



RCRA Compliance Inspection Report

Emerald Services, Inc. Tacoma Facility

Tacoma, Washington

WAD981769110

May 11 & 12, 2021

Prepared by:

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Inspector Signature/Date:

KATRINA BRADSHAW	Digitally signed by KATRINA BRADSHAW Date: 2021.08.24 16:18:22 -07'00'
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Supervisor Signature/Date:

Jennifer A Sullivan	Digitally signed by Jennifer A Sullivan Date: 2021.08.25 09:58:29 -07'00'
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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. The onsite inspection was conducted during the Novel Coronavirus (COVID-19) Pandemic and considerations and safety precautions were taken accordingly.

Section A: Basic Facility and Inspection Information

Facility Information

Handler Name: Emerald Services, Inc.-Tacoma Facility

Handler ID Number: WAD981769110

Facility Contact(s)/Title: Sheila Smith, Director, Environmental Compliance

Facility Location Address: 1825 Alexander Ave
Tacoma, WA 98421

Facility Mailing Address: 1825 Alexander Ave
Tacoma, WA 98421

Contact Phone Number: Sheila Smith: (425) 406-5311

Contact Email Address: ssmith@emeraldrenews.com

GPS Coordinates of Site: Lat: 47.26772
Long: -122.3891

Inspection Information

Inspection Type: RCRA Focused Compliance Inspection (FCI)

Inspection Date: May 11, 2021 May 12, 2021

Arrival Time: 0925 hours 0913 hours

Departure Time: 1445 hours 1510 hours

Inspection Team: Katrina (Katie) Bradshaw (EPA Region 10)
Cynthia (Cindy) Schafer (EPA Region 8)
Matthew Quarterman (EPA Region 10)
Rob Reed (Washington Department of Ecology)
Jason Landskron (Washington Department of Ecology)

Section B: General Facility Information

Owner/Operator Information

This Treatment, Storage, and Disposal Facility (TSDF or facility) has been owned by Clean Harbors, Inc. since July 9, 2016. The legal operator is Emerald Services, Inc. and Clean Harbors Environmental Services, Inc.

Site Location

According to a review of the R10 EJSCREEN: Basic Review Map Tool, the facility is located in an Environmental Justice area, with a 98-percentile index. The facility is located in the industrial port area

of Tacoma, Washington, on the north side of Alexander Avenue between the Hylebos and Blair Waterways. It is also located on the Puyallup Tribe Reservation.

Background and Activities

Emerald Services, Inc. receives hazardous waste from off site as a transfer facility. They have also notified as a Large Quantity Generator of hazardous waste, as well as a recycler of hazardous waste that stores prior to recycling. They have a used oil re-refinery for producing marine diesel oil, flux-extender and Naptha fuel. The Part B permitted TSDF conducts antifreeze recycling, solvent recycling, fuel blending and dangerous waste storage activities.

Section C: Regulatory Information

Compliance History

According to the RCRAInfo database, the most recent formal enforcement action taken against it was September 8, 2017 for a violation determined on March 15, 2017. The violation cited was a state financial liability requirement found at Washington Administrative Code (WAC) 173-303-620(8)(a). The facility returned to compliance on August 2, 2017. Subsequent Financial Records Reviews by Washington State Department of Ecology (Ecology) did not yield any violations. The most recent Compliance Evaluation Inspection was performed on September 12, 2019 by Ecology, and there were no violations cited.

Regulatory Status

According to RCRAInfo, the facility last notified the agency of hazardous waste generation activities on March 1, 2021. The database indicates that the facility is currently a Large Quantity Generator (LQG) of hazardous waste, as well as a transfer and storage recycling facility. The facility was permitted on March 1, 2010 and they applied for renewal (with modifications) on October 1, 2019. Based on my observations of waste generation, the amount of waste on site during the inspection, and the documentation in e-Manifest, the facility appeared to be generating greater than 1,000 kilograms of hazardous waste per month and was therefore an LQG at the time of the inspection.

Emerald Services, Inc. is covered under NAICS code 562211 - Hazardous waste treatment and disposal.

Site Hazardous Waste Information

According to the Part B Permit Application, dated October 8, 2019, Emerald Services, Inc. describes the processes for fuel blending, waste recycling, and used oil processing activities. The process used for fuel blending and energy recovery is the Fuel Blending System including equipment for shredding and mixing of wastes. The processes associated with waste recycling are the Thin Film Evaporator (aka LUWA) and High Boiler (Pot Still) Distillation Units, along with the Glycol Recycling Unit. The facility also consolidates compatible waste liquids with less than 5,000 Btu into a tank prior to shipment off-site for incineration. The dangerous wastes storage tanks may be associated with either storage activity (consolidation), the Fuel Blending System, Thin Film Evaporator, or High Boiler Distillation Units (see Attachment D for diagrams).

The facility has three active process vents regulated under WAC 173-303-690 (Subpart AA). Active process vents are connected to the Thin Film Evaporator and High Boiler Distillation Unit, and Glycol Recycling System. Volatile organic compound (VOC) emission control technology is installed on all

process vents. The Thin Film Evaporator and High Boiler Distillation Unit have an associated ventilation system that is connected to a flare to control VOC emissions. The Glycol Recycling System vents to a carbon adsorber for control of VOC emissions. A fourth process vent connects the fuel blending dispersion system and flare; however, the dispersion system has not been in service for several years.

The specific types of hazardous waste generated include still bottoms, filter debris, process residues, floor sweepings and activated carbon. Wastewater is also generated on-site from rainfall entering containment areas, operator hand washing, rinsate from equipment cleaning, and from glycol recycling operations. According to the permit, this wastewater contains less than 1% total organic carbon (TOC) and does not designate as dangerous or hazardous waste.

Section D: Description of Inspection

Purpose of Inspection

This was a Resource Conservation and Recovery Act (RCRA) inspection conducted pursuant to Washington's federally authorized RCRA program. The facility was inspected to evaluate compliance with the organic air emissions standards found in 40 CFR Part 264, Subparts AA, BB, and CC, and as incorporated by reference into the Washington Administrative Code (WAC) at 173-303-690, 691, and 692, as well as permitting requirements found in WAC 173-303-806. The inspection was conducted as part of the EPA National Compliance Initiative (NCI) for organic emissions from RCRA facilities.

Site Access

EPA was not denied access to the facility and was allowed inspection of all areas. All visitors received a safety brief and wore required personal protective equipment (PPE) prior to entering the restricted areas.

Inspection Entry and Opening Conference

As a result of the COVID-19 Pandemic safety measures, this was an announced inspection. Emerald office employees and EPA inspectors have all been working from home at least part-time, and it was thought prudent to extend social distancing precautions by conducting the opening conference using Microsoft Teams and to minimize the time on site for the inspection. A virtual conference was conducted on May 10, 2021 from 1400-1600 hours, and the onsite walk through was scheduled for May 11, 2021 at 0900 hours. The following individuals were present during the Microsoft Teams conference:

Katrina Bradshaw – USEPA Region 10 Inspector
Cynthia Schafer – USEPA Region 8 Inspector
Matthew Quarterman – USEPA Region 10 Inspector-in-training
Rob Reed – Washington Dept. of Ecology Inspector
Jason Landskron – Washington Dept. Ecology Permit Engineer
Sheila Smith – Emerald Services Director of Environmental Compliance
Stephen Grose – Clean Harbors Interim General Manager
Jeremy Moss – General Manager, VGO Unit
David Flake – Refinery Manager

I opened the meeting by explaining that this was a focused compliance inspection for RCRA organic air emission requirements, as part of EPA's National Compliance Initiative (NCI). I explained that I would be leading the inspection, along with Cindy Schafer and Matt Quarterman from EPA, as well as Rob

Reed and Jason Landskron from Ecology. I asked the facility representatives to explain their processes, and the inspectors asked follow-up questions during the conference.

Ms. Smith began by explaining that the permitted operations included the used oil re-refinery (which includes used oil receiving) and the hazardous waste storage and treatment facility. Mr. Flake continued to describe the process of collecting used oil through tanks, trucks, route trucks and rail cars, all of which gets processed in a vacuum distillation unit. The major product is Vacuum Gas Oil (VGO), and other products include light ends, asphalt flux, and wastewater. The facility performs screening before off-loading and full testing in guard tanks (for metals, water, PCBs, and coagulation). A shipment would get rejected for high metals, water content, high phosphorus, silicon, PCBs, or for low flashpoint. After passing testing results in one of the four, 25,000-gallon guard tanks, the used oil is pumped to the main feed tank, which is 100,000 gallons, and then to the process units and equipment in the refinery. The facility currently processes about 50,000 gallons of used oil per day. The processed VGO oil goes to a railcar and is sold to a customer for further refinement. A dehydration column removes water and light ends which go into an HX03 condenser and then the oil/water separator (OWS), which is a closed vessel. OWS water goes to an air stripper (which removes light hydrocarbons) then gets pumped into a railcar for off-site disposal. The air stripper is vented to a thermal oxidizer (TO). All vapors from all refinery process units go the TO. Ms. Smith stated that the re-refinery is complying with conditions on the Air Permit (issued by Puget Sound Clean Air Agency, or PSCAA) and complying with Clean Air Act regulations in lieu of RCRA Leak Detection and Repair (LDAR) regulations.

Mr. Grose then explained the glycol recycling process. Glycol waste enters the facility in a tote, drum or truck, and is sampled when entering the facility on the hazardous waste pad. Testing is performed according to the Waste Analysis Plan (WAP) and the accepted waste is pumped into tank D-210, then transferred through a filter into D-211 (both are 10,000-gallon tanks). The emulsified oils are skimmed from the tanks, then the waste is pumped through another filter into tank D-212, which is a 6,000-gallon feed tank. The facility recycles approximately 5,000 gallons per day. From the feed tank, the waste goes to a three-tower distillation process, which results in a final mix of 60% glycol and 40% water. The distillation bottoms go into a steel tote and are pumped as dangerous waste into the fuel blend railcar. The glycol product goes into a storage tank, and the water is tested and sent to Emerald Services at Airport Way for wastewater treatment.

Mr. Grose continued to describe the Thin-Film Evaporation system for solvent recovery, which is primarily for methyl ethyl ketone (MEK), n-methylpyrrolidone (NMP), and acetone. He said that volumes have decreased by about 95% in the last year and that they are looking at dropping this process off the permit. The system achieves about 98-99% purity and about 60-80% recovery on the incoming waste, depending upon waste stream quality. It starts with a full tank which loops to the evaporator until 70% has been evaporated. The bottoms are pumped to a fuel blending railcar as dangerous/hazardous waste for further off-site processing, and the vapors off the evaporator go to the flare. The whole process is under vacuum, but the product tank is not.

The High Boiler Distillation Unit, which Mr. Grose said they refer to as the SIVA (manufactured name), is a batch process. A fixed volume of waste is delivered to a pot still from a feed tank, or directly from containers. The pot is heated with a non-contact hot oil jacket. Distilled product is condensed, sent to tanks, and packaged for resale. The SIVA is also likely being removed from the permit.

The permit describes the Fuel Blending Process as dangerous waste lacking recoverable solvent suitable for resale, but exhibiting heat content suitable for energy recovery, that is blended to make fuels. Fuels are transferred by double-walled piping to the fuel railcar via the fuel blending feed pipe, the Cascade Shredder, or a vacuum tank truck, depending on the physical state of the material. The blended fuels are sent to permitted off-site energy recovery TSDFs. Mr. Grose said that they also have waste from customers that goes directly to fuel blending, which is all mixed in a railcar to meet

customer specifications (i.e., low water and high Btu).

Mr. Grose stated that they have a shredder for recovering paint, which was not operating at the time of the inspection, but while in operation, the emissions were under vacuum and sent to the flare. In the future, the facility will be going after high Btu household hazardous waste with the shredder.

The records requested during the opening conference included:

- LDAR monitoring and reporting
- Pressure relief setpoints
- List of what is currently in the tanks
- Piping and Instrumentation Diagrams (P&IDs)

The virtual opening conference ended at 1625 hours.

Inspection Summary

The Region 10 inspection team arrived at the facility at approximately 0900 on May 11, 2021. We met Ecology inspectors Reed and Landskron and donned our PPE. We then performed calibrations on both flame ionization detectors (TVA 2020s) and the forward-looking infrared camera (FLIR GF320), and then performed a bump check. The flame ionization detectors were each calibrated with zero air, 500 parts per million (ppm) methane and 10,000 ppm methane. Inspector Landskron also brought a TVA 2020, which he had already calibrated prior to arrival. We entered the facility gate at 0925 and presented our credentials to Ms. Smith and Mr. Grose. Ms. Smith handed us several process flow diagrams and P&IDs for the Part B side of the facility (see Attachment D). Mr. Grose provided a safety briefing after we all signed into the facility visitor log. There were about 21 employees on the site.

We began the inspection at the Glycol Recycling process area. Inspector-in-training Quarterman and Inspector Reed, under the direction of Inspectors Bradshaw and Schafer, began EPA Method 21 emissions monitoring of the pumps, pressure relief devices (PRDs), valves, and other components on the piping and the tanks. We also compared the equipment tags to the P&IDs to verify locations and identifications. There was an open-ended line after tag 292 from the feed line on Tank D-212 (see photo DSCN0331). We also discovered two leaks in the Glycol distillation process. The first was a visual leak on valve V288 on Tower 2 (see photos DSCN0334 and DSCN0335). The second was a visual leak on valve V294 on the wet carbon unit (see photo DSCN0336). Mr. Grose immediately notified employees to repair both leaks and cap the line. A short time later, an end cap was replaced on the open-ended line (DSCN0337). The team broke for lunch around 1130.

After lunch, we continued the inspection at the hazardous waste tanks D-300 (containing paint and solvent) and D-301 (fuel waste). The following leaks were detected (DSCN0338-DSCN042):

Process Unit	Tag #	Component Type	Reading (ppm)	Confirmation (ppm)	Notes
Tank D300	F555	Connector	3200	3.20%	
Tank D300	F557	PRD	7555	1.30%	Pressure relief side
Tank D301	F570	PRD	3400	3000	Vacuum side
Tank D301	F574	Connector	550	80	Windy

Next, we monitored the Thin Film Evaporator system (Figure D-14 in Attachment D). A connector off T100 between F113 and F114 was not on the P&ID or tagged. There was also a missing tag on F162. We detected a leak on tank V-100 on the manhole, with a reading of 1200 ppm, confirmed at 850 ppm. However, this was noted as being below the leak definition of 10,000 ppm for Subpart BB equipment.

We gave Ms. Smith a copy of the leaks we found that day on the LDAR Comparative Monitoring Form (Attachment E) and departed the facility at 1505 hours.

We returned the next morning at 0905 and repeated the calibration and bump checks of the TVA 2020s and calibration of the FLIR camera. Mr. Grose said that they had performed repairs on the visual leaks identified the previous day, and I went out to verify and take photos (DSCN0343 and DSCN0344).

In preparation for inspecting and monitoring the re-refinery, which is a hot work area, Mr. Flake provided a safety briefing and extra PPE (flame resistant coveralls for Ecology inspectors, and thick leather gloves for all inspectors). We split into two teams, with Inspectors Schafer and Reed on one team (escorted by Mr. Flake) and Inspectors Landskron, Quarterman, and me on the other team (escorted by facility engineer Mr. Blake Moffo and Safety Kleen manager Mr. Jim Joy). We were provided copies of P&IDs for the re-refinery, but these are Confidential Business Information (CBI) and are protected in EPA's recordkeeping as such. Inspector Schafer noted one open-ended line after the pressure meter on a wastewater tank, above the pump on a sample line. Maintenance personnel capped the line while the team continued monitoring, but no photo was taken, as I had the camera in a different area. Inspector Schafer found a leak on the area of the knockout pots to the TO (between the flame arrestor and TO flange) with a reading of 2100 ppm and confirmation of 3000 ppm. The team broke for lunch around noon.

After lunch, the teams continued monitoring the re-refinery area, but did not find any more leaks. I was concerned about the vent on the V500 flare knockout drum (DSCN0345 and DSCN0346), which seemed to be venting to atmosphere, but we were unable to monitor with the TVA 2020. Next, we went to the control room and observed the TO monitoring parameters (ambient temperature, vacuum pressure and low/high temperature alarms). The temperature at that time was 1773.7 degrees Fahrenheit.

We ended the inspection and conducted a records review and closing conference.

Areas of Concern

The following areas of concern were found during this inspection:

- There were visual leaks found in the Glycol Recycling area
- There were four leaks detected on tanks D-300 and D-301 above 500 ppm
- There were missing tags on the equipment and on P&IDs
- Tank V500 – it is unclear if this is permitted/regulated under the CAA

Closing Conference

We held the closing conference outside the office building, practicing social distancing, and requested the following records to be sent to me by email, due May 28, 2021:

- Annual LDAR monitoring records for the past three years
- LDAR repairs: dates and repair action (1st attempt and final) for the past three years
- Pressure relief setpoints on hazardous waste tanks D-300 and D-301
- Vapor pressure of contents of the glycol tanks
- Calibration records for Method 21 for three years
- Component keys (e.g., D=certain type of component, F=flange, etc.)
- List of components and their locations
- Exit velocity of the flare in June 2019
- Description of what vents to tank V500 and why it is not subject to Subpart CC

We thanked the facility representatives for their time and departed the facility at 1510 hours.

The records requested were received via email on May 28, 2021 and are to be reviewed by EPA Region 10.