III-n | AIR EMISSIONS TECHNICAL SUMMARY

The project's primary source of air emissions will be stationary diesel backup generators. The facility will install up to **twelve (12) Tier 2 certified diesel backup generators rated at 2.7 megawatts (MW) each**. Air emission estimates were conducted to ensure compliance with Federal, State, and Local air quality regulations, specifically targeting the National Ambient Air Quality Standards (NAAQS).

Regulatory Compliance and Permitting

Conservatively estimating the project's size and operational characteristics, it will not require permitting under Title IV (Acid Rain Program) or Title V (Operating Permits) of the Federal Clean Air Act. Because the project is located within the Ozone Transport Region, the facility will qualify for a Minor Facility Registration (AFR) in New York State by restricting emissions to less than 50% of the major source threshold. Specifically, the facility will "cap by rule" in accordance with 6 NYCRR 201-4.5, limiting Oxides of Nitrogen (NOx) to 49.9 tons per year.

Operational Maintenance and Limits

Generators require regular maintenance to ensure emergency readiness. While Federal regulations (40 CFR 60 Subpart IIII) allow up to 100 hours per year for maintenance and testing, the facility is requesting an enforceable limitation of 500 hours per year per unit for all operating categories (emergency, maintenance, and commissioning) to ensure total site emissions remain under the 49.9 tpy (NOx) cap.

Generator operating time will be tracked through the use of a non-resettable hour meter installed on each engine, as required by federal air regulations applicable to internal combustion engines. Readings will be recorded from the non-resettable hour meters at the beginning and end of each engine run to determine the total length of each run.

Estimated Annual Emissions (Total Campus)

Pollutant	Project Estimated Emissions (Actual)	STAMP DGEIS / Major Source Threshold
Oxides of Nitrogen (NOx)	**< 49.9 tpy**	100 tpy (DGEIS Impact Threshold) / 50 tpy (AFR Cap)
Carbon Monoxide (CO)	**~10.5 tpy***	100 tpy
Particulate Matter (PM_{10}/$PM_{2.5}$)	**~0.85 tpy***	100 tpy
Volatile Organic Compounds (VOC)	**~1.2 tpy***	50 tpy
Sulfur Dioxide (SO_2)	**< 0.1 tpy**	100 tpy
Hazardous Air Pollutants (HAPs)	**0.048 tpy**	25 tpy (Aggregate) / 10 tpy (Individual)
Greenhouse Gases (CO_2)	**5,333 tons**	25,000 metric tons (Reporting Threshold)

*Projected based on 500-hour enforceable run-time limit and Tier 2 emission factors.

Additional Note: Diesel generators do not emit perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), or sulfur hexafluoride (SF_6). Detailed analysis confirms that NOx emissions—the primary pollutant of concern—will be limited to a level that equates to approximately 134 hours of full-load operation per generator annually, providing a significant safety buffer relative to GEIS air quality thresholds.

Table C-1 - Summary of Actual and Potential Emissions for Generators
Stream U.S. Data Centers, LLC - BUFA Site
Alabama, New York

Number of Emergency Back-up Generator Engines (Site-Wide)

Kohler 2.7MW Emergency Back-up Generators	12
Total	**12**

Power Output by Load

	Power Output									
	(bhp/gen)[1]					(MMBtu/hr/gen)[2]				
Engines Group	**10% Load**	**25% Load**	**50% Load**	**75% Load**	**Full Standby**	**10% Load**	**25% Load**	**50% Load**	**75% Load**	**Full Standby**
Kohler 2.7MW	362	905	1,810	2,716	3,621	2.5	6.3	12.7	19.0	25.3

Notes:
[1] Per the manufacturer specification sheets and performance data for the engine model.
[2] Engine horsepower was converted to heat input based on the Brake-Specific Fuel Consumption (BSFC) from the USEPA's AP-42, Section 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines, Table 3.4-1, footnote e (October 1996):

BSFC = 7,000 Btu/hp-hr

	Uncontrolled Emission Factors for Kohler 2.7 MW Engines[1] (g/bhp-hr)				
Pollutant	**10% Load**	**25% Load**	**50% Load**	**75% Load**	**Full Standby**
NO_X	6.3	4.8	4.3	4.3	7.8
CO	3.1	1.3	0.45	0.60	0.22
VOC[2]	2.1	0.81	0.45	0.24	0.20
Filterable PM[3]	0.35	0.30	0.13	0.19	0.037

Notes:
[1] Refer to enclosed manufacturer performance data for the engine model. Emission factors are conservatively based on the manufacturer's not-to-exceed emissions data.
[2] Assumes that all hydrocarbons (HC) are VOC.
[3] Assumes that all filterable PM is less than 2.5 microns in diameter (i.e., PM = PM_{10} = $PM_{2.5}$).

Conversions:

1.34102 hp/kW

Table C-1 - Summary of Actual and Potential Emissions for Generators
Stream U.S. Data Centers, LLC - BUFA Site
Alabama, New York

AP-42 Emission Factors

Pollutant	Emission Factor[1] (lb/MMBtu)
SO_2[2]	1.52E-03
Condensable PM	7.70E-03
Benzene	7.76E-04
Toluene	2.81E-04
Xylenes	1.93E-04
Naphthalene	1.30E-04
Formaldehyde	7.89E-05
Acetaldehyde	2.52E-05
Acrolein	7.88E-06
Total PAH[3]	2.12E-04
Benzo(a)pyrene	*2.57E-07*
Dibenz(a,h)anthracene	*3.46E-07*
Benz(a)anthracene	*6.22E-07*
Acenaphthene	*4.68E-06*
Phenanthrene	*4.08E-05*
Fluorene	*1.28E-05*
Anthracene	*1.23E-06*
Pyrene	*3.71E-06*
Benzo(g,h,i)perylene	*5.56E-07*
Indeno(1,2,3-cd)pyrene	*4.14E-07*
Benzo(b)fluoranthene	*1.11E-06*
Fluoranthene	*4.03E-06*
Benzo(k)fluoranthene	*2.18E-07*
Acenaphthylene	*9.23E-06*
Chrysene	*1.53E-06*

Notes:
[1] AP-42 emission factors are from the U.S. EPA's AP-42, Section 3.4, Large Stationary Diesel And All Stationary Dual-fuel Engines, Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4.
[2] SO_2 emission factor assumes that all sulfur in the fuel is converted to SO_2 and is calculated based on the maximum allowable diesel fuel sulfur content under NSPS Subpart IIII:
Diesel Sulfur Content = 0.0015 wt.% Sulfur
[3] PAH = Polycyclic Aromatic Hydrocarbons

Table C-1 - Summary of Actual and Potential Emissions for Generators
Stream U.S. Data Centers, LLC - BUFA Site
Alabama, New York

GHG Emission Factors

Pollutant	Emission Factor - Heat Input-Based (lb/MMBtu)[1]
CO_2	163
CH_4	0.0066
N_2O	0.0013
CO_2e[2]	164

Notes:

[1] Per 40 CFR 98, Subpart C, Tables C-1 and C-2 for No. 2 distillate fuel oil combustion. The emission factors were converted from kg/MMBtu to lb/MMBtu.

[2] CO_2e emission factor is calculated as the sum of each GHG pollutant multiplied by its global warming potential, per 40 CFR 98, Subpart A, Table A-1:

CO_2:	1
CH_4:	28
N_2O:	265

Table C-1 - Summary of Actual and Potential Emissions for Generators
Stream U.S. Data Centers, LLC - BUFA Site
Alabama, New York

Hourly Emission Rates

Pollutant	Kohler 2.7 MW Engines - Hourly Emission Factors (lb/hr/gen) [1],[2]					
	10% Load	25% Load	50% Load	75% Load	Full Standby	Maximum
Criteria Pollutants						
NO_X	5.0	10	17	25	62	**62**
CO	2.4	2.5	1.8	3.6	1.8	**3.6**
VOC	1.7	1.6	1.8	1.4	1.6	**1.8**
Filt. PM[3]	0.28	0.60	0.51	1.1	0.30	**1.1**
$PM/PM_{10}/PM_{2.5}$[3]	0.30	0.64	0.60	1.3	0.49	**1.3**
SO_2	0.0038	0.010	0.019	0.029	0.038	**0.038**
Hazardous Air Pollutants						
Benzene	1.97E-03	4.92E-03	9.83E-03	1.48E-02	1.97E-02	**1.97E-02**
Toluene	7.12E-04	1.78E-03	3.56E-03	5.34E-03	7.12E-03	**7.12E-03**
Xylenes	4.89E-04	1.22E-03	2.45E-03	3.67E-03	4.89E-03	**4.89E-03**
Naphthalene	3.29E-04	8.24E-04	1.65E-03	2.47E-03	3.29E-03	**3.29E-03**
Formaldehyde	2.00E-04	5.00E-04	1.00E-03	1.50E-03	2.00E-03	**2.00E-03**
Acetaldehyde	6.39E-05	1.60E-04	3.19E-04	4.79E-04	6.39E-04	**6.39E-04**
Acrolein	2.00E-05	4.99E-05	9.99E-05	1.50E-04	2.00E-04	**2.00E-04**
Total PAH	5.37E-04	1.34E-03	2.69E-03	4.03E-03	5.37E-03	**5.37E-03**
Benzo(a)pyrene	*6.51E-07*	*1.63E-06*	*3.26E-06*	*4.89E-06*	*6.51E-06*	*6.51E-06*
Dibenz(a,h)anthracene	*8.77E-07*	*2.19E-06*	*4.38E-06*	*6.58E-06*	*8.77E-06*	*8.77E-06*
Benz(a)anthracene	*1.58E-06*	*3.94E-06*	*7.88E-06*	*1.18E-05*	*1.58E-05*	*1.58E-05*
Acenaphthene	*1.19E-05*	*2.97E-05*	*5.93E-05*	*8.90E-05*	*1.19E-04*	*1.19E-04*
Phenanthrene	*1.03E-04*	*2.59E-04*	*5.17E-04*	*7.76E-04*	*1.03E-03*	*1.03E-03*
Fluorene	*3.24E-05*	*8.11E-05*	*1.62E-04*	*2.43E-04*	*3.24E-04*	*3.24E-04*
Anthracene	*3.12E-06*	*7.79E-06*	*1.56E-05*	*2.34E-05*	*3.12E-05*	*3.12E-05*
Pyrene	*9.40E-06*	*2.35E-05*	*4.70E-05*	*7.05E-05*	*9.40E-05*	*9.40E-05*
Benzo(g,h,i)perylene	*1.41E-06*	*3.52E-06*	*7.05E-06*	*1.06E-05*	*1.41E-05*	*1.41E-05*
Indeno(1,2,3-cd)pyrene	*1.05E-06*	*2.62E-06*	*5.25E-06*	*7.87E-06*	*1.05E-05*	*1.05E-05*
Benzo(b)fluoranthene	*2.81E-06*	*7.03E-06*	*1.41E-05*	*2.11E-05*	*2.81E-05*	*2.81E-05*
Fluoranthene	*1.02E-05*	*2.55E-05*	*5.11E-05*	*7.66E-05*	*1.02E-04*	*1.02E-04*
Benzo(k)fluoranthene	*5.53E-07*	*1.38E-06*	*2.76E-06*	*4.14E-06*	*5.53E-06*	*5.53E-06*
Acenaphthylene	*2.34E-05*	*5.85E-05*	*1.17E-04*	*1.75E-04*	*2.34E-04*	*2.34E-04*
Chrysene	*3.88E-06*	*9.69E-06*	*1.94E-05*	*2.91E-05*	*3.88E-05*	*3.88E-05*
Total HAP	4.32E-03	1.08E-02	2.16E-02	3.24E-02	4.32E-02	**4.32E-02**

Table C-1 - Summary of Actual and Potential Emissions for Generators
Stream U.S. Data Centers, LLC - BUFA Site
Alabama, New York

Hourly Emission Rates *(Continued)*

Pollutant	Kohler 2.7 MW Engines - Hourly Emission Factors (lb/hr/gen) [1],[2]					
	10% Load	25% Load	50% Load	75% Load	Full Standby	Maximum
Greenhouse Gases						
CO_2	413	1,033	2,066	3,099	4,133	**4,133**
CH_4	0.017	0.042	0.084	0.13	0.17	**0.17**
N_2O	0.0034	0.0084	0.017	0.025	0.034	**0.034**
CO_2e	415	1,037	2,073	3,110	4,146	**4,146**

Notes:

[1] For engine-specific emission factors:
Hourly Emissions at Load *X* (lb/hr/gen) = Emission Factor at Load *X* (g/hp-hr) x Engine Power at Load *X* (bhp/gen) / (453.6 g/lb)

[2] For AP-42 & GHG emission factors:
Hourly Emissions at Load *X* (lb/hr/gen) = Emission Factor (lb/MMBtu) x Heat Input at Load *X* (MMBtu/hr/gen)

[3] Total $PM/PM_{10}/PM_{2.5}$ is the sum of filterable $PM/PM_{10}/PM_{2.5}$ and condensable PM.

Hours of Operation per Generator

Engine Group	Actual Operating Hours per Generator[1] (hr/yr/gen)	Potential Operating Hours per Generator[2] (hr/yr/gen)
12 Kohler 2.7 MW Engines	134	500

Notes:

[1] Actual Operating Hours are based on the facility-wide requested emissions cap on NO_X and are presented here for illustrative purposes. Stream Data Centers requests that this not be enforced as a limit on a per engine basis. All other pollutants will be inherently limited below applicable thresholds.

[2] Potential Operating Hours for the emergency generators are assumed to be 500 hr/yr/gen consistent with 6 NYCRR 200.1(cq).

Table C-1 - Summary of Actual and Potential Emissions for Generators
Stream U.S. Data Centers, LLC - BUFA Site
Alabama, New York

Actual and Potential Emissions - Diesel Generators

Pollutant	Maximum Hourly Emission Rate	Actual Emissions from All Generators[1]		Potential Emissions from All Generators[2]	
	(lb/hr/gen)	(lb/yr)	(tons/yr)	(lb/yr)	(tons/yr)
Criteria Pollutants					
NO_X	62	99,800	49.9	371,435	185.7
CO	3.6	5,758	2.9	21,429	10.7
VOC	1.8	2,879	1.4	10,714	5.4
Filt. PM	1.1	1,799	0.9	6,697	3.3
$PM_{10}/PM_{2.5}$	1.3	2,035	1.0	7,575	3.8
SO_2	0.038	62	0.03	230	0.1
Hazardous Air Pollutants					
Benzene	1.97E-02	31.7	1.59E-02	118.0	5.90E-02
Toluene	7.12E-03	11.5	5.74E-03	42.7	2.14E-02
Xylenes	4.89E-03	7.9	3.94E-03	29.3	1.47E-02
Naphthalene	3.29E-03	5.3	2.66E-03	19.8	9.88E-03
Formaldehyde	2.00E-03	3.2	1.61E-03	12.0	6.00E-03
Acetaldehyde	6.39E-04	1.0	5.15E-04	3.8	1.92E-03
Acrolein	2.00E-04	0.3	1.61E-04	1.2	5.99E-04
Total PAH	5.37E-03	8.7	4.33E-03	32.2	1.61E-02
Benzo(a)pyrene	*6.51E-06*	*0.01*	*5.25E-06*	*0.04*	*1.95E-05*
Dibenz(a,h)anthracene	*8.77E-06*	*0.01*	*7.07E-06*	*0.05*	*2.63E-05*
Benz(a)anthracene	*1.58E-05*	*0.03*	*1.27E-05*	*0.09*	*4.73E-05*
Acenaphthene	*1.19E-04*	*0.19*	*9.56E-05*	*0.71*	*3.56E-04*
Phenanthrene	*1.03E-03*	*1.67*	*8.34E-04*	*6.20*	*3.10E-03*
Fluorene	*3.24E-04*	*0.52*	*2.62E-04*	*1.95*	*9.73E-04*
Anthracene	*3.12E-05*	*0.05*	*2.51E-05*	*0.19*	*9.35E-05*
Pyrene	*9.40E-05*	*0.15*	*7.58E-05*	*0.56*	*2.82E-04*
Benzo(g,h,i)perylene	*1.41E-05*	*0.02*	*1.14E-05*	*0.08*	*4.23E-05*
Indeno(1,2,3-cd)pyrene	*1.05E-05*	*0.02*	*8.46E-06*	*0.06*	*3.15E-05*
Benzo(b)fluoranthene	*2.81E-05*	*0.05*	*2.27E-05*	*0.17*	*8.44E-05*
Fluoranthene	*1.02E-04*	*0.16*	*8.23E-05*	*0.61*	*3.06E-04*
Benzo(k)fluoranthene	*5.53E-06*	*0.01*	*4.45E-06*	*0.03*	*1.66E-05*
Acenaphthylene	*2.34E-04*	*0.38*	*1.89E-04*	*1.40*	*7.02E-04*
Chrysene	*3.88E-05*	*0.06*	*3.13E-05*	*0.23*	*1.16E-04*
Total HAP	4.32E-02	69.6	3.48E-02	259.1	1.30E-01

Table C-1 - Summary of Actual and Potential Emissions for Generators
Stream U.S. Data Centers, LLC - BUFA Site
Alabama, New York

Actual and Potential Emissions - Diesel Generators *(Continued)*

Pollutant	Maximum Hourly Emission Rate	Actual Emissions from All Generators[1]		Potential Emissions from All Generators[2]	
	(lb/hr/gen)	(lb/yr)	(tons/yr)	(lb/yr)	(tons/yr)
Greenhouse Gases					
CO_2	4,133	6,662,349	3,331	24,795,877	12,398
CH_4	0.17	270	0.14	1,006	0.50
N_2O	0.034	54	0.03	201	0.10
CO_2e	4,146	6,684,239	3,342	24,877,345	12,439

Notes:

[1] Actual Emissions (lb/yr) = Number of Generators (Number) x Maximum Hourly Emission Rate (lb/hr/gen) x Actual Operating Hours (hr/yr/gen)
Actual Emissions (ton/yr) = Actual Emissions (lb/yr) ÷ 2,000 (lb/ton)

[2] Potential Emissions (lb/yr) = Number of Generators (Number) x Maximum Hourly Emission Rate (lb/hr/gen) x Potential Operating Hours (hr/yr/gen)
Potential Emissions (ton/yr) = Potential Emissions (lb/yr) ÷ 2,000 (lb/ton)