



RCRA Compliance Inspection Report

W.R. Grace & Co.

Albany, Oregon

ORD085979474

August 2, 2021 – August 3, 2021

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Kimberly Chavez
EPA RCRA Inspector

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1. Attachment 01 - Site Map
2. Attachment 02 – Industrial wastewater Discharge Permit Jan dated December 2020
3. Attachment 03 – Totally Enclosed Treatment Facility Determination from Oregon Department of Environmental Quality dated June 14, 2013
4. Attachment 04 - Batch Recipe Example Redacted
5. Attachment 05 – Hazardous Tank T-400 and T-401 Certification
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11. Attachment 11 – Bulk Hazardous Waste Daily Inspection Log
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14. Attachment 14 - LDAR Monthly Inspection Form
15. Attachment 15 - Spent Solvent Loading Procedure
16. Attachment 16 – RCRA Subpart BB Leak Detection and Repair Form
17. Attachment 17 – TVA2020 FID Quick Start Procedure
18. Attachment 18 - Calibration Gas Certificate of Analysis
19. Attachment 19 – Hazardous Waste Training Certificate
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21. Attachment 21 - Email Receipt Confirmation
22. Attachment 22 - Manufacturing Process Unit (MPU) Exemption Statement

Disclaimer

This report is a summary of observations and information gathered from the facility at the time of the inspection. The information provided does not constitute a final decision on compliance with RCRA regulations, nor is it meant to be a comprehensive summary of all activities and processes conducted at the facility.

Section A: Basic Facility and Inspection Information

Facility Information

Handler Name: W.R. Grace & Co.
Handler ID Number: ORD085979474
Facility Contact(s)/Title: Shayne Bradshaw/Environmental Health Specialist
Facility Location Address: 1290 Industrial Way Albany, OR 97322
Facility Mailing Address: 1290 Industrial Way Albany, OR 97322
Contact Phone Number: 541-812-6034
Contact Email Address: Shayne.Bradshaw@grace.com
GPS Coordinates of Site: Latitude: 44.6276
Longitude: -123.1028

Inspection Information

Inspection Type: RCRA Focused Compliance Inspection (FCI)

Inspection Dates: August 2, 2021, to August 3, 2021

Arrival Time: 08:45 on August 2, 2021

Departure Time: 18:00 on August 3, 2021

Inspection Team: Kimberly Chavez, Andrew Ma (EPA HQ); Janosh Wolters, George Wieber (Eastern Research Group, Inc. [contractor])

Section B: General Facility Information

Owner/Operator Information

The W. R. Grace & Co. (WRG) facility located in Albany, Oregon consists of one main production building, an administration building, and a receiving building. WRG owns and operates the facility, and the company also operates production facilities globally. WRG has its United States headquarters in Columbia, MD.

Site Location

The facility is in Albany, Oregon. A facility site diagram which acts as the facility's emergency action plan map is included as Attachment 01.

Background and Activities

The facility is a large manufacturing facility that produces chiral intermediates, specialty amino acids, and single-site catalysts. WRG products are used primarily in two manufacturing sectors, pharmaceuticals, and manufacturing of resins. A large portion of the facility's operations consists of research and development for their customers on a pilot scale with the anticipation to move to large-scale production operations into Building 2 or to other facilities. WRG purchased the facility in 2010 and began operations. WRG operates with four rotating shifts that are twelve hours each such that the facility operates 24/7 and 365 days a year. There are approximately 100 employees employed at the facility at the time of the inspection.

Section C: Regulatory Information

Compliance History

The Oregon Department of Environmental Quality (DEQ) inspected the facility on April 3, and April 11, 2018, and conducted a hazardous waste compliance evaluation inspection. The inspection identified a violation for failing to comply with 40 C.F.R. 262.34(a)(4) as it refers to 40 C.F.R. 265.52(d), which outlines specific content required to be contained within the facility's contingency plan. A warning letter was issued to WRG, and no formal enforcement action was taken. According to the Enforcement and Compliance History Online (ECHO) record for WRG, no formal enforcement actions have been taken in the past 5 years. The only informal action was a written informal action that took place on April 27, 2018.

Regulatory Status

WRG is a large quantity generator (LQG) of hazardous waste according to the facility profile on ECHO. Additionally, WRG operates with an Industrial Wastewater Discharge Permit issued by the City of Albany (permit no. 2834-01). The industrial wastewater discharge permit is included as Attachment 02.

In 2019, the facility reported generating 1,734.8 tons of hazardous waste on its Biennial Report.

Site Hazardous Waste Information

WRG operates one main manufacturing building (Building 2) where large-scale manufacturing operations take place. WRG's manufacturing operations produce hazardous waste organic and aqueous liquids, solids, and debris. WRG manages the hazardous waste in satellite accumulation areas (SAAs), central accumulation areas (CAAs) for containerized hazardous waste, and Subpart J tanks. The types of hazardous waste containers used on site include 55-gallon drums, 5-gallon drums/buckets, lab packs, and gaylords. Additionally, waste neutralization of corrosive process wastes occurs on site with the facility managing such wastes under an enclosed treatment facility exemption. Oregon DEQ approved this exemption as shown by a letter included in Attachment 03.

There were two actively used Subpart J hazardous waste tanks (T-400 and T-401) on site at the time of the inspection. WRG manages both tanks under regulations specified in 40 C.F.R. Part 265 Subparts BB, and CC (RCRA Air regulations). WRG stated Subpart AA does not apply to this facility. The facility typically operates batch processes at various scales from research and development, pilot-scale operations, to large-scale manufacturing operations. The facility generates a desired product and byproduct streams from these batch processes. Batch recipes

are followed to generate a desired product and various byproducts. An example of a batch recipe template is provided in Attachment 04. A large portion of these byproducts is stored in stainless steel totes ranging from 275-gallons to 325-gallons. Byproducts generated during facility operations may be managed as hazardous waste depending upon a determination made by a process manager after WRG transfers the byproducts to the steel totes. At the time of the inspection, there was also one continuous manufacturing process for a major product. The continuous manufacturing process utilized dibutyl ether (DBE) solvent. Most of the facility's hazardous waste is generated as off-specification solvent and bulk waste solvent. WRG generates bulk waste solvent in various process vessels, which allow for WRG to collect waste in totes, drums, and the two hazardous waste tanks. The facility operates both hazardous waste tanks to receive compatible bulk waste solvent interchangeably. Each tank has a capacity of 4,000 gallons. The tank certification for both tanks is provided in Attachment 05. The tank certification shows the compatible solvents are bulk solvents including acetone, ethyl acetate, heptane, methanol, and n-butyl ether.

The facility operates two distillation columns. WRG uses one distillation column to distill off-specification and used DBE to generate usable, reclaimed DBE solvent to be put back into the original processes. The other distillation column is part of the on-site wastewater pretreatment system used to remove solvents from wastewaters before they are treated on site via activated sludge. Distillates from each of these distillation columns are managed as hazardous waste and sent from each respective distillate receiver tank to the hazardous waste tanks on site upon completion of the distillation process. Each distillation process is further discussed below.

The DBE distillation column receives wastes from facility processes that utilize DBE. This distillation column collects DBE as a middle cut from the column for reuse in on-site processes. The bottom cut of the column is recirculated during the initial heating stages of distillation column before being sent directly to the hazardous waste tanks. Distillates condensed at the top of the column are collected in Tank T-505B when the distillation unit is operating. The facility representatives stated that the material in Tank T-505B is always sent to the facility's hazardous waste tanks once the level in Tank T-505B reaches approximately 30 percent full. The facility does not manage Tank T-505B as a hazardous waste tank and stated the tank is a process unit for receiving distillates from the DBE distillation column. The facility stated the point of generation for the solvent waste is when the material leaves Tank T-505B and enters into the hard piping designated for transfer to the hazardous waste tanks.

The facility also sends high biochemical oxygen demand (BOD) water with approximately 10 percent solvent from their manufacturing area through a separate distillation column on site as part of the wastewater pretreatment process. The high BOD wastewater is received from production reactors into Tank T-500. WRG empties Tank T-500 approximately every other day into the distillation column, which is run as a batch distillation process. The distillation column removes solvent and components causing high BOD before sending the remaining wastewater through the facility's activated sludge pretreatment system. Distillates contributing to high BOD are collected in Tank T-501, where they are then recirculated as a coolant for the column during the batch process. When the solvent no longer exhibits cooling capabilities, the column is shut down and the material inside Tank T-501 is pumped via hard pipe to either hazardous waste tank. WRG collects the steam-heated condensed wastewater from the bottom of the distillation column and sends it to Tank T-502. WRG then pumps Tank T-502 to Tank T-301 which feeds the activated sludge in the facility's PACT (Powdered Activated Carbon Treatment) system tank. The PACT tank produces wastewater treatment sludge as a waste which is stored in gaylord containers as nonhazardous waste. The wastewater is then pumped via hard pipe to Tank T-300 where WRG discharges the wastewater via sanitary sewer to the City of Albany Publicly Owned

Water Works (POTW). The facility has permission for pretreatment under their wastewater treatment permit. The wastewater treatment permit is provided in Attachment 02. A Land Disposal Restriction notification provided by the facility (included in Attachment 06) also stated the intended wastewater treatment unit exemption for wastes managed in the on-site wastewater pretreatment system.

There are six CAAs for containers managed on site. Prior to a waste pickup, containers from five of the CAAs are transferred to one primary CAA located in the Building 1 warehouse. The CAAs are designated for all batch process wastes that cannot be reused, managed as wastewater, or accumulated in the hazardous waste tanks. The types of waste include solids accumulated in gaylords, aqueous batch wastes accumulated in 55-gallon drums, lab wastes, and lab packs.

WRG hires Clean Harbors as the hazardous waste transporter to take wastes off site. Clean Harbors picks up containerized wastes as needed and uses vacuum trucks to ship bulk solvent hazardous waste from Tank T-400 and Tank T-401 twice per week. The wastes from both tanks can be pumped into the same vacuum truck and managed as a single waste stream by Clean Harbors as both characteristic and F-listed hazardous waste solvents. The hazardous waste tanks pump outs follow WRG's standard operating procedure (SOP). The SOP states that the tank must be circulated approximately one hour before pick up is scheduled and sampled for pH. The pH must be between 6 and 10. At the end of the loading operation, the operator is instructed to use nitrogen to blow the line from the pump-out point back to the hazardous waste tank.

SAA hazardous waste containers are also managed on site in the production areas. WRG manages production waste in these containers and transfers the hazardous waste containers to the main CAA as needed. Periodically, due to research and development activities, products are stored in totes which may be determined to be hazardous waste at a later date. Mr. Stevens stated that WRG typically makes this determination within two weeks to two months of production. Storage areas for these totes are in Area 11 and Area 13. A "process hold" sticker is placed on these containers, which are considered products until determined by facility personnel to be unwanted products.

Section D: Description of Inspection

Purpose of Inspection

EPA Region 10 identified WRG for an RCRA NCI inspection using the neutral scheme targeting list for the Hazardous Waste Air Emissions National Compliance Initiative developed by EPA's Waste and Chemical Enforcement Division (WCED). The purpose of the inspection was to determine the facility's compliance with RCRA, with a special focus on the applicability/requirements of Subparts AA, BB, and CC of 40 C.F.R. Part 265.

Site Access

The inspection team met in the administration building parking lot and entered the building together at 08:50 on Monday, August 02, 2021. EPA had contacted WRG to announce the inspection in advance due to potential COVID-19 relevant policies. The inspection team checked in at the front security desk in the lobby upon arrival. Shayne Bradshaw, EHS Specialist at WRG, arrived at the lobby area shortly after the inspection team checked in. The inspection team received visitor badges and Mr. Bradshaw accompanied the team to a conference room on site.

Inspection Entry and Opening Conference

We first met with Mr. Bradshaw (EHS Specialist) and were shortly after joined by Howard Stevens (Plant Manager), Mitch Obradovic (Director – Environment & Remediation), and Alan Chen (EHS Manager). Kimberly Chavez from EPA and Janosh Wolters from ERG presented their inspector credentials to WRG personnel and informed them that this was a routine EPA RCRA NCI inspection that would not cover all RCRA regulations but instead focus on RCRA air emission regulations. George Wieber also joined the inspection team as a supporting engineer from ERG. Mr. Wolters stated that ERG was supporting the inspection by collecting data relevant to RCRA air emissions regulations and core RCRA regulations. The objective of the data collection was to evaluate compliance with RCRA LQG and Subparts AA, BB, and CC requirements.

Ms. Chavez stated that data collection activities would include EPA Method 21 comparative monitoring of equipment potentially applicable to Leak Detection and Repair (LDAR) program requirements and hazardous waste containers, as well as emission screening using a Forward Looking Infrared (FLIR) camera. Ms. Chavez inquired about any safety requirements for the use of equipment that is not intrinsically safe in the process area. Mr. Bradshaw stated that a hot work permit would be needed throughout specified areas of the facility, including the areas with the hazardous waste tanks. The hazardous waste tanks containing solvent wastes subject to RCRA air regulations are staged in a tank farm on the southwestern wall outside of Building 2. Ms. Chavez explained WRG's right to claim confidential business information (CBI). WRG did not provide anything during or after the inspection that was claimed to be CBI. Any information claimed as potential CBI in documents provided to the inspection team was redacted to remove potential CBI information. For the second day of the inspection on August 03, 2021, Andrew Ma from EPA joined the inspection team. Participants in the inspection for each day were recorded on attendance logs, which are included in Attachment 07. This inspection report and its attachments represent the inspection team's observations/findings.

All photographs taken during the walkthrough and inspection are provided in Attachment 08. The photograph numbers in this report correspond to the number inside of Attachment 08. Note that times recorded on each photograph are in Central Time (GMT -5). The local time during the inspection was Pacific Time (GMT -7), which is two hours behind the time recorded on the photographs.

Inspection Summary

August 02, 2021

Following the opening conference, Mr. Bradshaw, with help from his colleagues present, provided an overview of the facility's history, operations, and hazardous waste management program. The inspection team focused on hazardous wastes and equipment subject to RCRA Air regulations. Mr. Bradshaw provided a detailed explanation of the majority of the piping and instrumentation associated with the hazardous waste tanks containing solvent. John McIlveen (Senior Project Engineer) provided piping and instrumentation diagrams (P&IDs), and process flow diagrams for equipment contacting hazardous waste solvents, which the inspection team reviewed. The P&IDs included one diagram for the DBE distillation column and waste tanks LDAR monitoring points for the facility that is connected to the hazardous waste tanks and pump-out area for waste solvents as shown in Attachment 09. The process flow diagram for wastewater distillation process is provided in Attachment 10. Inspectors conducted further process and records review before starting an initial facility walkthrough at approximately 14:30 on August 02, 2021.

During the initial walkthrough, the inspection team observed the hazardous waste tanks, Area 11, drum crushing station, DBE distillation column, Building 2, and the less than 90-day accumulation area. The inspection team did not perform Method 21 monitoring or screening using the FLIR camera during the first day walkthrough.

The inspection team observed two hazardous waste tanks during the initial walkthrough. The hazardous waste tanks are used to store waste bulk solvent as described in Section C of this report. The tank farm had secondary containment that has been assessed and certified by a professional engineer during the initial integrity certification. The PE certification for both tanks is provided in Attachment 05. Ms. Chavez asked the facility if tank inspections occur on the hazardous waste tank. Mr. Bradshaw explained the facility performs daily tank inspections and provided these inspection logs during records review (see Attachment 11).

The inspection team observed the facility's drum crusher and cleaning station next. A photo of the drum crusher was taken the following day, August 03, 2021, and is shown in Attachment 08, Photo 2.

The inspection team then moved into Building 2. Mr. Bradshaw explained which piping was associated with hazardous waste and the inspection team walked all lines to gain a better understanding of the movement of hazardous waste to the hazardous waste tanks. The inspection team observed the facility's less than 90-day area located along the southeastern wall of Building 2. A total of one gaylord, one 35-gallon container, and five 55-gallon containers of hazardous waste were observed. All containers were closed, labeled with the words "Hazardous Waste", dated with an accumulation start date, and had an indication of the nature of the hazard. The oldest accumulation start date observed was 7/18/2021.

The inspection team then observed the facility's main CAA, located in Building 1. Mr. Bradshaw explained this CAA is where Clean Harbors picks up all the facility's containerized hazardous waste. The CAA had a total of five gaylord boxes, one 30-gallon container, two 35-gallon containers, two 5-gallon containers, one 55-gallon container, and one 30-gallon container of hazardous waste. All containers were closed, labeled with the words "Hazardous Waste", dated with an accumulation start date, and had an indication of the nature of the hazard. The oldest accumulation start date observed was 6/19/2021. Ms. Chavez asked if the facility keeps track of how much hazardous waste is on-site. Mr. Bradshaw explained the facility keeps a hazardous waste inventory log of all hazardous waste on-site. Mr. Bradshaw provided the inventory log during the document review. The inventory log is provided in Attachment 12 as an example. In addition, Mr. Bradshaw explained the facility completes weekly inspections of the facility CAAs. Inspection logs are provided in Attachment 13 as an example.

At approximately 17:45, Ms. Chavez reviewed potential areas of concern noted during both days of the inspection as well as pending document requests. The inspection team departed the facility at approximately 18:05 on August 02, 2021.

August 03, 2021

On August 03, 2021, Mr. Wolters and Mr. Wieber arrived at the facility at approximately 08:30 and calibrated the flame ionization detector on the Toxic Vapor Analyzer (TVA) 2020 for use in comparative LDAR monitoring. ERG calibrated the TVA 2020 using zero air and methane gas at 500 and 10,000 parts per million (ppm). The team conducted a bump test of the TVA 2020 after calibration to ensure the equipment was operating properly. All readings during the bump check were within 10 percent of the span gas concentrations. Ms. Chavez utilized the FLIR camera

during the second day of the inspection. The inspection team conducted monitoring per EPA Method 21 at the facility with the TVA 2020. Ms. Chavez used the FLIR camera to scan for fugitive emissions from the facility's equipment throughout the inspection. Method 21 monitoring was primarily done by Mr. Wolters with Mr. Wieber taking notes. Hazardous waste lines and other various pieces of equipment were monitored where accessible. At 09:00, the inspection team, including Andrew Ma from EPA entered the facility and moved to a conference room.

Mr. Bradshaw, Mr. Chen, Mr. Obradovic, and Mr. Stevens, and the inspection team had a group discussion of the LDAR monitoring program. Mr. Bradshaw explained that he trained and shadows Ry Schuerger (Wastewater Operator). Mr. Schuerger completes all LDAR monitoring. Mr. Schuerger was on vacation at the time of the inspection, so Mr. Bradshaw conducted all comparative monitoring for WRG. Mr. Bradshaw explained the LDAR monitoring program operations at WRG, including the use and calibration of the FID (TVA 2020) (discussed further in Section E). The inspection team then began a site walkthrough at 09:50.

The inspection team first walked to the facility's DBE distillation column. Comparative monitoring for all LDAR monitoring points and additional any connections or flanges was completed. The results of these readings were recorded on an LDAR monitoring log provided in Attachment 14. There were no detectible emissions recorded in relation to the DBE distillation column.

The inspection team then moved to the drum washing station at approximately 10:30. Mr. Wolters observed a reading of 697 ppm from the grate on the drum washing station. Specifically, the right-hand grate as shown in Photo 2 in Attachment 08. Ms. Chavez asked the facility where the material from the drum rinsing station is discharged to. Mr. Bradshaw explained the material is sent to the Tank T-400 hazardous waste tank. Mr. Bradshaw also explained that the facility procedure is to line up RCRA empty drums, triple rinse the drums in the station while simultaneously pumping the rinse water to Tank T-400 to ensure that the bottom of the rinse station does not accumulate hazardous waste. The facility then crushes the drum within the drum crusher next to the triple rinse station. Ms. Chavez noted it appeared that material was left in the right-hand containment section of the triple rinse station. This is the same area where Mr. Wolters observed the 697-ppm reading from the TVA 2020. Mr. Bradshaw explained it is uncommon for any material to be left inside the drum washing station and all material should have been pumped into the Tank T-400 hazardous waste tank.

1. The TVA 2020 measured a concentration of 697 parts per million (ppm) coming from the top of the right-hand side grate of the drum washing station.



{Photograph 2, Attachment 08}

At approximately 11:00, the inspection team went on top of Tank T-400. Mr. Wolters completed LDAR monitoring on all connections, valves, manways, and flanges on top of Tank T-400. The background reading observed from the TVA 2020 was 1.5 ppm. During the monitoring event, Mr. Wolters observed a reading of 1.13 percent, or approximately 11,300 ppm coming from the conservation vent (DTN-T400-001) on Tank T-400. Mr. Wolters then began monitoring Tank T-401. Mr. Wolters observed a reading of 297 ppm from the manway cover and a reading of 415 ppm from the conservation vent (DTN-T401-003).

2. Conservation vent from the top of T400 tank located in the tank farm with an observed reading of 11,300 ppm from the TVA 2020.



{Photograph 3, Attachment 08}

The inspection team then moved to Tank T-411, the receiving tank that stores material to be sent to the DBE distillation column for recovery. Mr. Wolters monitored closure devices on Tank T-411 for potential readings, including the conservation vent, manway cover, five flanges, the rupture disc, and the agitator, but no readings above background were recorded. The inspection team then returned to hazardous waste tanks Tank T-400 and Tank T-401 at around 12:35. Mr. Bradshaw explained how the hazardous waste tanks were emptied into vacuum trucks. As discussed in Section C of this report, the facility has an SOP for how waste tank transfers occur. The SOP is provided in Attachment 15. The facility manages the lines used only for tanker truck transfers under the 300-hour exemption. The facility's explanation of how these lines managed is provided in Attachment 16, the facility LDAR program. Mr. Bradshaw explained a nitrogen purge is performed to clear the lines from the hazardous waste tank leading to the vacuum truck immediately following a pump-out.

The inspection team then observed Tank T-505A at approximately 15:10. Tank T-505A is the receiving unit for the middle cut from the DBE distillation column, and it is intended to collect the reclaimed DBE solvent. The material collected in Tank T-505A is reused on-site in various processes, and the tank is shown as a receiving tank in the distillation process depicted in Attachment 09. The inspection team then observed Tank T-505B, which is a receiving unit for the facility's DBE distillation process, Tank T-505B holds the distillates/lights from the DBE column.

According to the facility, Tank T-505B is managed as a process unit and operates under a vacuum. The materials collected in Tank T-505B are ultimately discharged to the facility's hazardous waste tank when the Tank T-505B reaches 30 percent capacity. The total capacity is approximately 40 gallons.

3. Tank T-505A is used as a receiving unit for reclaimed DBE from the DBE distillation column.



{Photograph 4, Attachment 08}

4. Tank T-505B is a receiving unit for distillates/lights from the facility's DBE distillation column.



{Photograph 5, Attachment 08}

The inspection team then entered Building 2 at approximately 15:40. All lines that were labeled as part of the facility's LDAR monitoring program or contained hazardous waste at any point were monitored. During the monitoring event, the inspection team observed points B-79 (flange), B-80 (flange), B-81 (isolation valve), and B-82 (check valve) in the facility's LDAR monitoring program to be missing tags.

5. Lines containing points B-79, B-80, B-81, and B-82 inside Building 2 that were not tagged.



{Photograph 6, Attachment 08}

In addition to the points missing tags inside Building 2, Mr. Wolters observed that during the comparative monitoring of the DBE distillation column that tag B-33 appeared to be missing. The inspection team moved back to the DBE distillation column to confirm.

6. Photograph of point B-33 as documented in the facility's LDAR program. The point was located on the flange in the center of the photograph that is unlabeled.



{Photograph 7, Attachment 08}

The inspection team then observed Tanks T-501 and T-502. Both tanks are discussed in depth in Section C of this report. Ms. Chavez asked the facility if transfers from Tank T-501 are tracked. Mr. Bradshaw stated they are not tracked but that a conservative approximation would be T-501 is emptied to Tank T-400 three times per week. Tank T-501 has a 300-gallon capacity. Mr. Bradshaw explained there is hard piping from Tank T-501 to Tank T-400.

The inspection team then returned to the conference room at approximately 16:20. The closing conference was then conducted at approximately 17:45 before the inspection team departed the facility at approximately 18:00.

Section E: Records Review

LDAR Program Review

The inspection team reviewed the LDAR program documentation, consisting of P&IDs and monitoring logs. Components managed under the LDAR program included piping in Building 2; equipment connected to the hazardous waste Tanks T-400 and T-401; and equipment in operation with the DBE distillation column. P&IDs of components contacting hazardous waste solvents applicable under the RCRA Air regulations were reviewed during the inspection and are included in Attachment 09. Monitoring logs are maintained by the facility for tracking LDAR monitoring results for components. The logs included identifying information for each component that corresponded with the facility's LDAR program. WRG monitors components every month. Monitoring logs from December 2020 to June 2021 are included in Attachment 14.

WRG uses one ThermoScientific TVA 2020 maintained by WRG on site for conducting LDAR monitoring. The TVA 2020 was last serviced in January 2021 which was sent to the manufacturer for maintenance and multi-point calibration per the manufactures SOP. Mr. Bradshaw explained that the TVA 2020 is serviced on an annual basis. The TVA 2020 is calibrated before each monitoring event following the facility's SOP as shown in Attachment 17. The inspection team noted the SOP states the facility uses a calibration gas of 100-ppm isobutylene. Before the walkthrough on August 03, 2021; Mr. Bradshaw demonstrated to the inspection team how the facility calibrates their TVA 2020. Mr. Wolters observed Mr. Bradshaw using ambient air as the zero-air and one-span point calibration gas with a concentration of 10,000 ppm methane. This is also documented in the facility's "TVA 2020 FID Quick Start Procedure" shown in Attachment 17. Ms. Chavez asked Mr. Bradshaw if the facility uses methane or isobutylene. Mr. Bradshaw explained the facility began using methane in August 2017 but that the SOP for WRG must not have been updated. Mr. Bradshaw provided the certificate of analysis for the 10,000-ppm methane container used to calibrate the facility's TVA 2020 on the morning of August 03, 2021. The certificate of analysis is provided in Attachment 18.

7. Methane calibration gas was used for calibration of the facility's TVA 2020.



{Photograph 1, Attachment 08}

Daily and Weekly Inspections

WRG maintains a weekly waste inspection form used to record observations at each of the container CAAs, the hazardous waste tank rooms, the universal waste room, the DBE distillation

column, and the SAA containers. Checklist items include checks for labeling, accumulation start date, closure of containers, absence of spills/leaks, presence of spill control equipment, and aisle space between containers.

Examples of the daily inspection logs for hazardous waste tanks and weekly waste inspection logs are included in Attachments 11 and 13, respectively.

Tank Integrity Certifications

The inspection team reviewed the integrity certification for the hazardous waste tanks completed by a Professional Engineer in May 1988 (Attachment 05). Additionally, the assessment was conducted while the facility was still under ownership by Synthetech, Inc.

RCRA and DOT Training Records

The inspection team ensured that all the personnel completing LDAR monitoring and weekly CAA inspections had documentation of proper training on hazardous waste handling and management. Training records reviewed included Ry Schuerger's most recent RCRA training in May 2021. The training record is included in Attachment 19.

Areas of Concern

The presentation of areas of concern does not constitute a formal compliance determination or violation.

1. 40 C.F.R. § 265.1085(k) explains the requirements for owners or operators if a defect is detected during an inspection. During the inspection, Mr. Wolters noted a net reading of 11,300 ppm coming from the conservation vent on Tank T-400 (see Attachment 08, Photo 3). This exceeds the detectable emission threshold of 500 ppm. WRG would be required to repair the defect found on the conservation vent in accordance with 40 C.F.R. § 265.1085(k). In addition, Mr. Wolters observed a net reading of 415 ppm on the conservation vent on Tank T-401. Although it is not considered a detectable emission, the facility was notified of the reading.
2. 40 C.F.R. § 262.17(a)(2) requires large quantity generators of hazardous waste to comply with the applicable requirements of Subpart J, except §265.197(c) of Closure and post-closure care and §265.200—Waste analysis and trial tests, as well as the applicable requirements of AA, BB, and CC of 40 C.F.R. part 265 if they have hazardous waste that is placed in tanks. According to 40 C.F.R. § 260.10, the definition of a tank is “a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.”

Tank T-501 and Tank T-505B are both directly hard piped to hazardous waste Tanks T-400 and T-401. Tank T-501 is used to recirculate spent solvent into the DBE distillation column during operations for the solvents cooling properties. Once the DBE distillation column is no longer in use, the solvent is no longer recirculated and discharges directly to the hazardous waste tanks. Tank T-505B is a knockout pot that is used to collect distillate from condensers. The condensers are hard piped directly into Tank T-505B when the DBE distillation column is

operating, and the system is under vacuum. When the DBE distillation column is not in operation or Tank T-505B accumulates approximately 30 percent of its 40-gallon capacity, it is discharged via hard piping to hazardous waste tank T-400. Photographs of Tank T-505B and Tank T-501 are provided in Attachment 08 (Photos 7 and 8, respectively).

Both tanks are used to accumulate materials that are always discharged to hazardous waste Tanks T-400 and T-401. Prior to discharge into the hazardous waste tanks, the materials do not change physically or chemically while accumulating in Tanks T-501 and T-505B. WRG claims Tanks T-501 and T-505B (knockout pot) are MPUs, and therefore, are exempt from RCRA regulations. The statement WRG provided to the inspection team is provided in Attachment 20. If the tanks are determined to meet the definition of a hazardous waste tank, they would be subject to the requirements of Subpart J of 40 C.F.R. part 265 according to 40 C.F.R. § 262.17(a)(2). WRG does not presently manage the Tank T-501 and Tank T-505B under all requirements of Subpart J, with examples observed during the inspection being failure to label the tanks with the words "Hazardous Waste" and failure to provide documentation of the tank system integrity assessment performed by a Professional Engineer. Associated RCRA Air regulations under Subpart CC would also apply to Tanks T-501 and T-505B, if determined to be hazardous waste tanks.

3. The standards set forth in 40 C.F.R. § 265.1052 and 40 C.F.R. § 1057 require generators to monitor valves and pumps in light liquid service monthly unless certain exemptions are met.

WRG personnel stated that the equipment contacting hazardous waste in lines used to transfer waste from storage tanks to tank trucks include the following:

- Lines associated with Tank T-501
- The facility's organic liquid distillate receiver used with the DBE distillation column
- Multiple lines from vessels inside Building 2

40 C.F.R. § 265.1050(e) allows for equipment that contains or contacts hazardous waste with the organic concentration of at least 10 percent by weight for less than 300 hours per calendar year to be excluded from monitoring requirements outlined in 40 C.F.R. § 265.1052 through 40 C.F.R. § 265.1060. 40 C.F.R. § 265.1050(e) stipulates that this equipment must be identified as excluded as required by 40 C.F.R. § 265.1064(g)(6). WRG specifies all the components they believed to meet this exemption in Section 7.1 of the facility's LDAR program as shown in Attachment 16. If these components are determined to be in contact with hazardous waste for more than 300 hours per calendar year, they would need to be monitored in accordance with 40 C.F.R. § 265.1052 and 40 C.F.R. § 1057. The following components identified as excluded that may need to be monitored include:

- Valve to plugged cap on pressure side of pump 505A (tag B-5)
- Pump 505A (tag B-6)
- Valve #8 (tag B-8)
- Valve #9 (tag B-9)
- Valve #10 (tag B-10)
- Valve #11 (tag B-11)
- DC505 bottom-side orifice level transmitter valve (tag B-17)
- Pump 505C (tag B-22)
- Nitrogen blow down valve (tag B-30)

- Chicago fitting leg drain valve (tag B-36)
- Valve to pump 505C (tag B-37)
- Valve after pump 505C discharge pressure transmitter (tag B-38)
- Valve on pump 505C bypass (tag B-39)
- Valve to pump 505C pressure transmitter (tag B-40)
- Pump 505A drain valve (tag B-47)
- Drain valve on suction side of pump 505C (tag B-54)
- Valve #68 pump 505C drain valve (tag B-68)
- East side check valve (tag B-26)
- West side check valve (tag B-28)
- Ball valve #14 to inlet of HE (tag B-14)
- Ball valve #15 outlet from HE (tag B-15)
- HE505D bypass valve (tag B-16)
- Auto backflow valve to T400 & T401 (tag B-29)
- Valve to HI indicator for T505B (tag B-41)
- Check valve in tank farm from DC505 junction to B2 HW transfer line (tag B-69)
- Isolation valve for DC505 to B2 HW transfer line (tag B-70)
- Auto valve 4020 to T-401 (tag B-73)
- Auto valve 4018 to T-400 (tag B-76)
- Isolation valve (tag B-81)
- Check valve (tag B-82)

In addition to the components listed above, any pumps or valves associated with the transfer of hazardous waste from Tank-501 and lines inside Building 2 would need to be monitored if hazardous waste is in contact with these components more than 300 hours per calendar year.

WRG believed these components would be excluded from monitoring under 40 C.F.R. § 265.1050(e) if hazardous waste does not come into contact more than 300 hours annually. In addition, the facility's LDAR program states when the DBE column is running, the lines are only exempt up to the check valve outside of Building 2 in the tank farm. However, if the DBE column is not running, the entire length of transfer lines to the tanks do not exceed the 300-hour allowance for containing hazardous waste. Ms. Chavez specifically asked how the facility manages this exclusion. Mr. Bradshaw explained if the facility can determine that the DBE column will not operate from January to March, the lines would not be monitored because WRG believes the exclusion applies. If then in April the DBE column is operational for over 300 hours, the facility would begin monitoring in compliance with Subpart BB. More specifically, WRG does not appear to be managing the 300-hour exclusion on an annual basis and this allows the facility not to monitor in the beginning months of a new year if the DBE column is not operational. WRG explained if a client orders a product in April that would require the DBE to be in operation, they would begin monitoring. It appeared the facility was determining the 300-hour exclusion on a month-to-month basis.

4. 40 § 265.1063(b)(3) specifies that the instrument shall be calibrated before use on each day of its use by the procedures specific in Reference Method 21. Reference Method 21, Section 7.1.2 specifies that for each organic species that is to be measured during individual source surveys, obtain or prepare a known standard in air at a concentration approximately equal to

the applicable leak definition specified in the regulation. Per the Subpart BB regulations, the applicable leak definitions that apply are 500 ppm and 10,000 ppm.

WRG uses a ThermoScientific TVA 2020 as its detection instrument for LDAR monitoring, and calibration is performed using 10,000 ppm methane gas monthly on the morning before the monitoring event begins (see Attachment 08, Photo 1). Mr. Bradshaw demonstrated how the facility calibrates their TVA 2020 to Mr. Wolters. Mr. Wolters observed Mr. Bradshaw conducting a two-point calibration: the zero-calibration point was based on ambient air, and the span point was based on a 10,000-ppm methane calibration gas. However, calibration at 500 ppm is not part of the facility's calibration procedure.

Upon review of the facility's calibration SOP, the document does not reference the use of methane gas. The SOP stated the facility should use 100 ppm isobutylene for calibration. Mr. Bradshaw stated the document has not been updated. The detection instrument and calibration procedures in the facility's SOP do not meet the requirements of 40 C.F.R. § 265.1063(a) and (b) since zero air and 10,000 ppm n-hexane or methane are not specified as used for calibration. The inspection team recommended that the SOP be updated to accurately reflect the facility's current LDAR program/practices.

5. 40 C.F.R. § 265.1050(c) requires that each piece of equipment subject to Subpart BB of 40 C.F.R. Part 265 must "be marked in such a manner that it can be distinguished readily from other pieces of equipment".

During the monitoring event, the inspection team observed that LDAR monitoring points B-79 (flange), B-80 (flange), B-81 (isolation valve), and B-82 (check valve) located inside the western wall of Building 2 were missing tags (see Attachment 08, Photos 6 and 7). Mr. Wolters also observed that during the monitoring event of the DBE distillation column that tag B-33 was missing. In addition, components that are not monitored regularly are still required to be marked as applicable to Subpart BB.

6. 40 C.F.R. § 262.15(a)(5) states a generator must mark or label its container with the words "Hazardous Waste", an indication of the nature of the hazard, and ensure to keep containers closed when not adding waste or temporary venting.

Mr. Wolters observed a reading of 697 ppm from above the right-side grate on the "drum wash" station/sump (see Attachment 08, Photo 2). Mr. Bradshaw explained that the materials collected in this unit are ultimately sent to Tank T-400, the hazardous waste tank. At the time of this inspection, inspectors observed a layer of materials/sludge accumulated below the grate of this unit and emissions were detected by the TVA 2020 with a concentration reading of 697 ppm on one side.

Mr. Bradshaw stated during the inspection that the standard procedure for the drum wash station is to pump liquid in collected in the unit directly to hazardous waste Tank T-400 whenever the drum wash station is in use, which is meant to prevent any accumulation. Mr. Bradshaw also stated that the material sent to Tank T-400 from the drum wash sump is primarily water generated from the rinsing activities.

On October 04, 2021, Ms. Chavez received an email from Mr. Killian Condon, an Oregon Department of Environmental Quality (DEQ) RCRA inspector, stating that a recent on-site

RCRA CEI performed by the state also observed and photographed this drum wash station. According to the state inspector, the drum wash station was found to contain approximately 1" of sludge and liquids at the time of that inspection. In addition, when monitoring the unit, the facility's monitoring equipment alarmed to indicate fugitive volatile emissions were detected from this unit. The following pictures were provided via email to Ms. Chavez:

8. Photograph taken of the drum wash station from an Oregon DEQ RCRA inspector.



9. Photograph of sludge present inside the drum washing containment.



Closing Conference

The closing conference took place on August 03, 2021, at approximately 17:45. Attending from the facility were Mr. Bradshaw, Mr. Chen, Mr. Obradovic, and Mr. Stevens.

Ms. Chavez, Mr. Ma, Mr. Wolters, and Mr. Wieber were all present from the inspection team. The inspection team summarized the areas of concern identified during the inspection. Ms. Chavez explained the process moving forward and the timetable that the facility can expect for hearing back from the EPA and Region 10. In addition to the areas of concern, Ms. Chavez summarized additional documents that the inspection team would like to receive from WRG including an updated City of Albany Industrial Wastewater Discharge Permit and an explanation of the transfer lines at Tanks T-400 and T-401.

Ms. Chavez explained that the facility could respond to the areas of concern and notify EPA of actions to address issues identified. Ms. Chavez requested that responses be sent within two weeks following the inspection. Ms. Chavez identified herself as the primary point of contact for post-inspection responses, and Mr. Stevens identified himself as the primary point of contact on WRG's end.

The inspection team concluded the inspection and left the facility on August 03, 2021.

Post-Inspection Facility Response

On August 17, 2021, Mr. Stevens sent via email the requested information from the closing conference of the inspection. The information has been incorporated into this report. In addition to providing the requested documentation, Mr. Stevens email also responded to several of the areas of concern discussed at the closing conference as outlined below.

For the areas of concern regarding the conservation vents (area of concern #1) on Tank T-400 and Tank T-401, the facility has made a purchase order for new conservation vents and rebuild parts. The delivery time is expected to be within 14 weeks. Once WRG receives all parts needed for installation, the installation of the new vents will be scheduled.

For the areas of concern regarding the facility's calibration of their TVA 2020 (area of concern #4), the facility has ordered 500 ppm methane calibration gas for use during their upcoming LDAR monitoring event. This would be in addition to the zero gas, and 10,000 ppm methane gas. The facility did not comment if the SOP has been updated.

For the areas of concern regarding the missing tags (area of concern #5) on B-33, B-79, B-80, B-81, and B-82; the facility stated the points are readily identifiable testing points based on the description on the inspection form and were immediately identified during the inspection. The facility has also installed new LDAR tags at all of the points listed above.

For the areas of concern regarding the facility's triple rinse station (area of concern #6), the sump was emptied of its non-hazardous liquid wash waster on the same day it was observed. In addition, the facility has reinforced training on procedures for timely emptying of the sump.

The facility did not respond to AOC 2 and 3.

Ms. Chavez confirmed receipt of Mr. Stevens's email and attachments on August 17, 2021. The full text of the email from Mr. Stevens is provided as Attachment 21. The response attached to the email is included as Attachment 22.