UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2

In the matter of **Limetree Bay Terminals, LLC** 1 Estate Hope Christiansted, Virgin Islands 00820 And **Limetree Bay Refining, LLC** 1 Estate Hope Christiansted, Virgin Islands 00820 Respondents. Proceeding under Section 303 of the Clean Air Act, 42 U.S.C. § 7603	**CLEAN AIR ACT** **EMERGENCY ORDER** **CAA-02-2021-1003**

STATEMENT OF AUTHORITY

This emergency order ("Order") is issued to Limetree Bay Terminals, LLC ("LBT") and Limetree Bay Refining, LLC ("LBR") (collectively, "Limetree" or "Respondents") pursuant to the authority granted to the Administrator of the United States Environmental Protection Agency ("EPA") by Section 303 of the Clean Air Act ("CAA'" or "the Act"), 42 U.S.C. § 7603, to protect public health or welfare, or the environment. The authority to issue this Order has been delegated by the Administrator of EPA to the Regional Administrator for EPA Region 2, and redelegated to the Director of the Caribbean Environmental Protection Division, by Delegation No. 7-49. This Order is issued by the Director of the Caribbean Environmental Protection Division, of EPA Region 2.

Section 303 of the Act provides that:

[T]he Administrator, upon receipt of evidence that a pollution source or

> combination of sources (including moving sources) is presenting an imminent and substantial endangerment to public health or welfare, or the environment, may bring suit on behalf of the United States in the appropriate United States district court to immediately restrain any person causing or contributing to the alleged pollution to stop the emission of air pollutants causing or contributing to such pollution or to take such other action as may be necessary. If it is not practicable to assure prompt protection of public health or welfare or the environment by commencement of such a civil action, the Administrator may issue such orders as may be necessary to protect public health or welfare or the environment. Prior to taking any action under this section, the Administrator shall consult with appropriate State and local authorities and attempt to confirm the accuracy of the information on which the action proposed to be taken is based. Any order issued by the Administrator under this section shall be effective upon issuance and shall remain in effect for a period of not more than 60 days, unless the Administrator brings an action pursuant to the first sentence of this section before the expiration of that period. Whenever the Administrator brings such an action within the 60-day period, such order shall remain in effect for an additional 14 days or for such longer period as may be authorized by the court in which such action is brought.

PARTIES BOUND

1. This Order applies to and is binding upon the Respondents, their officers, directors, employees, agents, trustees, receivers, successors, assigns, and all other persons, including but not limited to firms, corporations, limited liability companies, subsidiaries, contractors, consultants, and lessees acting under or on behalf of Respondents in connection with the implementation of this Order.

2. Respondents shall be responsible and liable for conducting the activities specified pursuant to this Order, regardless of who performs the activities. Respondents shall be liable for the conduct of employees, agents, contractors, consultants, or lessees to satisfy the requirements of this Order.

3. No change in the ownership of the facility affected by this Order or the ownership or corporate status of Respondents shall in any way alter, diminish, or otherwise affect the responsibilities of Respondents under this Order. Respondents shall provide a copy of this Order to any successor(s) during the pendency of this Order.

FINDINGS OF FACT

The Director of the Caribbean Environmental Protection Division in EPA Region 2 makes the following Findings of Fact:

4. Prior to issuing this Order, EPA consulted with representatives of the Virgin Islands Department of Planning and Natural Resources ("DPNR") as required by Section 303 of the Act.

5. This Order concerns a facility located at 1 Estate Hope in Christiansted, Virgin Islands ("Facility"). The Facility includes a marine loading terminal (including storage capacity) and an integrated petroleum refinery ("Refinery" or "Refinery Operations"). The Facility is located on approximately 1,500 acres on the south central coast of St. Croix, U.S. Virgin Islands ("USVI").

6. Limetree Bay Terminals, LLC is a corporation that owns and/or operates some or all of the Facility. LBT is registered to do business in the U.S. Virgin Islands.

7. The Facility operates under a number of air permits, such as Prevention of Significant Deterioration ("PSD") and CAA Title V operating permits. LBT is named as the owner and/or operator of the Facility and responsible for Facility Clean Air Act compliance obligations, including for its Refinery Operations, in multiple air permits.

8. The Facility's Title V operating permit is permit number STX-TV-003-10 (the "Title V Permit"), and it is currently issued to "Limetree Bay Terminals LLC." The Title V Permit covers the Facility's Refinery Operations, among others.

9. The Facility also operates under three PSD permits (the "PSD Permits") that were amended on November 5, 2018 to reflect the transfer of ownership of the Facility from HOVENSA, LLC to "Limetree Bay Terminals, LLC." Some or all of these PSD permits encompass Refinery Operations.

10. Limetree Bay Refining, LLC is a corporation that owns and/or operates some or all of the Facility, including its Refinery Operations. LBR is registered to do business in the U.S. Virgin Islands.

11. On its website, Limetree describes LBR as "executing a project to refurbish and restart its St. Croix, USVI, deep conversion [petroleum] refinery" with peak processing capacity of 650,000 barrels of petroleum feedstock per day.

12. On July 30, 2018, the Legislature of the Virgin Islands approved an agreement with LBR titled "Refinery Operating Agreement by and among the Government of the Virgin Islands and Limetree Bay Refining, LLC," dated July 2, 2018.

13. According to the Limetree Title V Permit, the Facility was originally owned and/or operated by Hess Oil Virgin Islands Corporation ("HOVIC"). Facility operations began in 1965. On October 30, 1998, Amerada Hess Corporation, the parent company of HOVIC, and Petroleos de Venezuela, S.A. ("PDVSA") formed a new corporation, HOVENSA L.L.C. ("HOVENSA"), which acquired ownership and operational control of the St. Croix Refinery formerly known as HOVIC. Limetree and/or its corporate parent or associated business entities acquired the Facility in 2016.

14. Petroleum refineries separate crude oil into a wide array of petroleum products through a series of physical and chemical separation techniques. These techniques include fractionation, cracking, hydrotreating, combination/blending processes, and manufacturing and transport.

15. Limetree has described the Facility's refining operations as being conducted in the East Refinery, which includes crude units, a vacuum unit, a delayed coker unit ("DCU"), platformers, hydrotreaters, fluid catalytic cracking ("FCC"), an alkylation complex, an ultra-low sulfur gasoline unit, and a sulfolane complex. The East Refinery was developed in the 1970s, with the FCC added in 1993 and the DCU built in 2002. LBR Refinery Operations also include two flares (Flare #3 and Flare #8), two sulfur recovery units, one incinerator and a power generation complex.

16. According to Limetree, LBR started conducting activities to restart the operation of the Refinery in 2018. Among the units that Limetree has since restarted were the following: crude units #5 and #6 (limited capacity), vacuum unit #3, par-isom unit, platformer unit, sulfur recovery units, east incinerator, DCU, hydro-treating units (6, 7, and 9), reverse osmosis water plant, and gas turbines (GT-8, GT-9, GT-10, GT-11, and GT-13).

17. The Facility is located on the island of St. Croix. St. Croix is an island in the Caribbean Sea that is approximately 22 miles long (east to west) and 7 miles wide (north to south). As of the 2010 United States Census, the population of St. Croix was 50,601. The island of St. Croix is divided into nine subdistricts (population): East End (2,453), Anna's Hope Village (4,041), Christiansted (2,626), Sion Farm (13,003), Southcentral (8,049), Northcentral (4,977), Northwest (4,863), Southwest (7,498) and Frederiksted (3,091). The Facility is located on the southern shore of St. Croix, near the middle of the island east to west, within the Southcentral subdistrict.

18. According to EPA review of the National Weather Service data for February through May 2021 for St. Croix's Henry E. Rohlsen Airport meteorological station, the prevailing wind blows from the east and east-southeast to the west and west-

northwest. Wind direction prevalence indicates that communities located within Southcentral, Southwest, Frederiksted, Northwest, and portions of Northcentral are located downwind of the Facility. Among such communities are the following: Clifton Hill, Profit Hills, Kingshill, University of Virgin Islands Campus, Hannah's Rest, Frederiksted, Estate Northside, Smithfield, Upper Bethlehem, Mars Hill, Estate Carlton, Golden Grove, Grove Place, Negro Bay, Williams Delight, Whim, Sandy Point, La Grange, and Prosperity. Many residents live and work in these communities.

The Limetree Refinery

19. Refineries in general emit a whole host of pollutants, ranging from nitrous oxides ("NO_X"), sulfur dioxide ("SO_2"), and carbon monoxide ("CO") to volatile organic compounds ("VOC"), hydrogen sulfide ("H_2S"), and particulate matter "(PM"). NO_x, SO_2, and CO are typically emitted from combustion sources such as heaters, boilers and gas turbines. The VOCs contain light hydrocarbons. During start up, any VOCs are usually conveyed to a flare to be combusted.

20. The Refinery Operations separate crude oil into various components. Light ends (refinery fuel gas ("RFG")) are sent to the Facility's fuel gas system ("East Fuel Gas System"), while naphtha, jet fuel, kerosene, and No. 2 oil are further processed to remove sulfur. The H_2S gas generated from the desulfurization process is sent to the sulfur recovery plant to be treated by two sulfur recovery units.

21. RFG is a mixture of H_2S and other gases that is used to supply fuel to the various process heaters at the Refinery. This RFG collection and distribution system is referred to as the East Fuel Gas System. H_2S is removed from the Refinery fuel gas system using amine scrubbers. The gas that enters amine unit is high in H_2S, and is then processed in a sulfur recovery unit to convert H_2S into elemental sulfur.

22. LBR uses a flare known as Flare #8 to combust excess Refinery gas that contains a mix of H_2S, CO_2, and other gases such as hydrocarbons.

23. Emissions from flaring may include carbon particles (soot), unburned hydrocarbons, CO, partially burned and altered hydrocarbons, NOx and, if sulfur containing material such as hydrogen sulfide is flared, SO_2.

24. Sulfur compounds going to a flare are converted to SO_2 when burned, though flare efficiency is not 100%. The amount of SO_2 emitted depends directly on the quantity of sulfur in the flared gases.

25. The Refinery has a flare header system that collects and routes gases from process units, ancillary equipment, and the fuel gas system from locations throughout the Refinery to Flare #8. The Flare #8 header system collects gases from numerous areas of the Refinery, including but not limited to the amine units (Nos. 4, 5, 6 and 7), the sulfur recovery units (Nos. 3 and 4), the Coker Unit, and the East Fuel Gas System.[1]

26. Flare #8 is a steam assisted flare 230 feet above grade. Gas enters the flare for burning up through 41 staged burner tips.

27. Flare #8 is subject to an H_2S concentration limit specified in 40 C.F.R. § 60.103a(h) (162 parts per million ("ppm")) determined hourly on a 3-hr rolling average basis), as well as total sulfur ("TS") root-cause analysis requirements and monitoring requirements specified in 40 C.F.R. § 60.103a(c), and operating limits specified in 40 C.F.R. § 63.670.

[1] The full list of areas that send gas to Flare #8 includes crude unit No. 5; liquified propane gas ("LPG") treater No. 1; utility area No. 3 (Boilers 6, 7, 8, and 9); powerhouse No. 2 (Gas Turbines); utility area No. 3 (Boiler 10); crude unit No. 6; lean oil absorber/disulfide oil recovery; LPG treater No. 2; amine units (No. 4, 5, 6 and 7); high pressure fuel gas treater; gas recovery unit No. 2; LPG fractionation unit No. 3; deisopentanizer/IC5 Sweetener; vacuum unit No. 3; distillate desulfurizers (No. 6, 7 and 9); platformer & hydrobon No. 3; platformer No. 4; dimersol; flare system (East); benzene stripper (East); sour water strippers (No. 3 and 4); sulfur recovery units (No. 3 and 4); tail gas treating unit; sour water stripper No. 5; flares – low and high pressures; coker unit; coker nitrogen system; west interconnects; East Fuel Gas System; hydrogen tie-ins (east); and butane and propane system.

28. Flare #8 has a maximum vent gas flow rate of 1,500,000 lb/hr, and is not equipped with a Flare Gas Recovery System ("FGRS").

29. The Flare #8 header is equipped with monitoring instruments to measure volumetric flow, hydrogen sulfide content, total sulfur content, and vent gas composition, to demonstrate compliance with CAA requirements at 40 C.F.R. Part 60, Subpart Ja and 40 C.F.R. Part 63, Subpart CC. The monitoring instrumentation also measures certain other Flare #8 vent gas constituents.

30. The Facility's Title V permit, citing 40 C.F.R. § 60.104(a)(1), bars combustion in various locations at the Facility of fuel gas that contains hydrogen sulfide in excess of 0.1 gr/dscf. Two of these locations include Flare #8 and the East Fuel Gas System.

Refinery Restart

31. On February 1, 2021, EIG Global Energy Partners ("EIG"), a controlling investor in Limetree Bay Ventures, LLC[2], announced that the Refinery had successfully resumed operations and begun production and commercial sales of refined products.

32. According to a recent statement from LBT and LBR, "Limetree Bay Refining, LLC, restarted [Refinery] operations in February 2021, and is capable of processing around 200,000 barrels per day. Key restart work at the site began in 2018, including the 62,000 barrels per day modern, delayed Coker unit, extensive desulfurization capacity, and a reformer unit to produce clean, low-sulfur transportation fuels that will meet International Marine Organization ("IMO") standards required under

[2] Limetree's website describes Limetree Bay Ventures, LLC, as "a large-scale energy complex strategically located in St. Croix, U.S. Virgin Islands. The complex consists of Limetree Bay Refining, a refinery with peak processing capacity of 650 thousand barrels of petroleum feedstock per day, and Limetree Bay Terminal, a 34-million-barrel crude and petroleum products storage and marine terminal facility serving the refinery and third-party customers."

international law in 2020. The restart project provided much needed economic development in the U.S.V.I. and created more than 4,000 construction jobs at its peak and more than 600 full-time jobs currently."

33. Since February 1, 2021, at least four incidents have occurred at the Facility that have each had an immediate and significant health impact on multiple downwind communities.

February 4, 2021 Incident

34. On February 4, a mixture of oil and water, in the form of an oily mist, was emitted as air emissions from Flare #8 at the Facility (the "Feb. 4 Incident"). These emissions included liquid droplets of oil.

35. In a letter sent from Limetree to DPNR on March 3, 2021, Limetree explained the cause of the Feb. 4 Incident as follows ("Limetree 3/3/21 Letter"):

> "On February 4, 2021, the Coker unit was shut down for repairs. Operations was preparing to quench and open coke drum D-8504 as part of the normal shut down process. At approximately 02:30hrs, the Coker Drum D-8504 was being prepared to start the procedure for water quenching. The quench water control valve was 100% open, resulting in a large quantity of water entering the drum. The water evaporated quickly after contacting the hot coke. . . . [T]he pressure safety valves opened to relieve pressure . . . A mixture of oil and water vapor was sent to the containment system, exceeding its capacity and ultimately exiting through the No.8 flare."

36. The Limetree 3/3/21 letter further explains the immediate impact of the Feb. 4 Incident on the surrounding community, stating:

> "Around 14:30 hrs, calls were received by the Limetree Command Center from residents in the Clifton Hill area complaining of oil droplets on their vehicles and homes. Thereafter, Limetree immediately activated its Incident Command Response to address the impact on the community. . . . Complainants were contacted and told to disconnect their cisterns from the roof spouts if possible. A total of 11 complaints were received on February 4, 2021. On February 5, 2021, Limetree teams were dispatched to follow-up with residents in person and confirmed the presence of oil droplets on cars and homes. Plans were put in place to clean residents' cars and roofs. Additional complaints were made in following

days."

37. Limetree was aware of the impact this event had on the surrounding community, and paid for various cleaning and decontamination work and provided bottled water to the community. In a March 3, 2021 press release, Limetree stated, "Limetree's environmental team was able to field verify the area impacted by the release, which was determined to be the Clifton Hill community."

38. As of March 16, 2021, Limetree had reported to EPA that the Feb. 4 Incident resulted in 193 residences with potential contamination and 148 roofs and 245 cars that required cleaning. Samples were taken from 163 cisterns, and at the time the results of 135 of those samples had been received. 70 of those 135 cisterns were identified as contaminated. At the time, 65 had been reportedly cleaned.

39. Many in the community nearby the Facility rely on cisterns for their household water use. A March 21, 2021 news article explained that, "Ever since the refinery contaminated St. Croix's groundwater [under HOVENSA's prior operation], cisterns have become a necessity on the island—catching rain to provide water for residents to drink, wash with or . . . irrigate their vegetable gardens."

40. Residents also reported that the Feb. 4 Incident resulted in the oily mixture depositing on their vegetable gardens. One resident said that she and her husband ate only from their garden, but that the Feb. 4, 2021 Incident "destroyed all our foods" and "[e]verything was dead."

41. In an April 29, 2021 meeting with EPA officials, another resident living in the impacted Clifton Hill area explained that he collected water from his roof in a cistern, for filtration for drinking water and for his sheep. The Feb. 4 Incident resulted in oil on his roof and in his cistern. Limetree cleaned his cistern 2-3 weeks after the Feb. 4

Incident, but did not conduct follow-up sampling. Limetree provided bottled water, but he is concerned about the incident's impact on his plants and the produce he grows in his garden.

42. During an April 30, 2021, site visit to the Facility by staff from EPA and DPNR, Limetree representatives said that Limetree believes that the release was a mist with heavy oil in it, and acknowledged that the mist reached areas in Clifton Hill. When asked, Limetree representative said that the droplets passed through a lit flare flame, though they did not believe that flaming droplets of oil had been recorded.

43. Emissions of oil droplets from a flare is called "flare rainout." Flare rainout can create both environmental and physical safety hazards. Oil contamination of soil and water bodies creates environmental and public health hazards. While there is no evidence that "flaming rain" occurred during the Feb. 4 Incident, flare rainout can also result in physical and safety hazards such as "flaming rain" where the oil droplets ignite as they pass through the flare flame and rain down while on fire in the refinery and nearby neighborhoods, creating sources of ignition for vapors in the refinery and igniting combustible materials and starting fires inside the refinery and in adjacent neighborhoods. Because of these concerns, flare systems are designed with process vessels called "knockout drums." Knockout drums are vessels whose function is to remove or "knockout" large liquid droplets from the gas sent to the flare.

44. Knockout drums are sized for expected maximum load of liquid droplets. When that capacity is exceeded, the liquid droplets pass through the knockout drum and can cause flare rainout and flaming rain. The rainout during the February 4, 2021 Incident may indicate the Flare #8 knockout drum(s) were not designed with sufficient

capacity to prevent liquid carryover to the flare. This type of event is not common for a refinery startup.

Refinery Operating Pause

45. In early April, the Refinery stopped operations for a period of time due to undisclosed operational issues. LBR stated in a letter to EPA that the "refinery is shut down while we make operational adjustments."

Late April 2021 Incident

46. After Refinery operations restarted, on April 19, 20, 21, 22, and 23, 2021, Limetree reported to DPNR exceedances of the 162 ppm emission standard for H_2S concentrations measured at the flare header for Flare #8 at the Facility.

47. According to the Agency for Toxic Substances and Disease Registry ("ATSDR") H_2S is a flammable, colorless gas that smells like rotten eggs. People can usually smell H_2S at low concentrations in air when H_2S concentrations are in the range of from 0.0005 to 0.3 ppm. Exposure to low concentrations of H_2S may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Respiratory distress or arrest has been observed in people exposed to very high concentrations of H_2S.

48. According to ATSDR, SO_2 is a colorless gas with a pungent odor (often described as the smell of a struck match). Exposure to very high levels of SO_2 can be life threatening. Exposure to 100 ppm of SO_2 is considered immediately dangerous to life and health. Burning of the nose and throat, breathing difficulties, and severe airway obstructions may occur.

49. Between April 19 and April 22, 2021, hydrogen sulfide concentrations measured at the Flare #8 flare header rose to orders of magnitude above the limit of 162

ppm based on a 3-hr rolling average. High hydrogen sulfide readings on each of those four days, measured between 5 AM on April 19 and 5 PM on April 22, rose as high as 31,546.5, 39,475.7, 2,272.4, and 4,046.5 ppm, respectively (on a 3-hr rolling average basis).

50. Limetree has explained the exceedances on April 19-22, 2021 as follows:

> "On April 19th, the Coker unit was starting up and off gases generated were vented to the flare until the wet gas compressor was successfully brought online. The wet gas compressor was brought online around 1:34 AM on April 20th and the H_2S in the flare decreased as startup progressed. Since the H_2S level did not decrease below the emission limit once startup of the wet gas compressor was complete, Operations immediately began their search for another source of the H_2S by methodically isolating each unit's battery flare valves. On April 21st, Operations discovered a malfunctioning pressure safety valve (PSV) on the low-pressure flash drum (D-4603) at the No. 6 Distillate Desulfurizer Unit (DD6). The PSV was taken out of service for maintenance."

51. Limetree continued to measure high levels of hydrogen sulfide in excess of the 162 ppm limit at the flare header for Flare #8 at the Facility during the evening of April 22 and into April 23, 2021. Hydrogen sulfide readings rose throughout the evening on April 22, and peaked at a three-hour average of 91,649.0 ppm around 11 AM on April 23 – over 565 times higher than the concentration limit of 162 ppm.

52. Limetree has explained the exceedances on these days as follows:

> "At approximately 4:45 AM on April 23, 2021, the No. 4 Sulfur Recovery Unit (4SRU) tripped due to both "fire-eye" flame scanners not detecting a flame. At about 5:29 AM, the 4SRU was re-lit and at 7:07 AM the Clean Acid Gas (CAG) control valve at 4SRU started to slowly open but not quick enough to alleviate the pressure in the CAG header. Due to the backpressure in the CAG header, a pressure safety valve (PSV) at the No. 5 Amine Regeneration Unit (5ARU) relieved to the No. 8 Flare. The SO_2 generated from the combustion of the H_2S in the flare header caused odors which impacted our neighbors. Further investigation showed that there was another malfunctioning PSV at the No. 6 Distillate Desulfurizer Unit (DD6), contributing to the elevated H_2S before the 4SRU trip event. The PSV was taken out of service for maintenance."

H_2S production units were shut down or placed on circulation to reduce the load on the amine regeneration system and the sulfur recovery plant. Limetree shut down 5ARU because the PSV continued to leak to the flare even below the PSV setpoint. Limetree stated that one of its corrective actions included responding to odor complaints.

53. Two days later, on April 25, Limetree once again exceeded the 162 ppm limit for H_2S at Flare #8 from 3 to 11 p.m. That day, Limetree also exceeded that limit at the East Fuel Gas System from 1-10 PM. The maximum 3-hour average concentrations for H_2S that day were 842.4 ppm at Flare #8 and 629 ppm at the East Fuel Gas System.

54. Limetree has explained these exceedances as follows:

> "On April 25, 2021 the No. 3 and No. 4 Sulfur Recovery Units got contaminated with hydrocarbon carryover via the acid gas. Operations blocked in the acid gas header to the sulfur recovery units (SRUs) which overloaded the No. 4 Amine Regeneration unit (4ARU) preventing it from properly removing the H_2S in the fuel gas. The No. 5 Amine Regeneration unit was not operational at the time. Soon after, the 4ARU reboilers overpressured and relieved to the flare."

55. As a result of the "noxious" odor created by the Refinery's emissions, on April 23, 2021, the Virgin Islands Department of Education ("VIDOE") closed in-person instruction at three schools. In its press announcement, it stated that "[s]tudents and staff have reported feelings of nausea due to the smell, which was detected on April 22[, 2021]."

56. A Reuters news article also reported the April 23, 2021, closing of a St. Croix community coronavirus vaccination center due to the odor.

57. On April 23, 2021, DPNR issued a press release advising the community of "a foul, gaseous smell permeating throughout the Frederiksted area for the past few days." DPNR notes that it has been receiving citizen complaints, and that it "has discovered that the Limetree Bay Refinery is experiencing an exceedance of Hydrogen

sulfide." DPNR advised that people with respiratory ailments such as allergies, lung disease, and asthma should consider taking protective actions, including staying indoors or relocating to less affected areas of the island.

58. On April 24, 2021, the Virgin Island Department of Health ("VIDOH") issued a press release alerting St. Croix residents to potential health effects from the Facility's Refinery emissions. It noted Limetree's confirmation of elevated hydrogen sulfide concentrations from Flare #8 and said that a "foul, gaseous smell, which can smell similar to rotten eggs, has permeated throughout the Frederiksted area for the past few days." It explained the potential health effects of breathing hydrogen sulfide, and encouraged residents to report symptoms such as headaches, nausea, and symptoms of a respiratory nature to their healthcare providers.

59. On April 24, 2021, Limetree issued a press release denying any release of hydrogen sulfide occurred from April 22 to 23, 2021. Limetree claimed that the incident involved only an unusually high level of sulfur dioxide emissions, and that the odor of sulfur dioxide (similar to a struck match) can be smelled in amounts far below the level normally considered dangerous to health.

60. During an April 30, 2021, site visit to the Facility by staff from EPA and DPNR ("April Site Visit"), Limetree staff explained that the April 23, 2021 incident was related to the main sulfur recovery unit #4's fire eye detecting a lack of flame, and thus diverting the acid gas to the flare rather than treating it. The flare itself had a flame burning at the time that would have burned the hydrogen sulfide, producing sulfur dioxide.

61. During the April Site Visit, Limetree staff said that, although the Facility's Refinery Operations have two sulfur recovery units (SRUs Nos. 3 and 4), one (No. 3) was

out of service when the April 23, 2021 event occurred. The out of service unit was thus unable to act as a backup when the operating unit (No. 4) malfunctioned.

62. During the April Site Visit, EPA and DPNR were escorted by Limetree representatives to several areas of the Refinery, including the east part of the Facility where Flare #8 is located. Based on conversation with Limetree staff and EPA observation at the Facility, EPA staff learned that due to the significant elevation of Flare #8, the emissions from Flare #8 are often not measurable, nor are odors and other impacts from Flare #8's emissions detectable by olfaction on the grounds within the Facility's Refinery. Rather, emissions plumes from Flare #8 downwash at (i.e. lowers to) ground level well beyond the Facility's fenceline.

63. During the April Site Visit, DPNR staff noted that several residents provided very specific descriptions of odors and other impacts resulting from the April 23rd incident's emissions, and those odor characteristics and other impacts were consistent with both H_2S and SO_2 being released.

64. During the April Site Visit, EPA staff asked Limetree representatives if the Refinery was using a Sulfix™ H_2S scavenger system to reduce the levels of H_2S at the Flare #8 header. Limetree representatives confirmed that the Refinery is using a Sulfix™ H_2S scavenger system, and explained that it consists of the injection of an additive in several points of the Flare #8 header to absorb and recover some of the H_2S in the gas that is conveyed through the Flare #8 header. Limetree representatives informed EPA staff that although the H_2S scavenger system was in operation during the Late April 2021 Incident, the system was not designed to manage the gas flow and H_2S concentrations that were generated during the Incident. According to Limetree

representatives, the system is designed to manage flow into the Sulfix^{TM} system up to 1 million standard cubic feet (scf) and concentrations of no more than 1000 ppm of H_2S.

65. During the April Site Visit, Limetree staff acknowledged that the Facility does not have any SO_2 monitor to measure concentrations of SO_2 entering the atmosphere from Flare #8 post-flaring. Limetree believes the April 23, 2021 event only emitted SO_2 but does not know how much SO_2 was emitted.

66. Limetree also does not conduct any fenceline monitoring for SO_2 or H_2S; it only conducts fenceline monitoring for benzene. Limetree's predecessor, HOVENSA, operated five SO_2 monitors near the perimeter of the Facility, but those monitors have not been operated since 2013, after HOVENSA stopped operating the Facility's Refinery. Limetree has not restarted those SO_2 monitors. On April 30, 2021, EPA issued a Notice of Violation ("NOV") to Limetree for its failure to operate the five SO_2 monitors.

67. As indicated in EPA's AP-42 Chapter 13.5 (Industrial Flares), sulfur compounds contained in a flare gas stream are converted to SO_2 when burned. The amount of SO_2 emitted depends directly on the quantity of sulfur in the flared gases. The quantity of sulfur compounds and hydrocarbon emissions generated relate to the degree of combustion and the unit destruction efficiency. The degree of combustion depends largely on the rate and extent of fuel-air mixing and on the flame temperature achieved and maintained. A flare does not provide 100% destruction efficiency, so any changes in the degree of combustion, such as a sudden increase of flow and H_2S concentrations such as the one reported on April 23, 2021, can trigger the release of unburned sulfur compounds such as H_2S, as well as hydrocarbons, and an increase in SO_2 emissions.

68. Modeling of the Late April Incident by an expert EPA contractor showed that concentrations of sulfur dioxide exceed the Acute Exposure Guideline Level-1

(AEGL-1) for S at ground level. Above AEGL-1 level, asthmatics are at risk of bronchoconstriction, which results in increased airway resistance. The expert determined that subsequently exposed individuals in the community were faced with imminent and substantial danger to their health. The "notable discomfort, irritation, or certain asymptomatic non-sensory effects" associated with AEGL-1 exposure is consistent with citizen complaints received surrounding the Late April Event for the No. 8 Flare. Modeled 1-hour concentrations of SO2 also exceeded the lower bound of the taste threshold, and modeled 1-hour concentrations of H2S exceeded the odor threshold assuming a 98% conversion of H2S to SO2 associated with a well-operating flare (i.e., good combustion mechanics).

May 5, 6, and 7, 2021 Incident ("First May Incident")

69. On May 5, 2021, community members began calling EPA to report that an odor was emitting from the Facility. They described the odor as "sulfur," "gassy," "burnt eggs," and "rotten." On May 6, 2021, community members continued to report odor emitting from the Facility. At 7:08 PM est, a citizen caller reported that the odor was continuing and described the fumes as "noxious." The caller also stated that the "materials in the air were causing health problems" for community members, including "head ache, sore throat, ear ache, nausea, and lips and tongue tingling."

70. In an article published on May 7, 2021, the Washington Post reported that roughly 100 members of the community had contacted the Virgin Islands Territorial Emergency Management Agency ("VITEMA") describing a gaseous odor emitting from the Facility.

71. Initially, on May 5, 2021, Limetree issued a statement on Facebook denying that there were any problems at the Facility. Having received "several

community complaints of a strong odor," Limetree stated in its Facebook post that Facility personnel had conducted a preliminary investigation, and Limetree had concluded that "units are operating normally, and there is no activity that would result in an odor."

72. On May 5, 2021, Limetree environmental personnel reported to DPNR and EPA that the Facility had exceeded the H_2S limit at Flare #8 at approximately 9 PM est on May 5. At the time the email notification was sent to DPNR and EPA at 10:12 PM est, Limetree environmental personnel stated that H_2S was back below the limit.

73. On May 6, 2021, at 12:45 pm, Limetree issued another statement acknowledging that releases were occurring at the Facility. The statement read:

> "Limetree Bay has become aware of an odor affecting areas west of the facility. We are conducting maintenance activity at the Coker unit, which has resulted in light hydrocarbon odors. We will continue to monitor the situation, but there is the potential for additional odors while maintenance continues. We apologize for any impacts this may have caused the community. Thank you."

74. On May 6, 2021, around 11 AM est, an EPA On Scene Coordinator ("OSC"), was driving towards the Facility in order to investigate the source of odor complaints on May 5, 2021. The OSC submitted the following summary of his experience:

> While driving to the facilities, I intermittently had my car windows slightly open but at the time of this experience, my car windows were rolled up, with A/C circulating internally. I noticed an odor and pulled over. I rolled down my car window down to ask a worker on the side of the road what location I was at? What facility was he working at? The worker informed me it was "Container Port. I was surprised how unaffected the workers were by the odor. As if there was nothing different going on. They had no respiratory protection at all. I immediately closed my window and pulled away driving north. I determined that I was slightly west of the Limetree facility. The odor I briefly encountered was overwhelming and nauseating. I normally am suited up with respiratory protection and other [personal protective equipment] prior to being exposed to something like this. It was unexpected. The smell was gasoline-like in nature, but it was stronger than gasoline. I have experience inspecting refineries and other facilities, as well as general life experience mowing lawns and pumping gasoline, and I am familiar [with]

> what gasoline smells like and what many other substances emitted by refineries smell like. This odor was stronger, more pungent than others I have encountered. The odor was overwhelming and felt as if I would be sick. I sent an email to EPA Region 02 [Regional Emergency Operations Center (REOC)] with a Google maps screenshot to my location. The REOC was receiving multiple calls from the National Response Center regarding similar odor complaints. The DPNR Environmental Director also contacted me with similar odor complaints. I then planned to visit those two locations which were described as Whim Estates and Mars Hill. As I drove away, even with the A/C on and recirculating air, I continued to smell the odor. I did not detect any orders [sic] in the towns that I investigated which were on the southwest side of the island. I did feel sick throughout the afternoon. It was obvious[] to me the odor was emitting from Limetree and not the asphalt plant(s). I could tell due to my location, the wind direction at the time, and other factors. When I returned to the hotel, the woman at the front desk referenced the facility restarting the coker plant and said that it was the source of the smell. Throughout the afternoon, my head felt 'cloudy' and [I] needed to shower because I felt 'contaminated.'"

75. As a result of the odor, the Virgin Islands Department of Education closed three schools on May 6, 2021. Due to concerns of continuing odor releases, the school closures remained in effect through May 7, 2021.

76. Also as a result of the odor, the VI Bureau of Motor Vehicles ("VIBMV") closed early on May 6, 2021 and remained closed on May 7, 2021. The VIBMV stated that, "[t]his closure is necessary because the employees at the BMV are affected by the strong unpleasant, gas like odor, in the atmosphere surrounding the BMV."

77. On May 7, 2021, VI Governor Albert Bryan activated the VI National Guard and the VITEMA to address continuing reports of odor and heightened concern from the community. The Director of the VI Department of Health ("VIDOH") stated during the same briefing that at least three members of the community had sought medical attention at an area hospital for headaches and nausea allegedly caused by the continuing odors. VIDOH then advised residents with respiratory ailments to avoid going outside or to temporarily relocate to areas of the island that were less affected by the odors.

78. On May 7, 2021, Limetree environmental personnel reported to EPA that the Facility had exceeded the H_2S limit at Flare #8 at approximately 11 PM EST on May 7, 2021. Limetree environmental personnel stated in the email that "there was an instrumentation/communications error that caused a short spike." The notification did not indicate the extent of the exceedance.

May 12, 2021 Incident ("Second May Incident")

79. On May 12, 2021 at approximately 5:30 PM, Limetree reported to EPA that around 3:15 PM EST a flaring incident occurred at the Refinery when the pressure in the coker drum rose, causing fire or flames. At the time, Limetree was still unsure what specifically caused the flaring incident. Limetree reported that during its investigation of the fire, Limetree discovered that liquid droplets of oil were on the road west of the Facility. Limetree contacted VITEMA, and VITEMA had or was going to close the road. Liquid droplets of oil had also been reported on properties in the Enfield Green neighborhood.

80. Photographs and video of the Second May Incident show a large flame coming off Flare #8, with a large trailing plume of visible emissions extending a long distance.

81. At 4:15 PM on May 12, 2021, VITEMA issued an alert stating the following: "Limetree Bay Emergency Response Teams are responding to a fire onsite. DPNR has deployed the Virgin Islands Nation Guard for air quality monitoring and the VI Fire Service is standing by to support."

82. At 6:55 PM on May 12, 2021, Limetree emailed EPA to report the following: "We exceeded the 162 ppm H_2S limit in the flare header (3-hr average) starting on the hour of 3 to 4pm. We will follow up with a letter."

83. At 7:12 PM on May 12, 2021, Limetree sent EPA the following information by email: "At 6pm we exceeded the Reportable Quantity (RQ) of 500lbs of SO_2 in a 24hr period from a flaring event at Flare #8. Limetree issued a statement on social media and is preparing a press release. We temporarily suspended production in response to the incident." In a subsequent email, Limetree clarified that it "temporarily suspended production on all process units."

84. At 8:50 PM on May 12, 2021, Limetree staff told EPA staff by phone that Limetree was stopping production after such a "big" incident. This would not be a full shutdown of the Refinery, but Limetree would stop production. Limetree would run some units on circulation and the utilities/wastewater would still be in operation. The Limetree staff was not sure how long production would be suspended.

85. At 7:10 PM on May 12, 2021, an EPA employee currently deployed to St. Croix emailed colleagues and informed them that, "[t]here is oil on my windshield."

86. During the evening of May 12, 2021, a Reuters news article reported the following: "'The troubled Limetree Bay refinery in St. Croix will temporarily suspend production activities until further notice after a flaring incident dropped oil on a nearby neighborhood', the company said on Wednesday. The company urged residents in the nearby Enfield Green community not to consume the water following the incident. 'Water distribution will be established for affected communities,' the company said in a statement, adding that processing units will be brought to a 'safe, stable condition.'"

87. During a call with EPA staff on the morning of May 13, 2021, Limetree staff said that at that time no oil was being added to the Refinery system. The shutdown of production will take a couple of days. The oil from the incident that was deposited on roads and neighborhoods to the west of the Facility or elsewhere was a heavy oil like

pitch oil, and not crude oil. Limetree was, at this time, still using some pumps in generating electricity and running wastewater treatment operations.

88. Later in the morning on May 13, 2021, around 11:40 AM, Limetree staff clarified to EPA staff that all process units at the Refinery are shut down with the exception of the platformer, which supplies hydrogen to the desulfurization unit and is needed during the ramping down process. As soon as the Refinery is completely "ramped down", that unit will be shut down too. Limetree staff stated that they expected this to be completed by the end of the day on May 13, 2021.

89. The May 12, 2021 Incident resulted in flare rainout from Flare #8, and was likely caused by overloading the flare knockout drum with liquid droplets that reportedly originated from a process upset at the coker unit. As discussed in paragraph 44 above, this type of event – let alone two such events in a few months – is not common for a refinery startup.

90. Flare #8 has been the only flare in service at the Refinery, and refinery process units rely on it as a safeguard for process safety and environmental protection. Based on photos of the Second May Incident, it appears that Flare #8's flare tip, flare riser, and/or associated components were likely damaged in the Second May Incident. Due to the potential for release of uncombusted hydrocarbons and hydrogen sulfide, oil droplet rainout, and/or "burning rain", the refining process units that rely on Flare 8 may not be able to operate safely until Flare 8 is repaired and its capacity and fitness-for-service evaluated.

Limetree Environmental Staffing

91. During the April Site Visit, Limetree representatives stated that Limetree has a single Environmental Department, known as the Health, Safety, and Environmental ("HSE") Department, serving the entire Facility, including the Refinery and marine loading terminal operations. In addition to managing environmental compliance at the Facility, the HSE department also oversees safety and implementation of COVID-19-related procedures. The entire HSE department consists of 5 employees. Limetree representatives noted they did have consultant support.

92. A Refinery of this size and complexity would be expected to have 10-20 full time onsite staff in its health, safety and environment department.

93. On April 1, 2021, EPA issued a Clean Air Act § 114 information request to Limetree that provided Limetree with 30 days to respond. In an April 7, 2021 letter from LBR, LBR expressed that, "this is a very intense time for the [environmental, health, and safety] team in terms of work load in general." In large part given the heavy workload on its environmental, health, and safety staff, LBR requested that it be given an extra 180 days to respond to the information request, an amount of time far exceeding any extension typically provided by the EPA.

94. On April 19, 2021, Limetree replaced its Refinery General Manager.

Health and Welfare Risks of Hydrogen Sulfide, Sulfur Dioxide, and Fuel Oils

95. According to an April 24, 2021, DPNR advisory regarding the Late April 2021 incident, DNPR warned:

> "Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Respiratory distress or arrest has been observed in people exposed to very high concentrations of hydrogen sulfide.

> Exposure to low concentrations of hydrogen sulfide may cause headaches, poor memory, tiredness, and balance problems. Brief exposures to high concentrations of hydrogen sulfide can cause loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. However, in some individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory, and poor motor function.
>
> Individuals with respiratory ailments such as allergies, lung disease, or asthma should consider taking protective actions such as staying indoors or temporarily relocating to areas less affected."

This language echoes the information provided by ATSDR in its "TOXFAQ" and "Public Health Statement" (a summary about a hazardous substance taken from its ATSDR Toxicological Profile) documents for hydrogen sulfide.

96. ATSDR's "TOXFAQ" for hydrogen sulfide further notes that "[s]tudies in humans suggest that the respiratory tract and nervous system are the most sensitive targets of hydrogen sulfide toxicity."

97. According to ATSDR's "TOXFAQ" for hydrogen sulfide, while there is very little information on possible health problems in children who have been exposed to hydrogen sulfide, exposed children probably will experience effects similar to those experienced by exposed adults. Whether children are more sensitive to hydrogen sulfide exposure than adults is not known.

98. ATSDR's "Public Health Statement" on hydrogen sulfide further specifies that you can have respiratory and neurological effects if you are exposed to higher concentrations of hydrogen sulfide, at least 100 times higher than typical environmental levels. The ATSDR Public Health Statement elsewhere says that, "[h]ydrogen sulfide air concentrations from natural sources range between 0.00011 and 0.00033 ppm. In urban areas, the air concentrations are generally less than 0.001 ppm."

99. ATSDR's "Public Health Statement" on hydrogen sulfide notes that, "If you are exposed to very high concentrations of hydrogen sulfide, you may have severe problems breathing even if you do not have a pre-existing respiratory condition. You could lose consciousness if you are briefly exposed to very high concentrations (more than 1 million times higher than the amount typically found in the environment). If this happens, you may regain consciousness without any other effects. However, some people may have longer lasting effects such as headaches, poor attention span, poor memory, and poor motor function."

100. ATSDR has also said that hydrogen sulfide can remain in the air from 1 to 42 days, depending on the season.

101. Breathing high levels of SO_2 can cause immediate health impacts. Short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO_2. SO_2 emissions that lead to high concentrations of SO_2 in the air generally also lead to the formation of other sulfur oxides ("SOx"). SOx can react with other compounds in the atmosphere to form small particles. These particles contribute to particulate matter (PM) pollution. Small particles may penetrate deeply into the lungs and in sufficient quantity can contribute to health problems.

102. According to ATSDR's "Public Health Statement" on sulfur dioxide:

> "Short-term exposures to high levels of sulfur dioxide can be life-threatening. Exposure to 100 parts of sulfur dioxide per million parts of air (ppm) is considered immediately dangerous to life and health. Previously healthy nonsmoking miners who breathed sulfur dioxide released as a result of an explosion in an underground copper mine developed burning of the nose and throat, breathing difficulties, and severe airway obstructions. Longterm exposure to persistent levels of sulfur dioxide can also affect your health. Lung function changes have been observed in some workers exposed to 0.4–3.0 ppm sulfur dioxide for 20 years or more. However, these workers were also exposed to

> other chemicals, making it difficult to attribute their health effects to sulfur dioxide exposure alone. Additionally, exercising asthmatics are sensitive to the respiratory effects of low concentrations (0.25 ppm) of sulfur dioxide. . . .
>
> Most of the effects of sulfur dioxide exposure that occur in adults (i.e., difficulty breathing, changes in the ability to breathe as deeply or take in as much air per breath, and burning of the nose and throat) are also of potential concern in children, but it is unknown whether children are more vulnerable to exposure. Children may be exposed to more sulfur dioxide than adults because they breathe more air for their body weight than adults do. Children also exercise more frequently than adults. Exercise increases breathing rate. This increase results in both a greater amount of sulfur dioxide in the lungs and enhanced effects on the lungs. . . .
>
> Long-term studies surveying large numbers of children have indicated possible associations between sulfur dioxide pollution and respiratory symptoms or reduced breathing ability. Children who have breathed sulfur dioxide pollution may develop more breathing problems as they get older, may make more emergency room visits for treatment of wheezing fits, and may get more respiratory illnesses than is typical for children. However, studies like these are unable to provide conclusive evidence about sulfur dioxide's effects on children's health because many other pollutants are also present in the air. . . .
>
> It is known that exercising asthmatics are sensitive to low concentrations of sulfur dioxide. Therefore, increased susceptibility is expected in children with asthma, but it is not known whether asthmatic children are more sensitive than asthmatic adults. Additionally, asthma occurs most often in African Americans, children between the ages of 8 and 11, and people living in cities. For unknown reasons, the death rates associated with asthma are also higher in non-Caucasian people. Therefore, it is expected that asthmatic, African American children living in urban areas have increased sensitivity to sulfur dioxide."

103. The Center for Disease Control's ATSDR has developed a "ToxFAQ" document (a fact sheet that answers the most frequently asked questions about a contaminant and its health effects) for fuel oils. This document describes "fuels oils" as "a variety of yellowish to light brown liquid mixtures that come from crude petroleum. Some chemicals found in fuel oils may evaporate easily, while others may more easily dissolve in water. Fuel oils are produced by different petroleum refining processes, depending on their intended uses." The document notes that, "[d]rinking or breathing fuel oils may cause nausea or nervous system effects," although it also notes that, "[l]ittle

information is available about the health effects that may be caused by fuel oils." It says that "Breathing some fuel oils for short periods may cause nausea, eye irritation, increased blood pressure, headache, light-headedness, loss of appetite, poor coordination, and difficulty concentrating. Breathing diesel fuel vapors for long periods may cause kidney damage and lower your blood's ability to clot."

104. According to an expert EPA contractor, for the oil droplets released during two events, ". . . the oil [released during the Feb. 4 Incident and the Second May Incident] is likely composed of a mixture of petroleum hydrocarbons. Potential exposures include inhalation of volatile components, dermal contact with the residues, and ingestion of or contact with impacted water. Human health impacts depend on the specific petroleum constituents in a particular media or matrix, but total petroleum hydrocarbons as well as individual constituents have been associated with a variety of adverse health impacts. Skin and eye irritation, for example, are associated with short-term exposures to different hydrocarbon fractions. Longer term oral exposures to the semi-volatile fractions such as polyaromatic hydrocarbons (PAHs) have shown liver effects to be a common endpoint. Dermal contact with some PAHs have been shown to elicit skin hypersensitivity reactions. Some oil constituents have been classified as known or possible carcinogens.

> The expert EPA contractor found that: "The information available to date indicates that the incidents which occurred at the Limetree Bay Terminals and Refining facility present an imminent and substantial endangerment to both public health and welfare. This conclusion is based on multiple lines of evidence that demonstrate that the facility has already placed the health and welfare of the nearby community at risk. Additionally, the repeated nature of the flare failures coupled with the events associated with the release of noxious sulfur compounds and other potential hazardous air pollutants elevates the degree of harm."

The expert EPA contractor noted that, in addition to the impacts on physical health, the repeated incidents emitting oil droplets in a short time period have resulted in fear and anxiety about the next possible event and the severity of that event. The frequency of Limetree flare incidents raises the concern that events could continue to escalate and result in an even more significant or catastrophic incident, which could lead to injury or loss of life. The contractor also notes that improper maintenance or process safety management of flare systems has historically caused serious harm to people (killing or injuring workers and people living and working off site) and the environment, as well as damage and loss to property.

CONCLUSIONS OF LAW

EPA concludes the following:

105. Respondent LBT is a "person" within the meaning of Section 302(e) of the Act, 42 U.S.C. § 7602(e), against whom an Emergency Order may be issued under Section 303 of the Act, 42 U.S.C. § 7603.

106. Respondent LBR is a "person" within the meaning of Section 302(e) of the Act, 42 U.S.C. § 7602(e), against whom an Emergency Order may be issued under Section 303 of the Act, 42 U.S.C. § 7603.

107. In its current state, the Facility is a "pollution source" or "combination of sources" within the meaning of Section 303 of the Act, 42 U.S.C. § 7603.

108. The Feb. 4, 2021 Incident's emissions of an "oily mist," consisting in part of heavy oil, including a mixture of many heavy organic compounds; the Late April Incident emissions of H_2S and/or SO_2; the First May Incident's emissions of light hydrocarbons and/or volatile organic compounds; and the Second May Incident's

emissions of heavy oil droplets, particulate matter, and visible emissions are all "air pollutants" within the meaning of Sections 302(g) and 303 of the Act, 42 U.S.C. §§ 7602(g) and 7603.

109. Respondents are "causing or contributing" to the emission of air pollutants within the meaning of Sections 302(g) and 303 of the Act, 42 U.S.C. §§ 7602(g) and 7603, by continuing to operate the Facility's Refinery Operations in the current manner.

110. EPA is in receipt of evidence that, in less than four months, the air emissions from the Facility's Refinery Operations have, on at least four occasions, harmed the public health, welfare or the environment, as described *supra* at Paragraphs 33-90, and 95-104.

111. EPA is in receipt of evidence that the Refinery, if allowed to continue to operate as it is currently operated, presents an imminent and substantial endangerment to the public health or welfare or the environment.

112. Issuance of this Order is necessary to assure prompt protection of public health or welfare or the environment because it is not practicable to wait for the commencement of a civil action in United States District Court to assure prompt protection from additional air emissions events.

113. The Director of the Caribbean Environmental Protection Division has found that the Refinery's current operations, as described above, if allowed to continue, are presenting an imminent and substantial endangerment to public health or welfare or the environment, and it is therefore appropriate for the issuance of an Order under Section 303 of the Act, 42 U.S.C. § 7603.

114. The Director of the Caribbean Environmental Protection Division is vested with the authority of the Administrator under Section 303 of the Act, 42 U.S.C. § 7603.

ORDER

115. Based on the foregoing, and pursuant to Section 303 of the Act, 42 U.S.C. § 7603, in order to abate or prevent an imminent and substantial endangerment to public health or welfare or the environment, the Director of the Caribbean Environmental Protection Division hereby orders Respondents, their agents, employees, successors, and assigns, to address the endangerment posed by frequent incidents at the Refinery that have endangered public health and welfare, as follows:

a. Within one (1) business day of receipt of this Order, Respondents shall submit to EPA in writing a statement explaining whether Respondents intends to and is able to comply with this Order.

b. Upon receipt of this Order, Respondents shall ensure all Refinery Operations cease until the termination of this Order in accordance with paragraph 125 unless, based on the auditor reports and Respondents' implementation plan, EPA determines, in consultation with VIDPNR, that operations can resume before the expiration of the Order.

c. Respondents shall notify EPA electronically, in accordance with paragraph 116, as soon as possible once Refinery operations have ceased.

d. Respondents shall retain, at their expense, independent third party auditors ("Auditors") consistent with the requirements set forth below. The Auditors shall be retained to conduct one or more comprehensive

audits ("Audits"), to be completed by the earlier of 30 days after EPA's approval of a list of auditors for a given Audit Category pursuant to subparagraph (f) of this paragraph or 42 days after issuance of this Order. The Audits shall include a review of the items specified in subparagraphs (i) and (j) of this paragraph. Respondents shall require that the Auditors act independently and objectively when performing all activities. Respondents shall provide the Auditors with full access to the Facility and provide or otherwise make available any necessary personnel, documents, and Facility environmental, health, and safety training to fully perform all audit activities.

e. Within 7 days of this Order's issuance, Respondents shall submit to EPA the name and qualifications of at least three (3) proposed Auditors (the "Proposed Auditors") in each Audit Category discussed in subparagraphs (h), (i) and (j) of this paragraph – and more if necessary to provide competency in all of an Audit Category's scope – that Respondents certify meet the following conditions:

    i. A Proposed Auditor for the Environmental Compliance Audit has demonstrated experience in audits for compliance with Clean Air Act regulations and has completed at least a bachelors degree in science or engineering.

    ii. A Proposed Auditor for the Process Unit Audit has demonstrated experience in refinery process operation and optimization and has completed at least a bachelors degree in chemical or mechanical engineering.

iii. The Proposed Auditor and its personnel have not conducted research, development, design, construction, financial, engineering, legal, consulting nor other advisory services for Respondents or any other entity associated with the Refinery within the last three years. However, a Proposed Auditor with personnel who, before working for the audit firm, conducted research, development, design, construction, or consulting services for Respondents (as an employee or contractor) may meet the requirements of independence by ensuring such personnel do not participate on, manage, or advise the audit team;

iv. The Proposed Auditor was not involved in efforts since 2016 to restart or operate the Facility.

v. The Proposed Auditor and its personnel will not provide any other commercial, business, or voluntary services to Respondents for a period of at least three years following the Proposed Auditor's submittal of the final Audit Report.

vi. Respondents will not provide future employment to any of the Proposed Auditor's personnel who managed, conducted, or otherwise participated in the Audit for a period of at least three (3) years following the Proposed Auditor's submittal of its final Audit Report.

f. EPA will notify Respondents in writing whether it approves of any of the three (3) proposed Auditors in each Audit Category. Within 7

days of EPA approval, Respondents shall retain one or more of the EPA-approved Proposed Auditors for each Audit Category, who shall then become the Auditor(s) for that Audit Category, to perform the audit activities set forth in subparagraphs (i) and (j) of this paragraph of this Order. Respondents shall ensure that all audit personnel who conduct or otherwise participate in audit activities shall certify that they satisfy the conditions set forth in subparagraph (e) of this paragraph above before receiving any payment from Respondents.

i. If EPA rejects all three of the Proposed Auditors proposed for an Audit Category, within 48 hours of receipt of EPA's rejection notification, Respondents shall submit to EPA for approval another three (3) Proposed Auditors that meet the qualifications set forth in subparagraph (e) of this paragraph. EPA will review the proposed replacements in accordance with this subparagraph (f).

g. Each Auditor shall commence auditing onsite within 5 days of contracting.

h. The Audit Categories shall include Category A (Environmental Compliance Audit) and Category B (Process Unit Audit).

i. Audit Category A: Environmental Compliance Audit. Respondents shall ensure that the contract with the Auditor(s) retained to perform the Environmental Compliance Audit explicitly requires the Auditor(s) to perform the activities specified in this paragraph and its subparagraphs. However, the contents of the Audit shall not be

limited to the below items if the Auditor determines that additional evaluation should be conducted to prevent emissions or incidents that could endanger public health or welfare or the environment.

i. An evaluation of staffing within the environmental, health and safety program at the Refinery including staffing levels and whether staff have proper academic background, experience, and training to ensure the Refinery operates within required environmental, health, and safety limits and avoids situations or condition that endanger public health or welfare or the environment;

ii. A review of CAA compliance at the Refinery since February 2021, with a summary of all non-compliance and recommended steps to prevent future noncompliance, including at a minimum:

    1. Exceedances of NSPS Subpart J and Ja and permit H_2S limits at Flare #8 and the East Mix Drum and Coker Mix Drum Fuel Gas Systems;
    2. Compliance with all NSPS Subpart Ja requirements for flare incidents that exceed the 500 pound per day threshold;
    3. Compliance with the obligations of the Flare Management Plan submitted pursuant to NSPS Subpart Ja and NESHAP Subpart CC; and

4. An evaluation of compliance for releases at the coker unit with particular emphasis on the miscellaneous process vent requirements of NESHAP Subpart CC and the coker steam vent requirements of NESHAP Subpart CC.

j. Audit Category B: Process Area Audits. Respondents shall retain one or more Auditors, as necessary to ensure the Auditors have the requisite expertise to perform the activities in this paragraph and its subparagraphs. Respondents shall ensure that its contract with each Auditor retained to perform Process Area Audits explicitly requires the Auditor to perform the activities specified in this paragraph and its subparagraphs. However, the contents of the Audit shall not be limited to the below items if an Auditor determines that additional evaluation should be conducted to prevent emissions or incidents that could endanger public health or welfare or the environment.

1. Flare system audit.

a. An evaluation of the condition of the tip on Flare #8;

b. Capacity of the knockout pot to handle liquids loading to prevent flare rainout;

c. Capacity of flare #3 to serve as backup to Flare #8;

d. Other damage already incurred by and to the flare system due to high liquid loading or other causes;

e. Review of procedures that can be implemented to avoid and minimize the impact of future flaring events, including:

    i. Operation of redundant amine treatment units and redundant SRU trains operated in hot standby; and

    ii. Sulfur shedding practices;

f. A review of whether and how installation of a flare gas recovery system to eliminate or minimize Flare #8 non-compliance can be expedited; and

g. An evaluation of staffing with regard to the operation and maintenance of the process unit, including staffing levels and whether operators have proper experience and training to operate the process unit safely and within required environmental limits.

2. Coker audit.

    a. Releases to Flare #8, particularly high liquid loading that has occurred, what caused them,

and physical changes and operating changes to prevent them from happening in the future;

b. Releases since February 2021 of volatile organics directly to the atmosphere from the coker unit, and particularly from the steam vent prior to decoking, what caused them, and physical changes and operational changes to prevent such releases from happening again in the future; and

c. An evaluation of staffing with regard to the operation and maintenance of the process unit, including staffing levels and whether operators have proper experience and training to operate the process unit safely and within required environmental limits.

3. Amine/Sulfur Recovery Unit (SRU).

a. Acid gas flaring events at Flare #8, particularly including hydrocarbon carryover from the amine units to the SRUs, what caused them, and physical changes and operational changes to prevent them from happening again in the future;

b. Review of procedures that can be implemented to avoid and minimize the impact of future acid gas flaring events, including:

i. Operation of redundant amine treatment units and redundant SRU trains operated in standby; and

ii. Sulfur shedding practices; and

c. An evaluation of staffing with regard to the operation and maintenance of the process unit, including staffing levels and whether operators have proper experience and training to operate the process unit safely and within required environmental limits.

k. Respondents shall ensure that its contract with each Auditor requires that the Auditor shall simultaneously submit an audit report ("Audit Report") to Respondents, EPA (at the contacts listed in paragraph 116 below), and VIDPNR (at the contacts listed in paragraph 117). Concurrently, Respondents shall represent that the Audit Report submittal meets the following requirements:

i. Respondents shall ensure that the Auditor does not share any draft or preliminary audit findings or reports with Respondents in any format (electronic, paper, or verbal).

ii. Respondents shall conduct no post-audit oral or written communications with the Auditor except to request, for the

purposes of the audit, additional audit-related data or information. EPA and VIDPNR shall be simultaneously copied (at the contacts listed in paragraphs 116 and 117 below) on any such communication.

iii. Respondents shall ensure that the Auditor does not share its audit conclusions with Respondents until the Auditor submits its Audit Report(s) to EPA and VIDPNR.

iv. The Audit Report shall include all findings, conclusions, monitoring results, and other observations of the Auditor.

v. The Auditor shall provide EPA and VIDPNR with copies of all documents reviewed and identify all Facility personnel interviewed in support of the Audit Report.

vi. Respondents shall require the Auditor to include in the final Audit Report, submitted to EPA and VIDPNR pursuant to this Order, a certification that the Auditor has remained in compliance with all of the conditions set forth in subparagraph (e) of this paragraph, above.

l. Within 56 days of the issuance of this Order, Respondents shall submit to EPA a detailed plan that addresses all findings, conclusions, and observations set forth in each Audit Report, with an expeditious schedule for implementation of all corrective measures ("the Plan").

i. Respondents shall also describe each completed or proposed action to correct each deficiency identified in each Audit Report submitted to EPA, including the date(s) that such corrections occurred or are

scheduled to occur. The Plan shall provide for the implementation of each Auditor's recommendations in each Audit Report or provide a detailed explanation for why an Auditor's given recommendation is impracticable.

ii. The Plan shall ensure that the Refinery operates in a manner that complies with environmental statutory, regulatory and permit requirements such that said operation does not present an imminent and substantial endangerment to public health or welfare or the environment, and the Plan shall include adequate measures to protect the health and welfare of residents living near the Facility.

iii. The Plan shall be submitted to EPA, for EPA review, comment, and approval, or approval with modifications.

m. Upon commencing operation of any Refinery process unit following the ceasing of Refinery Operations required in subparagraph (b) of this paragraph, Respondents shall electronically notify EPA as soon as possible but no later than 24 hours after commencement.

116. Note: Respondents shall submit all notices, schedules, work plans, analyses, certifications and documentation required by this Order by email to:

Robert Buettner, Chief
Air Compliance Branch
Enforcement and Compliance Assurance Division
buettner.robert@epa,gov

And

Nancy Rodríguez, Chief
Multimedia Permits and Compliance Branch
Caribbean Environmental Protection Division
U.S. Environmental Protection Agency, Region 2

rodriguez.nancy@epa.gov

And

Harish Patel, Team Leader
Air Compliance Branch
Enforcement and Compliance Assurance Division
Patel.harish@epa.gov

And

Patrick Foley, Senior Environmental Engineer
Air Enforcement Division
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Foley.patrick@epa.gov

And

Liliana Villatora, Chief, Air Branch
U.S. Environmental Protection Agency, Region 2
Office of Regional Counsel
villatora.liliana@epa.gov

And

Sara Froikin, Assistant Regional Counsel
U.S. Environmental Protection Agency, Region 2
Office of Regional Counsel
froikin.sara@epa.gov

117. Note: Whenever submittal to VIDPNR is required in paragraph 115, Respondents shall submit all notices, schedules, work plans, analyses, certifications and documentation required by this Order by email to:

Verline Marcellin, Air Program Supervisor
Virgin Island Department of Planning and Natural Resources
verline.marcellin@dpnr.vi.gov

And

Jean-Pierre Oriol, Commissioner
Virgin Island Department of Planning and Natural Resources
jp.oriol@dpnr.vi.gov

ACCESS

118. Respondents shall allow EPA and its authorized representatives and contractors to enter and freely move about all areas subject to this Order, using equipment to gather information, for the purposes of inspecting conditions, activities, records, and contracts related to the presence of emissions in the Facility and other CAA compliance concerns and operation of the Refinery. Respondents shall allow EPA and its authorized representatives to enter the areas subject to this Order to inspect and copy all records, files, photographs, documents, sampling and monitoring data, and other writings related to carrying out this Order.

119. Nothing in this Order is intended to limit, affect or otherwise constrain EPA's rights of access to property and records pursuant to applicable law.

RESERVATION OF RIGHTS

120. EPA reserves the right to take any necessary action to enforce this Order, including obtaining injunctive relief or civil or criminal penalties, in accordance with Section 113 of the CAA, 42 U.S.C. § 7413.

121. Be advised that issuance of this Order does not preclude EPA from electing to pursue any other remedies or sanctions authorized by law that are available to address these and other violations. This Order does not resolve Respondents' liability for past violations of the Act or for any violations that continue from the date of this Order up to the date of compliance. At any time after the issuance of this Order, EPA may take any or all of the following actions: issue a further order requiring compliance with the Act; issue an administrative penalty order for up to $48,762 per day for each violation; or bring a civil or criminal action seeking an injunction and penalties. See Sections 113(a)-

(d) of the CAA, 42 U.S.C. §§ 7413(a)-(d); 40 C.F.R. Part 19; and 85 Fed. Reg. 83818 (December 20, 2020) (raising CAA penalties to $48,762 for violations occurring after Nov. 2, 2015 and assessed on or after Dec. 23, 2020).

122. Nothing in this Order shall limit the power and authority of EPA to take, direct or order all action necessary to protect public health or welfare or the environment to prevent, abate or minimize an imminent and substantial endangerment resulting from the continued operation of the Refinery as it is currently operated. Further, nothing in this Order shall be construed to prevent EPA from seeking legal or equitable relief to enforce the terms of this Order, or from taking other legal or equitable action as EPA deems appropriate and necessary, pursuant to the CAA, and any other applicable law. Nothing herein shall be construed to prevent EPA from requiring Respondents to perform further actions pursuant to the CAA or other applicable law.

123. Neither EPA nor the United States, by the issuance of this Order, assumes any liability for any acts or omissions by Respondents or Respondents' employees, agents, contractors or consultants engaged to carry out any action or activity pursuant to this Order; nor shall EPA or the United States be held as a party to any contract entered into by Respondents or Respondents' employees, agents, contractors or consultants engaged to carry out the requirements of this Order.

EFFECTIVE DATE

124. This Order is effective immediately upon issuance by EPA. Although this Order is effective immediately, Respondents may contact EPA to confer about compliance with the Order by contacting Sara Froikin, Esq. of EPA at 212-637-3263.

125. This Order shall be effective for a period of not more than 60 days unless the United States files a civil action in the appropriate United States district court pursuant to Section 303 of the Act, 42 U.S.C. § 7603.

CARMEN GUERRERO PEREZ

Digitally signed by CARMEN GUERRERO PEREZ
Date: 2021.05.14 12:43:00 -04'00'

May 14, 2021

Carmen R. Guerrero, Director
Caribbean Environmental Protection Division
United States Environmental Protection Agency, Region 2

Date