National Aeronautics and
Space Administration

Goddard Space Flight Center
Greenbelt, Maryland
20771

Reply to Attn of: 250

March 30, 2020

Mr. Daniel Davis
Compliance Program
Maryland Department of the Environment
Air and Radiation Administration
1800 Washington Boulevard, Suite 715
Baltimore, MD 21230-1720

Dear Mr. Davis:

Enclosed please find a copy of the 2019 Annual Emission Certification Report for NASA's Goddard Space Flight Center (GSFC). The report contains the total amount of emissions of each criteria pollutant, toxic air pollutant (TAP), and greenhouse gas (GHG), and an explanation of the methods and assumptions used to quantify emissions. Also contained in the report are the amounts, types, and analyses of fuels used; identification and description of air pollution control equipment and compliance monitoring equipment. This report is submitted in compliance with Section IV of the Part 70 Operating Permit Number 24-033-00675.

If you have any questions or comments concerning this matter, please call Ms. Kathleen Moxley at (301) 286-0717.

Sincerely,

Kimberly Finch, P.E.
Chief, Medical and Environmental Management Division

Enclosure

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Goddard Space Flight Center

Medical and Environmental Management Division, Code 250
Greenbelt, Maryland 20771

2019 Emissions Certification Report

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Enclosure

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PREFACE

DDC 4C developed this NASA's Goddard Space Flight Center (GSFC) 2019 Emissions Certification Report for the GSFC's Medical and Environmental Management Division, Code 250, under Contract Number NNG16AZ05C.

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1. Discussion of the Certification and Emissions Calculations

This 2019 Emissions Certification Report for the National Aeronautics and Space Administration (NASA)'s Goddard Space Flight Center (GSFC) is prepared in compliance with policies of the Maryland Department of the Environment (MDE) and satisfies the requirements of COMAR 26.11.01.05-1 and COMAR 26.11.02.19D requiring GSFC to certify the actual emissions of regulated air pollutants from permitted and registered air pollution sources. The required certification forms are included in Section 6 of this report.

MDE requires that emissions of criteria pollutants, toxic air pollutants (TAPs), and greenhouse gases (GHGs) be quantified. The Environmental Program Information Management System (EPIMS) was used to determine these emissions. EPIMS contains several modules including the Air Program Information Management System (APIMS)[1], which is used to calculate emissions and develop emissions inventories. The Hazardous Materials Management System (HMMS) chemical usage data were used in EPIMS to calculate volatile organic compound (VOC), particulate matter (PM) and hazardous air pollutant (HAP)/TAP emissions from GSFC's chemical processes. In accordance with instructions from MDE, annual emissions estimates for each emission unit are rounded to the nearest ton and daily emissions are rounded to the nearest pound.

MDE has requested that Title V facilities report emissions of HAPs from all registered equipment including fuel burning sources. GSFC is exempt from emissions reporting required by the Industrial Boiler Maximum Achievable Control Technology (MACT) Rule because this rule does not establish emissions limits for gas boilers (including boilers burning liquid fuel during periods of gas curtailment and periodic testing). In addition, GSFC is classified as an institutional facility and, therefore, is exempt from the requirements of 40CFR63 Section 63.6585(f)(3) related to generators. Therefore, GSFC is not required to submit HAP emissions from its registered fuel burning units.

The Ozone Season is from May 1st through September 30th. There were 153 actual operating days during the Ozone Season in 2019.

GSFC is required to confirm compliance with Maryland's Air Toxic Regulations. GSFC continues to comply with Maryland's Air Toxic Regulations (COMAR 26.11.15).

[1] APIMS Air Emissions Inventory Procedure: Instructional Guide for Producing a Complete and Accurate Air Force Air Emissions Inventory, Air Force Civil Engineering Center, January 2018.

2. Emissions Calculation Methodologies and Models

The emissions were calculated using the EPIMS software. EPIMS is a government off-the-shelf (GOTS) product developed and maintained by Northrop Grumman since its inception in 1996 and managed by the Air Force Engineering Center (AFCEC). It is used by all US Air Force installations and some Veteran Administration, Department of Energy, Army, Marine, and NASA installations. It is a Java web enterprise application with an Oracle database and has a Federal Risk and Authorization Management Program (FedRAMP) security accreditation.

EPIMS contains several modules including the APIMS module, the Storage Tank Accounting and Reporting (STAR) module, a refrigerant compliance module, an internal combustion engine compliance module, a water module, and a compliance assessment module.

APIMS is a complex air emissions modeling tool with 55 source categories and more than 15,000 emission factors. It performs stationary, mobile, and GHG actual and potential-to-emit emissions inventories. It has the capability to calculate monthly and hourly rolling totals. The tank attributes from STAR are used by APIMS air emission modeling to calculate tank emissions. The emission factors and emissions calculation methodologies are updated and maintained by AFCEC[2].

At GSFC, APIMS is used to demonstrate compliance for the air quality program. It collects, manages and calculates monthly operation data required to demonstrate compliance with the Center's Title V Operating Permit and calculates emissions of regulated pollutants from all permitted sources. Specifically, it provides an annual air emissions inventory that is used in the Annual Emissions Certification Report.

All chemical usage data used in the calculation of VOC, PM and HAP/TAP emissions from processes such as surface coating, electro-chemical plating, semiconductor development and fabrication are from HMMS. HMMS provides a reliable system of tracking storage and usage of hazardous materials through the duration of a product's life cycle. It calculates the usage and storage of all chemicals at the constituent level. HMMS is also a repository of the safety data sheets (SDSs) of these chemicals.

The use of HMMS data introduces a high level of conservatism in the emissions calculation process because for a given location, HMMS reports usage data from other operations in addition to those of the permitted sources of interest. It also assumes that all materials are completely consumed.

The records substantiating the numbers used in the calculations including, but not limited to, production logs, purchase orders, fuel usage records, fuel bills, HMMS chemical usage data and SDSs are maintained onsite and are available to MDE upon request.

[2] Air Emissions Guide for Air Force Stationary Sources: Methods for Estimating Emissions of Air Pollutants for Stationary/Mobile/Transitory Sources at United States Air Force Installations, Air Force Civil Engineering Center, August 2018.

3. Criteria Pollutant Emissions and Title V Reporting Requirements

3.1 Building 24 Boilers

3.1.1 Building 24 Boilers Descriptions

EU24-1, EU24-2 and EU24-4: Three Nebraska natural gas/landfill gas/No.2 fuel oil fired boilers each rated at 49.5 MMBtu/hr and each equipped with low NO_x burners. Landfill gas and natural gas are the primary fuel sources; No.2 fuel oil is only burned during periods of curtailment. MDE Registration Nos. 033-0675-5-0808, 5-0809, and 5-0811.

EU24-3 and EU24-5: Two Nebraska natural gas/No.2 fuel oil fired boilers each rated at 49.5 MMBtu/hr and each equipped with low NO_x burners. Natural gas is the primary fuel source; No.2 fuel oil is only burned during periods of curtailment. MDE Registration Nos. 033-0675-5-0810 and 5-0812.

3.1.2 Building 24 Boilers Fuel Use

The fuel usage per boiler is calculated using data from the boiler computation sheets of the Central Heating/Refrigeration plant monthly reports.

Boiler Registration No.	Natural Gas (ft^3)	Landfill Gas (ft^3)	Fuel Oil (gals)
5-0808 (Boiler 1)	39,507,188	182,882,000	442
5-0809 (Boiler 2)	64,672,305	163,552,000	2,789
5-0810 (Boiler 3)	33,352,931	0	3,930
5-0811 (Boiler 4)	77,197,930	166,709,000	561
5-0812 (Boiler 5)	24,139,641	0	390
Annual Total	**238,869,995**	**513,143,000**	**8,112**
Ozone Season Total	**65,339,996**	**181,932,000**	**7,594**
Note: Ozone Season Total constitutes fuel use between the months of May and September.			

3.1.3 Building 24 Boilers Emissions

The criteria pollutant emissions from the building 24 boilers EU24-1, EU24-2, EU24-3, EU24-4, and EU24-5 (MDE Registration No. 5-0808, 5-0809, 5-0810, 5-0811, and 5-0812) were calculated using EPIMS. All actual emissions of criteria pollutants from the GSFC building 24 boilers are located on Forms 2 and 3 in Section 6 of this report.

3.1.4 Building 24 Boilers Title V Reporting Requirements

Per Section 2.5.D of the GSFC's Title V Operating Permit, the permittee shall report as part of the annual emissions certification the following:

1. The calculated total rolling 12-month heat input to the five boilers.
2. The average NO_x emission rate from all 5 boilers on calendar monthly basis.
3. The average SO_x emissions from all 5 boilers on a 12-month rolling basis.

3.1.4.1 Building 24 Boilers Monthly Heat Input and Rolling Sum

Date	Natural Gas		Landfill Gas		Fuel Oil		Monthly Heat Input (MMBtu)	Rolling 12-Month Sum (MMBtu)
	Volume (ft^3)	Heat (MMBtu)	Volume (ft^3)	Heat (MMBtu)	Volume (gals)	Heat (MMBtu)		
Jan-19	34,229,996	35,086	50,849,000	25,425	0	0	60,510	498,916
Feb-19	27,710,005	28,403	45,304,000	22,652	518	73	51,127	503,533
Mar-19	31,489,999	32,277	40,080,000	20,040	0	0	52,317	503,683
Apr-19	17,190,002	17,620	45,827,000	22,914	0	0	40,533	499,515
May-19	11,420,000	11,706	47,395,000	23,698	0	0	35,403	501,131
Jun-19	9,589,997	9,830	43,597,000	21,799	0	0	31,628	501,239
Jul-19	14,850,000	15,221	30,676,000	15,338	5,727	802	31,361	503,235
Aug-19	15,730,000	16,123	29,405,000	14,703	1,425	200	31,025	506,440
Sep-19	13,750,000	14,094	30,859,000	15,430	442	62	29,585	507,405
Oct-19	16,580,000	16,994	36,887,000	18,444	0	0	35,438	505,475
Nov-19	19,980,000	20,480	55,372,000	27,686	0	0	48,166	503,781
Dec-19	26,350,000	27,009	56,892,000	28,446	0	0	55,455	502,549
Notes: Natural gas heat value is 1,025 Btu/ft^3, Landfill gas heat value is 500 Btu/ft^3, No. 2 fuel oil heat value is 140,000 Btu/gal.								

3.1.4.2 Building 24 Boilers Average Monthly NO_x Emission Rate and SO_x Rolling Sum Emissions

Date	NO_x Emission Rate (lbs/MMBtu)	SO_x Rolling Sum (tons)
Jan-19	0.05	0.27
Feb-19	0.05	0.27
Mar-19	0.05	0.27
Apr-19	0.05	0.27
May-19	0.05	0.27
Jun-19	0.05	0.27
Jul-19	0.05	0.39
Aug-19	0.05	0.42
Sep-19	0.05	0.43
Oct-19	0.05	0.43
Nov-19	0.05	0.40
Dec-19	0.05	0.40

3.2 Emergency Generators

2.2.1 Emergency Generators Descriptions

EU7-2: One emergency generator rated at 500 kW and firing No.2 fuel oil. MDE Registration No. 033-0675-9-1045.

EU10-3: One emergency generator rated at 500 kW and firing No.2 fuel oil. MDE Registration No. 033-0675-9-1047.

EU24C-1, EU24C-2, EU24C-3, EU24C-4 and EU24C-8: Five Caterpillar emergency generators each rated at 1,000 kW and firing No.2 fuel oil. MDE Registration Nos. 033-0675-9-1054

through 9-1058.

EU24C-6: One MTU Detroit Diesel emergency generator rated at 1,000 kW firing No.2 fuel oil. MDE Registration No. 033-0675-9-1366.

EU31-1 through EU31-5: Five Caterpillar emergency generators each rated at 1,450 kW and firing No.2 fuel oil. MDE Registration Nos. 033-0675-9-1049 through 9-1053.

EU29-1: One emergency generator rated at 1,000 kW firing No.2 fuel oil. MDE Registration No. 033-0675-9-1422.

EU7-3: One emergency generator rated at 500 kW firing No.2 fuel oil. MDE Registration No. 033-0675-9-1433.

EU28-1: One Kohler emergency generator rated at 563 kW firing No.2 fuel oil. MDE Registration No. 033-0675-9-1535.

3.2.2 Emergency Generators Fuel Use

3.2.2.1 Building 24C generators Fuel Use

The following table lists the amounts of fuel used by the building 24C generators EU24C-1 to 4, EU24C-6, and EU24C-8 (MDE Registration No. 9-1054 to 9-1057, 9-1366, and 9-1058) during calendar year and ozone season 2019.

Generator Registration No.	**9-1054**	**9-1055**	**9-1056**	**9-1057**	**9-1366**	**9-1058**
Annual Total (gals)	670.5	670.5	670.5	670.5	603.5	670.5
Ozone Season Total (gals)	268.2	268.2	268.2	268.2	268.2	268.2
Note: Ozone Season Total constitutes fuel use between the months of May and September.						

3.2.2.2 Building 31 Fuel Use

The following table lists the amounts of fuel used by the building 31 generators EU31-1 to 5 (MDE Registration No. 9-1049 to 1053) during calendar year and ozone season 2019.

Generator Registration No.	**9-1049**	**9-1050**	**9-1051**	**9-1052**	**9-1053**
Annual Total (gals)	1263.9	1263.9	1361.1	1361.1	1361.1
Ozone Season Total (gals)	583.3	583.3	583.3	583.3	583.3
Note: Ozone Season Total constitutes fuel use between the months of May and September.					

3.2.2.3 Other Generators Fuel Use

The following table lists the amounts of fuel used by the generators EU7-2, EU10-3, EU29-1, EU7-3, and EU28-1 (MDE Registration No. 9-1045, 9-1047, 9-1422, 9-1433, and 9-1535) during calendar year and ozone season 2019.

Generator Registration No.	**9-1045**	**9-1047**	**9-1422**	**9-1433**	**9-1535**
Annual Total (gals)	63.7	57.0	46.9	100.6	0.0
Ozone Season Total (gals)	20.1	16.8	20.1	33.5	0.0
Note: Ozone Season Total constitutes fuel use between the months of May and September.					

3.2.3 Emergency Generators Emissions

The criteria pollutant emissions from the emergency generators EU24C-1 to 4, EU24C-6, and EU24C-8 (MDE Registration No. 9-1054 to 9-1057, 9-1366, and 9-1058), EU31-1 to 5 (MDE

Registration No. 9-1049 to 1053), and EU7-2, EU10-3, EU29-1, EU7-3, and EU28-1 (MDE Registration No. 9-1045, 9-1047, 9-1422, 9-1433, and 9-1535) were calculated using EPIMS. All actual emissions of criteria air pollutants from GSFC emergency generators are located on Forms 2 and 3 in Section 6 of this report.

3.2.4 Emergency Generators Title V Reporting Requirements

Per Section 3.5.D of the GSFC's Title V Operating Permit, the permittee shall submit a record of the total generator operating hours in writing as part of the annual emissions certification Report.

Per Section 3.5.D of the GSFC's Title V Operating Permit, the permittee shall provide certification of the capacity factor of the equipment to the Department in writing as part of the annual emissions certification report.

3.2.4.1 Operating Hours for all Generators

Date	9-1045	9-1047	9-1054	9-1055	9-1056	9-1057	9-1366	9-1058
Jan-19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Feb-19	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
Mar-19	0.2	0.6	1.0	1.0	1.0	1.0	1.0	1.0
Apr-19	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
May-19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Jun-19	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Jul-19	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
Aug-19	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
Sep-19	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
Oct-19	1.1	0.6	1.0	1.0	1.0	1.0	1.0	1.0
Nov-19	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
Dec-19	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
Total	1.9	1.7	10.0	10.0	10.0	10.0	9.0	10.0

3.2.4.1 Continued Operating Hours for all Generators

Date	9-1049	9-1050	9-1051	9-1052	9-1053	9-1422	9-1433	9-1535
Jan-19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Feb-19	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0
Mar-19	1.0	1.0	1.0	1.0	1.0	0.0	1.0	0
Apr-19	1.0	1.0	2.0	2.0	2.0	0.0	0.0	0
May-19	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0
Jun-19	1.0	1.0	1.0	1.0	1.0	0.3	1.0	0
Jul-19	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0
Aug-19	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0
Sep-19	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0
Oct-19	4.0	4.0	4.0	4.0	4.0	0.0	0.0	0
Nov-19	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0
Dec-19	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0
Total	13.0	13.0	14.0	14.0	14.0	0.7	3.0	0

3.2.4.2 Capacity Factors for all Generators

Date	9-1045	9-1047	9-1054	9-1055	9-1056	9-1057	9-1366	9-1058
Jan-19	0	0	0	0	0	0	0	0
Feb-19	0	0	0	0	0	0	0	0
Mar-19	0	0	0	0	0	0	0	0
Apr-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0

3.2.4.2 Continued Capacity Factors for all Generators

Date	9-1049	9-1050	9-1051	9-1052	9-1053	9-1422	9-1433	9-1535
Jan-19	0	0	0	0	0	0	0	0
Feb-19	0	0	0	0	0	0	0	0
Mar-19	0	0	0	0	0	0	0	0
Apr-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0

3.3 Space Heating Boilers

3.3.1 Space Heating Boilers Descriptions

EU97-1: One Lochinvar, natural gas-fired boiler rated at 1.118 MMBtu/hr. MDE Registration No. 033-0675-5-0846.

EU302-1: One natural gas-fired boiler rated at 1.7 MMBtu/hr. MDE Registration No. 033-0675-5-0831.

EU302-3: One natural gas-fired boiler rated at 1.44 MMBtu/hr. MDE Registration No. 033-0675-5-1533.

EU35-1: One Lochinvar, natural gas-fired space heating boiler rated at 1.5 MMBtu/hr. MDE Registration No. 033-0675-5-1531.

EU35-2: One Lochinvar, natural gas-fired space heating boiler rated at 1.5 MMBtu/hr. MDE Registration No. 033-0675-5-1532.

3.3.2 Space Heating Boilers Fuel Use

The following table lists the amounts of fuel used by the space heating boilers EU97-1, EU302-1, EU302-3, EU35-1, and EU35-3 (MDE Registration No. 5-0846, 5-0831, 5-1533, 5-1531, and 5-1532) during calendar year and ozone season 2019.

Boiler Registration No.	**5-0846**	**5-0831 & 5-1533**	**5-1531 & 5-1532**
Annual Total (ft^3)	1,184,300	3,981,100	2,924,000
Ozone Season Total (ft^3)	364,400	1,320,400	490,000
Notes: 5-0846 fuel use not available in July, October and November. Ozone Season Total constitutes fuel use between the months of May and September.			

3.3.3 Space Heating Boilers Emissions

The criteria pollutant emissions from the space heating boilers EU97-1, EU302-1, EU302-3, EU35-1, and EU35-3 (MDE Registration No. 5-0846, 5-0831, 5-1533, 5-1531, and 5-1532) were calculated using EPIMS. All actual emissions of criteria pollutants from the GSFC space heating natural gas-fired boilers are located on Forms 2 and 3 in Section 6 of this report.

3.4 Surface Coating Operations

3.4.1 Surface Coating Operations Descriptions

EU4-2: Paint booth #1 with electric drying oven. MDE Registration No. 033-0675-6-1101.

EU4-3: Paint booth #2. MDE Registration No. 033-0675-6-1101.

EU4-6: Curing oven. MDE Registration No. 033-0675-6-1101.

EU5A-3: Paint Booth #3. MDE Registration No. 033-0675-6-1323.

3.4.2 Surface Coating Operations Emissions

The VOC emissions from the surface coating operations from EU4-2, EU4-3, EU4-6 (MDE Registration No. 6-1101) and EU5A-3 (MDE Registration No. 6-1323) were calculated using EPIMS and chemical usage data from HMMS. All actual VOC emissions from the GSFC surface coating operations are located on Form 2 in Section 6 of this report.

3.4.3 Surface Coating Operations Title V Reporting Requirements

Per Section 5.5.C of the GSFC's Title V Operating Permit, the permittee shall report material usage and VOC content of coatings in the annual emissions certification report.

3.4.3.1 Material Usage and VOC Content of the Surface Coating Operations

Material Name	**Annual Material Use (gals)**	**VOC Content (lbs/gal)**
Registration No. 6-1101		
Aeroglaze 9924	1.05	7.68
Aeroglaze 9929	0.05	6.68
Aeroglaze 9953	0.16	6.88
Aeroglaze 9958	3.63	7.40
Aeroglaze Z306	0.08	5.65
Aeroglaze Z307	1.48	6.10
Chemlok AP131	0.02	6.79
Xylene	0.77	7.28

Registration No. 6-1323		
BR 127 Corrosion Inhibiting Primer	1.62	6.6

3.5 Electro-Chemical Plating Shop

3.5.1 Electro-Chemical Plating Shop Descriptions

EU5-2: Process Line A equipped with a scrubber. Tanks A-1, A-2, A-4, A-6, A-8, A-9 and A-11. MDE Registration No. 033-0675-6-0852.

EU5-4: Process Line N equipped with a scrubber. Tanks N-1, N-3A, N-3B, N-5A, N-5B, N-5C, N-7, and N-8. MDE Registration No. 033-0675-6-0854.

EU5-6: Process Lines B and E equipped with a scrubber. Tanks B-1A, B-1B, B-3, B-4A, B-4B, B-6, B-7, B-8, B-10, E-1, E-2, E-3, E-5, E-7, and E-8. MDE Registration No. 033-0675-6-0862.

3.5.2 Electro-Chemical Plating Shop Emissions

The PM emissions from the electro-chemical plating shop process lines EU5-2, EU5-4, and EU5-6 (MDE Registration No. 6-0852, 6-0854, and 0862) were calculated using EPIMS and chemical usage data from HMMS. The actual PM emissions from the GSFC electro-chemical plating shop process lines are located on Form 3 in Section 6 of this report.

3.6 Clean Room Semiconductor Development and Fabrication

3.6.1 Clean Room Semiconductor Development and Fabrication Descriptions

EU30-1: Chemical Vapor Deposition process followed by three gas reactor columns and scrubber. MDE Reg. No. 033-0675-6-0903.

EU30-2: Ion Implantation process equipped with a scrubber. MDE Reg. No. 033-0675-6-0903.

EU30-3: Dry chemistry process equipped with a scrubber. MDE Reg. No. 033-0675-6-0903.

EU30-4: Oxidation process equipped with a scrubber. MDE Reg. No. 033-0675-6-0903.

EU30-5: Blasting process equipped with a scrubber. MDE Reg. No. 033-0675-6-0903.

EU30-6: Two thin film units equipped with a scrubber. MDE Reg. No. 033-0675-6-0903.

EU30-7: Four wet chemistry processes equipped with a scrubber. MDE Reg. No. 033-0675-6-0903.

EU30-8: Four photolithography processes equipped with a scrubber. MDE Reg. No. 033-0675-6-0903.

3.6.2 Clean Room Semiconductor Development and Fabrication Emissions

The VOC and PM emissions from the semiconductor development and fabrication processes EU30-1 to 8 (MDE Registration No. 6-0903) were calculated using EPIMS and chemical usage data from HMMS. The actual VOC and PM emissions from the GSFC semiconductor development and fabrication processes are located on Forms 2 and 3 in Section 6 of this report.

3.6.3 Clean Room Semiconductor Development and Fabrication Title V Reporting Requirements

Per Section 7.5.C and D of the GSFC's Title V Operating Permit, records of material usage and calculated HAP, TAP and VOC emissions shall be submitted to the department as part of the annual emissions certification report. The VOC emissions are located on Form 2 in Section 6. The calculated HAP and TAP emissions are presented in Section 4 and are located on Form 4 in Section 6.

3.6.3.1 Material Usage of the Clean Room Semiconductor Development and Fabrication

Material Name	Annual Material Use (gals)
Acetic Acid	4.00
AZ4330	1.00
EBR10A	1.00
Ethanol	1.06
Hexamethyldisilazane	2.64
Isopropyl Alcohol	78.19
Methanol	29.59
MF 312 Developer	19.81
Resist SPR 220-7	1.06
RR41 Remover	6.34
TMAH	4.08
Toluene	4.23
1165 Remover	19.00

3.7 Char-broilers

3.7.1 Char-broilers Descriptions

EU92-1 to EU92-4: Four charbroilers. MDE Registration No. 8-0186 to 8-0189.

3.7.2 Char-broilers Emissions

The VOC and PM emissions from the four char-broilers EU92-1 to EU92-4 (MDE Registration No. 8-0186 to 8-0189) were calculated using EPIMS using an operation schedule of 60 days a year. The actual VOC and PM emissions from the GSFC char-boilers are located on Forms 2 and 3 in Section 6 of this report.

3.8 Vapor Degreaser

3.8.1 Vapor Degreaser Description

EU7-4: One ultrasonic vapor degreaser with a solvent capacity of 9.2 gallons equipped with two cooling coils and a power sliding door. MDE Registration No. 033-0675-6-1459.

3.8.2 Vapor Degreaser Emissions

The Vapor Degreaser EU 7-4 (MDE Registration No. 6-1459) did not operate during the calendar year 2019. Therefore, there are no criteria pollutant emissions to report.

3.9 Fuel Storage and Dispensing Facility

3.9.1 Fuel Storage and Dispensing Facility Descriptions

EU27-2: One 5,000 gallon AST storing E85 which is a gasoline/ethanol mixture. The tank is equipped with a Stage I vapor recovery system. MDE Registration No. 033-0675-9-1168.

EU27-3: Two 5,000 gallon ASTs each storing gasoline and each equipped with a Stage I vapor recovery system. MDE Registration No. 033-0675-9-1331.

3.9.2 Fuel Storage and Dispensing Facility VOC Emissions

The VOC emissions from the fuel storage and dispensing facilities from EU27-2 and EU27-3 (MDE Registration No. 9-1168 and 9-1331) were calculated using EPIMS, which uses the EPA Tanks 4.09D model to calculate tank emissions. The actual VOC emissions from the GSFC fuel storage and dispensing facilities are located on Forms 2 in Section 6 of this report.

4. Toxic Air Pollutant and Hazardous Air Pollutant Emissions

4.1 Introduction

GSFC emitted equal to or more than the reporting threshold for seven (7) TAPs in calendar year 2019. GSFC emitted one (1) billable TAP equal to or more than the reporting thresholds in calendar year 2019. The TAP/HAP emissions were calculated using EPIMS and chemical usage data from HMMS. The actual TAP/HAP emissions from the GSFC operations are located on Forms 4 and 5 in Section 6 of this report. GSFC used the plantwide reporting threshold limits from the MDE website link http://www.mde.maryland.gov/programs/Air/AirQualityCompliance/Documents/www.mde.state.md.us/assets/document/air/Air_toxics_list.pdf, to determine what TAP emissions were required to be reported.

MDE has requested that Title V facilities report emissions of TAPs/HAPs from all registered equipment including fuel burning sources. GSFC is exempt from emissions reporting required by the Industrial Boiler MACT Rule because this rule does not establish emissions limits for gas boilers (including boilers burning liquid fuel during periods of gas curtailment and periodic testing). In addition, GSFC is classified as an institutional facility and, therefore, is exempt from the requirements of 40CFR63 Section 63.6585(f)(3) related to generators. Therefore, GSFC is not required to submit HAP emissions from its registered fuel burning units.

4.2 Source Specific TAP/HAP Emissions

4.2.1 Surface Coating Operation

TAP/HAP emissions from the Surface Coating Operation EU4-2, EU4-3, and EU4-6 (MDE Registration No. 6-1101) were calculated using an operating schedule of 260 days/year and 4 hours/day. Barium chromate, potassium zinc chromate hydroxide, and strontium chromate are reportable from the building 4, room 195 surface coating operation in calendar year 2019.

TAP/HAP emissions from the Surface Coating Operation EU5A-3 (MDE Registration No. 6-1323) were calculated using an operating schedule of 260 days/year and 4 hours/day. Antimony trioxide and strontium chromate are reportable from the building 5A surface coating operation in calendar year 2019.

4.2.2 Electro-Chemical Plating Shop

TAP/HAP emissions from the Electro-Chemical Plating Shop process lines EU5-2, EU5-4, and EU5-6 (MDE Registration Nos. 6-0852, 6-0854, and 6-0862) were calculated using an operating schedule of 260 days/year and 8 hours/day. There were no reportable TAP/HAP from the electro-chemical plating shop in calendar year 2019.

4.2.3 Clean Room Semiconductor Development and Fabrication

TAP/HAP emissions from the Clean Room Semiconductor Development and Fabrication processes EU30-1 to 8 (MDE Registration No. 6-0903) were calculated using an operating schedule of 260 days/year and 4 hours/day. Hydrogen Fluoride is reportable from the semiconductor development and fabrication clean room in calendar year 2019.

4.2.4 Char-broilers

TAP/HAP emissions from the Char-broilers EU92-1 to 4 (MDE Registration No. 8-0186 to 8-0189) were calculated using maximum allowable operating days specified in the 1996 Permit to Construct, which is 60 days. Benzene and formaldehyde are reportable from the Building 92 char-broilers in calendar year 2019.

4.2.5 Vapor Degreaser

The Vapor Degreaser EU 7-4 (MDE Registration No. 6-1459) did not operate during calendar year 2019. Therefore, there were no TAP and/or HAP emissions to report.

4.2.6 Fuel Storage and Dispensing Facility

TAP/HAP emissions from the 5,000-Gallon Aboveground E-85 Storage Tank EU7-2 (MDE Registration No. 9-1168) were calculated using an operating schedule of 365 days/year and 24 hours/day. There were no reportable TAP/HAP from the E-85 AST in calendar year 2019.

TAP/HAP emissions from the two 5,000-Gallon Aboveground Gasoline Storage Tanks EU7-3 (MDE Registration No. 9-1331) were calculated using an operating schedule of 365 days/year and 24 hours/day. There were no reportable TAP/HAP from the gasoline ASTs in calendar year 2019.

5. Greenhouse Gas Emissions

5.1 Introduction

The GHG emissions were calculated using EPIMS. The GHG inventories included direct emissions of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) from all registered pieces of fuel burning equipment. GHG emissions from the char-broilers are not included in this inventory because the char-broilers operations are considered de minimus.

5.2 Fuel Use

Emissions Unit	Reg. No.	Fuel	Fuel Use
Building #24 Boiler #1	MDE 5-0808	Natural Gas	39,507,195
Building #24 Boiler #2	MDE 5-0809	Natural Gas	64,672,300
Building #24 Boiler #3	MDE 5-0810	Natural Gas	33,352,937
Building #24 Boiler #4	MDE 5-0811	Natural Gas	77,197,924
Building #24 Boiler #5	MDE 5-0812	Natural Gas	24,139,642
Building #24 Boiler #1	MDE 5-0808	Landfill Gas	182,882,000
Building #24 Boiler #2	MDE 5-0809	Landfill Gas	163,552,000
Building #24 Boiler #3	MDE 5-0810	Landfill Gas	0
Building #24 Boiler #4	MDE 5-0811	Landfill Gas	166,709,000
Building #24 Boiler #5	MDE 5-0812	Landfill Gas	0
Building #24 Boiler #1	MDE 5-0808	#2 Fuel Oil	442
Building #24 Boiler #2	MDE 5-0809	#2 Fuel Oil	2,789
Building #24 Boiler #3	MDE 5-0810	#2 Fuel Oil	3,930
Building #24 Boiler #4	MDE 5-0811	#2 Fuel Oil	561
Building #24 Boiler #5	MDE 5-0812	#2 Fuel Oil	390
Building 24C Generator #1 (1000 KW)	MDE 9-1054	#2 Fuel Oil	671
Building 24C Generator #2 (1000 KW)	MDE 9-1055	#2 Fuel Oil	671
Building 24C Generator #3 (1000 KW)	MDE 9-1056	#2 Fuel Oil	671
Building 24C Generator #4 (1000 KW)	MDE 9-1057	#2 Fuel Oil	671
Building 24C Generator #8 (1000 KW)	MDE 9-1058	#2 Fuel Oil	671
Building 24C Generator #6 (1000 KW)	MDE 9-1366	#2 Fuel Oil	604
Building 31 Generator #1 (1450 KW)	MDE 9-1049	#2 Fuel Oil	1,264
Building 31 Generator #2 (1450 KW)	MDE 9-1050	#2 Fuel Oil	1,264
Building 31 Generator #3 (1450 KW)	MDE 9-1051	#2 Fuel Oil	1,361
Building 31 Generator #4 (1450 KW)	MDE 9-1052	#2 Fuel Oil	1,361
Building 31 Generator #5 (1450 KW)	MDE 9-1053	#2 Fuel Oil	1,361
Building 302 Boiler #1	MDE 5-0831	Natural Gas	2,166,928
Building 302 Boiler #3	MDE 5-1533	Natural Gas	1,814,172
Building 97 Boiler #1	MDE 5-0846	Natural Gas	1,184,300
Building 35 Boiler #1	MDE 5-1531	Natural Gas	1,462,000
Building 35 Boiler #2	MDE 5-1532	Natural Gas	1,462,000
Building 7 Generator #1 (500 KW)	MDE 9-1045	#2 Fuel Oil	64
Building 7 Generator #2 (500 KW)	MDE 9-1047	#2 Fuel Oil	101
Building 10 Generator #1 (500 KW)	MDE 9-1433	#2 Fuel Oil	57
Building 29 Generator #1 (1000 KW)	MDE 9-1422	#2 Fuel Oil	47
Building 28 Generator #1 (563 KW)	MDE 9-1535	#2 Fuel Oil	0
Notes: Natural and Landfill Gas units are measured in ft^3 and #2 Fuel Oil is measured in gallons. 5-0846 fuel use not available in July, October and November.			

5.3 Source Specific Emissions

The actual GHG emissions from the GSFC fuel-burning equipment are located on Form 6 in Section 6 of this report.

6. MDE Emissions Certification Forms

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6.1 Form 1 General Facility Information

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard, Suite 715 – Baltimore Maryland 21230-1720
410-537-3000 • 1-800-633-6101 • http://www.mde.state.md.us
Air and Radiation Management Administration
Air Quality Compliance Program
410-537-3220

FORM 1:

GENERAL FACILITY INFORMATION
EMISSION CERTIFICATION REPORT

Calendar Year: 2019

	Do Not Write in This Space
A. FACILITY IDENTIFICATION Facility Name **NASA, Goddard Space Flight Center (GSFC)**	Date Received Regional
Address **8800 Greenbelt Road**	Date Received State
City **Greenbelt** County **Prince George's** Zip Code **20771**	AIRS Code
B. Briefly describe the major function of the facility	FINDS Code
Goddard Space Flight Center's major function is the research, development, and fabrication of instruments, propulsion systems, and spacecraft. Major support services include an Electro-Chemical/Acid Polishing Facility, Central Boiler Plant, Cooling Towers, Clean Rooms, numerous laboratories, and maintenance shops.	SIC Code Facility Number TEMPO ID:
C. SEASONAL PRODUCTION (%, if applicable)	Reviewed by:

Winter *(Dec.-Feb.)*	**Spring** *(Dec.-Feb.)*	**Summer** *(Dec.-Feb.)*	**Fall** *(Dec.-Feb.)*
Percent	**Percent**	**Percent**	**Percent**

Name Date

D. Explain any increases or decreases in emissions from the previous calendar year for each registration at this facility.

There have been no major increases or decreases in operations during the 2019 calendar year, therefore, GSFC emissions have not significantly increased or decreased.

E. CONTROL DEVICE INFORMATION (NOx and VOC sources only)

Control Device	Capture Efficiency	Removal Efficiency
Stage 1 Vapor Recovery (E-85 and Gasoline AST)	**90%**	**100%**
Low NOx burners (5 boilers)	**N/A**	**N/A**
Scrubber – Building 30	**100%**	**90%**

I am familiar with the facility and the installations and sources for which this report is submitted. I have personally examined the information in this report, which consist of 69 pages (including attachments), and certify that the information is correct to the best of my knowledge.

Kimberly Finch, P.E. Chief, Medical and Environmental Management Division
Name (Print/Type) Title

(301) 286-7442
Signature Telephone

1/09/08

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6.2 Form 2 Criteria Air Pollutants

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FORM 2 CO

Facility Name: GSFC **Pollutant:** CO **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
5-0808	10300602	s	0	2	0	12:00 AM	11:59 PM	0	0		0	12:00 AM	11:59 PM	C1
BOILER 1 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0808	10300602	s	4	49	10	12:00 AM	11 59 PM	3	158		4	12:00 AM	11 59 PM	C1
BOILER 1 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24		f												
5-0808	10300602	s	2	72	3	12:00 AM	11:59 PM	1	46		1	12:00 AM	11:59 PM	C1
BO LER 1 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
5-0809	10300602	s	0	14	0	12:00 AM	11:59 PM	0	0		0	12:00 AM	11:59 PM	C1
BOILER 2 - 49.5 MMBTU/HR - #2 FUEL O L - BLDG 24		f												
5-0809	10300602	s	3	50	9	12:00 AM	11:59 PM	3	134		3	12:00 AM	11:59 PM	C1
BOILER 2 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24		f												
5-0809	10300602	s	3	63	6	12:00 AM	11:59 PM	2	87		1	12:00 AM	11:59 PM	C1
BOILER 2 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
5-0810	10300602	s	0	20	0	12 00 AM	11:59 PM	0	1		0	12 00 AM	11:59 PM	C1
BOILER 3 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0810	10300602	s	1	36	5	12:00 AM	11:59 PM	1	78		2	12:00 AM	11:59 PM	C1
BOILER 3 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
SUBTOTAL(1)			13	305										

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C3 - User calculated based on AP-42

FORM 2 CO

Facility Name: GSFC **Pollutant:** CO **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
5-0811	10300602	s	0	3	0	12:00 AM	11:59 PM	0	0		0	12:00 AM	11:59 PM	C1
BOILER 4 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0811	10300602	s	3	49	9	12:00 AM	11:59 PM	3	141		4	12:00 AM	11:59 PM	C1
BOILER 4 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24		f												
5-0811	10300602	s	3	63	7	12:00 AM	11:59 PM	2	103		1	12:00 AM	11:59 PM	C1
BOILER 4 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
5-0812	10300602	s	0	2	0	12:00 AM	11:59 PM	0	0		0	12:00 AM	11:59 PM	C1
BO LER 5 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0812	10300602	s	1	30	4	12:00 AM	11:59 PM	1	67		3	12:00 AM	11:59 PM	C1
BOILER 5 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
9-1054	20300101	s	0	74	0	12:00 AM	11 59 PM	0	0		0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-1		f												
9-1055	20300101	s	0	74	0	12:00 AM	11 59 PM	0	0		0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-2		f												
9-1056	20300101	s	0	74	0	12:00 AM	11 59 PM	0	0		0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-3		f												
9-1057	20300101	s	0	74	0	12:00 AM	11 59 PM	0	0		0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-4		f												
SUBTOTAL(2)			8	442										

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C3 - User calculated based on AP-42

FORM 2 CO

Facility Name: GSFC **Pollutant:** CO **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
9-1058	20300101	s	0	74	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-8		f												
9-1366	20300101	s	0	9	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-6		f												
9-1049	20300101	s	0	118	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1050	20300101	s	0	118	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1051	20300101	s	0	128	0	12 00 AM	11:59 PM	0	1		0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1052	20300101	s	0	128	0	12 00 AM	11:59 PM	0	1		0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1053	20300101	s	0	128	0	12 00 AM	11:59 PM	0	1		0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1045	20300101	s	0	7	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
500KW DIESEL GENERATOR - BLDG 7		f												
9-1433	20300101	s	0	11	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
500KW DIESEL GENERATOR - BLDG 7		f												
9-1047	20300101	s	0	6	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
SUBTOTAL(3)			0	728										

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C3 - User calculated based on AP-42

FORM 2 CO

Facility Name: GSFC **Pollutant:** CO **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
9-1535	20300101	s	0	0	0	12:00 AM	11:59 PM	0	0		0	12:00 AM	11:59 PM	C3
510KW DIESEL GENERATOR - BLDG 28		f												
9-1422	20300101	s	0	1	0	12:00 AM	11:59 PM	0	0		0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 29		f												
5-0831	10300603	s	0	0	24	12:00 AM	11:59 PM	7	365		24	12 00 AM	11:59 PM	C3
BOILER - 1.7 MMBTU/HR - NATURAL GAS - BLDG 302		f												
5-1533	10300603	s	0	0	24	12:00 AM	11:59 PM	7	365		24	12 00 AM	11:59 PM	C3
BOILER - 1.44 MMBTU/HR - NATURAL GAS - BLDG 302		f												
5-0846	10300603	s	0	0	24	12:00 AM	11:59 PM	7	365		24	12 00 AM	11:59 PM	C3
BOILER - 1.118 MMBTU/HR - NATURAL GAS - BLDG 97		f												
5-1531	10300603	s	0	1	24	12:00 AM	11 59 PM	7	365		24	12:00 AM	11:59 PM	C3
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35		f												
5-1532	10300603	s	0	1	24	12:00 AM	11:59 PM	7	365		24	12:00 AM	11:59 PM	C3
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35		f												
SUBTOTAL(4)			0	3										
TOTAL			22	1478										

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C3 - User calculated based on AP-42

FORM 2 NOx

Facility Name: GSFC **Pollutant:** NOX **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
5-0808	10300602	s	0	6	0	12:00 AM	11:59 PM	0	0	6	0	12:00 AM	11:59 PM	C1
BOILER 1 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0808	10300602	s	1	17	10	12:00 AM	11 59 PM	3	158	15	4	12:00 AM	11:59 PM	C1
BOILER 1 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24		f												
5-0808	10300602	s	1	57	3	12:00 AM	11:59 PM	1	46	49	1	12 00 AM	11:59 PM	C1
BO LER 1 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
5-0809	10300602	s	0	35	0	12:00 AM	11:59 PM	0	0	30	0	12:00 AM	11:59 PM	C1
BOILER 2 - 49.5 MMBTU/HR - #2 FUEL O L - BLDG 24		f												
5-0809	10300602	s	1	18	9	12:00 AM	11:59 PM	3	134	16	3	12 00 AM	11:59 PM	C1
BOILER 2 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24		f												
5-0809	10300602	s	2	49	6	12:00 AM	11:59 PM	2	87	55	1	12 00 AM	11:59 PM	C1
BOILER 2 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
5-0810	10300602	s	0	68	0	12 00 AM	11:59 PM	0	1	68	0	12 00 AM	11:59 PM	C1
BOILER 3 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0810	10300602	s	2	52	5	12:00 AM	11:59 PM	1	78	45	2	12 00 AM	11:59 PM	C1
BOILER 3 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
SUBTOTAL(1)			8	301						283				

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C3 - User calculated based on AP-42

FORM 2 NOx

Facility Name: GSFC **Pollutant:** NOX **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
5-0811	10300602	s	0	7	0	12:00 AM	11:59 PM	0	0	6	0	12:00 AM	11:59 PM	C1
BOILER 4 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0811	10300602	s	1	17	9	12:00 AM	11:59 PM	3	141	16	4	12 00 AM	11:59 PM	C1
BOILER 4 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24		f												
5-0811	10300602	s	3	50	7	12:00 AM	11:59 PM	2	103	51	1	12 00 AM	11:59 PM	C1
BOILER 4 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
5-0812	10300602	s	0	7	0	12:00 AM	11:59 PM	0	0	7	0	12:00 AM	11:59 PM	C1
BO LER 5 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0812	10300602	s	1	44	4	12:00 AM	11:59 PM	1	67	41	3	12:00 AM	11:59 PM	C1
BOILER 5 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
9-1054	20300101	s	0	322	0	12 00 AM	11:59 PM	0	0	1	0	12:00 AM	11 59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-1		f												
9-1055	20300101	s	0	322	0	12 00 AM	11:59 PM	0	0	1	0	12:00 AM	11 59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-2		f												
9-1056	20300101	s	0	322	0	12 00 AM	11:59 PM	0	0	1	0	12:00 AM	11 59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-3		f												
9-1057	20300101	s	0	322	0	12 00 AM	11:59 PM	0	0	1	0	12:00 AM	11 59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-4		f												
SUBTOTAL(2)			6	1412						124				

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C3 - User calculated based on AP-42

FORM 2 NOx

Facility Name: GSFC **Pollutant:** NOX **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
9-1058	20300101	s	0	322	0	12 00 AM	11:59 PM	0	0	1	0	12 00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-8		f												
9-1366	20300101	s	0	114	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-6		f												
9-1049	20300101	s	0	513	0	12 00 AM	11:59 PM	0	0	2	0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1050	20300101	s	0	513	0	12 00 AM	11:59 PM	0	0	2	0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1051	20300101	s	0	560	0	12 00 AM	11:59 PM	0	1	2	0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1052	20300101	s	0	560	0	12 00 AM	11:59 PM	0	1	2	0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1053	20300101	s	0	560	0	12 00 AM	11:59 PM	0	1	2	0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1045	20300101	s	0	31	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
500KW DIESEL GENERATOR - BLDG 7		f												
9-1433	20300101	s	0	48	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
500KW DIESEL GENERATOR - BLDG 7		f												
9-1047	20300101	s	0	27	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
SUBTOTAL(3)			2	3249						11				

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C3 - User calculated based on AP-42

FORM 2 NOx

Facility Name: GSFC **Pollutant:** NOX **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/y	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
9-1535	20300101	s	0	0	0	12:00 AM	11:59 PM	0	0	0	0	12:00 AM	11:59 PM	C3
510KW DIESEL GENERATOR - BLDG 28		f												
9-1422	20300101	s	0	14	0	12:00 AM	11:59 PM	0	0	0	0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 29		f												
5-0831	10300603	s	0	1	24	12:00 AM	11:59 PM	7	365	0	24	12:00 AM	11:59 PM	C3
BOILER - 1.7 MMBTU/HR - NATURAL GAS - BLDG 302		f												
5-1533	10300603	s	0	1	24	12:00 AM	11:59 PM	7	365	0	24	12:00 AM	11:59 PM	C3
BOILER - 1.44 MMBTU/HR - NATURAL GAS - BLDG 302		f												
5-0846	10300603	s	0	0	24	12:00 AM	11:59 PM	7	365	0	24	12:00 AM	11:59 PM	C3
BOILER - 1.118 MMBTU/HR - NATURAL GAS - BLDG 97		f												
5-1531	10300603	s	0	1	24	12:00 AM	11 59 PM	7	365	0	24	12:00 AM	11 59 PM	C3
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35		f												
5-1532	10300603	s	0	1	24	12:00 AM	11:59 PM	7	365	0	24	12:00 AM	11:59 PM	C3
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35		f												
SUBTOTAL(4)			0	16						1				
TOTAL			16	4977						419				

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C3 - User calculated based on AP-42

FORM 2 SOx

Facility Name: GSFC **Pollutant:** SOX **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
5-0808	10300602	s	0	19	0	12:00 AM	11:59 PM	0	0		0	12:00 AM	11:59 PM	C1
BOILER 1 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0808	10300602	s	0	1	10	12:00 AM	11 59 PM	3	158		4	12:00 AM	11:59 PM	C1
BOILER 1 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24		f												
5-0808	10300602	s	0	1	3	12:00 AM	11:59 PM	1	46		1	12 00 AM	11:59 PM	C1
BO LER 1 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
5-0809	10300602	s	0	119	0	12:00 AM	11:59 PM	0	0		0	12:00 AM	11:59 PM	C1
BOILER 2 - 49.5 MMBTU/HR - #2 FUEL O L - BLDG 24		f												
5-0809	10300602	s	0	1	9	12:00 AM	11:59 PM	3	134		3	12 00 AM	11:59 PM	C1
BOILER 2 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24		f												
5-0809	10300602	s	0	0	6	12:00 AM	11:59 PM	2	87		1	12 00 AM	11:59 PM	C1
BOILER 2 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
5-0810	10300602	s	0	167	0	12 00 AM	11:59 PM	0	1		0	12 00 AM	11:59 PM	C1
BOILER 3 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0810	10300602	s	0	0	5	12:00 AM	11:59 PM	1	78		2	12 00 AM	11:59 PM	C1
BOILER 3 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
SUBTOTAL(1)			0	308										

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C3 - User calculated based on AP-42

FORM 2 SOx

Facility Name: GSFC **Pollutant:** SOX **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
5-0811	10300602	s	0	24	0	12:00 AM	11:59 PM	0	0		0	12:00 AM	11:59 PM	C1
BOILER 4 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0811	10300602	s	0	1	9	12:00 AM	11:59 PM	3	141		4	12 00 AM	11:59 PM	C1
BOILER 4 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24		f												
5-0811	10300602	s	0	0	7	12:00 AM	11:59 PM	2	103		1	12 00 AM	11:59 PM	C1
BOILER 4 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
5-0812	10300602	s	0	17	0	12:00 AM	11:59 PM	0	0		0	12:00 AM	11:59 PM	C1
BO LER 5 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0812	10300602	s	0	0	4	12:00 AM	11:59 PM	1	67		3	12:00 AM	11:59 PM	C1
BOILER 5 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
9-1054	20300101	s	0	33	0	12:00 AM	11 59 PM	0	0		0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-1		f												
9-1055	20300101	s	0	33	0	12:00 AM	11 59 PM	0	0		0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-2		f												
9-1056	20300101	s	0	33	0	12:00 AM	11 59 PM	0	0		0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-3		f												
9-1057	20300101	s	0	33	0	12:00 AM	11 59 PM	0	0		0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-4		f												
SUBTOTAL(2)			0	172										

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C3 - User calculated based on AP-42

FORM 2 SOx

Facility Name: GSFC **Pollutant:** SOX **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
9-1058	20300101	s	0	33	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-8		f												
9-1366	20300101	s	0	0	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-6		f												
9-1049	20300101	s	0	52	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1050	20300101	s	0	52	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1051	20300101	s	0	57	0	12 00 AM	11:59 PM	0	1		0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1052	20300101	s	0	57	0	12 00 AM	11:59 PM	0	1		0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1053	20300101	s	0	57	0	12 00 AM	11:59 PM	0	1		0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1045	20300101	s	0	3	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
500KW DIESEL GENERATOR - BLDG 7		f												
9-1433	20300101	s	0	5	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
500KW DIESEL GENERATOR - BLDG 7		f												
9-1047	20300101	s	0	3	0	12 00 AM	11:59 PM	0	0		0	12 00 AM	11:59 PM	C3
SUBTOTAL(3)			0	317										

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C3 - User calculated based on AP-42

FORM 2 SOx

Facility Name: GSFC **Pollutant:** SOX **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
9-1535	20300101	s	0	0	0	12:00 AM	11:59 PM	0	0		0	12:00 AM	11:59 PM	C3
510KW DIESEL GENERATOR - BLDG 28		f												
9-1422	20300101	s	0	0	0	12:00 AM	11:59 PM	0	0		0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 29		f												
5-0831	10300603	s	0	0	24	12:00 AM	11:59 PM	7	365		24	12:00 AM	11:59 PM	C3
BOILER - 1.7 MMBTU/HR - NATURAL GAS - BLDG 302		f												
5-1533	10300603	s	0	0	24	12:00 AM	11:59 PM	7	365		24	12:00 AM	11:59 PM	C3
BOILER - 1.44 MMBTU/HR - NATURAL GAS - BLDG 302		f												
5-0846	10300603	s	0	0	24	12:00 AM	11:59 PM	7	365		24	12:00 AM	11:59 PM	C3
BOILER - 1.118 MMBTU/HR - NATURAL GAS - BLDG 97		f												
5-1531	10300603	s	0	0	24	12:00 AM	11 59 PM	7	365		24	12:00 AM	11 59 PM	C3
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35		f												
5-1532	10300603	s	0	0	24	12:00 AM	11:59 PM	7	365		24	12:00 AM	11:59 PM	C3
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35		f												
SUBTOTAL(4)			0	0										
TOTAL			1	797										

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C3 - User calculated based on AP-42

FORM 2 VOC

Facility Name: GSFC **Pollutant:** VOC **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
5-0808	10300602	s	0	0	0	12:00 AM	11:59 PM	0	0	0	0	12:00 AM	11:59 PM	C1
BOILER 1 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0808	10300602	s	0	3	10	12:00 AM	11 59 PM	3	158	3	4	12:00 AM	11:59 PM	C1
BOILER 1 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24		f												
5-0808	10300602	s	0	5	3	12:00 AM	11:59 PM	1	46	4	1	12 00 AM	11:59 PM	C1
BO LER 1 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
5-0809	10300602	s	0	1	0	12:00 AM	11:59 PM	0	0	1	0	12:00 AM	11:59 PM	C1
BOILER 2 - 49.5 MMBTU/HR - #2 FUEL O L - BLDG 24		f												
5-0809	10300602	s	0	3	9	12:00 AM	11:59 PM	3	134	3	3	12 00 AM	11:59 PM	C1
BOILER 2 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24		f												
5-0809	10300602	s	0	4	6	12:00 AM	11:59 PM	2	87	5	1	12 00 AM	11:59 PM	C1
BOILER 2 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
5-0810	10300602	s	0	1	0	12 00 AM	11:59 PM	0	1	1	0	12 00 AM	11:59 PM	C1
BOILER 3 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0810	10300602	s	0	2	5	12:00 AM	11:59 PM	1	78	2	2	12 00 AM	11:59 PM	C1
BOILER 3 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
SUBTOTAL(1)			1	19						18				

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C2 - User calculated based on material balance using engineering knowledge of the process
C3 - User calculated based on AP-42

FORM 2 VOC

Facility Name: GSFC **Pollutant:** VOC **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
5-0811	10300602	s	0	0	0	12:00 AM	11:59 PM	0	0	0	0	12:00 AM	11:59 PM	C1
BOILER 4 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0811	10300602	s	0	3	9	12:00 AM	11:59 PM	3	141	3	4	12 00 AM	11:59 PM	C1
BOILER 4 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24		f												
5-0811	10300602	s	0	4	7	12:00 AM	11:59 PM	2	103	4	1	12 00 AM	11:59 PM	C1
BOILER 4 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
5-0812	10300602	s	0	0	0	12:00 AM	11:59 PM	0	0	0	0	12:00 AM	11:59 PM	C1
BO LER 5 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24		f												
5-0812	10300602	s	0	2	4	12:00 AM	11:59 PM	1	67	2	3	12:00 AM	11:59 PM	C1
BOILER 5 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24		f												
9-1054	20300101	s	0	9	0	12:00 AM	11 59 PM	0	0	0	0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-1		f												
9-1055	20300101	s	0	9	0	12:00 AM	11 59 PM	0	0	0	0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-2		f												
9-1056	20300101	s	0	9	0	12:00 AM	11 59 PM	0	0	0	0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-3		f												
9-1057	20300101	s	0	9	0	12:00 AM	11 59 PM	0	0	0	0	12:00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-4		f												
SUBTOTAL(2)			1	44						9				

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C2 - User calculated based on material balance using engineering knowledge of the process
C3 - User calculated based on AP-42

FORM 2 VOC

Facility Name: GSFC **Pollutant:** VOC **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/yr	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
9-1058	20300101	s	0	9	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-8		f												
9-1366	20300101	s	0	2	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 24C-6		f												
9-1049	20300101	s	0	14	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1050	20300101	s	0	14	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1051	20300101	s	0	15	0	12 00 AM	11:59 PM	0	1	0	0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1052	20300101	s	0	15	0	12 00 AM	11:59 PM	0	1	0	0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1053	20300101	s	0	15	0	12 00 AM	11:59 PM	0	1	0	0	12 00 AM	11:59 PM	C3
1450KW DIESEL GENERATOR - BLDG 31		f												
9-1045	20300101	s	0	1	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
500KW DIESEL GENERATOR - BLDG 7		f												
9-1433	20300101	s	0	1	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
500KW DIESEL GENERATOR - BLDG 7		f												
SUBTOTAL(3)			0	85						0				

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C2 - User calculated based on material balance using engineering knowledge of the process
C3 - User calculated based on AP-42

FORM 2 VOC

Facility Name: GSFC **Pollutant:** VOC **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/y	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
9-1535	20300101	s	0	0	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
510KW DIESEL GENERATOR - BLDG 28		f												
9-1422	20300101	s	0	0	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
1000KW DIESEL GENERATOR - BLDG 29		f												
9-1047	20300101	s	0	1	0	12 00 AM	11:59 PM	0	0	0	0	12 00 AM	11:59 PM	C3
500KW DIESEL GENERATOR - BLDG 10		f												
5-0831	10300603	s	0	0	24	12:00 AM	11 59 PM	7	365	0	24	12:00 AM	11 59 PM	C3
BO LER - 1.7 MMBTU/HR - NATURAL GAS - BLDG 302		f												
5-1533	10300603	s	0	0	24	12:00 AM	11 59 PM	7	365	0	24	12:00 AM	11 59 PM	C3
BO LER - 1.44 MMBTU/HR - NATURAL GAS - BLDG 302		f												
5-0846	10300603	s	0	0	24	12:00 AM	11 59 PM	7	365	0	24	12:00 AM	11 59 PM	C3
BO LER - 1.118 MMBTU/HR - NATURAL GAS - BLDG 97		f												
5-1531	10300603	s	0	0	24	12:00 AM	11:59 PM	7	365	0	24	12:00 AM	11:59 PM	C3
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35		f												
5-1532	10300603	s	0	0	24	12:00 AM	11 59 PM	7	365	0	24	12:00 AM	11:59 PM	C3
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35		f												
9-1331	40200101	s	0	1	24	12:00 AM	11:59 PM	7	365	0	24	8 00 AM	3:59 PM	C2
GASOLINE DISPENS NG AT BLDG 27		f												
SUBTOTAL(4)			0	2						0				

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C2 - User calculated based on material balance using engineering knowledge of the process
C3 - User calculated based on AP-42

FORM 2 VOC

Facility Name: GSFC **Pollutant:** VOC **Calendar Year:** 2019

Registration No./	SCC		Actual Emissions		Operating Schedule (Actual)					TOSD	Operating Schedule			Estimation
Equipment Description	Number		Tons/y	lbs/dy	Hrs/dy	Start	End	Dys/wk	Dys/yr	lbs/dy	Hrs/dy	Start	End	Method
9-1168	40600603	s	0	1	24	12:00 AM	11:59 PM	7	365	0	24	8:00 AM	3:59 PM	C3
E85 DISPENSING AT BLDG 27		f												
6-1101	40200101	s	0	0	4	8:00 AM	3:59 PM	5	260	0	4	8:00 AM	3:59 PM	C2
SURFACE COATING IN BLDG 4, RM 195		f												
6-0903	31306599	s	0	1	4	8:00 AM	3:59 PM	5	260	1	4	8:00 AM	3:59 PM	C2
SEMI-CONDUCTOR OPERATION N B30		f												
6-1323	31306599	s	0	0	4	8:00 AM	3:59 PM	5	260	0	4	8:00 AM	3:59 PM	C2
SURFACE COATING N BLDG 5A		f												
8-0186	30201311	s	0	0	10	8:00 AM	5:59 PM	5	60	0	10	8:00 AM	5:59 PM	C2
CHARBROILER AT BLDG 92		f												
8-0187	30201311	s	0	0	10	8:00 AM	5:59 PM	5	60	0	10	8:00 AM	5 59 PM	C2
CHARBROILER AT BLDG 92		f												
8-0188	30201311	s	0	0	10	8:00 AM	5:59 PM	5	60	0	10	8:00 AM	5:59 PM	C2
CHARBROILER AT BLDG 92		f												
8-0189	30201311	s	0	0	10	8:00 AM	5:59 PM	5	60	0	10	8:00 AM	5:59 PM	C2
CHARBROILER AT BLDG 92		f												
SUBTOTAL(5)			0	3						2				
TOTAL			2	153						30				

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1). Also, 0.4 (which displays as 0) plus 0.4 (wich displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

TOSD - Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April - September). This section needs to be completed only for VOC and NOx sources.

Emissions Estimation Method
C1 - User calculated based on source test or other measurement
C2 - User calculated based on material balance using engineering knowledge of the process
C3 - User calculated based on AP-42

6.3 Form 3 Criteria Air Pollutant: PM

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FORM 3: PM

Particulate Matter

Calendar Year: 2019

Facility Name: GSFC

Facility ID: 24-033-00675

Pollutant: PM

Registration No./ Equipment Description	SCC Number	Fuel		PM - Filterable		PM10 - Filterable		PM2.5 - Filterable		PM Condensable		Operation	Estimation
				Tons/yr	Lbs/day	Tons/yr	Lbs/day	Tons/yr	Lbs/day	Tons/yr	Lbs/day	Days/yr	Method
5-0808	10300602	DIESEL FUEL	s	0	1	0	0	0	0	0	1	0	C3
BO LER 1 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24			f										
5-0808	10300602	LANDFILL GAS	s	0	1	0	1	0	1	0	3	154	C3
BOILER 1 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24			f										
5-0808	10300602	NATURAL GAS	s	0	1	0	1	0	1	0	4	50	C3
BOILER 1 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24			f										
5-0809	10300602	DIESEL FUEL	s	0	6	0	3	0	1	0	4	0	C3
BOILER 2 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24			f										
5-0809	10300602	LANDF LL GAS	s	0	1	0	1	0	1	0	4	130	C3
BO LER 2 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24			f										
5-0809	10300602	NATURAL GAS	s	0	1	0	1	0	1	0	4	90	C3
BO LER 2 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24			f										
5-0810	10300602	D ESEL FUEL	s	0	8	0	4	0	1	0	5	1	C3
BOILER 3 - 49 5 MMBTU/HR - #2 FUEL OIL - BLDG 24			f										
5-0810	10300602	NATURAL GAS	s	0	1	0	1	0	1	0	2	78	C3
BOILER 3 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24			f										
5-0811	10300602	DIESEL FUEL	s	0	1	0	1	0	0	0	1	0	C3
BO LER 4 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24			f										
SUBTOTAL(1)				0	21	0	14	0	8	1	28		

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1).

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

Emissions Estimation Method

A1 - U.S. EPA Reference Method
A2 - Other Particulate Sampling Train
A3 - Liquid Absorption Technique
A4 - Solid Absorption Technique
A5 - Freezing Out Technique
A9 - Other, Specify

User Calculated based on source test or other measurement
User Calculated based on material balance using engineering knowledge of the process
User Calculated based on AP-42
Judgement

C5 - User calculated based on State or local agency emission factor
C6 - New construction, not operational
C7 - Source closed, operation ceased
C8 - Computer calculated based on standard

FORM 3: PM

Particulate Matter

Calendar Year: 2019

Facility Name: GSFC

Facility ID: 24-033-00675

Pollutant: PM

Registration No./ Equipment Description	SCC Number	Fuel		PM - Filterable Tons/yr	PM - Filterable Lbs/day	PM10 - Filterable Tons/yr	PM10 - Filterable Lbs/day	PM2.5 - Filterable Tons/yr	PM2.5 - Filterable Lbs/day	PM Condensable Tons/yr	PM Condensable Lbs/day	Operation Days/yr	Estimation Method
5-0811	10300602	LANDF LL GAS	s	0	1	0	1	0	1	0	3	136	C3
BOILER 4 - 49.5 MMBTU/HR - LANDFILL GAS - BLDG 24			f										
5-0811	10300602	NATURAL GAS	s	0	1	0	1	0	1	0	4	108	C3
BOILER 4 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24			f										
5-0812	10300602	DIESEL FUEL	s	0	1	0	0	0	0	0	1	0	C3
BO LER 5 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24			f										
5-0812	10300602	NATURAL GAS	s	0	1	0	1	0	1	0	2	67	C3
BOILER 5 - 49.5 MMBTU/HR - NATURAL GAS - BLDG 24			f										
9-1054	20300101	D ESEL FUEL	s	0	6	0	5	0	4	0	1	0	C3
1000KW DIESEL GENERATOR - BLDG 24C-1			f										
9-1055	20300101	D ESEL FUEL	s	0	6	0	5	0	4	0	1	0	C3
1000KW DIESEL GENERATOR - BLDG 24C-2			f										
9-1056	20300101	D ESEL FUEL	s	0	6	0	5	0	4	0	1	0	C3
1000KW DIESEL GENERATOR - BLDG 24C-3			f										
9-1057	20300101	D ESEL FUEL	s	0	6	0	5	0	4	0	1	0	C3
1000KW DIESEL GENERATOR - BLDG 24C-4			f										
9-1058	20300101	D ESEL FUEL	s	0	6	0	5	0	4	0	1	0	C3
1000KW DIESEL GENERATOR - BLDG 24C-8			f										
SUBTOTAL(2)				0	33	0	27	0	26	1	14		

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1).

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

Emissions Estimation Method

A1 - U.S. EPA Reference Method
A2 - Other Particulate Sampling Train
A3 - Liquid Absorption Technique
A4 - Solid Absorption Technique
A5 - Freezing Out Technique
A9 - Other, Specify

User Calculated based on source test or other measurement
User Calculated based on material balance using engineering knowledge of the process
User Calculated based on AP-42
Judgement

C5 - User calculated based on State or local agency emission factor
C6 - New construction, not operational
C7 - Source closed, operation ceased
C8 - Computer calculated based on standard

FORM 3: PM

Particulate Matter

Calendar Year: 2019

Facility Name: GSFC

Facility ID: 24-033-00675

Pollutant: PM

Registration No./ Equipment Description	SCC Number	Fuel		PM - Filterable Tons/yr	PM - Filterable Lbs/day	PM10 - Filterable Tons/yr	PM10 - Filterable Lbs/day	PM2.5 - Filterable Tons/yr	PM2.5 - Filterable Lbs/day	PM Condensable Tons/yr	PM Condensable Lbs/day	Operation Days/yr	Estimation Method
9-1366	20300101	DIESEL FUEL	s	0	5	0	4	0	4	0	1	0	C3
1000KW DIESEL GENERATOR - BLDG 24C-6			f										
9-1049	20300101	DIESEL FUEL	s	0	9	0	7	0	7	0	1	0	C3
1450KW DIESEL GENERATOR - BLDG 31			f										
9-1050	20300101	DIESEL FUEL	s	0	9	0	7	0	7	0	1	0	C3
1450KW DIESEL GENERATOR - BLDG 31			f										
9-1051	20300101	DIESEL FUEL	s	0	10	0	8	0	8	0	1	1	C3
1450KW DIESEL GENERATOR - BLDG 31			f										
9-1052	20300101	DIESEL FUEL	s	0	10	0	8	0	8	0	1	1	C3
1450KW DIESEL GENERATOR - BLDG 31			f										
9-1053	20300101	DIESEL FUEL	s	0	10	0	8	0	8	0	1	1	C3
1450KW DIESEL GENERATOR - BLDG 31			f										
9-1045	20300101	DIESEL FUEL	s	0	1	0	0	0	0	0	0	0	C3
500KW D ESEL GENERATOR - BLDG 7			f										
9-1433	20300101	DIESEL FUEL	s	0	1	0	1	0	1	0	0	0	C3
500KW D ESEL GENERATOR - BLDG 7			f										
9-1535	20300101	DIESEL FUEL	s	0	0	0	0	0	0	0	0	0	C3
510KW D ESEL GENERATOR - BLDG 28			f										
9-1422	20300101	DIESEL FUEL	s	0	1	0	1	0	0	0	0	0	C3
1000KW DIESEL GENERATOR - BLDG 29			f										
SUBTOTAL(3)				0	56	0	45	0	43	0	7		

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1).

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

Emissions Estimation Method

A1 - U.S. EPA Reference Method
A2 - Other Particulate Sampling Train
A3 - Liquid Absorption Technique
A4 - Solid Absorption Technique
A5 - Freezing Out Technique
A9 - Other, Specify

User Calculated based on source test or other measurement
User Calculated based on material balance using engineering knowledge of the process
User Calculated based on AP-42
Judgement

C5 - User calculated based on State or local agency emission factor
C6 - New construction, not operational
C7 - Source closed, operation ceased
C8 - Computer calculated based on standard

FORM 3: PM

Particulate Matter

Calendar Year: 2019

Facility Name: GSFC

Facility ID: 24-033-00675

Pollutant: PM

Registration No./ Equipment Description	SCC Number	Fuel		PM - Filterable Tons/yr	PM - Filterable Lbs/day	PM10 - Filterable Tons/yr	PM10 - Filterable Lbs/day	PM2.5 - Filterable Tons/yr	PM2.5 - Filterable Lbs/day	PM Condensable Tons/yr	PM Condensable Lbs/day	Operation Days/yr	Estimation Method
9-1047	20300101	D ESEL FUEL	s	0	0	0	0	0	0	0	0	0	C3
500KW D ESEL GENERATOR - BLDG 10			f										
5-0831	10300603	NATURAL GAS	s	0	0	0	0	0	0	0	0	365	C3
BOILER - 1.7 MMBTU/HR - NATURAL GAS - BLDG 302			f										
5-1533	10300603	NATURAL GAS	s	0	0	0	0	0	0	0	0	365	C3
BOILER - 1.44 MMBTU/HR - NATURAL GAS - BLDG 302			f										
5-0846	10300603	NATURAL GAS	s	0	0	0	0	0	0	0	0	365	C3
BOILER - 1.118 MMBTU/HR - NATURAL GAS - BLDG 97			f										
5-1531	10300603	NATURAL GAS	s	0	0	0	0	0	0	0	0	365	C3
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35			f										
5-1532	10300603	NATURAL GAS	s	0	0	0	0	0	0	0	0	365	C3
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35			f										
8-0186	30201311	CHARCOAL	s	0	0	0	1	0	0	0	0	60	C3
CHARBROILER AT BLDG 92			f										
8-0187	30201311	CHARCOAL	s	0	0	0	1	0	0	0	0	60	C3
CHARBROILER AT BLDG 92			f										
8-0188	30201311	CHARCOAL	s	0	0	0	1	0	0	0	0	60	C3
CHARBRO LER AT BLDG 92			f										
8-0189	30201311	CHARCOAL	s	0	0	0	1	0	0	0	0	60	C3
CHARBRO LER AT BLDG 92			f										
SUBTOTAL(4)				0	1	0	3	0	0	0	0		

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1).

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

Emissions Estimation Method

A1 - U.S. EPA Reference Method
A2 - Other Particulate Sampling Train
A3 - Liquid Absorption Technique
A4 - Solid Absorption Technique
A5 - Freezing Out Technique
A9 - Other, Specify

User Calculated based on source test or other measurement
User Calculated based on material balance using engineering knowledge of the process
User Calculated based on AP-42
Judgement

C5 - User calculated based on State or local agency emission factor
C6 - New construction, not operational
C7 - Source closed, operation ceased
C8 - Computer calculated based on standard

FORM 3: PM

Particulate Matter

Calendar Year: 2019

Facility Name: GSFC

Facility ID: 24-033-00675

Pollutant: PM

Registration No./ Equipment Description	SCC Number			PM - Filterable		PM10 - Filterable		PM2.5 - Filterable		PM Condensable		Operation	Estimation
				Tons/yr	Lbs/day	Tons/yr	Lbs/day	Tons/yr	Lbs/day	Tons/yr	Lbs/day	Days/yr	Method
6-0852	39999989	N/A	s	0	1	0	0	0	0	0	0	260	C3
PROCESS L NE A BLDG 5			f										
6-0854	39999989	N/A	s	0	1	0	0	0	0	0	0	260	C3
PROCESS LINE N, BLDG 5			f										
6-0862	39999989	N/A	s	0	1	0	0	0	0	0	0	260	C3
PROCESS LINE B AND E, BLDG 5			f										
6-0903	31306599	N/A	s	2	15	0	0	0	0	0	0	260	C3
SEMI-CONDUCTOR OPERATION N B30			f										
SUBTOTAL(5)				2	18	0	0	0	0	0	0		
TOTAL				3	129	1	89	0	77	1	49		

s - Stack Emissions f - Fugitive Emissions Daily emissions (lbs/dy) are lbs/operating day of the source

The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) plus 0.6 (which displays as 1) equals 1.2 (which will display 1).

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel.

Emissions Estimation Method

A1 - U.S. EPA Reference Method
A2 - Other Particulate Sampling Train
A3 - Liquid Absorption Technique
A4 - Solid Absorption Technique
A5 - Freezing Out Technique
A9 - Other, Specify

User Calculated based on source test or other measurement
User Calculated based on material balance using engineering knowledge of the process
User Calculated based on AP-42
Judgement

C5 - User calculated based on State or local agency emission factor
C6 - New construction, not operational
C7 - Source closed, operation ceased
C8 - Computer calculated based on standard

6.4 Form 4 Toxic Air Pollutants

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FORM 4:

TOXIC AIR POLLUTANTS EMISSIONS CERTIFICATION REPORT

Calendar Year: 2019

Facility Name: NASA Goddard Space Flight Center **Facility ID:** 24-033-00675 **Pollutant:** Antimony Trioxide *

Equipment Description/ Registration No.	Actual Emissions Tons/yr	Lbs/dy	Lbs/hr	Control Device**	% Efficiency
SURFACE COATING IN BLDG 5A 6-1323	0.0009	0.0067	0.0017		
Sum:	**0.0009**	**0.0067**	**0.0017**		

Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

***Please attach all calculations.**

***See Attachment 1 for the minimum reporting values.**

****Control Device**
- **S = Scrubber**
- **B = Baghouse**
- **ESP = Electrostatic Precipitator**
- **A = Afterburner**
- **C = Condenser**
- **AD = Adsorbtion**
- **O = Other**

FORM 4:

TOXIC AIR POLLUTANTS

Calendar Year: 2019

EMISSIONS CERTIFICATION REPORT

Facility Name: NASA Goddard Space Flight Center **Facility ID:** 24-033-00675 **Pollutant:** Barium Chromate

Equipment Description/ Registration No.	Actual Emissions Tons/yr	Lbs/dy	Lbs/hr	Control Device**	% Efficiency
SURFACE COATING IN BLDG 4, RM 195 6-1101	0.000019	0.000148	0.000037		
Sum:	**0.000019**	**0.000148**	**0.000037**		

Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

***Please attach all calculations.**

***See Attachment 1 for the minimum reporting values.**

****Control Device**
- **S = Scrubber**
- **B = Baghouse**
- **ESP = Electrostatic Precipitator**
- **A = Afterburner**
- **C = Condenser**
- **AD = Adsorbtion**
- **O = Other**

FORM 4:

TOXIC AIR POLLUTANTS EMISSIONS CERTIFICATION REPORT

Calendar Year: 2019

Facility Name: NASA Goddard Space Flight Center **Facility ID:** 24-033-00675 **Pollutant:** Benzene *

Equipment Description/ Registration No.	Actual Emissions Tons/yr	Lbs/dy	Lbs/hr	Control Device**	% Efficiency
CHARBROILERS AT BLDG 92 8-0186 to 8-0189	0.07	0.20	0.05		
Sum:	**0.07**	**0.20**	**0.05**		

Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values.

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

FORM 4:

TOXIC AIR POLLUTANTS

Calendar Year: 2019

EMISSIONS CERTIFICATION REPORT

Facility Name: NASA Goddard Space Flight Center **Facility ID:** 24-033-00675 **Pollutant:** Formaldehyde *

Equipment Description/ Registration No.	Actual Emissions Tons/yr	Lbs/dy	Lbs/hr	Control Device**	% Efficiency
CHARBROILERS AT BLDG 92 8-0186 to 8-0189	0.060	0.168	0.042		
Sum:	**0.060**	**0.168**	**0.042**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values.

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 4:

TOXIC AIR POLLUTANTS

Calendar Year: 2019

EMISSIONS CERTIFICATION REPORT

Facility Name: NASA Goddard Space Flight Center **Facility ID:** 24-033-00675 **Pollutant:** Hydrogen Fluoride *

Equipment Description/ Registration No.	Actual Emissions Tons/yr	Lbs/dy	Lbs/hr	Control Device**	% Efficiency
SEMI-CONDUCTOR OPERATION IN B30 6-0903	0.0101	0.0778	0.0195		
Sum:	**0.0101**	**0.0778**	**0.0195**		

Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

***Please attach all calculations.**

***See Attachment 1 for the minimum reporting values.**

****Control Device**
- **S = Scrubber**
- **B = Baghouse**
- **ESP = Electrostatic Precipitator**
- **A = Afterburner**
- **C = Condenser**
- **AD = Adsorbtion**
- **O = Other**

FORM 4:

TOXIC AIR POLLUTANTS

Calendar Year: 2019

EMISSIONS CERTIFICATION REPORT

Facility Name: NASA Goddard Space Flight Center **Facility ID:** 24-033-00675 **Pollutant:** Potassium Zinc Chromate Hydroxide

Equipment Description/ Registration No.	Actual Emissions Tons/yr	Lbs/dy	Lbs/hr	Control Device**	% Efficiency
SURFACE COATING IN BLDG 4, RM 195 6-1101	0.000438	0.00337	0.000843		
Sum:	**0.000438**	**0.00337**	**0.000843**		

Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

***Please attach all calculations.**

***See Attachment 1 for the minimum reporting values.**

****Control Device**
- **S = Scrubber**
- **B = Baghouse**
- **ESP = Electrostatic Precipitator**
- **A = Afterburner**
- **C = Condenser**
- **AD = Adsorbtion**
- **O = Other**

FORM 4:

TOXIC AIR POLLUTANTS

Calendar Year: 2019

EMISSIONS CERTIFICATION REPORT

Facility Name: NASA Goddard Space Flight Center **Facility ID:** 24-033-00675 **Pollutant:** Strontium Chromate

Equipment Description/ Registration No.	Actual Emissions Tons/yr	Lbs/dy	Lbs/hr	Control Device**	% Efficiency
SURFACE COATING IN BLDG 4, RM 195 6-1101	0.000537	0.004128	0.001032		
SURFACE COATING IN BLDG 5A 6-1323	0.000145	0.001112	0.000278		
Sum:	**0.000682**	**0.005241**	**0.00131**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values.

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

6.5 Form 5 Billable Toxic Air Pollutants

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FORM 5:

BILLABLE TOXIC AIR POLLUTANTS EMISSIONS CERTIFICATION REPORT

Calendar Year: 2019

Facility Name: NASA Goddard Space Flight Center **Facility ID:** 24-033-00675

Chemical Name	CAS Number		Actual Emissions Tons/year	Lbs/day	Lbs/hr		
carbon disulfide	75150	S					
		F					
carbonyl sulfide	463581	S					
		F					
chlorine	7782505	S					
		F					
cyanide compounds	57125	S					
		F					
hydrochloric acid	7647010	S					
		F					
HYDROGEN FLUORIDE	7664393	S	0 0101	0.0778	0 0195		C2
		F					
methyl chloroform	71556	S					
		F					
methylene chloride	75092	S					
		F					
perchloroethylene	127184	S					
		F					
phosphine	7803512	S					
		F					
titanium tetrachloride	7550450	S					
		F					
TOTALS			0 0101	0.0778	0.0195		C2

S - Stack Emissions F - Fugitive Emissions Daily emissions (lbs/day) are lbs/operating day of the source

PLEASE NOTE: Be sure to attach all data and calculations necessary to support the emissions figures shown above.
Calculated using a 260 days per year operation.

Emission Estimation Method

A1 - U.S EPA Reference Method
A2 - Other Particulate Sampling Train
A3 - Liquid Absorption Technique
A4 - Solid Absorption Technique
A5 - Freezing Out Technique
A9 - Other, Specify

C1 - User calculated based on source test or other measurement
C2 - User calculated based on material balance using engineering knowledge of the process
C3 - User calculated based on AP-42
C4 - User calculated by engineering judgment
C5 - User calculated based on a State or local agency factor
C6 - New construction, not operational
C7 - Source closed, operation ceased
C8 - Computer calculated based on standards

This form is to include only the chemicals identified.

6.6 Form 6 Greenhouse Gas Air Pollutants

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FORM 6: Greenhouse Gases

Calendar Year: 2019

GREENHOUSE GAS AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: GSFC **Facility ID:** 24-033-00675 **Pollutant:** CH4

Equipment Description	MDE Number	Energy Type	Actual Emissions		
			Tons/yr	lbs/dy	lbs/hr
BOILER 1 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0808	NATURAL GAS	0	2	0
BOILER 2 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0809	NATURAL GAS	0	2	0
BOILER 3 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0810	NATURAL GAS	0	1	0
BOILER 4 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0811	NATURAL GAS	0	2	0
BOILER 5 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0812	NATURAL GAS	0	1	0
BOILER 1 - 49 5 MMBTU/HR - LANDFILL GAS - BLDG 24	MDE 5-0808	LANDFILL GAS	0	1	0
BOILER 2 - 49 5 MMBTU/HR - LANDFILL GAS - BLDG 24	MDE 5-0809	LANDFILL GAS	0	1	0
BOILER 4 - 49 5 MMBTU/HR - LANDFILL GAS - BLDG 24	MDE 5-0811	LANDFILL GAS	0	1	0
BOILER 1 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0808	DIESEL FUEL	0	0	0
BOILER 2 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0809	DIESEL FUEL	0	3	0
BOILER 3 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0810	DIESEL FUEL	0	3	0
BOILER 4 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0811	DIESEL FUEL	0	1	0
BOILER 5 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0812	DIESEL FUEL	0	0	0
1000KW DIESEL GENERATOR - BLDG 24C-1	MDE 9-1054	DIESEL FUEL	0	1	0
1000KW DIESEL GENERATOR - BLDG 24C-2	MDE 9-1055	DIESEL FUEL	0	1	0
1000KW DIESEL GENERATOR - BLDG 24C-3	MDE 9-1056	DIESEL FUEL	0	1	0
1000KW DIESEL GENERATOR - BLDG 24C-4	MDE 9-1057	DIESEL FUEL	0	1	0
1000KW DIESEL GENERATOR - BLDG 24C-8	MDE 9-1058	DIESEL FUEL	0	1	0
1000KW DIESEL GENERATOR - BLDG 24C-6	MDE 9-1366	DIESEL FUEL	0	1	0
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1049	DIESEL FUEL	0	1	0
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1050	DIESEL FUEL	0	1	0
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1051	DIESEL FUEL	0	1	0
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1052	DIESEL FUEL	0	1	0
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1053	DIESEL FUEL	0	1	0
BOILER - 1.7 MMBTU/HR - NATURAL GAS - BLDG 302	MDE 5-0831	DIESEL FUEL	0	0	0
BOILER - 1.44 MMBTU/HR - NATURAL GAS - BLDG 302	MDE 5-1533	DIESEL FUEL	0	0	0
BOILER - 1.118 MMBTU/HR - NATURAL GAS - BLDG 97	MDE 5-0846	DIESEL FUEL	0	0	0
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35	MDE 5-1531	DIESEL FUEL	0	0	0
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35	MDE 5-1532	DIESEL FUEL	0	0	0
500KW DIESEL GENERATOR - BLDG 7	MDE 9-1045	DIESEL FUEL	0	0	0
500KW DIESEL GENERATOR - BLDG 7	MDE 9-1433	DIESEL FUEL	0	0	0
510KW DIESEL GENERATOR - BLDG 28	MDE 9-1535	DIESEL FUEL	0	0	0
1000KW DIESEL GENERATOR - BLDG 29	MDE 9-1422	DIESEL FUEL	0	0	0
500KW DIESEL GENERATOR - BLDG 10	MDE 9-1047	DIESEL FUEL	0	0	0
TOTAL			1	29	3

Note:
The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) equals 1.2
(which will display 1) as the SUBTOTAL. Also, 0.4 (which displays as 0) plus 0.4 (which displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

FORM 6: Greenhouse Gases

Calendar Year: 2019

GREENHOUSE GAS AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: GSFC **Facility ID:** 24-033-00675 **Pollutant:** CO2

Equipment Description	MDE Number	Energy Type	Actual Emissions		
			Tons/yr	lbs/dy	lbs/hr
BOILER 1 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0808	NATURAL GAS	2371	102329	4264
BOILER 2 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0809	NATURAL GAS	3881	89532	3730
BOILER 3 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0810	NATURAL GAS	2002	51321	2138
BOILER 4 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0811	NATURAL GAS	4633	90116	3755
BOILER 5 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0812	NATURAL GAS	1449	43215	1801
BOILER 1 - 49 5 MMBTU/HR - LANDFILL GAS - BLDG 24	MDE 5-0808	LANDFILL GAS	5545	70156	2923
BOILER 2 - 49 5 MMBTU/HR - LANDFILL GAS - BLDG 24	MDE 5-0809	LANDFILL GAS	4811	71755	2990
BOILER 4 - 49 5 MMBTU/HR - LANDFILL GAS - BLDG 24	MDE 5-0811	LANDFILL GAS	4904	69510	2896
BOILER 1 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0808	DIESEL FUEL	5	9945	9945
BOILER 2 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0809	DIESEL FUEL	31	62755	3486
BOILER 3 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0810	DIESEL FUEL	44	78603	3275
BOILER 4 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0811	DIESEL FUEL	6	12623	6312
BOILER 5 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0812	DIESEL FUEL	4	8775	8775
1000KW DIESEL GENERATOR - BLDG 24C-1	MDE 9-1054	DIESEL FUEL	8	15422	1542
1000KW DIESEL GENERATOR - BLDG 24C-2	MDE 9-1055	DIESEL FUEL	8	15422	1542
1000KW DIESEL GENERATOR - BLDG 24C-3	MDE 9-1056	DIESEL FUEL	8	15422	1542
1000KW DIESEL GENERATOR - BLDG 24C-4	MDE 9-1057	DIESEL FUEL	8	15422	1542
1000KW DIESEL GENERATOR - BLDG 24C-8	MDE 9-1058	DIESEL FUEL	8	15422	1542
1000KW DIESEL GENERATOR - BLDG 24C-6	MDE 9-1366	DIESEL FUEL	7	13880	1542
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1049	DIESEL FUEL	12	24598	2236
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1050	DIESEL FUEL	12	24598	2236
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1051	DIESEL FUEL	13	26834	2236
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1052	DIESEL FUEL	13	26834	2236
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1053	DIESEL FUEL	13	26834	2236
BOILER - 1.7 MMBTU/HR - NATURAL GAS - BLDG 302	MDE 5-0831	DIESEL FUEL	129	709	30
BOILER - 1.44 MMBTU/HR - NATURAL GAS - BLDG 302	MDE 5-1533	DIESEL FUEL	110	600	25
BOILER - 1.118 MMBTU/HR - NATURAL GAS - BLDG 97	MDE 5-0846	DIESEL FUEL	71	389	16
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35	MDE 5-1531	DIESEL FUEL	132	721	30
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35	MDE 5-1532	DIESEL FUEL	132	721	30
500KW DIESEL GENERATOR - BLDG 7	MDE 9-1045	DIESEL FUEL	1	1465	771
500KW DIESEL GENERATOR - BLDG 7	MDE 9-1433	DIESEL FUEL	1	2313	771
510KW DIESEL GENERATOR - BLDG 28	MDE 9-1535	DIESEL FUEL	0	0	0
1000KW DIESEL GENERATOR - BLDG 29	MDE 9-1422	DIESEL FUEL	1	1696	1542
500KW DIESEL GENERATOR - BLDG 10	MDE 9-1047	DIESEL FUEL	1	1311	771
TOTAL			30373	991248	80711

Note:
The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) equals 1.2
(which will display 1) as the SUBTOTAL. Also, 0.4 (which displays as 0) plus 0.4 (which displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.

FORM 6: Greenhouse Gases

Calendar Year: 2019

GREENHOUSE GAS AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: GSFC **Facility ID:** 24-033-00675 **Pollutant:** N2O

Equipment Description	MDE Number	Energy Type	Actual Emissions		
			Tons/yr	lbs/dy	lbs/hr
BOILER 1 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0808	NATURAL GAS	0	0	0
BOILER 2 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0809	NATURAL GAS	0	0	0
BOILER 3 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0810	NATURAL GAS	0	0	0
BOILER 4 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0811	NATURAL GAS	0	0	0
BOILER 5 - 49 5 MMBTU/HR - NATURAL GAS - BLDG 24	MDE 5-0812	NATURAL GAS	0	0	0
BOILER 1 - 49 5 MMBTU/HR - LANDFILL GAS - BLDG 24	MDE 5-0808	LANDFILL GAS	0	0	0
BOILER 2 - 49 5 MMBTU/HR - LANDFILL GAS - BLDG 24	MDE 5-0809	LANDFILL GAS	0	0	0
BOILER 4 - 49 5 MMBTU/HR - LANDFILL GAS - BLDG 24	MDE 5-0811	LANDFILL GAS	0	0	0
BOILER 1 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0808	DIESEL FUEL	0	0	0
BOILER 2 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0809	DIESEL FUEL	0	1	0
BOILER 3 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0810	DIESEL FUEL	0	1	0
BOILER 4 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0811	DIESEL FUEL	0	0	0
BOILER 5 - 49.5 MMBTU/HR - #2 FUEL OIL - BLDG 24	MDE 5-0812	DIESEL FUEL	0	0	0
1000KW DIESEL GENERATOR - BLDG 24C-1	MDE 9-1054	DIESEL FUEL	0	0	0
1000KW DIESEL GENERATOR - BLDG 24C-2	MDE 9-1055	DIESEL FUEL	0	0	0
1000KW DIESEL GENERATOR - BLDG 24C-3	MDE 9-1056	DIESEL FUEL	0	0	0
1000KW DIESEL GENERATOR - BLDG 24C-4	MDE 9-1057	DIESEL FUEL	0	0	0
1000KW DIESEL GENERATOR - BLDG 24C-8	MDE 9-1058	DIESEL FUEL	0	0	0
1000KW DIESEL GENERATOR - BLDG 24C-6	MDE 9-1366	DIESEL FUEL	0	0	0
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1049	DIESEL FUEL	0	0	0
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1050	DIESEL FUEL	0	0	0
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1051	DIESEL FUEL	0	0	0
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1052	DIESEL FUEL	0	0	0
1450KW DIESEL GENERATOR - BLDG 31	MDE 9-1053	DIESEL FUEL	0	0	0
BOILER - 1.7 MMBTU/HR - NATURAL GAS - BLDG 302	MDE 5-0831	DIESEL FUEL	0	0	0
BOILER - 1.44 MMBTU/HR - NATURAL GAS - BLDG 302	MDE 5-1533	DIESEL FUEL	0	0	0
BOILER - 1.118 MMBTU/HR - NATURAL GAS - BLDG 97	MDE 5-0846	DIESEL FUEL	0	0	0
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35	MDE 5-1531	DIESEL FUEL	0	0	0
BOILER - 1.5 MMBTU/HR - NATURAL GAS - BLDG 35	MDE 5-1532	DIESEL FUEL	0	0	0
500KW DIESEL GENERATOR - BLDG 7	MDE 9-1045	DIESEL FUEL	0	0	0
500KW DIESEL GENERATOR - BLDG 7	MDE 9-1433	DIESEL FUEL	0	0	0
510KW DIESEL GENERATOR - BLDG 28	MDE 9-1535	DIESEL FUEL	0	0	0
1000KW DIESEL GENERATOR - BLDG 29	MDE 9-1422	DIESEL FUEL	0	0	0
500KW DIESEL GENERATOR - BLDG 10	MDE 9-1047	DIESEL FUEL	0	0	0
TOTAL			0	5	1

Note:
The displayed numbers above are rounded to the nearest whole number. For instance, 0.6 (which displays as 1) equals 1.2
(which will display 1) as the SUBTOTAL. Also, 0.4 (which displays as 0) plus 0.4 (which displays as 0) equals 0.8 (which will display 1) as the SUBTOTAL.