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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.: R13-1910D  
Plant ID No.: 009-00054  
Applicant: Precoat Metals  
Facility Name: Weirton Plant  
Location: Brooke County  
NAICS Code: 332812  
Application Type: Modification  
Received Date: May 7, 2012  
Engineer Assigned: Joe Kessler  
Fee Amount: \$1,000  
Date Received: May 11, 2012  
Complete Date: May 30, 2012  
Due Date: August 28, 2012  
Applicant Ad Date: May 18, 2012  
Newspaper: *The Weirton Daily Times*  
UTM's: 534.83 km Easting • 4,474.18 km Northing • Zone 17  
Description: Installation of a 4.46 mmBtu/hr natural-gas fired infrared drying oven.

On January 9, 1996 Roll Coater was issued Permit Number R13-1910 for the construction and operation of a metal coil coating facility. Since that time, the facility (now owned by Precoat Metals) has been the subject of several permitting actions. A description of each of these permitting actions is given below.

- On February 24, 2006, Permit Number R13-1910A was issued to Roll Coater as a Class II Administrative Update to increase the SO<sub>2</sub> and PM emission limits for the thermal oxidizer.
- On October 26, 2006, Permit Number R13-1910B was issued to Roll Coater as a Class I Administrative Update to reorganize Section 4.0 of the permit.
- On April 12, 2012, Permit Application R13-1910C was submitted to the Division of Air Quality (DAQ) to remove monitoring language from the permit. Subsequently, on May 10, 2012, this application was withdrawn.

## **DESCRIPTION OF PROCESS/MODIFICATIONS**

### ***Existing Facility***

The following description of the existing facility is taken from the Fact Sheet associated with the 2008 Title V permit:

The existing PreCoat Metals Weirton Plant is metal coil coating facility with a maximum capacity of 158,231.5 pounds of metal coated per hour. Metal coils delivered to the facility are run through the preclean section to remove oil from the surface of the strip. The strip then passes through the wet section for cleaning, rinsing, and chemical treatment. Then the metal strip passes through the coater room where primer is applied, and on through the primer oven to the quench/cooling area. From the quench/cooling area, the metal strips return to the coater room where a top coat is applied. From the finish coater the metal strip passes through the finish oven to the quench/cooling area. The prime and finish ovens exhaust to the afterburner (thermal oxidizer) and the waste heat is drawn through the waste heat boiler to generate steam for heating the wet section tanks. When steam is not required, the exhaust is directed through the bypass stack. Finished coils are packaged and shipped to other locations for further processing. An onsite wastewater treatment system is operated to treat process wastewater from coil cleaning, rinsing, chemical treatment, and quenching.

### ***Proposed Modification***

Precoat Metals is now requesting authorization to install and operate a 4.46 mmBtu/hr natural gas-fired infrared drying oven. The unit works by using heat from the combustion of natural gas to power infrared emitters that in turn dry wet metal coils prior to coating. The coils are wet from having been rinsed with a non-VOC water-based material to remove remnants of the chemical bath used in cleaning the coils. The rinse must be dried prior to coating and the new infrared drying oven is used for this purpose.

As there are no VOCs in the water-based rinse, the only emissions from the unit are products of combustion.

## **SITE INSPECTION**

Due to the nature of this modification, no site inspection was deemed necessary by the writer. The last inspection took place on September 20, 2010 and was performed by Mr. Steven Sobutka of the Northern Panhandle Regional Office (NPRO). The result of that inspection was a Status Code 30 - Facility in Compliance.

## **REVIEW OF APPLICANT'S EMISSIONS ESTIMATE**

Emissions from the 4.46 mmBtu/hr natural gas-fired infrared drying oven were based on the emission factors provided for natural gas combustion as given in AP-42 Section 1.4. Hourly emissions were based on the maximum design heat input (MDHI) of the dryer (4.46 mmBtu/hr) and annual emissions were based on an annual operation of 8,760 hours. A natural gas heat content

value of 1,020 btu/ft<sup>3</sup> was used in the calculations. The potential-to-emit (PTE) of the unit is given in the following table:

**Table 1: Drying Oven PTE**

Pollutant	lb/hr	tons/year <sup>(1)</sup>
NO <sub>x</sub>	0.45	1.97
CO	0.37	1.62
VOC	0.02	0.11
PM <sup>(2)</sup>	0.03	0.15
SO <sub>2</sub>	0.00	0.01

(1) Based on 8760 hours operation/year.

(2) All PM emissions are assumed to bePM<sub>2.5</sub> or less.

## **REGULATORY APPLICABILITY**

This section will address the potential regulatory applicability/non-applicability of substantive state and federal air quality rules relevant to the new infrared drying oven.

### ***45CSR2: To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers (non-applicability)***

Pursuant to the exemption given under §45-2-11, any determination of potential eligibility of the infrared drying oven to 45CSR2 is not necessary as the MDHI of the unit is less than 10 mmBtu/hr.

### ***45CSR10: To Prevent and Control Air Pollution from the Emission of Sulfur Oxides (non-applicability)***

Pursuant to the exemption given under §45-10-10.1, any determination of potential eligibility of the infrared drying oven to fuel burning unit provisions of 45CSR10 is not necessary as the MDHI of the unit is less than 10 mmBtu/hr.

### ***45CSR13: Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation***

The existing Weirton Plant is defined as a “stationary source” under 45CSR13. The proposed modification, as shown in Table 1 above, results in a PTE increase of particulate matter and VOCs below the levels given under §45-13-2.17a (six (6) pounds/hour and ten (10) tons/year) that would define the action as a “modification.” However, as the changes do result in an increase, Precoat Metals is required, at minimum, to obtain a Class II Administrative Update. Precoat Metals submitted a modification permit application to install and operate the infrared drying oven and when, given the option of changing the application to a Class II Administrative Update, chose to proceed with the regular modification.

As required under §45-13-8.3 (“Notice Level A”), Precoat Metals placed a Class I legal

advertisement in a “newspaper of general circulation in the area where the source is . . . located.” The ad ran on May 18, 2012 in *The Weirton Daily Times* and the affidavit of publication for this legal advertisement was submitted on May 30, 2012.

#### ***45CSR14/45CSR19 Major Source Non-Applicability***

The Weirton Plant, according to the PTE given in the (R30-00900054-2008) Title V Fact Sheet is an existing major source. However, the PTE associated with the infrared drying oven for all pollutants is less than the corresponding significant thresholds that would define the installation as a “major modification” either under 45CSR14 or 45CSR19. Therefore, review pursuant to these rules is not required.

#### ***45CSR30: Requirements for Operating Permits***

45CSR30 provides for the establishment of a comprehensive air quality permitting system consistent with the requirements of Title V of the Clean Air Act. The Precoat Metals Weirton Plant, defined under Title V as a “major source,” was last issued a Title V Permit (R30-00900054-2008) on August 26, 2008. Proposed changes evaluated herein must also be incorporated into the facility's Title V operating permit. Commencement of the operations authorized by this permit shall be determined by the appropriate timing limitations associated with Title V permit revisions per 45CSR30.

### **TOXICITY ANALYSIS OF NON-CRITERIA REGULATED POLLUTANTS**

The installation of the infrared drying oven will not cause any substantive emissions increase in non-criteria regulated pollutants.

### **AIR QUALITY IMPACT ANALYSIS**

The proposed changes do not meet the definition of a “major modification” pursuant to 45CSR14 and, therefore, an air quality impact (computer modeling) analysis was not required.

### **MONITORING, COMPLIANCE DEMONSTRATIONS, RECORD-KEEPING, AND REPORTING REQUIREMENTS**

As the PTE of the drying oven is based on the MDHI and on operation of 8,760 hours/year, no monitoring is required on the unit. Compliance demonstrations are limited to the following:

- The MDHI shall not exceed 4.46 mmBtu/hr and the unit shall only be fired by natural gas; and
- The unit shall not be used to dry VOC-containing materials.

**CHANGES TO PERMIT R13-1910B**

Substantive changes to permit R13-1910B are limited to the following:

- Addition of the infrared drying oven to Table 1.0: Emission Units Table; and
- Addition of the specific requirements pertaining to the drying oven under Section 9.0 of the proposed permit.

**TESTING OF OPERATIONS**

Due to the small size of the new infrared drying oven, no specific post-issuance performance testing is required on the unit. As per boilerplate, at the Director’s discretion, in accordance with the provisions of 3.3 of the proposed permit, Precoat Metals shall be required to conduct performance test(s) to determine compliance with the emission limits.

**RECOMMENDATION TO DIRECTOR**

The information provided in the permit application indicates that compliance with all applicable regulations will be achieved. Therefore, I recommend to the Director the issuance of a Permit Number R13-1910D to Precoat Metals for the above discussed modification of the Weirton Plant located in Weirton, Brooke County, WV.

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Joe Kessler, PE  
Engineer

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Date