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**west virginia** department of environmental protection

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Division of Air Quality  
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Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
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**ENGINEERING EVALUATION / FACT SHEET**

BACKGROUND INFORMATION

Application No.: R13-2908  
Plant ID No.: 107-00088  
Applicant: Camden-Clark Memorial Hospital Corp.  
Facility Name: St. Joseph's Campus  
Location: Wood County  
NAICS Code: 622110  
Application Type: Construction  
Received Date: November 22, 2011  
Engineer Assigned: Steven R. Pursley, PE  
Fee Amount: \$1,000.00  
Date Received: November 29, 2011  
Complete Date: December 27, 2011  
Due Date: March 26, 2012  
Applicant Ad Date: November 26, 2011  
Newspaper: *The Parkersburg News and Sentinel*  
UTM's: Easting: 452.45 km    Northing: 4,347.68 km    Zone: 17  
Description: Installation of a 14.7 mmbtu natural gas fired boiler with fuel oil backup.

DESCRIPTION OF PROCESS

Addition of a 14.7 mmbtu natural gas fired boiler with fuel oil backup to the existing central utilities plant.

SITE INSPECTION

No site inspection was performed, however, the writer is familiar with the location of the hospital. It is located in a residential/commercial area with multiple residences and businesses nearby. To get to the facility take I-77 north to Parkersburg exit 173. At the end of the ramp turn left onto WV route 95. Go approximately 2.5 miles and turn right onto the East St. Bridge. After crossing bridge, turn left on 7<sup>th</sup> st/Old US 50/St. Rt. 14. Go

approximately 0.9 miles and at Camden Clark Hospital veer right and proceed on Murdoch Ave. Go approximately 0.8 miles and turn right on 19<sup>th</sup> St. The hospital is on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions from the boiler when burning natural gas should be as follows:

	Lb/hr	tpy
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	0.12	0.53
NO <sub>x</sub>	1.61	7.06
SO <sub>2</sub>	0.03	0.14
VOC	0.09	0.40
CO	0.55	2.41
CO <sub>2</sub>	1,687	7,389.06

Emissions from the boiler when burning number 2 fuel oil should be as follows:

	Lb/hr	tpy (based on 500 hrs/yr) <sup>1</sup>
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	0.13	0.04
NO <sub>x</sub>	0.58	0.15
SO <sub>2</sub>	7.22	1.805
VOC	0.04	0.01
CO	0.58	0.15
CO <sub>2</sub>	2,423	605.75

<sup>1</sup>The applicant has stated that they could foresee no event that would require them to use fuel oil to fire the boiler for more than 500 hours per year in any emergency situation.

The maximum annual increase in emissions is as follows (based on 500 hours firing fuel oil and 8,260 hours firing natural gas for PM, SO<sub>2</sub>, CO and CO<sub>2</sub> and 8,760 hours firing natural gas for NO<sub>x</sub> and VOCs):

	tpy
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	0.54
NO <sub>x</sub>	7.06
SO <sub>2</sub>	1.93
VOC	0.40
CO	2.43
CO <sub>2</sub>	7,573.06

### REGULATORY APPLICABILITY

The facility proposed to be permitted under this application No. R13-2908 is subject to the following state and federal regulations:

45CSR2 To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers.

Per §45-2-3.1 visible emission from the source shall not exceed 10% opacity based on a six minute block average. Because the boiler will use natural gas and fuel oil exclusively, this requirement should be met.

§45-2-4.1.b limits the amount of PM released into the air from the boiler to 1.32 pounds per hour. Actual emissions of PM from the boiler should be less than 0.13 pounds per hour. Therefore this requirement should be met.

45CSR10 To Prevent and Control Air Pollution from the Emission of Sulfur Oxides.

§45-10-3.1.e limits the amount of SO<sub>2</sub> emitted from the boiler to 45.57 pounds per hour. Actual emissions of SO<sub>2</sub> from the boiler should be less than 7.21 pounds per hour. Therefore this requirement should be met.

45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation.

The source is subject to 45CSR13 because it is subject to Section 112(j) of the Clean

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Air Act.

45CSR16 Standards of Performance for New Stationary Sources.

The source is subject to 45CSR16 because it is subject to 40 CFR 60 Subpart Dc.

45CSR30 Requirements for Operating Permits.

The source is subject to 45CSR30 because it is subject to 40 CFR 60 Subpart Dc.

#### FEDERAL REGULATIONS:

40 CFR 60, Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.

The new boiler is rated at a maximum of 12.6 MMBTU/hr. Since the boiler is between 10 and 100 MMBTU/hr it is subject to 40 CFR 60 Subpart Dc. However, when the boiler fires natural gas it is exempt from all emission standards. When firing #2 fuel oil the boiler is subject to a fuel sulfur limit of not more than 0.5% Sulfur by weight (§60.42c)d).

#### NONAPPLICABILITY DETERMINATIONS

40 CFR 63, Subpart JJJJJJ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers Area Sources

It should be noted that Subpart JJJJJJ is triggered based on what fuel is actually fired, not what fuel(s) is permitted. The applicant has indicated in the permit application that they expect to fire only natural gas in the boiler (except for 24 hours per year for maintenance/testing). The fuel oil backup is apparently required by hospital codes. Therefore, the facility will not be subject to Subpart JJJJJJ so long as they don't actually fire fuel oil with the exceptions noted in §63.11237. Specifically §63.11237 states "Gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels, burns liquid fuel only during periods of gas curtailment, gas supply emergencies, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year).

#### TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

The only non-criteria pollutants emitted by the boiler will be those trace amounts (less than 2 pounds per year for any speciated HAP based on AP-42) that are a normal byproduct of natural gas and fuel oil combustion.

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### AIR QUALITY IMPACT ANALYSIS

Since this is a minor modification to a minor stationary source, no modeling was performed.

### MONITORING OF OPERATIONS

The facility shall maintain monthly records of the amount of natural gas and fuel oil consumed.

### RECOMMENDATION TO DIRECTOR

Information supplied in the application indicates that compliance with all applicable regulations will be achieved. Therefore it is the recommendation of the writer that permit R13-2908 for the installation of a boiler in Parkersburg, Wood County, be granted to Camden Clark Memorial Hospital Corporation.

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Steven R. Pursley, PE  
Engineer

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February 14, 2012

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