



1900 Belmont Boulevard  
Nashville, TN 37212-3757

phone 615-460-6670  
fax 615-460-5544

February 11, 2016

Metropolitan Government of Nashville and Davidson County  
Metropolitan Health Department  
Pollution Control Division  
Attention: Eric McCann  
311-23<sup>rd</sup> Avenue, North  
Nashville, Tennessee 37203

Dear Eric,

Belmont University is submitting the enclosed documents to remain in compliance with our Air Pollutant Source Operating Permit number 323-1, condition (13), as well as Air Pollutant Operating Permit number 323-2, condition (11). It is Belmont's intent to remain in full compliance with the Federal Clean Air Act 40 CFR 52, the State of Tennessee, Air Quality Regulation §1200-3-9-.02 as well as, Regulation Number 3, "New Source Review" of the Metropolitan Government of Nashville and Davidson County, Tennessee.

Enclosed you will find our *Annual Criteria Pollutant Emission Inventory Report*, with supporting calculations attached. We are also enclosing our *Hazardous Air Pollutant Emission Inventory Report* and our *Typical Ozone Season Day Emission Inventory Report*. We have also included a check in the amount of \$2,101.68 as payment of our 2015 Annual Emission Fees.

Please feel free to contact me if you have any questions regarding this information.  
Sincerely,

A handwritten signature in blue ink that reads "Mark W. Grones".

Mark W. Grones  
FMS, Assistant Director  
Belmont University  
Nashville, Tennessee 37212-3757

CC: Henry Lacher

**ANNUAL CRITERIA POLLUTANT EMISSION INVENTORY REPORT**

(1) Company Name:

**Belmont University**

Physical Location:

1900 Belmont Boulevard  
Nashville, TN 37212

Metro Public Health Department  
Pollution Control Division  
311 23rd Avenue North  
Nashville, TN 37203

Owner or Designated Representative:

Mark W. Grones  
Facilities Management Services, Assistant Director

Mailing Address:

1900 Belmont Boulevard  
ATT: FMS  
Nashville, TN 37212

Telephone Number:

(615) 460-6670

The following information is submitted in accordance with Section 10.56.290, "Measurement of Emissions", of Chapter 10.56, "Air Pollution Control", of the Metropolitan Code of Law

(2) Permit No.	(3) Source No.	(4) Point No. From Permit	(5) Group No.	(6) Process No.	(7) Annual Throughput (Include Units)	(8) Annual Fuel Usage and Type (Include Units)	(9) Annual Hours of Operation	(10) Type and Amount of Pollutants Emitted in Tons/Year						
								Particulate	Sulfur Dioxide	Nitrogen Dioxide	Carbon Monoxide	Volatile Organic Compounds	Lead	t-Butyl/ Acetate
323-1	1	1*				97.69 MMCF		0.37	0.029	4.884	4.103	0.269		
323-2	2	2*			14,191 lbs	1,999 gal		0.0604	0.181	1.396	0.349	0.0623		
<b>(11) Total</b>								<b>0.430</b>	<b>0.21</b>	<b>6.28</b>	<b>4.452</b>	<b>0.3313</b>		

(12) I hereby certify that this information is essentially correct.

Signature:



Title:

Facilities Management Services, Assistant Director

207-600-076 (Rev. 10/06)

Mark W. Grones

Date

Month: February  
Day: 11  
Year: 2016

**TYPICAL OZONE SEASON DAY EMISSION INVENTORY REPORT**

Company Name: **Belmont University**  
 Physical Location: 1900 Belmont Boulevard  
 Nashville, TN 37212  
 Metro Public Health Department  
 Pollution Control Division  
 311 23rd Avenue North  
 Nashville, TN 37203

Owner or Designated Representative:  
 Mark W. Groves  
 Facilities Management Services, Assistant Director  
 Mailing Address:  
 1900 Belmont Boulevard  
 ATT: FMS  
 Nashville, TN 37212  
 Telephone Number: (615) 460-6670

The following information is submitted in accordance with Section 10.56.290, "Measurement of Emissions", of Chapter 10.56, "Air Pollution Control" of the Metropolitan Code of Law

(2) Permit No.	(3) Source No.	(4) Point No. From Permit	(5) Group No.	(6) Process No.	(7) O <sub>3</sub> Sea. Avg. Daily Process Wt. (Include Units)	(8) O <sub>3</sub> Sea. Avg. Daily Fuel Usage & Type (Include Units)	(9) Total O <sub>3</sub> Season Days of Operation	(10) Percentage of Annual Throughput	(11) Pollutants Emitted in Pounds/Day	Volatiles Organic Compounds				
								Dec- Feb.	March- May	June- August	Sept- Nov.			
323-1	1	1*				97.69 MMCF	92	39	39	17	22	17.66	14.83	0.971
323-2	2	2*			38.19 lbs/day	5.38 Gals/day	3	22	24	25	30	870.34	213.18	43.63
<b>(12) Total</b>												<b>888.00</b>	<b>228.01</b>	<b>41.45</b>

(13) I hereby certify that this information is essentially correct.  
 Signature: *Mark W. Groves*  
 Title: Facilities Management Services, Assistant Director  
 Date: Month February, Day 11, Year 2016  
 207-00-077 (Rev. 10/06) Mark W. Groves



**METRO Annual Emission Report**  
**Belmont University Permit # 323-1**

2015

**Annual Throughput Natural Gas**

Meter	88001	79001	21001	22004	Thrail	Kenn	Comm	DKNS
Jan	73,990	1,960	3,497	39,440	3,604	3,141	555	3,461
Feb	73,480	3,810	3,777	51,130	3,726	3,887	578	4,005
Mar	56,100	2,870	2,681	29,720	1,823	2,532	406	2,500
Apr	40,920	2,220	2,121	18,380	1,005	1,674	290	1,951
May	30,730	2,090	1,815	15,660	328	710	101	998
Jun	35,490	1,670	2,297	12,940	506	831	170	965
Jul	38,800	1,630	1,952	13,610	376	639	110	771
Aug	32,940	1,140	2,015	9,890	722	1,272	202	1,486
Sep	31,730	2,030	2,653	10,120	975	1,755	326	1,854
Oct	40,500	2,200	3,057	14,770	1,825	2,299	392	2,161
Nov	60,960	2,340	3,295	23,740	3,103	2,709	457	2,563
Dec	63,160	3,260	4,037	24,390	2,636	2,913	394	2,157
<b>Total:</b>	<b>578,800</b>	<b>27,220</b>	<b>33,197</b>	<b>263,790</b>	<b>20,629</b>	<b>24,362</b>	<b>3,981</b>	<b>24,872</b>

976,851 CCF / 10,000 CCF/MMCF = **97.69 MMCF**  
 365 days / yr x 24 hrs = **8,760 annual hrs of operation**

<b>PM</b>	97.69	MMBTU x	7.6	lbs / MMCF =	742.41	lbs /	2,000	lbs / ton =	<b>0.3712 tons per year</b>
<b>SO2</b>	97.69	MMBTU x	0.6	lbs / MMCF =	58.61	lbs /	2,000	lbs / ton =	<b>0.0293 tons per year</b>
<b>NO2</b>	97.69	MMBTU x	100	lbs / MMCF =	9,768.51	lbs /	2,000	lbs / ton =	<b>4.8843 tons per year</b>
<b>CO</b>	97.69	MMBTU x	84	lbs / MMCF =	8,205.55	lbs /	2,000	lbs / ton =	<b>4.1028 tons per year</b>
<b>VOC</b>	97.69	MMBTU x	5.5	lbs / MMCF =	537.27	lbs /	2,000	lbs / ton =	<b>0.2686 tons per year</b>

**Natural Gas Consumption**  
**Ozone Quarters**

Dec	102,947	Mar	98,632	Jun	54,869	Sept	51,443
Jan	129,648	Apr	68,561	July	57,888	Oct	67,204
Feb	144,393	May	52,432	Aug	49,667	Nov	99,167
<b>total</b>	<b>376,988</b>	<b>total</b>	<b>382,049</b>	<b>total</b>	<b>162,424</b>	<b>total</b>	<b>217,814</b>
1st Qtr	<b>39%</b>	2nd Qtr	<b>39%</b>	3rd Qtr	<b>17%</b>	4th Qtr	<b>22%</b>

97.69 MMCF x 17% = 16.24 MMCF / 92 days = **0.1765 MMCF / day during ozone season**

<b>NO2</b>	0.18	MMCF / day during ozone season x	100	lbs / MMCF =	<b>17.6548 lbs / day</b>
<b>CO</b>	0.18	MMCF / day during ozone season x	84	lbs / MMCF =	<b>14.8300 lbs / day</b>
<b>VOC</b>	0.18	MMCF / day during ozone season x	5.5	lbs / MMCF =	<b>0.9710 lbs / day</b>

2015 Annual Throughput Diesel Fuel

	CEC Time	CEC Gal	Garage Time	Garage Gal	Hillside Time	Hillside Gal	MPAC Time	MPAC Gal	McWhorter	McAfee	Dickens			
Jan	124	107.01	30	7.41	30	2.95	30	2.95	75	7.37	70	6.90	30	2.95
Feb	165	142.40	30	7.41	30	2.95	30	2.95	60	5.90	30	2.95	30	2.95
Mar	135	116.51	15	3.71	15	1.47	15	1.47	60	5.90	0	0.00	15	1.47
Apr	195	168.29	0	0.00	0	0.00	0	0.00	60	5.90	0	0.00	0	0.00
May	168	144.98	30	7.41	30	2.95	30	2.95	75	7.37	30	2.95	30	2.95
Jun	165	142.40	30	7.41	30	2.95	30	2.95	60	5.90	30	2.95	30	2.95
Jul	155	133.77	75	18.53	75	7.37	75	7.37	75	7.37	75	7.37	75	7.37
Aug	120	103.56	45	11.12	45	4.42	45	4.42	60	5.90	45	4.42	45	4.42
Sep	135	116.51	60	14.82	60	5.90	60	5.90	60	5.90	60	5.90	60	5.90
Oct	165	142.40	75	18.53	75	7.37	75	7.37	75	7.37	75	7.37	75	7.37
Nov	225	194.18	60	14.82	60	5.90	60	5.90	60	5.90	60	5.90	60	5.90
Dec	105	90.62	45	11.12	45	4.42	45	4.42	60	5.90	45	4.42	45	4.42
<b>Total:</b>	<b>1,857</b>	<b>1602.63</b>	<b>495</b>	<b>122.29</b>	<b>495</b>	<b>48.65</b>	<b>495</b>	<b>48.65</b>	<b>780</b>	<b>76.68</b>	<b>520</b>	<b>51.13</b>	<b>495</b>	<b>48.65</b>

Total Time: 4,122 min / 60 min / hr = 68.7 hrs

Total Fuel Usage: 1,999 gal x 19,300 BTU / lb x 7.1 lbs / gal = 273,879,120 BTU / 1,000,000 = 273.88 MMBTU / yr

CEC

Fuel Usage: 1,603 gal x 19,300 BTU / lb x 7.10 lbs / gal = 219,608,389 BTU / 1,000,000 = 219.61 MMBTU / yr

PM	219.61	MMBTU x	0.1	bs / MMBTU =	21.96	lbs /	2,000	lbs / ton =	0.0110	tons per year
SO2	219.61	MMBTU x	0.505	bs / MMBTU =	110.90	lbs /	2,000	lbs / ton =	0.0555	tons per year
NO2	219.61	MMBTU x	3.2	bs / MMBTU =	702.75	lbs /	2,000	lbs / ton =	0.3514	tons per year
CO	219.61	MMBTU x	0.85	bs / MMBTU =	186.67	lbs /	2,000	lbs / ton =	0.0933	tons per year
VOC	219.61	MMBTU x	0.09	bs / MMBTU =	19.76	lbs /	2,000	lbs / ton =	0.0099	tons per year

Garage, Hillside, MPAC, McAfee

Fuel Usage: 271 gal x 19,300 BTU / lb x 7.10 lbs / gal = 37,096,762 BTU / 1,000,000 = 37.10 MMBTU / yr

PM	37.10	MMBTU x	1.82	bs / MMBTU =	67.52	lbs /	2,000	lbs / ton =	0.0338	tons per year
SO2	37.10	MMBTU x	4.62	bs / MMBTU =	171.39	lbs /	2,000	lbs / ton =	0.0857	tons per year
NO2	37.10	MMBTU x	38.5	bs / MMBTU =	1,428.23	lbs /	2,000	lbs / ton =	0.7141	tons per year
CO	37.10	MMBTU x	9.43	bs / MMBTU =	349.82	lbs /	2,000	lbs / ton =	0.1749	tons per year
VOC	37.10	MMBTU x	1.93	bs / MMBTU =	71.60	lbs /	2,000	lbs / ton =	0.0358	tons per year

McWhorter & Dickens

Fuel Usage: 125 gal x 19,300 BTU / lb x 7.10 lbs / gal = 17,173,970 BTU / 1,000,000 = 17.17 MMBTU / yr

PM	17.17	MMBTU x	1.82	bs / MMBTU =	31.26	lbs /	2,000	lbs / ton =	0.0156	tons per year
SO2	17.17	MMBTU x	4.62	bs / MMBTU =	79.34	lbs /	2,000	lbs / ton =	0.0397	tons per year
NO2	17.17	MMBTU x	38.5	bs / MMBTU =	661.20	lbs /	2,000	lbs / ton =	0.3306	tons per year
CO	17.17	MMBTU x	9.43	bs / MMBTU =	161.95	lbs /	2,000	lbs / ton =	0.0810	tons per year
VOC	17.17	MMBTU x	1.93	bs / MMBTU =	33.15	lbs /	2,000	lbs / ton =	0.0166	tons per year

Fuel Consumption  
Ozone Quarters

	Gal		Gal		Gal	#days	Gal		
Dec	125		Mar	131	Jun	168	30	Sept	161
Jan	138		Apr	174	July	189	31	Oct	198
Feb	168		May	172	Aug	138	31	Nov	239
total	430		total	476	total	495	92	total	597
1st Qtr	22%		2nd Qtr	24%	3rd Qtr	24.76%		4th Qtr	30%

273.88 MMBTU x 25% = 67.82 MMBTU / 3 days = 22.61 MMBTU / day during ozone season

5.38 gal/day x 7.1 lbs/gal = 38.19 lbs/day

NO2 22.61 MMBTU / day during ozone season x 38.50 lbs / MMBTU = 870.3424 lbs / day

CO 22.61 MMBTU / day during ozone season x 9.43 lbs / MMBTU = 213.1774 lbs / day

VOC 22.61 MMBTU / day during ozone season x 1.93 lbs / MMBTU = 43.6302 lbs / day

Total Emissions for the Year

PM 0.0604 tons per year

SO2 0.1808 tons per year

NO2 1.3961 tons per year

CO 0.3492 tons per year

VOC 0.0623 tons per year