

University of Louisville, Belknap Campus

2301 S. Brook St.
Louisville, KY 40208

Plant ID: 0852

June 15, 2018

Louisville Metro Air Pollution Control District
701 W. Ormsby Ave.
Suite 303
Louisville, KY 40203

RE: 2017 University of Louisville, Belknap Campus Title V Emission Inventory
Permit O-0852-16-V

Dear Sir or Madam,

Per the reporting requirements in Regulation 1.06, Section 4, the 2017 Emission Inventory for Permit O-0852-16-V is enclosed on District-required Emission Inventory Forms. Per the regulation, the emissions from the source are to be reported by April 15 each year for the previous year. An extension for this submission was requested and granted until June 15.

Option 2 (Processes spreadsheet) has been selected for the Emission Inventory. The following forms are included for the 2017 reporting period submittal:

- Form E99
- Processes – which includes the E90, E20, E45, E54, and E44 Forms
- Form E10T
- Form E91T
- Form E92T

Per APCD's request, an electronic version of the forms and emission files will be provided in addition to a hard copy version.

Please call Cathy Price at (502) 852-2956 if you have any questions.

Louisville Metro Air Pollution Control District

Form E99 - Plant-wide Pollutant Emissions Summary and Certification

Please read the instructions before filling out the form. The values reported must agree with the summation of the values reported for the individual emission processes/points identified in copies of Form E90.

Plant ID: Emission Year:
 Company Name:
 Plant Location: Zipcode:
 NAICS: or SIC:

Pollutant	Description, Comments	Total Emissions (Tons)
Ammonia (NH ₃)		0.31
Carbon monoxide (CO)		8.30
Oxides of nitrogen (NO _x)		6.31
Particulate matter: TSP (filterable + condensable)		0.82
PM-condensable (condensable particulate matter)		0.55
PM ₁₀ -filterable (particulate matter <10 µm)		0.27
PM _{2.5} -filterable (particulate matter <2.5 µm)		0.27
Sulfur dioxide (SO ₂)		0.11
Volatile organic compounds (VOCs)		1.21
Total Hazardous air pollutants (HAPs)		0.19

Technical Contact Person:

Name: Title:
 Telephone #: E-Mail Address:

Certification by Responsible Official

Based on available information and belief formed after reasonable inquiry, I certify that the statements and information in this document are true, accurate, and complete.

Name*: Title:
Please print the name of the responsible official
 Telephone #: E-Mail Address:

Signature*: _____ Date: _____

*Pursuant to LMAPCD Regulation 2.16, Section 3.5.11, the certifying individual must be a "responsible official" as defined in LMAPCD Regulation 2.16, Section 1.36.

Page Identifier:

Louisville Metro Air Pollution Control District

Form E90 - Process Information

Please read the instructions carefully before completing this form to quantify the emissions for each emission process/point.

Plant ID:	<input type="text" value="0852"/>	Emission Year:	<input type="text" value="2017"/>
Company Name:	<input type="text" value="University of Louisville, Belknap Campus"/>		
Emission Unit ID:	<input type="text" value="U1/U2"/>		
Emission Process/Point:	<input type="text" value="E1"/>		
Comments:	<input type="text" value="Boiler 1"/>		

Throughput

Operating Schedule for the Emission Year:

Actual hours this emission process/point operated in the report year:

Throughput: Throughput per year: Units

Control Devices:

Use the control device identifiers from Form E92T to allocate emissions to control devices. List the capture efficiency for each emission stream. **Sequence:** Include whether the device operates in parallel or series. Enter "NA" for a singular control device.

Control Device Identifier	% Captured	Sequence	% Uptime
C4	100.00%	NA	100.00%
C5	100.00%	NA	100.00%

Stacks and Other Release Points:

Use the release point identifiers from Form E91T to allocate emissions to release points.

Use one row per Release Point or identify if allocation is evenly split.

Release Point Identifier	% of Emissions
S1	100.00%
Total (must equal 100%):	100%

Page Identifier:

Emissions

Emission Process/Point:

E1

Attach all spreadsheets used to calculate emissions.

1. Criteria Air Pollutants (CAPS):

Enter the actual emissions in **tons**.

- Ammonia (NH₃), CAS # 7664-41-7
- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
- Particulate matter: TSP (filterable + condensable)
- PM condensable (condensable particulate matter)
- PM₁₀ filterable (particulate matter <10 μm)
- PM_{2.5} filterable (particulate matter <2.5 μm)
- Sulfur dioxide (SO₂)
- Volatile organic compounds (including HAP VOCs)

Tons	Calculation Method	Emission Factor	
		Value	Units
0.10	US EPA Emission Factor (uncontrolled)	3.2	lb/mmscf
2.61	US EPA Emission Factor (uncontrolled)	84	lb/mmscf
1.00	USEPA Emission Factor (controlled)	32	lb/mmscf
0.24	US EPA Emission Factor (uncontrolled)	7.6	lb/mmscf
0.18	US EPA Emission Factor (uncontrolled)	5.7	lb/mmscf
0.06	US EPA Emission Factor (uncontrolled)	1.9	lb/mmscf
0.06	US EPA Emission Factor (uncontrolled)	1.9	lb/mmscf
0.02	US EPA Emission Factor (uncontrolled)	0.6	lb/mmscf
0.17	US EPA Emission Factor (uncontrolled)	5.5	lb/mmscf

2. (Optional) Greenhouse Gases (GHG)

- Carbon dioxide (CO₂)
- Hydrofluorocarbons (HFC)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Perfluorocarbons (PFC)
- Sulfur hexafluoride (SF₆)

Tons	Calculation Method		

3. Toxic Air Contaminants (TACs):

- 1,2,4-Trimethylbenzene, CAS # 95-63-6
- Aluminum fume or dust
- Boron trifluoride, CAS # 7637-07-2
- Butyl acrylate, CAS # 141-32-2
- Copper and Copper Compounds (as Copper)
- Nitric acid, CAS # 7697-37-2
- Sulfuric acid, CAS # 7664-93-9

Pounds	Calculation Method		
0.05	US EPA Emission Factor (uncontrolled)	8.50E-04	lb/mmscf

2. Hazardous Air Pollutants (HAPs):

In each row, select a HAP from the drop-down list or enter a TAC. Enter the emissions for the year in **pounds**. If there are more than 15, use a second copy of the form or an attached sheet. **Attach all calculations.**

Pollutant	Pounds	Calculation Method	Emission Factor	
			Value	Units
1 Lead	0.03	US EPA Emission Factor (uncontrolled)	5.00E-04	lb/mmscf
2 2-Methylnaphthalene	0.00	US EPA Emission Factor (uncontrolled)	2.40E-05	lb/mmscf
3 3-Methylcholanthrene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
4 7,12-Dimethylbenz[a]Anthracene	0.00	US EPA Emission Factor (uncontrolled)	1.60E-05	lb/mmscf
5 Acenaphthene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
6 Acenaphthylene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
7 Anthracene	0.00	US EPA Emission Factor (uncontrolled)	2.40E-06	lb/mmscf
8 Benz[a]Anthracene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
9 Benzene	0.13	US EPA Emission Factor (uncontrolled)	2.10E-03	lb/mmscf
10 Benzo[a]Pyrene	0.00	US EPA Emission Factor (uncontrolled)	1.20E-06	lb/mmscf
11 Benzo[b]Fluoranthene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
12 Benzo[g,h,i]Perylene	0.00	US EPA Emission Factor (uncontrolled)	1.20E-06	lb/mmscf
13 Benzo[k]Fluoranthene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
14 Chrysene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
15 Dibenzo[a,h]Anthracene	0.00	US EPA Emission Factor (uncontrolled)	1.20E-06	lb/mmscf
16 Dichlorobenzene	0.07	US EPA Emission Factor (uncontrolled)	1.20E-03	lb/mmscf
17 Fluoranthene	0.00	US EPA Emission Factor (uncontrolled)	3.00E-06	lb/mmscf
18 Fluorene	0.00	US EPA Emission Factor (uncontrolled)	2.80E-06	lb/mmscf
19 Formaldehyde	4.67	US EPA Emission Factor (uncontrolled)	7.50E-02	lb/mmscf
20 Hexane	112.00	US EPA Emission Factor (uncontrolled)	1.80E+00	lb/mmscf
21 Indeno[1,2,3-cd]Pyrene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf

22	Naphthalene	0.04	US EPA Emission Factor (uncontrolled)	6.10E-04	lb/mm scf
23	Phenanthrene	0.00	US EPA Emission Factor (uncontrolled)	1.70E-05	lb/mm scf
24	Pyrene	0.00	US EPA Emission Factor (uncontrolled)	5.00E-06	lb/mm scf
25	Toluene	0.21	US EPA Emission Factor (uncontrolled)	3.40E-03	lb/mm scf
26	Arsenic	0.01	US EPA Emission Factor (uncontrolled)	2.00E-04	lb/mm scf
27	Beryllium	0.00	US EPA Emission Factor (uncontrolled)	1.20E-05	lb/mm scf
28	Cadmium	0.07	US EPA Emission Factor (uncontrolled)	1.10E-03	lb/mm scf
29	Chromium	0.09	US EPA Emission Factor (uncontrolled)	1.40E-03	lb/mm scf
30	Cobalt	0.01	US EPA Emission Factor (uncontrolled)	8.40E-05	lb/mm scf
31	Manganese	0.02	US EPA Emission Factor (uncontrolled)	3.80E-04	lb/mm scf
32	Mercury	0.02	US EPA Emission Factor (uncontrolled)	2.60E-04	lb/mm scf
33	Nickel	0.13	US EPA Emission Factor (uncontrolled)	2.10E-03	lb/mm scf
34	Selenium	0.00	US EPA Emission Factor (uncontrolled)	2.40E-05	lb/mm scf

Total HAPs: = 117.50 lb
0.06 tons

None of the compounds listed on the HAPs tab are emitted from this emission process/point.

Page Identifier:

Louisville Metro Air Pollution Control District Form E20 - Boiler or Process Fuel Usage

Emission Unit ID:

Emission Process/Point ID:

Process Fuel Usage	Coal Type: <input style="width: 80px;" type="text"/>				Coke		Fuel Oil Grade: <input style="width: 50px;" type="text"/>			Gas		Wood/Wood Waste			Other (specify)		
	Usage Tons	Btu per lb	Sulfur %wgt	Ash %wgt	Usage Tons	Sulfur %wgt	Usage Gallons	Btu per gal	Sulfur % wgt	Usage MMCF	Usage Gallons	Usage, Tons	Btu per lb	Ash %wgt	Usage	Btu per unit	Sulfur %wgt
JAN		0	0.00	0.00		0.00		0	0.00	8.76			0	0.00		0	0.00
FEB										5.03							
MAR										13.93							
APR										2.70							
MAY										0.00							
JUN										0.00							
JUL										0.00							
AUG										0.00							
SEP										0.00							
OCT										0.00							
NOV										6.88							
DEC										24.93							
Total/Avg	0.00	0	0.00	0.00	0.00	0.00	0.00	0	0.00	62.22	0.00	0	0	0.00	0.00	0	0.00

Comments:

Page Identifier:

Louisville Metro Air Pollution Control District

Form E90 - Process Information

Please read the instructions carefully before completing this form to quantify the emissions for each emission process/point.

Plant ID:	<input type="text" value="0852"/>	Emission Year:	<input type="text" value="2017"/>
Company Name:	<input type="text" value="University of Louisville, Belknap Campus"/>		
Emission Unit ID:	<input type="text" value="U1/U2"/>		
Emission Process/Point:	<input type="text" value="E2"/>		
Comments:	<input type="text" value="Boiler 2 - Did not operate in 2017"/>		

Throughput

Operating Schedule for the Emission Year:

Actual hours this emission process/point operated in the report year:

Throughput: Throughput per year: Units

Control Devices:

Use the control device identifiers from Form E92T to allocate emissions to control devices. List the capture efficiency for each emission stream. **Sequence:** Include whether the device operates in parallel or series. Enter "NA" for a singular control device.

Control Device Identifier	% Captured	Sequence	% Uptime
C1	100.00%	Series	100.00%
C2	100.00%	Series	100.00%

Stacks and Other Release Points:

Use the release point identifiers from Form E91T to allocate emissions to release points.

Use one row per Release Point or identify if allocation is evenly split.

Release Point Identifier	% of Emissions
S2	100.00%
Total (must equal 100%):	100%

Page Identifier:

Attach all spreadsheets used to calculate emissions.

1. Criteria Air Pollutants (CAPS):

Enter the actual emissions in **tons**.

- Ammonia (NH₃), CAS # 7664-41-7
- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
- Particulate matter: TSP (filterable + condensable)
- PM condensable (condensable particulate matter)
- PM₁₀ filterable (particulate matter <10 µm)
- PM_{2.5} filterable (particulate matter <2.5 µm)
- Sulfur dioxide (SO₂)
- Volatile organic compounds (including HAP VOCs)

Tons	Calculation Method	Emission Factor	
		Value	Units

2. (Optional) Greenhouse Gases (GHG)

- Carbon dioxide (CO₂)
- Hydrofluorocarbons (HFC)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Perfluorocarbons (PFC)
- Sulfur hexafluoride (SF₆)

Tons	Calculation Method		

3. Toxic Air Contaminants (TACs):

- 1,2,4-Trimethylbenzene, CAS # 95-63-6
- Aluminum fume or dust
- Boron trifluoride, CAS # 7637-07-2
- Butyl acrylate, CAS # 141-32-2
- Copper and Copper Compounds (as Copper)
- Nitric acid, CAS # 7697-37-2
- Sulfuric acid, CAS # 7664-93-9

Pounds	Calculation Method		

2. Hazardous Air Pollutants (HAPs):

In each row, select a HAP from the drop-down list or enter a TAC. Enter the emissions for the year in **pounds**. If there are more than 15, use a second copy of the form or an attached sheet. **Attach all calculations.**

Pollutant	Pounds	Calculation Method	Emission Factor	
			Value	Units
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Total HAPs: = 0.00 lb
0.00 tons

None of the compounds listed on the HAPs tab are emitted from this emission process/point.

Louisville Metro Air Pollution Control District Form E20 - Boiler or Process Fuel Usage

Emission Unit ID:

Emission Process/Point ID:

Process Fuel Usage	Coal Type: <input style="width: 80px;" type="text"/>				Coke		Fuel Oil Grade: <input style="width: 50px;" type="text"/>			Gas		Wood/Wood Waste			Other (specify)		
	Usage Tons	Btu per lb	Sulfur %wgt	Ash %wgt	Usage Tons	Sulfur %wgt	Usage Gallons	Btu per gal	Sulfur % wgt	Usage MMCF	Usage Gallons	Usage, Tons	Btu per lb	Ash %wgt	Usage	Btu per unit	Sulfur %wgt
JAN		0	0.00	0.00		0.00	0.00	0	0.00				0	0.00		0	0.00
FEB							0.00										
MAR							0.00										
APR							0.00										
MAY							0.00										
JUN							0.00										
JUL							0.00										
AUG							0.00										
SEP							0.00										
OCT							0.00										
NOV							0.00										
DEC							0.00										
Total/Avg	0.00	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0	0.00	0.00	0	0.00

Comments:

Page Identifier:

Louisville Metro Air Pollution Control District

Form E90 - Process Information

Please read the instructions carefully before completing this form to quantify the emissions for each emission process/point.

Plant ID:	<input type="text" value="0852"/>	Emission Year:	<input type="text" value="2017"/>
Company Name:	<input type="text" value="University of Louisville, Belknap Campus"/>		
Emission Unit ID:	<input type="text" value="U1/U2"/>		
Emission Process/Point:	<input type="text" value="E3"/>		
Comments:	<input type="text" value="Boiler 3"/>		

Throughput

Operating Schedule for the Emission Year:

Actual hours this emission process/point operated in the report year:

Throughput: Throughput per year: Units

Control Devices:

Use the control device identifiers from Form E92T to allocate emissions to control devices. List the capture efficiency for each emission stream. **Sequence:** Include whether the device operates in parallel or series. Enter "NA" for a singular control device.

Control Device Identifier	% Captured	Sequence	% Uptime
C6	100.00%	NA	100.00%
C7	100.00%	NA	100.00%

Stacks and Other Release Points:

Use the release point identifiers from Form E91T to allocate emissions to release points.

Use one row per Release Point or identify if allocation is evenly split.

Release Point Identifier	% of Emissions
S6	100.00%
Total (must equal 100%):	100%

Page Identifier:

Emissions

Emission Process/Point:

E3

Attach all spreadsheets used to calculate emissions.

1. Criteria Air Pollutants (CAPS):

Enter the actual emissions in **tons**.

- Ammonia (NH₃), CAS # 7664-41-7
- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
- Particulate matter: TSP (filterable + condensable)
- PM condensable (condensable particulate matter)
- PM₁₀ filterable (particulate matter <10 μm)
- PM_{2.5} filterable (particulate matter <2.5 μm)
- Sulfur dioxide (SO₂)
- Volatile organic compounds (including HAP VOCs)

Tons	Calculation Method	Emission Factor	
		Value	Units
0.10	US EPA Emission Factor (uncontrolled)	3.2	lb/mmscf
2.55	US EPA Emission Factor (uncontrolled)	84	lb/mmscf
0.97	USEPA Emission Factor (controlled)	32	lb/mmscf
0.23	US EPA Emission Factor (uncontrolled)	7.6	lb/mmscf
0.17	US EPA Emission Factor (uncontrolled)	5.7	lb/mmscf
0.06	US EPA Emission Factor (uncontrolled)	1.9	lb/mmscf
0.06	US EPA Emission Factor (uncontrolled)	1.9	lb/mmscf
0.02	US EPA Emission Factor (uncontrolled)	0.6	lb/mmscf
0.17	US EPA Emission Factor (uncontrolled)	5.5	lb/mmscf

2. (Optional) Greenhouse Gases (GHG)

- Carbon dioxide (CO₂)
- Hydrofluorocarbons (HFC)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Perfluorocarbons (PFC)
- Sulfur hexafluoride (SF₆)

Tons	Calculation Method		

3. Toxic Air Contaminants (TACs):

- 1,2,4-Trimethylbenzene, CAS # 95-63-6
- Aluminum fume or dust
- Boron trifluoride, CAS # 7637-07-2
- Butyl acrylate, CAS # 141-32-2
- Copper and Copper Compounds (as Copper)
- Nitric acid, CAS # 7697-37-2
- Sulfuric acid, CAS # 7664-93-9

Pounds	Calculation Method		
0.05	US EPA Emission Factor (uncontrolled)	8.50E-04	lb/mmscf

2. Hazardous Air Pollutants (HAPs):

In each row, select a HAP from the drop-down list or enter a TAC. Enter the emissions for the year in **pounds**. If there are more than 15, use a second copy of the form or an attached sheet. **Attach all calculations.**

Pollutant	Pounds	Calculation Method	Emission Factor	
			Value	Units
1 Lead	0.03	US EPA Emission Factor (uncontrolled)	5.00E-04	lb/mmscf
2 2-Methylnaphthalene	0.00	US EPA Emission Factor (uncontrolled)	2.40E-05	lb/mmscf
3 3-Methylcholanthrene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
4 7,12-Dimethylbenz[a]Anthracene	0.00	US EPA Emission Factor (uncontrolled)	1.60E-05	lb/mmscf
5 Acenaphthene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
6 Acenaphthylene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
7 Anthracene	0.00	US EPA Emission Factor (uncontrolled)	2.40E-06	lb/mmscf
8 Benz[a]Anthracene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
9 Benzene	0.12	US EPA Emission Factor (uncontrolled)	2.10E-03	lb/mmscf
10 Benzo[a]Pyrene	0.00	US EPA Emission Factor (uncontrolled)	1.20E-06	lb/mmscf
11 Benzo[b]Fluoranthene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
12 Benzo[g,h,i]Perylene	0.00	US EPA Emission Factor (uncontrolled)	1.20E-06	lb/mmscf
13 Benzo[k]Fluoranthene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
14 Chrysene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
15 Dibenzo[a,h]Anthracene	0.00	US EPA Emission Factor (uncontrolled)	1.20E-06	lb/mmscf
16 Dichlorobenzene	0.07	US EPA Emission Factor (uncontrolled)	1.20E-03	lb/mmscf
17 Fluoranthene	0.00	US EPA Emission Factor (uncontrolled)	3.00E-06	lb/mmscf
18 Fluorene	0.00	US EPA Emission Factor (uncontrolled)	2.80E-06	lb/mmscf
19 Formaldehyde	4.31	US EPA Emission Factor (uncontrolled)	7.50E-02	lb/mmscf
20 Hexane	103.40	US EPA Emission Factor (uncontrolled)	1.80E+00	lb/mmscf
21 Indeno[1,2,3-cd]Pyrene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf

22	Naphthalene	0.04	US EPA Emission Factor (uncontrolled)	6.10E-04	lb/mmscf
23	Phenanthrene	0.00	US EPA Emission Factor (uncontrolled)	1.70E-05	lb/mmscf
24	Pyrene	0.00	US EPA Emission Factor (uncontrolled)	5.00E-06	lb/mmscf
25	Toluene	0.20	US EPA Emission Factor (uncontrolled)	3.40E-03	lb/mmscf
26	Arsenic	0.01	US EPA Emission Factor (uncontrolled)	2.00E-04	lb/mmscf
27	Beryllium	0.00	US EPA Emission Factor (uncontrolled)	1.20E-05	lb/mmscf
28	Cadmium	0.06	US EPA Emission Factor (uncontrolled)	1.10E-03	lb/mmscf
29	Chromium	0.08	US EPA Emission Factor (uncontrolled)	1.40E-03	lb/mmscf
30	Cobalt	0.00	US EPA Emission Factor (uncontrolled)	8.40E-05	lb/mmscf
31	Manganese	0.02	US EPA Emission Factor (uncontrolled)	3.80E-04	lb/mmscf
32	Mercury	0.01	US EPA Emission Factor (uncontrolled)	2.60E-04	lb/mmscf
33	Nickel	0.12	US EPA Emission Factor (uncontrolled)	2.10E-03	lb/mmscf
34	Selenium	0.00	US EPA Emission Factor (uncontrolled)	2.40E-05	lb/mmscf

Total HAPs: = 108.48 lb
0.05 tons

None of the compounds listed on the HAPs tab are emitted from this emission process/point.

Page Identifier:

Louisville Metro Air Pollution Control District Form E20 - Boiler or Process Fuel Usage

Emission Unit ID:

Emission Process/Point ID:

Process Fuel Usage	Coal Type: <input style="width: 80px;" type="text"/>				Coke		Fuel Oil Grade: <input style="width: 50px;" type="text"/>			Gas		Wood/Wood Waste			Other (specify)		
	Usage Tons	Btu per lb	Sulfur %wgt	Ash %wgt	Usage Tons	Sulfur %wgt	Usage Gallons	Btu per gal	Sulfur % wgt	Usage MMCF	Usage Gallons	Usage, Tons	Btu per lb	Ash %wgt	Usage	Btu per unit	Sulfur %wgt
JAN		0	0.00	0.00		0.00		0	0.00	15.97			0	0.00		0	0.00
FEB										14.01							
MAR										6.65							
APR										0.19							
MAY										0.00							
JUN										0.00							
JUL										0.00							
AUG										0.00							
SEP										0.00							
OCT										8.08							
NOV										11.98							
DEC										0.55							
Total/Avg	0.00	0	0.00	0.00	0.00	0.00	0.00	0	0.00	57.44	0.00	0	0	0.00	0.00	0	0.00

Comments:

Page Identifier:

Louisville Metro Air Pollution Control District

Form E90 - Process Information

Please read the instructions carefully before completing this form to quantify the emissions for each emission process/point.

Plant ID:	<input type="text" value="0852"/>	Emission Year:	<input type="text" value="2017"/>
Company Name:	<input type="text" value="University of Louisville, Belknap Campus"/>		
Emission Unit ID:	<input type="text" value="U7"/>		
Emission Process/Point:	<input type="text" value="E10"/>		
Comments:	<input type="text" value="Gasoline Storage Tank"/>		

Throughput

Operating Schedule for the Emission Year:

Actual hours this emission process/point operated in the report year:

Throughput: Throughput per year: Units

Control Devices:

Use the control device identifiers from Form E92T to allocate emissions to control devices. List the capture efficiency for each emission stream. **Sequence:** Include whether the device operates in parallel or series. Enter "NA" for a singular control device.

Control Device Identifier	% Captured	Sequence	% Uptime
C9	100.00%	NA	100.00%

Stacks and Other Release Points:

Use the release point identifiers from Form E91T to allocate emissions to release points.

Use one row per Release Point or identify if allocation is evenly split.

Release Point Identifier	% of Emissions
S5	100.00%
Total (must equal 100%):	100%

Page Identifier:

Louisville Metro Air Pollution Control District Form E54 - Stage I Gasoline Throughput

Emission Unit ID:

Emission Process/Point ID:

Throughput	
Month	Gallons of Gasoline
January	430
February	0
March	0
April	0
May	0
June	384
July	0
August	0
September	0
October	450
November	0
December	0
Total	1264

Emissions

Emission Process/Point:

E12

Attach all spreadsheets used to calculate emissions.

1. Criteria Air Pollutants (CAPS):

Enter the actual emissions in **tons**.

- Ammonia (NH₃), CAS # 7664-41-7
- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
- Particulate matter: TSP (filterable + condensable)
- PM condensable (condensable particulate matter)
- PM₁₀ filterable (particulate matter <10 µm)
- PM_{2.5} filterable (particulate matter <2.5 µm)
- Sulfur dioxide (SO₂)
- Volatile organic compounds (including HAP VOCs)

Tons	Calculation Method	Emission Factor	
		Value	Units
1.69E-02	US EPA Emission Factor (uncontrolled)	0.95	lb/mmBtu
7.86E-02	US EPA Emission Factor (uncontrolled)	4.41	lb/mmBtu
5.53E-03	US EPA Emission Factor (uncontrolled)	0.31	lb/mmBtu
5.53E-03	US EPA Emission Factor (uncontrolled)	0.31	lb/mmBtu
5.53E-03	US EPA Emission Factor (uncontrolled)	0.31	lb/mmBtu
5.17E-03	US EPA Emission Factor (uncontrolled)	0.29	lb/mmBtu
6.42E-03	US EPA Emission Factor (uncontrolled)	0.36	lb/mmBtu

2. (Optional) Greenhouse Gases (GHG)

- Carbon dioxide (CO₂)
- Hydrofluorocarbons (HFC)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Perfluorocarbons (PFC)
- Sulfur hexafluoride (SF₆)

Tons	Calculation Method		

3. Toxic Air Contaminants (TACs):

- 1,2,4-Trimethylbenzene, CAS # 95-63-6
- Aluminum fume or dust
- Boron trifluoride, CAS # 7637-07-2
- Butyl acrylate, CAS # 141-32-2
- Copper and Copper Compounds (as Copper)
- Nitric acid, CAS # 7697-37-2
- Sulfuric acid, CAS # 7664-93-9

Pounds	Calculation Method		

2. Hazardous Air Pollutants (HAPs):

In each row, select a HAP from the drop-down list or enter a TAC. Enter the emissions for the year in **pounds**. If there are more than 15, use a second copy of the form or an attached sheet. **Attach all calculations.**

Pollutant	Pounds	Calculation Method	Emission Factor	
			Value	Units
1 Benzene	3.33E-02	US EPA Emission Factor (uncontrolled)	9.33E-04	lb/mmBtu
2 Toluene	1.46E-02	US EPA Emission Factor (uncontrolled)	4.09E-04	lb/mmBtu
3 Xylenes (Mixed Isomers)	1.02E-02	US EPA Emission Factor (uncontrolled)	2.85E-04	lb/mmBtu
4 1,3-Butadiene	1.39E-03	US EPA Emission Factor (uncontrolled)	3.91E-05	lb/mmBtu
5 Formaldehyde	4.21E-02	US EPA Emission Factor (uncontrolled)	1.18E-03	lb/mmBtu
6 Acetaldehyde	2.73E-02	US EPA Emission Factor (uncontrolled)	7.67E-04	lb/mmBtu
7 Acrolein	3.30E-03	US EPA Emission Factor (uncontrolled)	9.25E-05	lb/mmBtu
8 Naphthalene	3.02E-03	US EPA Emission Factor (uncontrolled)	8.48E-05	lb/mmBtu
9 Acenaphthylene	1.80E-04	US EPA Emission Factor (uncontrolled)	5.06E-06	lb/mmBtu
10 Acenaphthene	5.06E-05	US EPA Emission Factor (uncontrolled)	1.42E-06	lb/mmBtu
11 Fluorene	1.04E-03	US EPA Emission Factor (uncontrolled)	2.92E-05	lb/mmBtu
12 Phenanthrene	1.05E-03	US EPA Emission Factor (uncontrolled)	2.94E-05	lb/mmBtu
13 Anthracene	6.67E-05	US EPA Emission Factor (uncontrolled)	1.87E-06	lb/mmBtu
14 Fluoranthene	2.71E-04	US EPA Emission Factor (uncontrolled)	7.61E-06	lb/mmBtu
15 Pyrene	1.70E-04	US EPA Emission Factor (uncontrolled)	4.78E-06	lb/mmBtu
16 Benz[a]Anthracene	5.99E-05	US EPA Emission Factor (uncontrolled)	1.68E-06	lb/mmBtu
17 Chrysene	1.26E-05	US EPA Emission Factor (uncontrolled)	3.53E-07	lb/mmBtu
18 Benzo[b]Fluoranthene	3.53E-06	US EPA Emission Factor (uncontrolled)	9.91E-08	lb/mmBtu
19 Benzo[k]Fluoranthene	5.53E-06	US EPA Emission Factor (uncontrolled)	1.55E-07	lb/mmBtu
20 Benzo[a]Pyrene	6.70E-06	US EPA Emission Factor (uncontrolled)	1.88E-07	lb/mmBtu
21 Indeno[1,2,3-c,d]Pyrene	1.34E-05	US EPA Emission Factor (uncontrolled)	3.75E-07	lb/mmBtu

22	Dibenzo[a,h]Anthracene	2.08E-05	US EPA Emission Factor (uncontrolled)	5.83E-07	lb/mmBtu
23	Benzo[g,h,i]Perylene	1.74E-05	US EPA Emission Factor (uncontrolled)	4.89E-07	lb/mmBtu

Total HAPs:

= 0.14 lb
0.00 tons

None of the compounds listed on the HAPs tab are emitted from this emission process/point.

Page Identifier:

Louisville Metro Air Pollution Control District Form E20 - Boiler or Process Fuel Usage

Emission Unit ID:

Emission Process/Point ID:

Process Fuel Usage	Coal Type: <input style="width: 80px;" type="text"/>				Coke		Fuel Oil Grade: <input style="width: 50px;" type="text" value="#2"/>			Gas		Wood/Wood Waste			Other (specify)		
	Usage Tons	Btu per lb	Sulfur %wgt	Ash %wgt	Usage Tons	Sulfur %wgt	Usage Gallons	Btu per gal	Sulfur % wgt	Usage MMCF	Usage Gallons	Usage, Tons	Btu per lb	Ash %wgt	Usage	Btu per unit	Sulfur %wgt
JAN		0	0.00	0.00		0.00	21.22	140000	15 ppm				0	0.00		0	0.00
FEB							21.22										
MAR							21.22										
APR							21.22										
MAY							21.22										
JUN							21.22										
JUL							21.22										
AUG							21.22										
SEP							21.22										
OCT							21.22										
NOV							21.22										
DEC							21.22										
Total/Avg	0.00	0	0.00	0.00	0.00	0.00	254.66	140000	#####	0.00	0.00	0	0	0.00	0.00	0	0.00

Comments:

Page Identifier:

Emissions

Emission Process/Point:

E15

Attach all spreadsheets used to calculate emissions.

1. Criteria Air Pollutants (CAPS):

Enter the actual emissions in **tons**.

Ammonia (NH₃), CAS # 7664-41-7

Carbon monoxide (CO)

Nitrogen oxides (NO_x)

Particulate matter: TSP (filterable + condensable)

PM condensable (condensable particulate matter)

PM₁₀ filterable (particulate matter <10 μm)

PM_{2.5} filterable (particulate matter <2.5 μm)

Sulfur dioxide (SO₂)

Volatile organic compounds (including HAP VOCs)

Tons	Calculation Method	Emission Factor	
		Value	Units
2.48E-02	US EPA Emission Factor (uncontrolled)	0.95	lb/mmBtu
1.15E-01	US EPA Emission Factor (uncontrolled)	4.41	lb/mmBtu
8.10E-03	US EPA Emission Factor (uncontrolled)	0.31	lb/mmBtu
8.10E-03	US EPA Emission Factor (uncontrolled)	0.31	lb/mmBtu
8.10E-03	US EPA Emission Factor (uncontrolled)	0.31	lb/mmBtu
7.58E-03	US EPA Emission Factor (uncontrolled)	0.29	lb/mmBtu
9.40E-03	US EPA Emission Factor (uncontrolled)	0.36	lb/mmBtu

2. (Optional) Greenhouse Gases (GHG)

Carbon dioxide (CO₂)

Hydrofluorocarbons (HFC)

Methane (CH₄)

Nitrous oxide (N₂O)

Perfluorocarbons (PFC)

Sulfur hexafluoride (SF₆)

Tons	Calculation Method		

3. Toxic Air Contaminants (TACs):

1,2,4-Trimethylbenzene, CAS # 95-63-6

Aluminum fume or dust

Boron trifluoride, CAS # 7637-07-2

Butyl acrylate, CAS # 141-32-2

Copper and Copper Compounds (as Copper)

Nitric acid, CAS # 7697-37-2

Sulfuric acid, CAS # 7664-93-9

Pounds	Calculation Method		

2. Hazardous Air Pollutants (HAPs):

In each row, select a HAP from the drop-down list or enter a TAC. Enter the emissions for the year in **pounds**. If there are more than 15, use a second copy of the form or an attached sheet. **Attach all calculations.**

Pollutant	Pounds	Calculation Method	Emission Factor	
			Value	Units
1 Benzene	4.87E-02	US EPA Emission Factor (uncontrolled)	9.33E-04	lb/mmBtu
2 Toluene	2.14E-02	US EPA Emission Factor (uncontrolled)	4.09E-04	lb/mmBtu
3 Xylenes (Mixed Isomers)	1.49E-02	US EPA Emission Factor (uncontrolled)	2.85E-04	lb/mmBtu
4 1,3-Butadiene	2.04E-03	US EPA Emission Factor (uncontrolled)	3.91E-05	lb/mmBtu
5 Formaldehyde	6.17E-02	US EPA Emission Factor (uncontrolled)	1.18E-03	lb/mmBtu
6 Acetaldehyde	4.01E-02	US EPA Emission Factor (uncontrolled)	7.67E-04	lb/mmBtu
7 Acrolein	4.83E-03	US EPA Emission Factor (uncontrolled)	9.25E-05	lb/mmBtu
8 Naphthalene	4.43E-03	US EPA Emission Factor (uncontrolled)	8.48E-05	lb/mmBtu
9 Acenaphthylene	2.64E-04	US EPA Emission Factor (uncontrolled)	5.06E-06	lb/mmBtu
10 Acenaphthene	7.42E-05	US EPA Emission Factor (uncontrolled)	1.42E-06	lb/mmBtu
11 Fluorene	1.53E-03	US EPA Emission Factor (uncontrolled)	2.92E-05	lb/mmBtu
12 Phenanthrene	1.54E-03	US EPA Emission Factor (uncontrolled)	2.94E-05	lb/mmBtu
13 Anthracene	9.77E-05	US EPA Emission Factor (uncontrolled)	1.87E-06	lb/mmBtu
14 Fluoranthene	3.98E-04	US EPA Emission Factor (uncontrolled)	7.61E-06	lb/mmBtu
15 Pyrene	2.50E-04	US EPA Emission Factor (uncontrolled)	4.78E-06	lb/mmBtu
16 Benz[a]Anthracene	8.78E-05	US EPA Emission Factor (uncontrolled)	1.68E-06	lb/mmBtu
17 Chrysene	1.84E-05	US EPA Emission Factor (uncontrolled)	3.53E-07	lb/mmBtu
18 Benzo[b]Fluoranthene	5.18E-06	US EPA Emission Factor (uncontrolled)	9.91E-08	lb/mmBtu
19 Benzo[k]Fluoranthene	8.10E-06	US EPA Emission Factor (uncontrolled)	1.55E-07	lb/mmBtu
20 Benzo[a]Pyrene	9.82E-06	US EPA Emission Factor (uncontrolled)	1.88E-07	lb/mmBtu
21 Indeno[1,2,3-c,d]Pyrene	1.96E-05	US EPA Emission Factor (uncontrolled)	3.75E-07	lb/mmBtu

22	Dibenzo[a,h]Anthracene	3.05E-05	US EPA Emission Factor (uncontrolled)	5.83E-07	lb/mmBtu
23	Benzo[g,h,i]Perylene	2.56E-05	US EPA Emission Factor (uncontrolled)	4.89E-07	lb/mmBtu

Total HAPs: = 0.20 lb
0.00 tons

None of the compounds listed on the HAPs tab are emitted from this emission process/point.

Page Identifier:

Louisville Metro Air Pollution Control District Form E20 - Boiler or Process Fuel Usage

Emission Unit ID:

Emission Process/Point ID:

Process Fuel Usage	Coal Type: <input style="width: 80px;" type="text"/>				Coke		Fuel Oil Grade: <input style="width: 50px;" type="text" value="#2"/>			Gas		Wood/Wood Waste			Other (specify)		
	Usage Tons	Btu per lb	Sulfur %wgt	Ash %wgt	Usage Tons	Sulfur %wgt	Usage Gallons	Btu per gal	Sulfur % wgt	Usage MMCF	Usage Gallons	Usage, Tons	Btu per lb	Ash %wgt	Usage	Btu per unit	Sulfur %wgt
JAN		0	0.00	0.00		0.00	31.10	140000	15 ppm				0	0.00		0	0.00
FEB							31.10										
MAR							31.10										
APR							31.10										
MAY							31.10										
JUN							31.10										
JUL							31.10										
AUG							31.10										
SEP							31.10										
OCT							31.10										
NOV							31.10										
DEC							31.10										
Total/Avg	0.00	0	0.00	0.00	0.00	0.00	373.21	140000	#####	0.00	0.00	0	0	0.00	0.00	0	0.00

Comments:

Page Identifier:

Louisville Metro Air Pollution Control District

Form E90 - Process Information

[Please read the instructions carefully before completing this form to quantify the emissions for each emission process/point.](#)

Plant ID:	<input type="text" value="0852"/>	Emission Year:	<input type="text" value="2017"/>
Company Name:	<input type="text" value="University of Louisville, Belknap Campus"/>		
Emission Unit ID:	<input type="text" value="U9 & Insignificant Indirect Combustion"/>		
Emission Process/Point:	<input type="text" value="E16, E17, E18, E19, E21, E22, E23, E24, E25, E26, E27, E29, E30, E31, E32, E33, E34, E35, E36, E37, E38, & IA Indirect Combustion"/>		
Comments:	<input type="text" value="Hot water boilers, steam boilers, and domestic boilers"/>		

Throughput

Operating Schedule for the Emission Year:

Actual hours this emission process/point operated in the report year:

Throughput: Throughput per year: Units

Control Devices:

Use the control device identifiers from Form E92T to allocate emissions to control devices. List the capture efficiency for each emission stream. **Sequence:** Include whether the device operates in parallel or series. Enter "NA" for a singular control device.

Control Device Identifier	% Captured	Sequence	% Uptime

Stacks and Other Release Points:

Use the release point identifiers from Form E91T to allocate emissions to release points.

Use one row per Release Point or identify if allocation is evenly split.

Release Point Identifier	% of Emissions
F2	100.00%

Total (must equal 100%): 100%

Page Identifier:

Emissions

E16, E17, E18, E19, E21, E22, E23, E24, E25, E26, E27, E29, E30, E31, E32, E33, E34, E35, E36, E37, E38, & IA Indirect Combustion

Emission Process/Point:

Attach all spreadsheets used to calculate emissions.

1. Criteria Air Pollutants (CAPS):

Enter the actual emissions in **tons**.

- Ammonia (NH₃), CAS # 7664-41-7
- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
- Particulate matter: TSP (filterable + condensable)
- PM condensable (condensable particulate matter)
- PM₁₀ filterable (particulate matter <10 μm)
- PM_{2.5} filterable (particulate matter <2.5 μm)
- Sulfur dioxide (SO₂)
- Volatile organic compounds (including HAP VOCs)

Tons	Calculation Method	Emission Factor	
		Value	Units
0.11	US EPA Emission Factor (uncontrolled)	3.2	lb/mmscf
2.96	US EPA Emission Factor (uncontrolled)	84	lb/mmscf
3.53	USEPA Emission Factor (controlled)	100	lb/mmscf
0.27	US EPA Emission Factor (uncontrolled)	7.6	lb/mmscf
0.20	US EPA Emission Factor (uncontrolled)	5.7	lb/mmscf
0.07	US EPA Emission Factor (uncontrolled)	1.9	lb/mmscf
0.07	US EPA Emission Factor (uncontrolled)	1.9	lb/mmscf
0.02	US EPA Emission Factor (uncontrolled)	0.6	lb/mmscf
0.19	US EPA Emission Factor (uncontrolled)	5.5	lb/mmscf

2. (Optional) Greenhouse Gases (GHG)

- Carbon dioxide (CO₂)
- Hydrofluorocarbons (HFC)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Perfluorocarbons (PFC)
- Sulfur hexafluoride (SF₆)

Tons	Calculation Method		

3. Toxic Air Contaminants (TACs):

- 1,2,4-Trimethylbenzene, CAS # 95-63-6
- Aluminum fume or dust
- Boron trifluoride, CAS # 7637-07-2
- Butyl acrylate, CAS # 141-32-2
- Copper and Copper Compounds (as Copper)
- Nitric acid, CAS # 7697-37-2
- Sulfuric acid, CAS # 7664-93-9

Pounds	Calculation Method		
0.06	US EPA Emission Factor (uncontrolled)	8.50E-04	lb/mmscf

2. Hazardous Air Pollutants (HAPs):

In each row, select a HAP from the drop-down list or enter a TAC. Enter the emissions for the year in **pounds**. If there are more than 15, use a second copy of the form or an attached sheet. **Attach all calculations.**

Pollutant	Pounds	Calculation Method	Emission Factor	
			Value	Units
1 Lead	0.04	US EPA Emission Factor (uncontrolled)	5.00E-04	lb/mmscf
2 2-Methylnaphthalene	0.00	US EPA Emission Factor (uncontrolled)	2.40E-05	lb/mmscf
3 3-Methylcholanthrene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
4 7,12-Dimethylbenz[a]Anthracene	0.00	US EPA Emission Factor (uncontrolled)	1.60E-05	lb/mmscf
5 Acenaphthene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
6 Acenaphthylene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
7 Anthracene	0.00	US EPA Emission Factor (uncontrolled)	2.40E-06	lb/mmscf
8 Benz[a]Anthracene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
9 Benzene	0.15	US EPA Emission Factor (uncontrolled)	2.10E-03	lb/mmscf
10 Benzo[a]Pyrene	0.00	US EPA Emission Factor (uncontrolled)	1.20E-06	lb/mmscf
11 Benzo[b]Fluoranthene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
12 Benzo(g,h,i)Fluoranthene	0.00	US EPA Emission Factor (uncontrolled)	1.20E-06	lb/mmscf
13 Benzo[k]Fluoranthene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
14 Chrysene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
15 Dibenzo[a,h]Anthracene	0.00	US EPA Emission Factor (uncontrolled)	1.20E-06	lb/mmscf
16 Dichlorobenzene	0.08	US EPA Emission Factor (uncontrolled)	1.20E-03	lb/mmscf
17 Fluoranthene	0.00	US EPA Emission Factor (uncontrolled)	3.00E-06	lb/mmscf
18 Fluorene	0.00	US EPA Emission Factor (uncontrolled)	2.80E-06	lb/mmscf
19 Formaldehyde	5.29	US EPA Emission Factor (uncontrolled)	7.50E-02	lb/mmscf
20 Hexane	127.07	US EPA Emission Factor (uncontrolled)	1.80E+00	lb/mmscf
21 Indeno[1,2,3-c,d]Pyrene	0.00	US EPA Emission Factor (uncontrolled)	1.80E-06	lb/mmscf
22 Naphthalene	0.04	US EPA Emission Factor (uncontrolled)	6.10E-04	lb/mmscf
23 Phenanthrene	0.00	US EPA Emission Factor (uncontrolled)	1.70E-05	lb/mmscf

24	Pyrene	0.00	US EPA Emission Factor (uncontrolled)	5.00E-06	lb/mmscf
25	Toluene	0.24	US EPA Emission Factor (uncontrolled)	3.40E-03	lb/mmscf
26	Arsenic	0.01	US EPA Emission Factor (uncontrolled)	2.00E-04	lb/mmscf
27	Beryllium	0.00	US EPA Emission Factor (uncontrolled)	1.20E-05	lb/mmscf
28	Cadmium	0.08	US EPA Emission Factor (uncontrolled)	1.10E-03	lb/mmscf
29	Chromium	0.10	US EPA Emission Factor (uncontrolled)	1.40E-03	lb/mmscf
30	Cobalt	0.01	US EPA Emission Factor (uncontrolled)	8.40E-05	lb/mmscf
31	Manganese	0.03	US EPA Emission Factor (uncontrolled)	3.80E-04	lb/mmscf
32	Mercury	0.02	US EPA Emission Factor (uncontrolled)	2.60E-04	lb/mmscf
33	Nickel	0.15	US EPA Emission Factor (uncontrolled)	2.10E-03	lb/mmscf
34	Selenium	0.00	US EPA Emission Factor (uncontrolled)	2.40E-05	lb/mmscf

Total HAPs:

=

133.31 lb

0.07 tons

None of the compounds listed on the HAPs tab are emitted from this emission process/point.

Page Identifier:

Louisville Metro Air Pollution Control District Form E20 - Boiler or Process Fuel Usage

Emission Unit ID: U9 & Insignificant Indirect Combustion

Emission Process/Point ID: E16, E17, E18, E19, E21, E22, E23, E24, E25, E26, E27, E29, E30, E31, E32, E33, E34, E35, E36, E37, E38, & IA Indirect Combustion

Process Fuel Usage	Coal Type: 				Coke		Fuel Oil Grade: 			Gas		Wood/Wood Waste			Other (specify)		
	Usage Tons	Btu per lb	Sulfur %wgt	Ash %wgt	Usage Tons	Sulfur %wgt	Usage Gallons	Btu per gal	Sulfur % wgt	Usage MCF	Usage Gallons	Usage, Tons	Btu per lb	Ash %wgt	Usage	Btu per unit	Sulfur %wgt
JAN		0	0.00	0.00		0.00		0	0.00	7.14			0	0.00		0	0.00
FEB										6.94							
MAR										5.15							
APR										4.42							
MAY										6.40							
JUN										5.33							
JUL										5.17							
AUG										5.40							
SEP										5.80							
OCT										5.90							
NOV										5.12							
DEC										7.81							
Total/Avg	0.00	0	0.00	0.00	0.00	0.00	0.00	0	0.00	70.59	0.00	0	0	0.00	0.00	0	0.00

Comments:

Page Identifier:

Louisville Metro Air Pollution Control District

Form E90 - Process Information

Please read the instructions carefully before completing this form to quantify the emissions for each emission process/point.

Plant ID:	<input type="text" value="0852"/>	Emission Year:	<input type="text" value="2017"/>
Company Name:	<input type="text" value="University of Louisville, Belknap Campus"/>		
Emission Unit ID:	<input type="text" value="U10"/>		
Emission Process/Point:	<input type="text" value="E39"/>		
Comments:	<input type="text" value="Groundwater Remediation System - Did not operate in 2017"/>		

Throughput

Operating Schedule for the Emission Year:

Actual hours this emission process/point operated in the report year:

Throughput: Throughput per year: Units

Control Devices:

Use the control device identifiers from Form E92T to allocate emissions to control devices. List the capture efficiency for each emission stream. **Sequence:** Include whether the device operates in parallel or series. Enter "NA" for a singular control device.

Control Device Identifier	% Captured	Sequence	% Uptime
C10	100.00%	NA	100.00%

Stacks and Other Release Points:

Use the release point identifiers from Form E91T to allocate emissions to release points.

Use one row per Release Point or identify if allocation is evenly split.

Release Point Identifier	% of Emissions
S7	100.00%
Total (must equal 100%):	100%

Page Identifier:

Attach all spreadsheets used to calculate emissions.

1. Criteria Air Pollutants (CAPS):

Enter the actual emissions in **tons**.

- Ammonia (NH₃), CAS # 7664-41-7
- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
- Particulate matter: TSP (filterable + condensable)
- PM condensable (condensable particulate matter)
- PM₁₀ filterable (particulate matter <10 µm)
- PM_{2.5} filterable (particulate matter <2.5 µm)
- Sulfur dioxide (SO₂)
- Volatile organic compounds (including HAP VOCs)

Tons	Calculation Method	Emission Factor	
		Value	Units

2. (Optional) Greenhouse Gases (GHG)

- Carbon dioxide (CO₂)
- Hydrofluorocarbons (HFC)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Perfluorocarbons (PFC)
- Sulfur hexafluoride (SF₆)

Tons	Calculation Method		

3. Toxic Air Contaminants (TACs):

- 1,2,4-Trimethylbenzene, CAS # 95-63-6
- Aluminum fume or dust
- Boron trifluoride, CAS # 7637-07-2
- Butyl acrylate, CAS # 141-32-2
- Copper and Copper Compounds (as Copper)
- Nitric acid, CAS # 7697-37-2
- Sulfuric acid, CAS # 7664-93-9

Pounds	Calculation Method		

2. Hazardous Air Pollutants (HAPs):

In each row, select a HAP from the drop-down list or enter a TAC. Enter the emissions for the year in **pounds**. If there are more than 15, use a second copy of the form or an attached sheet. **Attach all calculations.**

Pollutant	Pounds	Calculation Method	Emission Factor	
			Value	Units
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Total HAPs: = 0.00 lb
0.00 tons

None of the compounds listed on the HAPs tab are emitted from this emission process/point.

Louisville Metro Air Pollution Control District

Form E90 - Process Information

Please read the instructions carefully before completing this form to quantify the emissions for each emission process/point.

Plant ID: Emission Year:

Company Name:

Emission Unit ID:

Emission Process/Point:

Comments:

Throughput

Operating Schedule for the Emission Year:

Actual hours this emission process/point operated in the report year:

Throughput: Throughput per year: Units

Control Devices:

Use the control device identifiers from Form E92T to allocate emissions to control devices. List the capture efficiency for each emission stream. **Sequence:** Include whether the device operates in parallel or series. Enter "NA" for a singular control device.

Control Device Identifier	% Captured	Sequence	% Uptime
C11	100.00%	NA	100.00%

Stacks and Other Release Points:

Use the release point identifiers from Form E91T to allocate emissions to release points.

Use one row per Release Point or identify if allocation is evenly split.

Release Point Identifier	% of Emissions
S8	100.00%
Total (must equal 100%):	100%

Page Identifier:

Emissions

Emission Process/Point:

IA - Natural Gas Engines

Attach all spreadsheets used to calculate emissions.

1. Criteria Air Pollutants (CAPS):

Enter the actual emissions in **tons**.

- Ammonia (NH₃), CAS # 7664-41-7
- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
- Particulate matter: TSP (filterable + condensable)
- PM condensable (condensable particulate matter)
- PM₁₀ filterable (particulate matter <10 μm)
- PM_{2.5} filterable (particulate matter <2.5 μm)
- Sulfur dioxide (SO₂)
- Volatile organic compounds (including HAP VOCs)

Tons	Calculation Method	Emission Factor	
		Value	Units
4.15E-03	US EPA Emission Factor (uncontrolled)	3.17E-01	lb/mmBtu
5.34E-02	US EPA Emission Factor (uncontrolled)	4.08E+00	lb/mmBtu
1.01E-06	US EPA Emission Factor (uncontrolled)	7.71E-05	lb/mmBtu
1.01E-06	US EPA Emission Factor (uncontrolled)	7.71E-05	lb/mmBtu
1.01E-06	US EPA Emission Factor (uncontrolled)	7.71E-05	lb/mmBtu
7.70E-06	US EPA Emission Factor (uncontrolled)	5.88E-04	lb/mmBtu
1.55E-03	US EPA Emission Factor (uncontrolled)	1.18E-01	lb/mmBtu

2. (Optional) Greenhouse Gases (GHG)

- Carbon dioxide (CO₂)
- Hydrofluorocarbons (HFC)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Perfluorocarbons (PFC)
- Sulfur hexafluoride (SF₆)

Tons	Calculation Method		

3. Toxic Air Contaminants (TACs):

- 1,2,4-Trimethylbenzene, CAS # 95-63-6
- Aluminum fume or dust
- Boron trifluoride, CAS # 7637-07-2
- Butyl acrylate, CAS # 141-32-2
- Copper and Copper Compounds (as Copper)
- Nitric acid, CAS # 7697-37-2
- Sulfuric acid, CAS # 7664-93-9

Pounds	Calculation Method		

2. Hazardous Air Pollutants (HAPs):

In each row, select a HAP from the drop-down list or enter a TAC. Enter the emissions for the year in **pounds**. If there are more than 15, use a second copy of the form or an attached sheet. **Attach all calculations.**

Pollutant	Pounds	Calculation Method	Emission Factor	
			Value	Units
1,1,2,2-Tetrachloroethane	1.05E-03	US EPA Emission Factor (uncontrolled)	4.00E-05	lb/mmBtu
1,1,2-Trichloroethane	8.33E-04	US EPA Emission Factor (uncontrolled)	3.18E-05	lb/mmBtu
1,3-Butadiene	6.99E-03	US EPA Emission Factor (uncontrolled)	2.67E-04	lb/mmBtu
1,3-Dichloropropene	6.91E-04	US EPA Emission Factor (uncontrolled)	2.64E-05	lb/mmBtu
2-Methylnaphthalene	8.69E-04	US EPA Emission Factor (uncontrolled)	3.32E-05	lb/mmBtu
2,2,4-Trimethylpentane	6.55E-03	US EPA Emission Factor (uncontrolled)	2.50E-04	lb/mmBtu
Acenaphthene	3.27E-05	US EPA Emission Factor (uncontrolled)	1.25E-06	lb/mmBtu
Acetaldehyde	2.19E-01	US EPA Emission Factor (uncontrolled)	8.36E-03	lb/mmBtu
Acenaphthylene	1.45E-04	US EPA Emission Factor (uncontrolled)	5.53E-06	lb/mmBtu
Acrolein	1.35E-01	US EPA Emission Factor (uncontrolled)	5.14E-03	lb/mmBtu
Benzene	1.15E-02	US EPA Emission Factor (uncontrolled)	4.40E-04	lb/mmBtu
Benzo[b]Fluoranthene	4.35E-06	US EPA Emission Factor (uncontrolled)	1.66E-07	lb/mmBtu
Benzo[e]Pyrene	1.09E-05	US EPA Emission Factor (uncontrolled)	4.15E-07	lb/mmBtu
Benzo[g,h,i]Perylene	1.08E-05	US EPA Emission Factor (uncontrolled)	4.14E-07	lb/mmBtu
Biphenyl	5.55E-03	US EPA Emission Factor (uncontrolled)	2.12E-04	lb/mmBtu
Carbon Tetrachloride	9.61E-04	US EPA Emission Factor (uncontrolled)	3.67E-05	lb/mmBtu
Chlorobenzene	7.96E-04	US EPA Emission Factor (uncontrolled)	3.04E-05	lb/mmBtu
Chloroform	7.46E-04	US EPA Emission Factor (uncontrolled)	2.85E-05	lb/mmBtu
Chrysene	1.81E-05	US EPA Emission Factor (uncontrolled)	6.93E-07	lb/mmBtu
Ethyl Benzene	1.04E-03	US EPA Emission Factor (uncontrolled)	3.97E-05	lb/mmBtu
1,1-Dichloroethane	1.16E-03	US EPA Emission Factor (uncontrolled)	4.43E-05	lb/mmBtu

22	Fluoranthene	2.91E-05	US EPA Emission Factor (uncontrolled)	1.11E-06	lb/mmBtu
23	Fluorene	1.48E-04	US EPA Emission Factor (uncontrolled)	5.67E-06	lb/mmBtu
24	Formaldehyde	1.38E+00	US EPA Emission Factor (uncontrolled)	5.28E-02	lb/mmBtu
25	Methanol	6.55E-02	US EPA Emission Factor (uncontrolled)	2.50E-03	lb/mmBtu
26	Methylene Chloride (Dichloromethane)	5.24E-04	US EPA Emission Factor (uncontrolled)	2.00E-05	lb/mmBtu
27	Hexane	2.91E-02	US EPA Emission Factor (uncontrolled)	1.11E-03	lb/mmBtu
28	Naphthalene	1.95E-03	US EPA Emission Factor (uncontrolled)	7.44E-05	lb/mmBtu
29	PAH, total	7.04E-04	US EPA Emission Factor (uncontrolled)	2.69E-05	lb/mmBtu
30	Phenanthrene	2.72E-04	US EPA Emission Factor (uncontrolled)	1.04E-05	lb/mmBtu
31	Phenol	6.29E-04	US EPA Emission Factor (uncontrolled)	2.40E-05	lb/mmBtu
32	Pyrene	3.56E-05	US EPA Emission Factor (uncontrolled)	1.36E-06	lb/mmBtu
33	Styrene	6.18E-04	US EPA Emission Factor (uncontrolled)	2.36E-05	lb/mmBtu
34	1,1,2,2-Tetrachloroethane	6.49E-05	US EPA Emission Factor (uncontrolled)	2.48E-06	lb/mmBtu
35	Toluene	1.07E-02	US EPA Emission Factor (uncontrolled)	4.08E-04	lb/mmBtu
36	Vinyl Chloride	3.90E-04	US EPA Emission Factor (uncontrolled)	1.49E-05	lb/mmBtu
37	Xylenes (Mixed Isomers)	4.82E-03	US EPA Emission Factor (uncontrolled)	1.84E-04	lb/mmBtu

Total HAPs:

=

1.89 lb

0.00 tons

None of the compounds listed on the HAPs tab are emitted from this emission process/point.

Page Identifier:

Louisville Metro Air Pollution Control District Form E20 - Boiler or Process Fuel Usage

Emission Unit ID: Insignificant Activities

Emission Process/Point ID: IA - Natural Gas Engines

Process Fuel Usage	Coal Type: 				Coke		Fuel Oil Grade: 			Gas		Wood/Wood Waste			Other (specify)		
	Usage Tons	Btu per lb	Sulfur %wgt	Ash %wgt	Usage Tons	Sulfur %wgt	Usage Gallons	Btu per gal	Sulfur % wgt	Usage MMCF	Usage Gallons	Usage, Tons	Btu per lb	Ash %wgt	Usage	Btu per unit	Sulfur %wgt
JAN		0	0.00	0.00		0.00		0	0.00	0.0022			0	0.00		0	0.00
FEB										0.0022							
MAR										0.0022							
APR										0.0022							
MAY										0.0022							
JUN										0.0022							
JUL										0.0022							
AUG										0.0022							
SEP										0.0022							
OCT										0.0022							
NOV										0.0022							
DEC										0.0022							
Total/Avg	0.00	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.03	0.00	0	0	0.00	0.00	0	0.00

Comments:

Page Identifier:

Emissions

Emission Process/Point:

IA - Diesel Engines

Attach all spreadsheets used to calculate emissions.

1. Criteria Air Pollutants (CAPS):

Enter the actual emissions in **tons**.

Ammonia (NH₃), CAS # 7664-41-7

Carbon monoxide (CO)

Nitrogen oxides (NO_x)

Particulate matter: TSP (filterable + condensable)

PM condensable (condensable particulate matter)

PM₁₀ filterable (particulate matter <10 µm)

PM_{2.5} filterable (particulate matter <2.5 µm)

Sulfur dioxide (SO₂)

Volatile organic compounds (including HAP VOCs)

Tons	Calculation Method	Emission Factor	
		Value	Units
1.12E-01	US EPA Emission Factor (uncontrolled)	0.95	lb/mmBtu
5.19E-01	US EPA Emission Factor (uncontrolled)	4.41	lb/mmBtu
3.65E-02	US EPA Emission Factor (uncontrolled)	0.31	lb/mmBtu
3.65E-02	US EPA Emission Factor (uncontrolled)	0.31	lb/mmBtu
3.65E-02	US EPA Emission Factor (uncontrolled)	0.31	lb/mmBtu
3.42E-02	US EPA Emission Factor (uncontrolled)	0.29	lb/mmBtu
4.24E-02	US EPA Emission Factor (uncontrolled)	0.36	lb/mmBtu

2. (Optional) Greenhouse Gases (GHG)

Carbon dioxide (CO₂)

Hydrofluorocarbons (HFC)

Methane (CH₄)

Nitrous oxide (N₂O)

Perfluorocarbons (PFC)

Sulfur hexafluoride (SF₆)

Tons	Calculation Method		

3. Toxic Air Contaminants (TACs):

1,2,4-Trimethylbenzene, CAS # 95-63-6

Aluminum fume or dust

Boron trifluoride, CAS # 7637-07-2

Butyl acrylate, CAS # 141-32-2

Copper and Copper Compounds (as Copper)

Nitric acid, CAS # 7697-37-2

Sulfuric acid, CAS # 7664-93-9

Pounds	Calculation Method		

2. Hazardous Air Pollutants (HAPs):

In each row, select a HAP from the drop-down list or enter a TAC. Enter the emissions for the year in **pounds**. If there are more than 15, use a second copy of the form or an attached sheet. **Attach all calculations.**

Pollutant	Pounds	Calculation Method	Emission Factor	
			Value	Units
1 Benzene	2.20E-01	US EPA Emission Factor (uncontrolled)	9.33E-04	lb/mmBtu
2 Toluene	9.64E-02	US EPA Emission Factor (uncontrolled)	4.09E-04	lb/mmBtu
3 Xylenes (Mixed Isomers)	6.71E-02	US EPA Emission Factor (uncontrolled)	2.85E-04	lb/mmBtu
4 1,3-Butadiene	9.21E-03	US EPA Emission Factor (uncontrolled)	3.91E-05	lb/mmBtu
5 Formaldehyde	2.78E-01	US EPA Emission Factor (uncontrolled)	1.18E-03	lb/mmBtu
6 Acetaldehyde	1.81E-01	US EPA Emission Factor (uncontrolled)	7.67E-04	lb/mmBtu
7 Acrolein	2.18E-02	US EPA Emission Factor (uncontrolled)	9.25E-05	lb/mmBtu
8 Naphthalene	2.00E-02	US EPA Emission Factor (uncontrolled)	8.48E-05	lb/mmBtu
9 Acenaphthylene	1.19E-03	US EPA Emission Factor (uncontrolled)	5.06E-06	lb/mmBtu
10 Acenaphthene	3.35E-04	US EPA Emission Factor (uncontrolled)	1.42E-06	lb/mmBtu
11 Fluorene	6.88E-03	US EPA Emission Factor (uncontrolled)	2.92E-05	lb/mmBtu
12 Phenanthrene	6.93E-03	US EPA Emission Factor (uncontrolled)	2.94E-05	lb/mmBtu
13 Anthracene	4.41E-04	US EPA Emission Factor (uncontrolled)	1.87E-06	lb/mmBtu
14 Fluoranthene	1.79E-03	US EPA Emission Factor (uncontrolled)	7.61E-06	lb/mmBtu
15 Pyrene	1.13E-03	US EPA Emission Factor (uncontrolled)	4.78E-06	lb/mmBtu
16 Benz[a]Anthracene	3.96E-04	US EPA Emission Factor (uncontrolled)	1.68E-06	lb/mmBtu
17 Chrysene	8.32E-05	US EPA Emission Factor (uncontrolled)	3.53E-07	lb/mmBtu
18 Benzo[b]Fluoranthene	2.33E-05	US EPA Emission Factor (uncontrolled)	9.91E-08	lb/mmBtu
19 Benzo[k]Fluoranthene	3.65E-05	US EPA Emission Factor (uncontrolled)	1.55E-07	lb/mmBtu
20 Benzo[a]Pyrene	4.43E-05	US EPA Emission Factor (uncontrolled)	1.88E-07	lb/mmBtu
21 Indeno[1,2,3-c,d]Pyrene	8.83E-05	US EPA Emission Factor (uncontrolled)	3.75E-07	lb/mmBtu

Louisville Metro Air Pollution Control District Form E20 - Boiler or Process Fuel Usage

Emission Unit ID: Insignificant Activities

Emission Process/Point ID: IA - Diesel Engines

Process Fuel Usage	Coal				Coke		Fuel Oil			Gas		Wood/Wood Waste			Other (specify)		
	Type:						Grade: #2			Natural	Propane						
Month	Usage Tons	Btu per lb	Sulfur %wgt	Ash %wgt	Usage Tons	Sulfur %wgt	Usage Gallons	Btu per gal	Sulfur % wgt	Usage MMCF	Usage Gallons	Usage, Tons	Btu per lb	Ash %wgt	Usage	Btu per unit	Sulfur %wgt
JAN		0	0.00	0.00		0.00	140.23	140000	15 ppm				0	0.00		0	0.00
FEB							140.23										
MAR							140.23										
APR							140.23										
MAY							140.23										
JUN							140.23										
JUL							140.23										
AUG							140.23										
SEP							140.23										
OCT							140.23										
NOV							140.23										
DEC							140.23										
Total/Avg	0.00	0	0.00	0.00	0.00	0.00	1,682.77	140000	#####	0.00	0.00	0	0	0.00	0.00	0	0.00

Comments:

Page Identifier:

Attach all spreadsheets used to calculate emissions.

1. Criteria Air Pollutants (CAPS):

Enter the actual emissions in **tons**.

- Ammonia (NH₃), CAS # 7664-41-7
- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
- Particulate matter: TSP (filterable + condensable)
- PM condensable (condensable particulate matter)
- PM₁₀ filterable (particulate matter <10 μm)
- PM_{2.5} filterable (particulate matter <2.5 μm)
- Sulfur dioxide (SO₂)
- Volatile organic compounds (including HAP VOCs)

Tons	Calculation Method	Emission Factor	
		Value	Units
2.91E+00	US EPA Emission Factor (uncontrolled)	4.92E-07	lb/gal
2.91E+00	US EPA Emission Factor (uncontrolled)	4.92E-07	lb/gal
2.91E+00	US EPA Emission Factor (uncontrolled)	4.92E-07	lb/gal

2. (Optional) Greenhouse Gases (GHG)

- Carbon dioxide (CO₂)
- Hydrofluorocarbons (HFC)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Perfluorocarbons (PFC)
- Sulfur hexafluoride (SF₆)

Tons	Calculation Method		

3. Toxic Air Contaminants (TACs):

- 1,2,4-Trimethylbenzene, CAS # 95-63-6
- Aluminum fume or dust
- Boron trifluoride, CAS # 7637-07-2
- Butyl acrylate, CAS # 141-32-2
- Copper and Copper Compounds (as Copper)
- Nitric acid, CAS # 7697-37-2
- Sulfuric acid, CAS # 7664-93-9

Pounds	Calculation Method		

2. Hazardous Air Pollutants (HAPs):

In each row, select a HAP from the drop-down list or enter a TAC. Enter the emissions for the year in **pounds**. If there are more than 15, use a second copy of the form or an attached sheet. **Attach all calculations.**

Pollutant	Pounds	Calculation Method	Emission Factor	
			Value	Units
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Total HAPs: = 0.00 lb
0.00 tons

None of the compounds listed on the HAPs tab are emitted from this emission process/point.

Louisville Metro Air Pollution Control District Form E44 - Wet Cooling Tower

Emission Unit ID:

Insignificant Activities

Emission Process/Point ID:

Cooling Towers

Required Data					
Tower Name	Tower Type (Natural Draft or Induced Draft)	Range of Total Dissolved Solids (ppmw)	Operating Schedule (days/year) or (hours/year)	Throughput (1000 gallons/day) or (gallons/min)	PM/PM ₁₀ /PM _{2.5} filterable Emissions (tons/year)
North Row 1		295	4380	1500	9.70E-02
North Row 2		295	4380	1500	9.70E-02
North Row 3		295	4380	1500	9.70E-02
North Row 4		295	4380	1500	9.70E-02
North Row 5		295	4380	1500	9.70E-02
North Row 6		295	4380	1500	9.70E-02
North Row 7		295	4380	1500	9.70E-02
South Row 1		295	4380	2250	1.45E-01
South Row 2		295	4380	2250	1.45E-01
South Row 3		295	4380	2250	1.45E-01
South Row 4		295	4380	2250	1.45E-01
South Row 5		295	8760	2250	2.91E-01
South Row 6		295	8760	2250	2.91E-01
South Row 7		295	8760	2250	2.91E-01
Tower #15		295	8760	2500	3.23E-01
Tower #16		295	8760	2500	3.23E-01
Alumni Club		295	4380	475	3.07E-02
Henry Vogt		295	4380	600	3.88E-02
Louisville Hall		295	4380	450	2.91E-02
University Tower Apts		295	4380	450	2.91E-02
Totals:				33225	2.91

Comments or explanations to clarify any data included on this page:

Throughput is in gallons per minute
Drift Factor of 0.0002

Page Identifier:

lb/gal pound per gallon
ppm parts per million

Attach all spreadsheets used to calculate emissions.

1. Criteria Air Pollutants (CAPS):

Enter the actual emissions in **tons**.

- Ammonia (NH₃), CAS # 7664-41-7
- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
- Particulate matter: TSP (filterable + condensable)
- PM condensable (condensable particulate matter)
- PM₁₀ filterable (particulate matter <10 µm)
- PM_{2.5} filterable (particulate matter <2.5 µm)
- Sulfur dioxide (SO₂)
- Volatile organic compounds (including HAP VOCs)

Tons	Calculation Method	Emission Factor	
		Value	Units
0.002	US EPA Emission Factor (uncontrolled)	4	lb/year

2. (Optional) Greenhouse Gases (GHG)

- Carbon dioxide (CO₂)
- Hydrofluorocarbons (HFC)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Perfluorocarbons (PFC)
- Sulfur hexafluoride (SF₆)

Tons	Calculation Method		

3. Toxic Air Contaminants (TACs):

- 1,2,4-Trimethylbenzene, CAS # 95-63-6
- Aluminum fume or dust
- Boron trifluoride, CAS # 7637-07-2
- Butyl acrylate, CAS # 141-32-2
- Copper and Copper Compounds (as Copper)
- Nitric acid, CAS # 7697-37-2
- Sulfuric acid, CAS # 7664-93-9

Pounds	Calculation Method		

2. Hazardous Air Pollutants (HAPs):

In each row, select a HAP from the drop-down list or enter a TAC. Enter the emissions for the year in **pounds**. If there are more than 15, use a second copy of the form or an attached sheet. **Attach all calculations.**

Pollutant	Pounds	Calculation Method	Emission Factor	
			Value	Units
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Total HAPs: = 0.00 lb
0.00 tons

None of the compounds listed on the HAPs tab are emitted from this emission process/point.

Louisville Metro Air Pollution Control District

Form E90 - Process Information

Please read the instructions carefully before completing this form to quantify the emissions for each emission process/point.

Plant ID:	<input type="text" value="0852"/>	Emission Year:	<input type="text" value="2017"/>
Company Name:	<input type="text" value="University of Louisville, Belknap Campus"/>		
Emission Unit ID:	<input type="text" value="IA3"/>		
Emission Process/Point:	<input type="text" value="E14"/>		
Comments:	<input type="text" value="Diesel Generator (Cardinal Stadium NE)"/>		

Throughput

Operating Schedule for the Emission Year:

Actual hours this emission process/point operated in the report year:

Throughput: Throughput per year: Units

Control Devices:

Use the control device identifiers from Form E92T to allocate emissions to control devices. List the capture efficiency for each emission stream. **Sequence:** Include whether the device operates in parallel or series. Enter "NA" for a singular control device.

Control Device Identifier	% Captured	Sequence	% Uptime

Stacks and Other Release Points:

Use the release point identifiers from Form E91T to allocate emissions to release points.

Use one row per Release Point or identify if allocation is evenly split.

Release Point Identifier	% of Emissions
F2	100.00%
Total (must equal 100%):	100%

Page Identifier:

Emissions

Emission Process/Point:

E14

Attach all spreadsheets used to calculate emissions.

1. Criteria Air Pollutants (CAPS):

Enter the actual emissions in **tons**.

- Ammonia (NH₃), CAS # 7664-41-7
- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
- Particulate matter: TSP (filterable + condensable)
- PM condensable (condensable particulate matter)
- PM₁₀ filterable (particulate matter <10 μm)
- PM_{2.5} filterable (particulate matter <2.5 μm)
- Sulfur dioxide (SO₂)
- Volatile organic compounds (including HAP VOCs)

Tons	Calculation Method	Emission Factor	
		Value	Units
9.54E-03	US EPA Emission Factor (uncontrolled)	0.95	lb/mmBtu
4.43E-02	US EPA Emission Factor (uncontrolled)	4.41	lb/mmBtu
3.11E-03	US EPA Emission Factor (uncontrolled)	0.31	lb/mmBtu
3.11E-03	US EPA Emission Factor (uncontrolled)	0.31	lb/mmBtu
3.11E-03	US EPA Emission Factor (uncontrolled)	0.31	lb/mmBtu
2.91E-03	US EPA Emission Factor (uncontrolled)	0.29	lb/mmBtu
3.61E-03	US EPA Emission Factor (uncontrolled)	0.36	lb/mmBtu

2. (Optional) Greenhouse Gases (GHG)

- Carbon dioxide (CO₂)
- Hydrofluorocarbons (HFC)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Perfluorocarbons (PFC)
- Sulfur hexafluoride (SF₆)

Tons	Calculation Method		

3. Toxic Air Contaminants (TACs):

- 1,2,4-Trimethylbenzene, CAS # 95-63-6
- Aluminum fume or dust
- Boron trifluoride, CAS # 7637-07-2
- Butyl acrylate, CAS # 141-32-2
- Copper and Copper Compounds (as Copper)
- Nitric acid, CAS # 7697-37-2
- Sulfuric acid, CAS # 7664-93-9

Pounds	Calculation Method		

2. Hazardous Air Pollutants (HAPs):

In each row, select a HAP from the drop-down list or enter a TAC. Enter the emissions for the year in **pounds**. If there are more than 15, use a second copy of the form or an attached sheet. **Attach all calculations.**

Pollutant	Pounds	Calculation Method	Emission Factor	
			Value	Units
1 Benzene	1.87E-02	US EPA Emission Factor (uncontrolled)	9.33E-04	lb/mmBtu
2 Toluene	8.21E-03	US EPA Emission Factor (uncontrolled)	4.09E-04	lb/mmBtu
3 Xylenes (Mixed Isomers)	5.72E-03	US EPA Emission Factor (uncontrolled)	2.85E-04	lb/mmBtu
4 1,3-Butadiene	7.85E-04	US EPA Emission Factor (uncontrolled)	3.91E-05	lb/mmBtu
5 Formaldehyde	2.37E-02	US EPA Emission Factor (uncontrolled)	1.18E-03	lb/mmBtu
6 Acetaldehyde	1.54E-02	US EPA Emission Factor (uncontrolled)	7.67E-04	lb/mmBtu
7 Acrolein	1.86E-03	US EPA Emission Factor (uncontrolled)	9.25E-05	lb/mmBtu
8 Naphthalene	1.70E-03	US EPA Emission Factor (uncontrolled)	8.48E-05	lb/mmBtu
9 Acenaphthylene	1.02E-04	US EPA Emission Factor (uncontrolled)	5.06E-06	lb/mmBtu
10 Acenaphthene	2.85E-05	US EPA Emission Factor (uncontrolled)	1.42E-06	lb/mmBtu
11 Fluorene	5.86E-04	US EPA Emission Factor (uncontrolled)	2.92E-05	lb/mmBtu
12 Phenanthrene	5.90E-04	US EPA Emission Factor (uncontrolled)	2.94E-05	lb/mmBtu
13 Anthracene	3.75E-05	US EPA Emission Factor (uncontrolled)	1.87E-06	lb/mmBtu
14 Fluoranthene	1.53E-04	US EPA Emission Factor (uncontrolled)	7.61E-06	lb/mmBtu
15 Pyrene	9.60E-05	US EPA Emission Factor (uncontrolled)	4.78E-06	lb/mmBtu
16 Benz[a]Anthracene	3.37E-05	US EPA Emission Factor (uncontrolled)	1.68E-06	lb/mmBtu
17 Chrysene	7.09E-06	US EPA Emission Factor (uncontrolled)	3.53E-07	lb/mmBtu
18 Benzo[b]Fluoranthene	1.99E-06	US EPA Emission Factor (uncontrolled)	9.91E-08	lb/mmBtu
19 Benzo[k]Fluoranthene	3.11E-06	US EPA Emission Factor (uncontrolled)	1.55E-07	lb/mmBtu
20 Benzo[a]Pyrene	3.78E-06	US EPA Emission Factor (uncontrolled)	1.88E-07	lb/mmBtu
21 Indeno[1,2,3-c,d]Pyrene	7.53E-06	US EPA Emission Factor (uncontrolled)	3.75E-07	lb/mmBtu

22	Dibenzo[a,h]Anthracene	1.17E-05	US EPA Emission Factor (uncontrolled)	5.83E-07	lb/mmBtu
23	Benzo[g,h,i]Perylene	9.82E-06	US EPA Emission Factor (uncontrolled)	4.89E-07	lb/mmBtu

Total HAPs: = 0.08 lb
0.00 tons

None of the compounds listed on the HAPs tab are emitted from this emission process/point.

Page Identifier:

Louisville Metro Air Pollution Control District Form E20 - Boiler or Process Fuel Usage

Emission Unit ID:

Emission Process/Point ID:

Process Fuel Usage	Coal Type: <input style="width: 80px;" type="text"/>				Coke		Fuel Oil Grade: <input style="width: 50px;" type="text" value="#2"/>			Gas		Wood/Wood Waste			Other (specify)		
	Usage Tons	Btu per lb	Sulfur %wgt	Ash %wgt	Usage Tons	Sulfur %wgt	Usage Gallons	Btu per gal	Sulfur % wgt	Usage MMCF	Usage Gallons	Usage, Tons	Btu per lb	Ash %wgt	Usage	Btu per unit	Sulfur %wgt
JAN		0	0.00	0.00		0.00	11.95	140000	15 ppm				0	0.00		0	0.00
FEB							11.95										
MAR							11.95										
APR							11.95										
MAY							11.95										
JUN							11.95										
JUL							11.95										
AUG							11.95										
SEP							11.95										
OCT							11.95										
NOV							11.95										
DEC							11.95										
Total/Avg	0.00	0	0.00	0.00	0.00	0.00	143.43	140000	#####	0.00	0.00	0	0	0.00	0.00	0	0.00

Comments:

Page Identifier:

Louisville Metro Air Pollution Control District

Form E90 - Process Information

Please read the instructions carefully before completing this form to quantify the emissions for each emission process/point.

Plant ID:	<input type="text" value="0852"/>	Emission Year:	<input type="text" value="2017"/>
Company Name:	<input type="text" value="University of Louisville, Belknap Campus"/>		
Emission Unit ID:	<input type="text" value="Insignificant Activities"/>		
Emission Process/Point:	<input type="text" value="Non-Combustion I.A.s"/>		
Comments:	<input type="text" value="Silver stream coler+ negative maker; Digital dry toner printers; Residential/Domestic Equipment; Emergency relief vents and ventilating systems; Academic Labs for R&D; Diesel Fuel Storage Tanks; Used oil and cooking grease tanks; Soil or Groundwater Remediation Projects; Lab ventilating exhausting systems - PTE from Permit used"/>		

Throughput

Operating Schedule for the Emission Year:

Actual hours this emission process/point operated in the report year:

Throughput: Throughput per year: Units

Control Devices:

Use the control device identifiers from Form E92T to allocate emissions to control devices. List the capture efficiency for each emission stream. **Sequence:** Include whether the device operates in parallel or series. Enter "NA" for a singular control device.

Control Device Identifier	% Captured	Sequence	% Uptime

Stacks and Other Release Points:

Use the release point identifiers from Form E91T to allocate emissions to release points.

Use one row per Release Point or identify if allocation is evenly split.

Release Point Identifier	% of Emissions
F2	100.00%

Total (must equal 100%): 100%

Page Identifier:

Louisville Metro Air Pollution Control District
Form E10T - Emission Units and Processes Table

Please read the instructions carefully before completing this form.

Plant ID:	<input type="text" value="0852"/>	Emission Year:	<input type="text" value="2017"/>
Company Name:	<input type="text" value="University of Louisville, Belknap Campus"/>		
Comments:	<input type="text"/>		

Continue on the E10T tab.

Louisville Metro Air Pollution Control District
Form E10T - Emission Units and Processes Table

Emission Unit ID	Emission Unit Type	Emission Unit Description	Emission Process/ Point ID	Emission Process Description	Emission Process SCC	Comments
U1/U2	Boiler	Natural Gas Boiler	E1	Natural Gas Boiler	10300602	
U1/U2	Boiler	Fuel Oil Boiler	E2	Fuel Oil Boiler	10300502	
U1/U2	Boiler	Natural Gas/Fuel Oil Boiler	E3	Natural Gas/Fuel Oil Boiler	10300602	
U5	Printing line	Sheet Fed Lithographic Press	E6	Sheet Fed Lithographic Press	40500401	
U5	Printing line	Sheet Fed Lithographic Press	E7	Sheet Fed Lithographic Press	40500401	
U5	Printing line	Sheet Fed Lithographic Press	E8	Sheet Fed Lithographic Press	40500401	
U7	Storage tank	Portable Gasoline Tank	E10	Portable Gasoline Tank	40600306	
U8	Other combustion	Diesel Fired Emergency Generator	E12	Diesel Fired Emergency Generator	20300101	
U8	Other combustion	Diesel Fired Emergency Generator	E15	Diesel Fired Emergency Generator	20300101	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E16	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E17	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E18	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E19	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E21	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E22	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E23	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E24	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E25	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E26	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E27	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E29	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E30	Natural Gas Indirect Fired Equipment	10300603	
U9	Other combustion	Natural Gas Indirect Fired Equipment	E31	Natural Gas Indirect Fired Equipment	10300603	

Louisville Metro Air Pollution Control District
Form E91T - Release Point Table

Please read the instructions carefully before filling out the form.

Plant ID:

0852

Emission Year:

2017

Company Name:

University of Louisville, Belknap Campus

Louisville Metro Air Pollution Control District
Form E92T - Control Measure

Please read the instructions carefully before completing this form.

Plant ID:

Emission Year:

Company Name:

