



United States Environmental Protection Agency
Region 7
Enforcement and Compliance Assurance Division

Air Branch

**Air Branch Inspection Report
Partial Compliance Evaluation**

Reichhold LLC 2

249 Saint Louis Avenue
Valley Park, Missouri 63088-1721
FRS# 110000440620

Mailing address:

Same as above

Inspection Date(s):

March 29 – 30, 2022

SIGNATURE

Tyler Salamasick, Inspector, ECAD, Air Branch

Authorized for Release by:

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APPENDICES

- A FLIR (27 items images/video)
- B Confidential Business Information and non-confidential summary emission data (40 files and 58 pages)
- C Receipt for Documents and Confidentiality Notice (2 page)
- D Field Photographs (33 pages 63 images)
- E Field notes and notebook (8 pages and one notebook)

**This Contents page shows all the sections contained in this report
and provides a clear indication of the end of this report.**

INSPECTION OVERVIEW

INSPECTION OBJECTIVE

The inspection was conducted to determine Reichhold LLC 2's (Reichhold) compliance with the Clean Air Act (CAA). The inspection was a partial compliance evaluation with primary focus on the facility's synthetic minor status per the requirements of the State of Missouri's approved permitting programs. The inspection was part of the U.S. Environmental Protection Agency's *Creating Cleaner Air for Communities* National Compliance Initiative.

Table 1 lists the inspection team members.

Table 1. PROJECT TEAM MEMBERS		
Team Member	Organization	Project Role
Tyler Salamasick	EPA, Region 7, ECAD, Air Branch	Lead Inspector
Kyle Ash	St. Louis County	Field team member
Aaron Camden	St. Louis County	Field team member

FACILITY CONTACT INFORMATION

Table 2 lists the primary facility contacts.

Table 2. FACILITY CONTACT INFORMATION		
Name, Title	Phone No.	Email Address
Wayne Pedlar, Plant Manager	(636) 529-8737	Wayne.Pedlar@reichhold.com
Tiffany Emmet, Environment, Health and Safety (EHS)	(636) 212-5569	Tiffany.Emmett@reichhold.com
Stan Ogrodnick, EHS Manager	(919) 961-5958	Stan.Ogrodnick@POLYNT.COM

FACILITY OVERVIEW

Reichhold is a plastic materials and resin manufacturing facility with a North American Industry Classification System code of 325211. Reichhold manufactures coating resins for the paint production industry. The facility operates 24-hours a day, 7 days per week, with occasional shut down for holidays and maintenance. The facility operates with 52 employees, depending on which shift is running. They have been operating as Reichhold since 1989 and operated as different companies prior.

According to Reichhold's permit (Intermediate State Operating Permit Project No. 2012-07-045), issued by St. Louis County, the facility has a synthetic minor limit for criteria air pollutants and hazardous air pollutants (HAP).

Table 3 lists the regulations and standards the facility is subject to according to the permit.

FACILITY OVERVIEW Table 3. APPLICABLE REGULATIONS AND STANDARDS	
Code of Federal Regulation	Standard Name
40 CFR Part 60	Subpart A, General Provisions
40 CFR Part 61	Subpart M, National Emission Standard for Asbestos
40 CFR Part 63	Subpart ZZZZ, Stationary Reciprocating Internal Combustion Engines

FACILITY OPERATIONS SUMMARY

Reichhold operates a 6 reactor manufacturing facility. The facility primarily blends and produces the base materials for coatings. The resin production operations include mixing, blending and reacting solid and liquid chemicals. On site are: 59 storage tanks, 6 reactor tanks, 8 thinning tanks, and 12 mixing tanks devoted to resin production. Also on site are 3 boilers, 2 heaters, a diesel-powered emergency generator and a diesel fire pump. All the boilers and heaters operate on natural gas or #2 fuel oil. The heaters are used to warm some of the storage tanks, as their contents would solidify at room temperature (both raw materials and finished goods).

Mr. Pedlar clarified that only two boilers are capable of burning fuel oil and that the 12 MMBtu boiler has been disconnected from the #2 fuel line and does not run on #2 fuel.

FIELD ACTIVITIES SUMMARY

During the two days of inspection, I reviewed the facility's main process of blending and manufacturing coating materials. I observed the operation of the facility's thermal oxidizer (TO) and the associated scrubbers. I used a Forward Looking Infrared (FLIR) camera to view the facility's material handling, the emission point for the TO and the exhaust points from various boilers. FLIR camera images are found in **Appendix A**.

Observations and potential findings from the facility tour, and records review, and sampling/measurement activities are noted in the **Investigation Observation and Potential Findings** section below.

On March 29, 2022, Mr. Ash and Mr. Camden, met me at the facility. Prior to entering the facility, I used the FLIR camera to monitor the facility's potential VOC emission points while completing a perimeter walk. We walked around the facility starting at the east side of the plant on Third Street (see satellite image below). I worked my way around the facility in a counterclockwise pattern.

Figure 1: Satellite image of Reichhold:



SOURCE – Google Earth

After the offsite observations, we made our way into the facility. We checked in with security and were permitted into the plant. Upon meeting Mrs. Emmett and Mr. Pedlar, I introduced myself and members of the inspection team, presented my credentials, and provided my business card. I explained that the purpose of the visit, noted above. I explained that after asking for some general business information, I would observe work practices, process units, emission units, control equipment and review associated records demonstrating compliance with the standard, permit, regulation.

After the introductory meeting, I reviewed the plant wide emission calculations with the facility. I asked the facility representatives to provide me with the emission calculations and demonstrate how the facility determined the inputs for its calculations. Mr. Pedlar and Mrs. Emmett contacted Mr. Ogradnick, the corporate permitting contact in the company. Mr. Ogradnick went through the facility wide emission calculations with us over the phone while we reviewed the calculations in the facility's excel spreadsheet.

We walked through the main portions of the facility with Mr. Pedlar and Mrs. Emmett. I asked that, if possible, we walk through the facility starting with the raw material receiving, through the processing, and then make it to final processing and shipping. While walking through the facility on the 29th, I observed the following areas: wastewater treatment, tank wagons, fire pump, electric fire pump, raw material and intermediate product storage, hot oil boiler, old oil heater stack (abandoned stack), solvent storage, Berdorf cooling conveyor, reactors, scrubbers, batching control room, thermal oxidizer and the lab. After the walk through on the 29th, I informed Mr. Pedlar and Mrs. Emmett that I would need to return the following day to make additional observations at the facility.

I reviewed the facility's 12 month rolling summary which showed criteria pollution and HAP emissions. I also viewed the summary data inputs. The facility uses a software called SAP to enter batch information. The batch includes the product recipe and the amounts of materials used. The bulk tanks use a turbine meter or mass flow meter to measure inputs. Some of the dry materials are scaled in or the measure based on the reported bag weight. The facility's emission calculations are considered by the facility as confidential business information due to

the inclusion of the batch weights used in the calculations. The facility did not consider the summary emissions data as confidential. (**Appendix B**)

In order to determine the TOs operations I requested that they provide me with the TOs operating temperatures for the past two years only covering the first Monday and Thursday of each month with a reference to which reactors were running at the time and if the reactors were utilizing VOCs / volatile HAPs.

I returned on May 30, 2022, at 8:08 AM and I conducted the inspection without the St. Louis County inspectors. I made additional observations with the FLIR camera while onsite. I also finished reviewing the pollution control devices during the second day. I completed a closing conference with the facility representatives. I provided and Mr. Pedlar signed a "Receipt for Documents and Samples" form (**Appendix C**). We discussed the records provided while on site and Mr. Pedlar did not claim any of the records provided on site as confidential. I provided and Mr. Pedlar signed a "Confidentiality Notice" form. I left the facility at 10:40 AM.

INSPECTION OBSERVATIONS AND POTENTIAL FINDINGS

Ambient weather, site conditions and activities were documented in field records. All photographs are attached as **Appendix D**. I made the following observations during the inspection. I discussed all observations with facility representatives during the closeout meeting unless otherwise noted in the observation description.

These observations are not final compliance determinations. EPA Region 7 Air Branch case review team will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information.

While conducting the perimeter observations with the FLIR, I recorded images of the facility. I also documented some odors while conducting the perimeter observations with the FLIR camera. My odor observations were as follows:

Wind 7 MPH ESE 46F

9:10 AM – Faint cereal like solvent odor – North of Reichhold.

9:16 AM – Faint paint like odor – North of Reichhold near baseball field.

I did not observe odors down wind of the facility while conducting the remaining FLIR observations. We walked the entire perimeter of the facility during the first day of offsite observations.

During the review of the facility wide summary emissions data, I noted the apparent highest emissions for the criteria pollutants as well as the HAP emissions in my field notes (**Appendix E**). My observations by air pollutant are as follows:

Highest volatile organic compound (VOC) 12 month rolling emission observed- ~40 tons per 12 month rolling of the permitted 85 tons.

Highest nitrous oxide compounds (NO_x) 12 month rolling emission observed- ~6 tons per 12 month rolling of the permitted 50 tons.

Highest carbon monoxide (CO) 12 month rolling emission observed- ~5 tons per 12 month rolling of the permitted 100 tons.

Highest sulfur dioxide (SO₂) 12 month rolling emission observed- ~0.05 tons per 12 month rolling of the permitted 100 tons.

Highest particulate matter less than ten microns (PM₁₀) 12 month rolling emission observed- ~1.5 tons per 12 month rolling of the permitted 100 tons.

Highest single Hazardous Air Pollutant (HAP) (Xylene) 12 month rolling emission observed- ~4 tons per 12 month rolling of the permitted 10 tons.

While touring the facility I observed the TO in operation. On March 29, I observed the TO was operating at 1500°F (temperature in the control room). The operator indicated that there was an alarm if the TO shuts down. The facility documents the TO downtime in its emission calculations. The reaction process cannot be stopped once it has started so the facility continues to run the process if the TO goes down mid batch. I also observed the temperature gauge directly connected to the TO; the temperature gauge read 1502°F. This observation was consistent with my observations in the control room and my review of the past few years of temperature readings.

During the review of the facility's synthetic minor emission calculations, I noticed that Reichhold accounted for a 90% control efficiency for the volatile organic compounds (VOC) and volatile HAP emissions that were controlled by the TO. The thermal oxidizer is referred to in the permit ID 189-1097 Project Number 2012-07-045 but only to be used for odor control, not as an air pollution control device. Mr. Ogradnick explained that Reichhold was using a conservative control efficiency for the TO and that commonly TOs have a control efficiency of 95% or higher. I asked Mr. Ogradnick if a stack test had been conducted to determine the TOs control efficiency, to which he responded that it had not.

Potential Finding 1: Thermal Oxidizer control efficiency as a pollution control unit: The facility accounts for the control efficiency of a thermal oxidizer that is not permitted as a control device and hasn't been stack tested to determine the control efficiency. This calculation is connected with their synthetic minor limit as permitted.

Observation Summary: In order to calculate the facility's air emissions for its synthetic minor permit limit Reichhold tracks its material usage and uses emission factors to calculate the emissions. In its calculations, the facility is also using emission factors and are also accounting for a control efficiency of a TO that is not required by permit as an emission control device. The TO is not a permit required control device and the control efficiency may not be a federally enforceable limit. The TO was not tested in order to demonstrate the efficiency accounted for in the facility's emission calculations. The emissions from the TO may be higher than accounted for and could potentially put the facility above major source permitting threshold requirements if the actual control efficiency is very low.

Citation: Title 40 Chapter I Subchapter C Part 70 § 70.7 State implementation of the Title V Permitting program – Potential to emit

Potential Finding 1: Thermal Oxidizer control efficiency as a pollution control unit: The facility accounts for the control efficiency of a thermal oxidizer that is not permitted as a control device and hasn't been stack tested to determine the control efficiency. This calculation is connected with their synthetic minor limit as permitted.

Evidence: Facility emission calculation spreadsheet (Appendix B)