



west virginia department of environmental protection

Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone (304) 926-0475 • FAX: (304) 926-0479

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
www.dep.wv.gov

**ENGINEERING EVALUATION / FACT SHEET**

BACKGROUND INFORMATION

Application No.: R13-1512H  
Plant ID No.: 011-00045  
Applicant: Rust-Oleum Corporation  
Facility Name: Lesage Facility  
Location: Lesage, Cabell County  
NAICS Code: 325510  
Application Type: Modification  
Received Date: February 10, 2014  
Engineer Assigned: Laura M. Jennings  
Fee Amount: \$1,000.00  
Date Received: February 12, 2014  
Complete Date: April 30, 2014  
Due Date: July 29, 2014  
Applicant Ad Date: February 14, 2014  
Newspaper: *The Herald Dispatch*  
UTM's: Easting: 388.1 km      Northing: 4,268.4 km      Zone: 17  
Description: The proposed changes include: updating tank and process equipment identifications in Emissions Unit Table 1 to reflect "as is"; adding two (2) 10,000 gallon fiberglass storage tanks [TK-306 and TK-307]; adding one (1) 2,000 gallon steel mixing tank [TD-44]; and adding one (1) 1,100 gallon steel mixing tank [TD-45].

DESCRIPTION OF PROCESS

Raw materials arrive at the facility via tanker truck or railcar. The raw materials are deposited into the storage tanks with the use of a loading rack assisted by pumps attached to the trucks. Some of the materials stored in the tanks require no mixing and are sent directly to the filling station for consumer packaging while others are pumped into the building for use in one of three product mixing areas.

The Safe and Simple Production Line mixes enamel and latex paint products. This area also contains indoor storage tanks for the raw material resins used to make these products. Additives and pigments arrive in drums/sacks and are blended with the raw material resins

in individual product tanks. This area contains eight (8) mixing tanks that are used to make pre-blends of the various products prior to their introduction into dedicated mixing tanks. These products are referred to as “Safe and Simple” due to their low volatility and relative ease of production. Upon completion of the blend, the product remains in its dedicated mixing tank until it is pumped to one of the filling stations for consumer packaging.

The Paint and Paint Related Product Line mixes shellacs, varnishes, and solvent based paint products. The raw materials used in this process are pumped from storage tanks. Additives and pigments arrive in drums/sacks and are added to the raw materials to produce the desired blend. In addition to the dedicated product blending and holding tanks, this area contains six (6) dispersion tanks that are used to prepare dispersions or slurries of various products prior to their introduction to the dedicated blending/holding tank. The finished blend remains in its dedicated mixing tank until it is pumped to one of the filling stations for consumer packaging.

The Cleaners Production Line mixes various paint stripping and cleaning products. The raw materials used in this process are pumped from storage tanks. Additives and pigments arrive in drums/sacks and are added to the raw materials to produce the desired blend. Because some of these products contain methylene chloride the tanks are equipped with vapor-tight hoppers for the addition of dry ingredients and vapor return lines to the methylene chloride storage tank. Approximately 99% of all welds and flanges in methylene chloride service are back-welded. All piping joints are checked quarterly using a methylene chloride analyzer as part of the Leak Detection and Repair (LDAR) testing. Products blended are kept in their dedicated blending/holding tanks until they are pumped to one of the filling stations for customer packaging.

The Filling Machines packages all products into consumer-sized containers. The filling stations (Serac 1, Serac 2, Serac 3, Round Containers 1, Round Containers 2, Automatic 5 Gallon Filling Machine, Portable Hand Filling Machine, and Wood Putty 1) accommodate gallon, quart, or pint square cans or gallon and quart round cans. These products are then boxed and/or stacked on skids prior to delivery to customers via truck.

Process/Permit Changes Requested:

#### *New Equipment*

This application proposes the addition of the following equipment:

- One (1) 10,000 gallon storage tank [TK-306]
- One (1) 10,000 gallon storage tank [TK-307]
- One (1) 2,000 gallon tank [TD-44]
- One (1) 1,100 gallon tank [TD-45]

#### *Permitted Equipment Removed/ Never Installed and/or No Longer in Service*

- Paint Storage & Manufacturing Equipment: TD-11, TD-12, TD-18, TD-50, TD-51, TD-52, TD-53, SA-1, TK-13, TK-15, TK-19, TK-23, TK-391, TK-401, TK-411, TK-421

- Boilers/ Cooling Tower: B1 (Wax Production Line), B2, CT-1

*Corrections to Equipment Identifications in Permit R13-1512G*

Emission Unit ID	Design Capacity Change	
	From:	To:
TD-28	3,000 gals	4,000 gals
TD-33	2,000 gals	1,400 gals
TD-36	1,400 gals	2,000 gals
TD-37	1,400 gals	2,0-00 gals
TD-4	4,000 gals	3,000 gals
TD-5	4,000 gals	3,000 gals
TD-6	4,000 gals	3,000 gals
TD-7	4,000 gals	3,000 gals
TD-8	4,000 gals	3,000 gals
TD-42	180 gals	2,000 gals
TD-43	850 gals	430 gals

*Emission Units with change in Emission Unit ID*

New Emission Unit ID	Previous Emission Unit ID
TK-302	291
TK-303	311
TK-303	381
TK-304	451

*Other administrative change requests*

- The current permit R13-1512G references nineteen (19) emission units that were never installed and/or have been removed from service. In addition, there are eleven (11) emission units that require design capacity corrections. The Emissions Unit Table provided in this application correctly identifies design capacities of vessels currently in operation at the Lesage facility.
- Revise § 4.1.3 to read: *Methylene chloride emissions from the facility (including fugitive emissions) shall not exceed 5,000 (lb/yr).*
- Delete § 4.1.6 and § 4.1.7 because the reference boilers were never installed

- Amend § 4.1.8 to read: *Compliance with this emission limit shall be conducted by determining actual VOC loss using Emission Inventory Improvement Program (EIIP) Volume II: Chapter 8 Preferred and Alternative Methods for Estimating Air Emissions from Paint and Ink Manufacturing Facilities on a monthly basis.*
- Delete § 4.1.9 because the starch adhesive process was never installed.
- Amend § 4.4.6 to read: *To demonstrate compliance with the VOC emission limit of 4.1.8., the permittee shall determine actual VOC losses from the facility using Emission Inventory Improvement Program (EIIP) Volume II: Chapter 8 Preferred and Alternative Methods for Estimating Air Emissions from Paint and Ink Manufacturing Facilities on a monthly basis.*

## SITE INSPECTION

The facility last received a full on-site inspection by Josh Woody from DAQ's Compliance and Enforcement section on September 26, 2013. At the time of the inspection, the facility was found to be in compliance.

A site visit is not required for this permitting action.

## ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The TANKS Emissions Estimation Software, Version 4.09D was used to calculate emissions from new storage tanks TK-306 and TK-307. The products being stored and/or processed in the referenced tanks are primarily non-hazardous VOC water based acrylic polymers. A small amount of non-yellowing aqueous solution of non-metallic, non-chlorinated organic compounds are added to serve as preservatives. Where product ingredient chemical and/or physical data for VOCs was not available a worst case scenario (acetone) default was used to satisfy TANKS program input requirements.

AP-42, Chapter 7.1 (Organic Liquid Storage Tanks) equations were used to estimate emissions for the indoor mixing tanks TD-44 and TD-45.

The emission calculations were reviewed and verified by the writer. To be consistent with DAQ's policy for low emitting sources, these tanks are all have a capacity less than 20,000 gallons and therefore, these emissions will not be reflected in the permit.

Emissions Summary Table:

Emission Point ID	Emission Unit ID	Regulated Pollutant	Maximum Potential Emissions	
			lb/hr	tpy
TK-306	E-TK-306	VOC	0.03	0.10
		Triethylamine	.0003	0.00134
TK-307	E-TK-307	none	n/a	n/a

TD-44	Vent Inside	VOC	n/a	0.02
		DiPropylene Glycol Methyl Ether (DPGM)	n/a	0.0006
TD-45	Vent Inside	VOC	n/a	0.03
		Formaldehyde	n/a	0.00005
Total Emissions Increase		VOC	0.03	0.15
		Total HAPs	0.0003	0.002
Revised Facility PTE		VOC (including HAPs)	n/a	22.6

## REGULATORY APPLICABILITY

### STATE REGULATIONS:

The following state regulations have been reviewed for applicability regarding the proposed changes associated with this permit application.

**45CSR13 PERMITS FOR CONSTRUCTION, MODIFICATION, RELOCATION AND OPERATION OF STATIONARY SOURCES OF AIR POLLUTANTS, NOTIFICATION REQUIREMENTS, ADMINISTRATIVE UPDATES, TEMPORARY PERMITS, GENERAL PERMITS, PERMISSION TO COMMENCE CONSTRUCTION, AND PROCEDURES FOR EVALUATION**

The changes proposed in this modification application meet the definition of a modification under 45CSR §13 - 2.17.e, results in any regulated air pollutant emissions increase for which the owner or operator of a source voluntarily chooses to obtain a modification permit pursuant to this rule, even though the owner or operator is not otherwise required to do so.

The increase of potential VOC emissions is 0.03 lb/hr and 0.15 tpy of the regulated air pollutant which is below the modification threshold of 6 lb/hr and 10 tpy or more.

The increase of potential HAP emissions is <0.01 lb/hr and <0.01 tpy of hazardous air pollutants considered on an aggregated basis which is below the modification threshold of 2 lbs/hr or 5 tpy.

There is no increase in potential emissions of methylene chloride; however, it was requested that the emissions limitation be revised to match the Table 45-13A threshold. The increase requested in the limit is less than 10%. There are new emissions of formaldehyde that is listed in Table 45-13A; however the emissions are below the threshold.

The applicant has met the requirements of 45CSR13 by placing a Class I

legal notice in *The Herald Dispatch* on February 24, 2014, by providing a complete permit application, and by paying the required \$1,000 application fee.

#### 45CSR27 TO PREVENT AND CONTROL THE EMISSIONS OF TOXIC AIR POLLUTANTS

The purpose of 45CSR27 is to prevent and control the discharge of toxic air pollutants requiring the application of best available technology (BAT).

The facility is currently subject to 45CSR27 for the storage of Methylene Chloride. The requested emission limit change from 4,934.5 lb/yr to 5,000 lb/yr is consistent with the 45CSR27 threshold.

Formaldehyde emissions are being introduced into the facility because formaldehyde is a component of the Nuosept™ 95 Biocide that will be used in the new mix tank [TD-45]. Formaldehyde potential emissions provided in the application are 0.02 pounds per year and is well below the threshold for formaldehyde of 1,000 pounds per calendar year demonstrating compliance. A formaldehyde emission limit will be added to the permit consistent with the 45CSR27 threshold.

#### TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Listed below is information concerning the two new hazardous air pollutants (HAPs) and/or toxic air pollutants (TAPs) associated with this permit application. Glycol Ethers are not a new hazardous air pollutant at the facility.

*Formaldehyde* is a component of Nuosept™ 95 Biocide with a concentration of 1.5 - <5%.

Formaldehyde is used mainly to produce resins used in particle board products and as an intermediate in the synthesis of other chemicals. Exposure to formaldehyde may occur by breathing contaminated indoor air, tobacco smoke, or ambient urban air. Acute (short-term) and chronic (long-term) inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer. Animal inhalation studies have reported an increased incidence of nasal squamous cell cancer. EPA considers formaldehyde a probable human carcinogen (Group B1).

*Triethylamine* is a component of NeoRez R-9637 with a concentration of 1.8 wt%.

Acute (short-term) exposure of humans to triethylamine vapor causes eye irritation, corneal swelling, and halo vision. People have complained of seeing "blue haze" or having "smoky vision." These effects have been reversible upon cessation of exposure. Acute exposure can irritate the skin and mucous membranes in humans. Chronic (long-term) exposure of

workers to triethylamine vapor has been observed to cause reversible corneal edema. Chronic inhalation exposure has resulted in respiratory and hematological effects and eye lesions in rats and rabbits. No information is available on the reproductive, developmental, or carcinogenic effects of triethylamine in humans. EPA has not classified triethylamine with respect to potential carcinogenicity.

### AIR QUALITY IMPACT ANALYSIS

The proposed changes in this permit application do not meet the definition of a major modification according to the definitions in 45CSR14 and 45CSR19; therefore, modeling is not required for this permit application.

### MONITORING OF OPERATIONS

There are no new monitoring requirements required by the proposed changes in this application. The recordkeeping requirement to demonstrate compliance with the VOC and HAP emission limits is already comprehensive to include the addition of the formaldehyde emission limit.

### CHANGES TO PERMIT R13-1512G

- Miscellaneous changes to address current permit revision, updated EPA address, and current officials
- Updated company name and mailing address
- Update the emissions unit table (1.0) as described in the process description section of this evaluation
- Revised 4.1.3 as requested in the process description section of this evaluation to match the allowable limit in 45CSR27 and added a facility wide TAP emissions limit for formaldehyde
- Deleted the Boilers B1 and B2 from requirements 4.1.6 and 4.1.7 as requested in the process description section of this evaluation; however the requirements remain for the tube heaters.
- Revised the basis of calculating emissions in requirement 4.1.8 as requested in the process description section of this evaluation. Increased the facility VOC emission limit from 22.4 tpy to 22.6 tpy to include the increase in emissions from this application.
- Deleted 4.1.9 as requested in the process description section of this evaluation and renumbered 4.1.10 to 4.1.9.
- Revised the basis of demonstrating compliance to the calculated emissions in requirement 4.4.6 as requested in the process description section of this evaluation.

RECOMMENDATION TO DIRECTOR

The writer recommends that the Modification Permit R13-1512H be granted to Rust-Oleum Corporation, Lesage facility located in Cabell County, WV. Based on the information provided in the permit application, the applicant meets all applicable federal and state air regulations pertaining to the requested changes.

---

Laura Jennings  
Permit Engineer

---

Date