Ventilation, Sludge Removal/Vacuum, Truck Venting (17)	VOC	8.15	0.54
		BZ	0.10	<0.01
		H <sub>2</sub> S	0.28	<0.01
Fugitives				
FUG 100	100 Manifold Fugitives (5)	VOC	1.19	5.15
		BZ	0.17	0.71
		H <sub>2</sub> S	0.05	0.18
FUG 300	300 Manifold Fugitives (5)	VOC	0.22	0.90
		BZ	0.18	0.72
		H <sub>2</sub> S	0.01	0.03
FUG 500	500 Manifold Fugitives (5)	VOC	0.25	1.08
		BZ	0.17	0.71
FUG 700	700 Manifold Fugitives (5) (17)	VOC	0.44	1.90
		BZ	<0.01	0.02
		H <sub>2</sub> S	0.02	0.03
FUG C	C Manifold Fugitives (5)	VOC	0.20	0.84
		BZ	0.17	0.71
FUG D	D Manifold Fugitives (5)	VOC	0.77	3.37
		BZ	0.17	0.71
Annual Fugitives Compliance Caps		VOC	-	11.34
		BZ	-	1.00
Loading Operations and Fugitives				
TR-1	Truck Loading Rack 1	VOC	0.97	0.69
		BZ	0.25	0.21

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		H <sub>2</sub> S	0.04	0.02
OVS-1	Oil/Water Separator1	VOC	2.50	3.80
MVC-2	Marine Vapor Combustor (MVC) Inerted Ship and Barge Loading (17)	VOC	2.26	---
		BZ	0.03	---
		NO <sub>x</sub>	8.99	---
		CO	16.35	---
		PM	0.52	---
		PM <sub>10</sub>	0.52	---
		PM <sub>2.5</sub>	0.52	---
		H <sub>2</sub> S	0.05	---
		SO <sub>2</sub>	101.33	---
MVC-3A	MVC Inerted Ship and Barge Loading (17)	VOC	2.26	---
		BZ	0.03	---
		NO <sub>x</sub>	8.99	---
		CO	16.35	---
		PM	0.52	---
		PM <sub>10</sub>	0.52	---
		PM <sub>2.5</sub>	0.52	---
		H <sub>2</sub> S	0.05	---
		SO <sub>2</sub>	101.33	---
MVC-3B	MVC Inerted Ship and Barge Loading (17)	VOC	2.26	---
		BZ	0.03	---
		NO <sub>x</sub>	8.99	---
		CO	16.35	---
		PM	0.52	---
		PM <sub>10</sub>	0.52	---
		PM <sub>2.5</sub>	0.52	---
		H <sub>2</sub> S	0.05	---
		SO <sub>2</sub>	101.33	---
MVC-4A	MVC Inerted Ship and Barge Loading (17)	VOC	2.28	---
		BZ	0.03	---
		NO <sub>x</sub>	8.12	---
		CO	14.76	---
		PM	0.55	---

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		PM <sub>10</sub>	0.55	---
		PM <sub>2.5</sub>	0.55	---
		H <sub>2</sub> S	0.05	---
		SO <sub>2</sub>	101.33	---
MVC-4B	MVC Inerted Ship and Barge Loading (17)	VOC	2.28	---
		BZ	0.03	---
		NO <sub>x</sub>	8.12	---
		CO	14.76	---
		PM	0.55	---
		PM <sub>10</sub>	0.55	---
		PM <sub>2.5</sub>	0.55	---
		H <sub>2</sub> S	0.05	---
		SO <sub>2</sub>	101.33	---
MVC-2, MVC-3A, MVC-3B, MVC-4A, & MVC-4B	MVCs Inerted Ship and Barge Loading hourly and annual CAPs (17)	VOC	10.21	12.27
		BZ	0.13	0.11
		NO <sub>x</sub>	40.17	30.95
		CO	73.04	68.77
		PM	2.48	2.56
		PM <sub>10</sub>	2.48	2.56
		PM <sub>2.5</sub>	2.48	2.56
		H <sub>2</sub> S	0.05	0.02
		SO <sub>2</sub>	101.33	37.63
SD-6, SD-7	Ship Dock 6, Ship Dock 7	VOC	0.08	0.03
ATM M-LOAD	Uncontrolled Marine loading of products with VP < 0.5 psia	VOC	13.49	4.88
RCR-1	Railcar Rack 1	VOC	1.01	4.41
		H <sub>2</sub> S	0.05	0.15
TR-2	Truck Rack 2	VOC	0.08	0.37
		H <sub>2</sub> S	<0.01	0.01
FUG 200	200 Manifold Fugitives (5)	VOC	0.80	3.41
		BZ	0.08	0.28
		H <sub>2</sub> S	0.04	0.12
FUG 400	400 Manifold Fugitives (5)	VOC	0.99	4.31
		BZ	0.07	0.26

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		H <sub>2</sub> S	0.05	0.15
KILGORE	Kilgore Equipment Fugitives (5)	VOC	0.02	0.06
		BZ	0.01	0.01
		H <sub>2</sub> S	<0.01	<0.01
PR FUG	PR FUG Equipment Fugitive Area (5)	VOC	0.15	0.62
		BZ	0.02	0.06
		H <sub>2</sub> S	0.01	0.02
FUG SD-1	Ship Dock 1 Fugitive Area (5)	VOC	0.11	0.47
		BZ	0.01	0.05
		H <sub>2</sub> S	0.01	0.02
FUG SD-4/5	Ship Dock 4/5 Fugitive Area (5)	VOC	0.11	0.47
		BZ	0.01	0.05
		H <sub>2</sub> S	0.01	0.02
FUG SD-6/7	Ship Dock 6/7 Fugitive Area (5)	VOC	0.11	0.44
		BZ	0.01	0.03
		H <sub>2</sub> S	0.01	0.02
FUG SD-8	Ship Dock 8 Fugitive Area (5)	VOC	0.11	0.44
		BZ	0.01	0.04
		H <sub>2</sub> S	0.01	0.02
FUG BD-D	Barge Dock D Fugitive Area (5)	VOC	0.11	0.47
		BZ	0.01	0.05
		H <sub>2</sub> S	0.01	0.02
FUG RCR-1	Railcar Rack Equipment Fugitives (5)	VOC	0.07	0.26
		H <sub>2</sub> S	<0.01	0.01
FUG TR-1/2	Truck Rack Equipment Fugitives (5)	VOC	0.06	0.21
		BZ	0.02	0.02
		H <sub>2</sub> S	<0.01	<0.01
OWS-2	Oil/Water Separator 2	VOC	5.00	1.90
FUG LOAD	Inerted Ship and Barge Loading Fugitives (17)	VOC	13.13	11.33
		BZ	0.18	0.11
		H <sub>2</sub> S	0.53	0.18
Boiler				
S-2	Boiler S-2	VOC	0.11	0.11
		NOx	0.16	0.16
		CO	0.35	0.35



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		PM	0.03	0.03
		SO2	0.06	0.06
Individual Tanks				
80-62	IFR Tank 80-62	VOC	8.29	2.11
		BZ	0.42	0.09
		H <sub>2</sub> S	0.01	0.02
80-64	IFR Tank 80-64	VOC	8.29	2.11
		BZ	0.42	0.09
		H <sub>2</sub> S	0.01	0.02
100-60	IFR Tank 100-60	VOC	7.65	3.01
		BZ	0.38	0.13
		H <sub>2</sub> S	0.02	0.04
100-61	IFR Tank 100-61	VOC	7.65	3.01
		BZ	0.38	0.13
		H <sub>2</sub> S	0.02	0.04
100-63	IFR Tank 100-63	VOC	7.65	3.01
		BZ	0.38	0.13
		H <sub>2</sub> S	0.02	0.04
175-59	IFR Tank 175-59	VOC	6.09	2.26
		BZ	0.31	0.09
		H <sub>2</sub> S	0.02	0.03
200-20	IFR Tank 200-20	VOC	5.66	4.37
		BZ	0.28	0.19
		H <sub>2</sub> S	0.02	0.05
200-56	IFR Tank 200-56 (6)	VOC	2.01	2.67
		H <sub>2</sub> S	0.09	0.03
200-57	IFR Tank 200-57 (6)	VOC	2.01	2.67
		H <sub>2</sub> S	0.09	0.03
200-58	IFR Tank 200-58 (6)	VOC	2.01	2.67
		H <sub>2</sub> S	0.09	0.03
390-23	IFR Tank 390-23 (6)	VOC	4.31	3.91
		H <sub>2</sub> S	0.01	0.04
390-24	IFR Tank 390-24	VOC	4.31	3.91
		BZ	0.29	0.65
		H <sub>2</sub> S	0.02	0.04

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390-25	IFR Tank 390-25	VOC	4.74	6.00
		BZ	0.23	0.26
		H <sub>2</sub> S	0.03	0.08
390-26	IFR Tank 390-26	VOC	4.74	6.00
		BZ	0.23	0.26
		H <sub>2</sub> S	0.03	0.08
390-27	IFR Tank 390-27	VOC	4.74	6.00
		BZ	0.23	0.26
		H <sub>2</sub> S	0.03	0.08
390-30	IFR Tank 390-30	VOC	4.74	4.70
		BZ	0.23	0.13
		H <sub>2</sub> S	0.03	0.06
390-31	IFR Tank 390-31	VOC	4.74	4.70
		BZ	0.23	0.13
		H <sub>2</sub> S	0.03	0.06
390-32	IFR 390-32	VOC	4.74	4.70
		BZ	0.23	0.13
		H <sub>2</sub> S	0.03	0.06
390-33	IFR Tank 390-33	VOC	4.74	4.70
		BZ	0.23	0.13
		H <sub>2</sub> S	0.03	0.06
390-34	IFR Tank 390-34	VOC	4.74	4.70
		BZ	0.23	0.13
		H <sub>2</sub> S	0.03	0.06

(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                                      |
| BZ                | - benzene  |
| NO <sub>x</sub>   | - total oxides of nitrogen   |
| SO <sub>2</sub>   | - sulfur dioxide   |
| PM                | - total particulate matter, suspended in the atmosphere, including PM <sub>10</sub> and PM <sub>2.5</sub> , as represented |
| PM <sub>10</sub>  | - total particulate matter equal to or less than 10 microns in diameter, including PM <sub>2.5</sub> , as represented      |
| PM <sub>2.5</sub> | - particulate matter equal to or less than 2.5 microns in diameter   |
| CO                | - carbon monoxide  |
| H <sub>2</sub> S  | - hydrogen sulfide   |

(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.  
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- (5) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.
- (6) Emission rates were calculated based on the permit by rule requirements at the time of submittal to Texas Commission on Environmental Quality (TCEQ); i.e., only VOC emissions are quantified. Estimated rates of benzene emissions from these sources would be based on the 'Emissions of Crude Oil and Refinery Petroleum Fractions Containing Less Than 10 percent Benzene,' defined in Table 478 of 30 TAC § 106.478.
- (7) The Hourly and Annual Tank Caps apply to the total emissions from the combined operations of these tanks.
- (8) Hourly Tank VOC Cap [VOC Cap (lb/hr)] - Applicable only to the hourly VOC emissions from routine operations of the permitted sources indicated in (7). This cap includes the BZ cap (lb/hr) defined in (9) but does not authorize emissions of this constituent greater than its specified cap.
- (9) Hourly Tank Benzene Cap [BZ Cap (lb/hr)] - A subcap of the VOC Cap (lb/hr). Applicable only to the hourly benzene emissions from the routine operations of the permitted sources indicated in (7).
- (10) Annual Tank VOC Cap [VOC Cap (TPY)] - Applicable only to the annual VOC emissions from (a) the routine operations of the permitted sources indicated in (7) and (b), the MSS operations authorized by the MSS VOC Cap (TPY). The VOC Cap (TPY) includes the BZ Cap (TPY) defined in (11) but does not authorize emissions of this constituent greater than its specified cap.
- (11) Annual Tank Benzene Cap [BZ cap (TPY)] - A subcap of the VOC Cap (TPY). Applicable only to the annual benzene emissions from (a) the routine operations of the permitted sources indicated by (7), and (b) the MSS operations included in the MSS BZ Cap (TPY).
- (12) Hourly MSS VOC Cap [MSS VOC Cap (lb/hr)] - Separate from the VOC Cap (lb/hr), includes the MSS BZ lb/hr cap defined in (13) but does not authorize emissions of this constituent greater than its specified maximum value. Applicable only to the total VOC emissions from (a) those activities listed in Attachments A, B, and C of the permit special conditions, (b) the standing idle, re-filling, and de-gassing periods of the roof landing operations conducted for any combination of IFR vessels authorized by this permit. This cap's maximum value is compound specific, and determined by the equation in Special Condition No. 28 with use of 0.80 as the value of the specified factor (note: the value of the factor in Special Condition No. 28, i.e., 0.75, is applicable only to re-fill emissions).
- (13) Hourly MSS BZ Cap [MSS BZ Cap (lb/hr)] - A subcap of the MSS VOC Cap (lb/hr), separate from the BZ Cap (lb/hr) defined in (9). Applicable only to the total benzene emissions from (a) those activities listed in Attachments A, B, and C of the permit special conditions, (b) the standing idle, re-filling, and de-gassing periods of the roof landing operations conducted for any combination of IFR vessels authorized by this permit. This cap's maximum value (59.82 lb/hr) is based on the worst-case emission scenario for benzene.
- (14) Annual MSS VOC Cap [MSS VOC Cap (TPY)] - A subcap of the VOC Cap (TPY), applicable only to the annual VOC emissions from the authorized MSS operations, including (a) those activities listed in Attachments A, B, and C of the permit special conditions, (b) those associated with tank roof landings of the permitted sources, and (c) the VCs used to control these emissions.
- (15) Annual MSS BZ Cap [MSS BZ Cap (TPY)] - A subcap (not contained in the MSS VOC Cap (TPY)) of the BZ cap (TPY) defined in (11). Applicable only to the annual benzene emissions from (a) those activities listed in Attachments A, B, and C of the permit special conditions, (b) the standing idle, re-filling and de-gassing periods of the roof landing operations conducted for any combination of IFR vessels authorized by this permit, and (c) the VCs used to control these emissions.
- (16) As referenced in Special Condition Nos. 24 and 27, the following are existing, unmodified IFR storage tanks per this permit's MAERT dated February 10, 2009: 27-14, 27-15, 80-4, 80-7, 80-10, 80-12, 80-43, 80-44, 80-45, 80-46, 100-47, 100-48, 100-49, 100-54, 100-55, 150-9, 150-40, 150-41, 150-42, 200-8, 200-11, 200-51, 200-53, 250-50, 250-52,

Emission Sources - Maximum Allowable Emission Rates

260-5, 260-6, 300-1, 300-2, 300-3, 300-4, 300-21, 300-22, C80-4, TH-501, and TH-502 from the Overall VOC Emission Cap. Also included are Tanks 80-62, 80-64, 100-60, 100-61, 100-63, 175-59, 200-20, 200-56, 200-57, 200-58, 390-23, 390-24, 390-25, 390-26, 390-27, 390-30, 390-31, 390-32, 390-33, and 390-34.

- (17) Benzene emissions are also included in the VOC rates for this EPN.
- (18) Annual emissions of SO<sub>2</sub>, PM, PM<sub>10</sub>, and PM<sub>2.5</sub> are based on multiple PORTVCs operating at a combined total of 7,800 hrs/yr
- (19) Annual H<sub>2</sub>S emissions from EPN PORTVC are included under EPN MSS-1
- (20) Hourly MSS H<sub>2</sub>S Cap [MSS H<sub>2</sub>S Cap (lb/hr)] - applicable only to the total H<sub>2</sub>S emissions in the current permit from activities listed in Attachments A, B, and C of the permit special conditions. This cap's maximum value for crude oil/condensate is based on the maximum VOC emissions determined by the equation in Special Condition No. 28 with use of 0.80 as the value of the specified factor (note: the value of the factor in Special Condition No. 28, i.e., 0.75, is applicable only to re-fill emissions). Also, refer to MAERT footnote (12).
- (21) Annual MSS H<sub>2</sub>S Cap [MSS H<sub>2</sub>S Cap (TPY)] - applicable only to the annual H<sub>2</sub>S emissions from the authorized MSS operations in the current permit, including activities listed in Attachments A, B, and C of the permit special conditions.

Dated: August 26, 2019