



Region 2 Caribbean Environmental Protection Division
Multimedia Permits and Compliance Branch – Air Protection Team

CAA Inspection Report

Inspection Date: May 19, 2022

Facility Name: Limetree Bay Terminals, LLC

Facility Address: One Estate Hope, Christiansted, VI 00820

Coordinates: Latitude: 17.714764°; Longitude: -64.757309°

ICIS-Air ID #: VI0000007800100002

Facility size: Major

State Referral: ☐ Yes ☒ No

NAICS code: 424710 – Petroleum Bulk Stations and Terminals

Facility Contact(s): Maria Aloyo, Environmental Specialist, (340) 692-3781, Maloyo@lbenergy.com

EPA Lead Inspector: Alex O. Rivera, Environmental Engineer, (787) 977-5845, rivera.alex@epa.gov

EPA Asst. Inspectors: Katherine Marmanides, Environmental Scientist, (212) 637-4063, marmanides.katherine@epa.gov

State Inspector(s): Andrew Jackson, (340) 773-1082, andrew.jackson@dpr.vi.gov

Permitted Regulatory Program(s) Evaluated:

- ☒ SIP 110
- ☒ NSPS 111 – Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984
- ☐ NESHAP 112 (61)
- ☒ MACT 112 (63) – Subparts: Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries and Subpart R - National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations);
- ☐ CFC 608
- ☐ PSD (Part C)
- ☐ NSR (Part D)
- ☒ TV

Major Pollutant(s): Volatile Organic Compounds (VOC's)

I. Inspection purpose and pertinent regulatory requirements

The purpose of this inspection was to evaluate the facility's compliance with the following regulatory requirements that are listed as part Limetree Bay Terminals, LLC (LBT) Title V operating permit number STX-TV-003-10 that was issued on July 1st, 2010 by the Virgin Islands Department of Planning and Natural Resources (DPNR):

1. 40 CFR, Part 63, Subpart R - National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations).
2. 40 CFR, Part 63, Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries.
3. 40 CFR, Part 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.
4. The Virgin Islands Rules and Regulations, Title 12 Chapter 9

In addition, an infrared camera (IR) survey of the storage tanks and other equipment that processes gasoline was performed.

II. Summary of Observations

A. Opening Meeting

EPA Region 2 inspectors Katherine Marmanides and Alex Rivera along with Andrew Jackson from the Department of Planning and Natural Resources (DPNR) drove to the facility and gained access through the security gate at around 9:00 AM. After gaining access to the facility, the inspectors were received by Ms. Maria Aloyo, Environmental Specialist; and Ms. Joyce Wakefield, Environmental Specialist (LBT representatives). EPA inspectors showed their inspector credentials and stated that the purpose of the visit was to conduct a Clean Air Act inspection. The inspectors were instructed to watch a safety video before proceeding with the inspection activities. After watching the video and completing other safety related paperwork, LBT representatives escorted the EPA inspectors and Mr. Jackson to a conference room. The EPA inspectors and Mr. Jackson formally introduced themselves and provided further details about the purpose and explained that an infrared (IR) camera and a MultiRae photoionization detector (PID) will be used to survey the facility's truck loading rack area and the gasoline storage tanks.

The EPA inspectors requested an update of the facility operating status and began discussing the inspection questionnaire.

B. Inspection Questionnaire

- Permit Status – Inspector Rivera asked LBT representatives about their plans on how to manage the facility permits after Port Hamilton Refining and Transportation (PHRT) recent acquisition of the refinery. Ms. Aloyo and Ms. Wakefield indicated that both parties still do not have any concrete plans and that LBT's consultants are working on developing the best approach to separate the permit in two entities.
- Operational changes – Inspector Rivera asked LBT representatives about any other operational changes in addition to PHRT acquisition of the refinery. Ms. Aloyo indicated that LBT remains operating as a storage terminal without any significant changes since EPA's 2017 inspection, with the exception that

LBT no longer manage vacuum gas oil. LBT currently manages #6 fuel oil, #2 fuel oil, crude oil, liquified propane gas, butane, naphtha, gasoline, and jet fuel.

- Gasoline storage tanks – Inspector Rivera requested LBT representatives to provide a list of the tanks storing gasoline at the time of the inspection and the type of floating roof. Ms. Aloyo informed that seven (7) tanks were storing gasoline: 1) Tank 6831 with an internal floating roof (IFR) and connected to the truck loading rack to supply premium gasoline, 2) Tank 6833 with an external floating roof (EFR), 3) Tank 6838 with an EFR, 4) Tank 6840 with an EFR, 5) Tank 6842 with an EFR, 6) Tank 6843 with an IFR, and 7) Tank 6888 with an IFR and connected to the truck loading rack to supply regular gasoline.
- Power generation – Inspector Rivera asked LBT representatives about how power is being generated in the Facility, for a status of the temporary generators installation project, and future plans for power generation in the complex. Ms. Aloyo informed that LBT already brought to the site 10 generators of 1 megawatts each. Ms. Aloyo added that the generators are already located where they are intended to be operated but are not connected to a fuel source or power connection. Ms. Aloyo also indicated that LBT is using gas turbines GT 7 and GT 8 to generate their power, using GT 8 and GT in standby. Ms. Aloyo stated that the current use of the gas turbines is not cost effective because the current operations power demand is significantly lower than its capacity. Ms. Wakefield indicated that the complex power and reverse osmosis water infrastructure is capable of supplying the power and water demand of the whole island but that there is too much liability.
- Truck loading rack – Ms. Aloyo confirmed that the Facility loading rack has two bays, one for loading gasoline and the other to load diesel and jet fuels. Inspector Rivera asked about how the company ensure that each truck meets to vapor tightness requirements. Ms. Aloyo stated that each vehicle has a tank code and badge assigned and if the tank truck vapor tightness certification is not up to date the access badge is deactivated and will not be able to access the Facility. Inspector Rivera asked about how the facility monitors compliance with the 10 mg/L limit or 0.45% as propane operating limit applicable to the vapor recovery unit (VRU). Ms. Aloyo indicated that the Facility VRU is programmed to automatically shutdown if the VRU CEMS values reach 0.35% as propane and stated that due to the usual low amount of truck loading activity, the shutdown value is never triggered. Ms. Aloyo also mentioned that LBT expects to conduct a relative accuracy test audit to their VRU in June 2022. Inspector Rivera asked about the number of trucks that normally load per day. Ms. Aloyo informed that the truck loading rack normally manages 6 trucks per day, with the exception of Fridays on which that value can go up to 50 trucks.
- Marine Dock – Ms. Aloyo confirmed that no vessels or activities were being conducted at the marine dock.

The EPA inspectors decided to continue with the questionnaire and records review in the afternoon and decided to start with the site tour to observe the truck loading rack operations and gasoline storage tanks with the IR Camera.

C. Site Tour

EPA inspectors were escorted by LBT representatives to the truck loading rack at 10:05 AM. However, no trucks were loading. LBT representatives showed Tank 6888 (IFR regular gasoline) located adjacent to the truck loading rack area and connected to the loading rack. Ms. Aloyo informed Inspector Rivera that approximately two weeks before the inspection, the VRU CEMS computer screen got damage and is not allowing the operators to see the CEMS screen. Ms. Aloyo confirmed that the CEMS is still recording data and allowing LBT to download the data and that the CEMS is still capable to trigger its programmed alarms and shutdown mechanisms. The EPA inspectors decided to continue the site walkthrough and observe the rest of the gasoline

storage tanks with the IR Camera. The following is a summary of the observations from the gasoline storage tanks in service at the time of the inspection:

Tank 6838

- Equipped with an EFR.
- Tank level at approximately less than a ¼ quarter full, below 8 ft of product.
- Wind blowing towards northwest at approximately 6 mph and a temperature of 86°F.
- Emissions were observed leaking from both tank automatic bleeder vents or vacuum breakers located on the west and east sides of the tank. Two (2) IR camera videos MOV_585 and MOV_586 were taken at 10:45 AM and 10:46 AM of each vacuum breaker.

Tank 6842

- Equipped with an EFR.
- Tank level at approximately half of its capacity.
- Emissions were observed leaking from the tank automatic bleeder vent or vacuum breaker located at the west side of the tank. One (1) IR camera video taken MOV_587 at 10:56 AM.

Tank 6840

- Equipped with an EFR.
- Tank level at approximately half of its capacity.
- Strong hydrocarbons odor noticed. PID VOC readings fluctuated between 100-1000 ppb.
- Emissions were observed leaking from both tank automatic bleeder vents or vacuum breakers located on the west and east sides of the tank. Two (2) IR camera videos MOV_588 and MOV_589 were taken at 11:06 AM and 11:07 AM of each vacuum breaker.

Tank 6843

- Equipped with an IFR.
- Tank level at approximately half of its capacity.
- No emissions observed at 11:20 AM.

Tank 6831

- Equipped with an IFR.
- Tank level at approximately half of its capacity.
- Wind at 5 mph and temperature at 90°F.
- No emissions observed at 11:33 AM.

Tank 6833

- Equipped with an EFR.
- Tank level at approximately less than half of its capacity.
- Emissions were observed leaking from both tank automatic bleeder vents or vacuum breakers located on the west and east sides of the tank. Two (2) IR camera videos MOV_591 and MOV_592 were taken at 11:46 AM and 11:48 AM of each vacuum breaker.

LBT representatives were informed about a truck awaiting to be loaded at the loading rack and the EPA inspectors agreed on returning to the loading rack area.

Truck Loading Rack

- Tank truck from company Bunkers of St. Croix with license plate YZA-852 loading at approximately 12:00PM.
- Emissions observed leaking from the top of the tank truck. Video MOV_593 and photos IR_594 through IR_596 were taken.
- EPA inspectors requested LBT representatives to provide copies of the tank truck vapor tightness.
- No emissions seen from VRU.
- VRU CEMS display unreadable and appear to be damage by sun exposure.

Tank 6888

- Equipped with an IFR.
- Tank level at approximately half of its capacity.
- Connected to the truck loading rack.
- No emissions observed.

The EPA inspectors and CORCO representatives agreed on pausing the walkthrough to take a break for lunch at 12:20 PM. The inspection was resumed at 1:15 PM. LBT representatives escorted the EPA inspectors to the temporary engines project location. The following is a summary of the observations:

- 10 engines of 1 MWs each.
- A transformer station is being built. Currently working on installing electrical connection and fuel supply infrastructure. Transformer station not connected to the complex power grid. The project still need a switch board to be built.
- One smaller power generator installed and already in operation to provide power to the project trailer office.
- Project contractor representatives informed about a commissioning test run to be conducted to the engines for 5 minutes. The test started at approximately 1:35 PM and lasted approximately 5 minutes as indicated. According to the contractor representatives, each tank has a 1,000-liter day tank storing ultra-low sulfur diesel.

The EPA inspectors were escorted to the Marine Dock on which it was confirmed that no activities were occurring at the time of the inspection. The EPA inspectors completed the walkthrough at 2:10 PM.

D. Inspection Questionnaire and Closing Meeting

Once escorted back to the Facility conference room, Inspector Rivera continued with the questionnaire and file review portion of the inspection at approximately 2:20 PM. The EPA Inspectors summarized the list of documents to be requested via email and agreed with Ms. Aloyo for LBT provide the following information¹:

Tanks:

1. Provide a list of each storage tank at the Facility that has been in gasoline service, or storing a gasoline blend stock, within the last two (2) years. This list should include the tank identification number, the designed capacity, the date that the tank was put in service, and the type of tank (e.g., internal floating roof, external floating roof, geodesic dome, etc.).

¹ LBT provided the requested information to EPA via email and OneDrive folder on July 1, 2022.

2. Provide the annual throughput for each tank listed in question 2.a. for the last two (2) calendar years.
3. Provide a site layout(s) identifying the location and identification number of the tanks listed in question 2.a.
4. Provide all VOC and HAP emission calculations for all tanks with floating roofs for calendar years 2020 and 2021. Include any roof landing emissions (Excel Spreadsheet).
5. For all floating roof tanks subject to 40 C.F.R. Part 63, Subpart R, any post-2017 inspection out-of-service (10-year API 653) tank inspection dates, reports, and all documentation of follow-up work (See 40 C.F.R. § 63.423(a)).
6. For all floating roof tanks subject to 40 C.F.R. Part 63, Subpart R, provide records of the most recent annual in-service roof inspection. (See 40 C.F.R. § 63.423(a)).
7. Provide information regarding the floating roof tank design characteristics, including:
 - i. Date of construction;
 - ii. Modification or reconstruction date;
 - iii. Volume capacity of each tank (gallons/barrels)
 - iv. Maximum liquid height of tank;
 - v. Floating roof type and material;
 - vi. Deck seam type (e.g. welded, bolted);
 - vii. Type of tank shell (e.g., welded or riveted);
 - viii. Type of roof support;
 - ix. Number and type of rim vents;
 - x. Number and type of guide poles, along with installation date;
 - xi. Number and type of pressure and or vacuum vents;
 - xii. Number of floating roof legs, and high and low position heights;
 - xiii. Type and date of installation of current primary seal;
 - xiv. Type and date of installation of current secondary seal; and
 - xv. Additional control devices (e.g., leg socks, gauge pole wiper, pole float, etc.).

Truck Loading Rack:

8. Provide a description of the measures taken to ensure that each truck that is loaded meets vapor tightness requirements.
9. Provide a description of the program used to for leak detection for equipment in gasoline service.
10. Provide a description of the measures taken to ensure that trucks are not loaded at a pressure greater than 450 mm of water (4,500 pascals).
11. For each pressure relief valve (PRV) located between the point of vapor recovery at the loading rack and any emissions control device, provide documentation that shows the relief (opening) pressure of the valve (e.g., photograph of the nameplate).
12. Provide a description of the monitoring method used for determining continuous compliance with the applicable VOC limit.
13. Provide an electronic spreadsheet of continuous emissions monitoring system (CEMS) data used to demonstrate compliance with the applicable VOC limit, from January 1, 2021, to the date of this Request for Information.
14. Provide an electronic spreadsheet of the monthly product (i.e., gasoline, diesel) throughput for the truck loading rack from January 1, 2021, to the date of this Request for Information.
15. Provide copies of the annual vapor tightness certification of all trucks that loaded product on May 19, 2022.

16. Provide documentation of the LDAR tests (sight, sound, smell) conducted for the months of March and April 2022, for equipment leaks in gasoline service during the loading of a gasoline cargo tank. Information required includes: (1) the equipment type and identification number; (2) The nature of the leak (i.e., vapor or liquid) and the method of detection (i.e., sight, sound, or smell); (3) The date the leak was detected and the date of each attempt to repair the leak; (4) Repair methods applied in each attempt to repair the leak; (5) Any "Repair delayed" and the reason for the delay if the leak is not repaired within 15 calendar days after discovery of the leak; (6) The expected date of successful repair of the leak if the leak is not repaired within 15 days; and (7) The date of successful repair of the leak. This information must be kept in a logbook, see 40 C.F.R. § 63.428(e).
17. Provide the monthly gasoline throughput for the truck loading rack for calendar years 2020, 2021, and the 12-month rolling year-to-date for 2022 (through May 2022), in Excel spreadsheet format.

Inspector Rivera also agreed with Ms. Aloyo to share the IR camera videos to facilitate any follow up actions². EPA inspectors thanked Ms. Aloyo for her cooperation and availability during the inspection and concluded the inspection at 3:00 PM.

Inspection Report Sign-Off

Lead Inspector's Name: Alex Rivera

ALEX
RIVERA

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RIVERA
Date: 2022.07.13
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Assisting Inspector's Name: Katherine Marmanides

Katherine G.
Marmanides

Digitally signed by
Katherine G. Marmanides
Date: 2022.07.13
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Supervisor's Name: Nancy Rodríguez

NANCY
RODRIGUEZ

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NANCY RODRIGUEZ
Date: 2022.07.13
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² Inspector Rivera shared the videos with Ms. Aloyo via Dropbox on June 2, 2022.