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NSA MID SOUTH
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LETTER TRANSMITTING BASEWIDE EMISSIONS INVENTORY IDENTIFYING ALL
POTENTIAL EMISSION SOURCES MILLINGTON SUPPACT TN

1/30/2009
ENSAFE



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January 30, 2009

Mr. Billy Smith
Major Source Supervisor-Air Pollution Control
Memphis & Shelby County Health Department
814 Jefferson Avenue, 4th Floor
Memphis, Tennessee 38105

RE: Naval Support Activity, Mid-South
Emissions Inventory

Dear Mr. Smith:

On behalf of Naval Support Activity (NSA) Mid-South, EnSafe Inc. is submitting this emissions inventory for your review. Per your request, NSA conducted a base-wide (facility wide) emissions inventory to identify all potential emission sources. The operating parameters obtained for each source is based on the most accurate data available at the time of the inventory.

The following information addresses the information requested in your email to Mr. Randy Wilson on August 18, 2008.

Existing Permitted Sources

Currently, the facility has operating permits for the following sources:

- 1500 kW emergency generator (Permit No. 00485-04P) *750 N m c I*
- 750 kW emergency generator (Permit No. 00485-05P)
- 10,000-gallon diesel storage tank (Permit No. 00485-06P) *- 1786*

The UTM coordinates of the three permitted sources is included in Attachment 1

The base layout maps (Figures 1 through 5) are also in Attachment 1. Since these figures were developed, several of the buildings were demolished. A list of these buildings is also in Attachment 1. The three permitted sources are shown on Figure 1. The remaining emergency generators and storage tanks are also identified on these figures. Although the external fuel burning sources are not specifically identified on these maps, a list of each unit and the corresponding building number can also be found in Attachment 1.

Emissions Inventory

NSA identified the following categories as potential emission sources:

- External fuel burning sources (space heaters, hot water heaters, etc)
- Internal fuel burning sources (emergency generators)
- Storage tanks
- Screen printing operations

External fuel burning sources

The facility operates one propane-fired and numerous natural gas-fired space heaters, water heaters, and hot water boilers. A list containing each source, its purpose, the maximum rated capacity, actual fuel usage, and operating schedule is in Attachment 2. Emissions from these units were calculated using emission factors from AP-42, Section 1.4, Natural Gas Combustion and Section 1.5, Liquefied Petroleum Gas. To comply with the definition of potential-to-emit (PTE), the potential hours of operation used in the emission calculations were 8,760 hours per year. A copy of the PTE calculations for these sources is also in Attachment 2.

Internal fuel burning sources

The facility operates numerous emergency generators throughout the base. Only two of the emergency generators have a capacity greater than 500 kW and have operating permits. The remaining generators all have capacities less than or equal to 500 kW. Emissions from the emergency generators were calculated using emission factors from AP-42, Section 3.3, Gasoline and Diesel Industrial Engines, and Section 3.4, Large Stationary Diesel and all Stationary Due-Fuel Engines. To comply with the definition of PTE, the potential hours of operation used in the emission calculations were 500 hours per year, which are the maximum hours for a generator. A copy of the PTE calculations for these sources is also in Attachment 3.

Storage Tanks

The facility has 11 aboveground storage tanks and two underground storage tanks throughout the facility that store either gasoline or diesel. Emissions from the tanks were calculated using EPA Tanks 4.0.9d chemical database using either distillate No. 2 fuel oil or gasoline (RVP 12) as the material stored. In order to obtain the potential throughput, the 2008 actual throughput was used as the basis and then increased to account for future growth. A copy of the Tanks 4.09d output can be found in Attachment 4.

Screen Printing Operations

The facility currently operates one screen printing area which can print hats, T-Shirts, etc. The majority of orders are out-sourced so only a small amount of printing is done on the base. In order to determine PTE from this source, the 2008 actual usage amounts were used as the basis and then increased to account for growth. Material Safety Data Sheets (MSDS) for each chemical was reviewed to determine the volatile organic compound and hazardous air pollutant content. A copy of the PTE calculations and MSDS are in Attachment 5.

A summary of the PTE from each of the sources above is in Attachment 6 and listed below.

Pollutant	Emissions (tons/year)
Nitrogen Oxides	123.73
Carbon Monoxide	55.52
Volatile Organic Compounds	29.61
Sulfur Dioxide	54.30
Particulate Matter	14.11
Total Hazardous Air Pollutants	1.22

Based on using the methods listed above to complete the inventory, it appears that the only pollutant that the facility triggers major source status for is nitrogen oxides (NO_x). However, this number is based on the fact that the external fuel burning sources operate continually (PTE hours of operation are 8,760 hours per year). Many of these units are space heaters or hot water heaters that provide comfort heat on a seasonal basis, typically October through April, therefore the hours of operation would never reach the 8,760 hours per year. In addition, the majority of the NO_x emissions are from the emergency generators less 500 kW which are typically exempt from permitting.

Table 2 shows the facility's 2008 actual emissions. The detailed calculations are in Attachment 7.

Pollutant	Emissions (tons/year)
Nitrogen Oxides	14.25
Carbon Monoxide	9.37
Volatile Organic Compounds	7.27
Sulfur Dioxide	0.70
Particulate Matter	0.95
Total Hazardous Air Pollutants	1.10

NSA is requesting a meeting, possibly the week of February 16, 2009, with the department to discuss these findings and how to proceed.

If you have any questions, please call me at (901) 372-7962.

Sincerely,

EnSafe Inc.



By: Kimberly S. Sass, EI, CHMM
Senior Project Manager

Enclosure