


March 21, 2019

Mr. James Brazzill  
Jefferson County Department of Health  
Environmental Health Services  
Air and Radiation Protection Division  
P.O. Box 2648  
Birmingham, AL 35202-2648

Dear Mr. Brazzill,

Enclosed please find the 2018 Annual Emissions Inventory for the University of Alabama at Birmingham.  
If you have any questions, do not hesitate to contact me.

Sincerely;

  
J. David Hagan

Director, Environmental Management Program  
University of Alabama at Birmingham  
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# UAB Annual Emissions Calculations

## Group A Boilers

### 1. Steam Plant: 4 X 99 MM Btu/hr NG

Actual Emissions in Tons Per Year:

1-3940 hrs  
PM 0.975  
SO2 .00118  
NOx 7.099  
CO 6.478  
VOC 0.950  
TOTAL = 15.503

2- 4456 hrs  
PM 1.10  
SO2 0.132  
NOx 8.028  
CO 8.27  
VOC 1.213  
TOTAL = 18.743

3- 2752 hrs  
PM .681  
SO2 .0817  
NOx 4.958  
CO 5.108  
VOC .749  
TOTAL = 11.577

4-3762 hrs  
PM .931  
SO2 .111  
NOx 6.778  
CO 6.983  
VOC 1.024  
TOTAL = 15.819

**GRAND TOTAL (actual) = 57.642 TPY**

### 2. WIC: 2 X 32.66 MM Btu NG

PM .1430  
SO2 .1716  
NOx 10.413

CO 10.728  
VOC 1.57  
Total PTE = 23.025 TPY

**3. North Pavilion1:1 X 33.475 MM Btu NG**

PM .735  
SO2 0.88  
NOx 5.336  
CO 5.492  
VOC .806  
TOTAL = 13.247 TPY

**North Pavilion2: 1 X 33.6 MM Btu NG**

PM .733  
SO2 0.88  
NOx 5.356  
CO 5.518  
VOC .809  
TOTAL = 13.349 TPY

**4. West Pavilion: 1 X 21 MM Btu NG**

PM .275  
SO2 .055  
NOx 8.738  
CO 1.747  
VOC .459  
TOTAL = 11.27 TPY

**5. SEBLAB: 3 X 7 MM Btu NG**

PM .4599  
SO2 .055  
NOx 3.348  
CO 3.44  
VOC .505  
TOTAL = 7.807 TPY

**6. Highlands: 3 X 11.7 MM Btu NG**

PM .461  
SO2 .092  
NOx 14.60  
CO 2.92  
VOC .768  
TOTAL = 18.84 TPY

**7. Campbell: 2 X 5.23 MM Btu NG**

PM .137  
SO2 .027  
NOx 4.35  
CO .870  
VOC .229  
TOTAL = 5.61 TPY

**8. Education: 2 X 10.46 MM Btu NG**

PM .274  
SO2 .549  
NOx 8.696  
CO 1.74  
VOC .458  
TOTAL = 11.717 TPY

**9. MCLM: 2 X 25.11 MM Btu NG**

PM .659  
SO2 .131  
NOx 20.896  
CO 4.179  
VOC 1.099  
TOTAL = 26.96

**10. Webb: 2 X 6.28 MM Btu NG**

PM .165  
SO2 .033  
NOx 5.226  
CO 1.045  
VOC .275  
TOTAL = 6.744

**Group B Boilers**

Total # boilers = 32

Average boiler size = 3.5 MMBtu/hr

PM 1.472  
SO2 .294  
NOx 46.603  
CO 9.321  
VOC 2.45  
TOTAL = 61.965 TPY

**Group C Water Heaters**

Total # water heater = 60

All  $\leq$  120 gallons  
All  $\leq$  1.6 MMBtu/hr  
PM .788  
SO2 .158  
NOx 24.966  
CO 4.993  
VOC 1.31  
TOTAL = 32.838TPY

## **EMERGENCY GENERATORS & FIRE PUMPS**

### **Group A**

1. Central Plant #5  
# Generators = 2  
Rated HP = 1214  
Hrs operated = 50  
PM .02  
SO2 .024  
NOx .639  
CO .349  
VOC .039  
TOTAL = 1.071

### **2. WIC**

# Generators = 2  
Rated HP = 2146  
Hrs operated = 50  
PM .035  
SO2 .043  
NOx 1.13  
CO .617  
VOC .069  
TOTAL = 1.894

### **3. SEBLAB**

# Generators = 1  
Rated HP = 923  
Hrs operated = 50  
PM .0008  
SO2 .043  
NOx .29  
CO .133  
VOC .069  
TOTAL = .933

### **4. Heritage Hall**

# Generators = 1  
Rated HP = 685

Hrs operated = 50  
PM .0005  
SO2 .032  
NOx .215  
CO .0991  
VOC .051  
TOTAL = .3976

5. Student Residence Hall

# Generators = 1  
Rated HP = 670  
Hrs operated = 50  
PM .0005  
SO2 .031  
NOx .210  
CO .097  
VOC .050  
TOTAL = .3885

6. Rust Computer Center

# Generators = 1  
Rated HP = 1207  
Hrs operated = 50  
PM .001  
SO2 .099  
NOx .378  
CO .175  
VOC .019  
TOTAL = .672

7. 936 Bldg

# Generators = 1  
Rated HP = 335  
Hrs operated = 50  
PM .003  
SO2 .003  
NOx .009  
CO .005  
VOC .005  
TOTAL = .02

8. Central Plant 1

# Generators = 1  
Rated HP = 805  
Hrs operated = 50  
PM .0007  
SO2 .038

NOx .253  
CO .116  
VOC .060  
TOTAL = .4677

9. Central Plant 2  
# Generators = 1  
Rated HP = 805  
Hrs operated = 50  
PM .0007  
SO2 .038  
NOx .253  
CO .116  
VOC .060  
TOTAL = .4677

10. AIEVA Vis Arts  
# Generators = 1  
Rated HP = 805  
Hrs operated = 50  
PM .0007  
SO2 .038  
NOx .253  
CO .116  
VOC .060  
TOTAL = .4677

11. OHS Support Facility  
# Generators = 1  
Rated HP = 54  
Hrs operated = 50  
PM .0009  
SO2 .0005  
NOx .011  
CO .011  
VOC .0008  
TOTAL = .0242

12. OHS Support Facility (fire pump)  
# Generators = 1  
Rated HP = 107  
Hrs operated = 50  
PM .005  
SO2 .0009  
NOx .046  
CO .022  
VOC .002



**TOTAL = .0759**

13. Hill Student Center

# Generators = 1

Rated HP = 670

Hrs operated = 50

PM .0005

SO2 .031

NOx .210

CO .097

VOC .050

**TOTAL = .3885**

14. Heritage Hall

# Generators = 1

Rated HP = 402

Hrs operated = 50

PM .0033

SO2 .019

NOx .079

CO .058

VOC .030

**TOTAL = .5778**

15. 616 Bldg

# Generators = 1

Rated HP = 40

Hrs operated = 50

PM .0006

SO2 .0004

NOx .008

CO .008

VOC .0006

**TOTAL = .0176**

16. WBHM (JJJJ)

# Generators = 1

Rated HP = 40

Hrs operated = 50

NOx + HC emissions  
= .022

CO emissions  
= .854

**TOTAL = .876**

17. Remote Parking #4

# Generators = 1

Rated HP = 34

Hrs operated = 50

NOx + HC emissions

= .019

CO emissions

= .726

**TOTAL = .745**

18. Remote Parking #4

# Generators = 1

Rated HP = 67

Hrs operated = 50

NOx + HC emissions

= .037

CO emissions

= 1.42

**TOTAL = 1.457**

19. Lister Hill Library

# Generator (fire pump) = 1

Rated HP = 50

Hrs operated = 50

NOx + HC emissions

= .028

CO emissions

= 1.066

**TOTAL = 1.094**

20. Education Bldg – Telecom Rm

# Generators = 1

Rated HP = 201

Hrs operated = 50

NOx + HC emissions

= .022

CO emissions

= .044

VOC emissions

= .011

TOTAL = .077

**Group B Generators**

NOx = 28.813

**INCINERATORS**

A. Therm-Tec

B. Power-Pak

**Fleet Fugitive Emissions**

Gasoline & Diesel = 7.42 TPY

**GRAND TOTAL = 339.085 TPY**

