



west virginia department of environmental protection

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

BACKGROUND INFORMATION

Registration No.: G65-C551 *After-the-Fact*
Plant ID No.: 047-00153
Applicant: City of Welch
Location: Welch, WV (McDowell County)
SIC Code: 4941
Application Type: Construction
Received Date: March 12, 2015
Engineer Assigned: Thornton E. Martin Jr.
Fee Amount: \$250.00
Date Received: March 16, 2015
Complete Date: April 22, 2015
Applicant Ad Date: NA
Newspaper: NA
UTM's: Easting: 445.882 km Northing: 4,142.917 km Zone: 17
Description: Registration of an existing emergency generator to be used during power outages. Note that this Class I General Permit requires no public notice.

DESCRIPTION OF PROCESS

The emergency generator will combust diesel (2FO) and provide power when purchase power is disrupted. The generator will supply power for the Water Treatment Plant. The engine is a 2000 model, Caterpillar 3406C, rated for 469 bhp @ 1,800 rpm. The generator was placed into service in the calendar year 2000.

The generator, when operating will provide power for the well pumps which pump the untreated water through a 1,200 gpm cascading tray aerator. Following aeration, treatment continues in a rectangular sedimentation basin for settling suspended and precipitated particles and sequestration. After sedimentation, the water passes through three gravity-sand filters installed in parallel. Finally, the water is treated with gaseous chlorine before entering the clearwell. Two high service pumps send the finished water from the clear well out into the distribution system. The generator also provides energy needed to operate the lights, telemetry readouts, chemical dosing

pumps, lab equipment, HVAC and other functions related to operation of the treatment plant.

All emission units covered by this permit are listed in Table 1:

Table 1: Emission Units

Source ID No.	Description	Engine							Control Equipment
		Manufacturer	Model	Mfg. Date	kW _e Rating	Speed	Tier	EPA Certificate	
Emergency Generator									
EG-1	Diesel Generator Set	Caterpillar	3406C	2000	350	1800 RPM	Tier 1	N/A	None
Storage									
		Status	Content	Volume	Dia	Throughput	Orientation	Liquid Height	
T-01	Fuel Tank	New	#2 Diesel	500 gal.	N/A	250 gpy	HORZ	N/A	N/A

SITE INSPECTION

A site inspection was deemed unnecessary by the writer at this time. However, once the emergency generator is installed and operated, it will be placed on the regular inspection list of sources.

Directions (taken from Application): Take US-52-N to Welch, bear right onto Virginia Ave., turn right onto Elkhorn St., bear right onto Howard St., after 2 miles turn right onto Wyoming St. (SR-16) then in 0.4 miles, continue straight on McDowell St. (SR-16), continue straight on McDowell St. (CR-7), turn left at S. Tug St., continue onto City Park Rd. (CR7/8) for 0.2 miles, bear right onto Un-Named Rd., continue for approximately a mile and the plant will be on your left.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

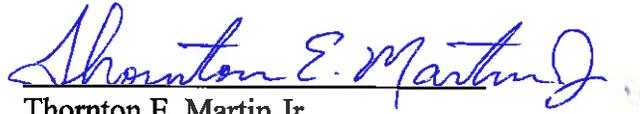
Maximum controlled emissions from Welch's Water Treatment Plant, diesel fired emergency generator are summarized in the table below. G65-C limits the facility to 500 hours per year of operation. The following annual emissions estimate were derived based on 500 hours of use as allowed by the G65-C permit.

The emission factors for this emergency generator come from the engine manufacturer's data included with the application.

The emission factors from the engine manufacturer's data (Caterpillar) in g/bhp-hr are: 0.04, HC; 5.83, NO_x; 1.72, CO; 0.231, PM.

RECOMMENDATION TO DIRECTOR

The City of Welchs' request to construct and operate an emergency generator at the Welch, McDowell County, WV Water Treatment Plant meets the requirements of General Permit G65-C and all applicable rules and therefore should be granted a General Permit Registration to construct and operate the said facility.



Thornton E. Martin Jr.
Permit Engineer

April 22, 2015

Date