United States Environmental Protection Agency
Office of Enforcement and Compliance Assurance
Office of Criminal Enforcement, Forensics and Training

National Enforcement Investigations Center

NEIC

NEICVP1568E01

NEIC CIVIL INVESTIGATION REPORT
Port Hamilton Refinery and Transportation
St. Croix, U.S. Virgin Islands

Investigation Dates:
April 2-11, 2024

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INVESTIGATION OVERVIEW

PROJECT OBJECTIVE

At the request of U.S. Environmental Protection Agency (EPA) Region 2 (Region), EPA's National Enforcement Investigations Center (NEIC) conducted a Resource Conservation and Recovery Act (RCRA) investigation of Port Hamilton Refining and Transportation (PHRT) located at 1 Estate Hope, Christiansted, St. Croix, U.S. Virgin Islands. The scope of the investigation was to evaluate PHRT's waste management practices and to determine the regulatory status of shut down process units, hazardous waste accumulation areas, and tanks. This report presents NEIC's field observations during the on-site inspection of PHRT and the results of NEIC laboratory analyses of samples collected during the inspection.

Table 1 lists the project team members.

Table 1. PROJECT TEAM MEMBERS		
Team Member	**Organization**	**Project Role**
Craig Lutz	NEIC	Project manager (PM)
Laura Kanopkin	NEIC	Field team member
Brian Kennedy	NEIC	Field team member
Andrew Rippert	NEIC	Field team member
Bradley W. Miller	NEIC	Analytical project manager (APM)
Justin Bordoff	NEIC	Laboratory team member
Alexis Espino	NEIC	Laboratory team member
Claresta Joe-Wong	NEIC	Laboratory team member
Matt Moan	NEIC	Laboratory team member
Allison Vaughan	NEIC	Laboratory team member
REGIONAL AND OTHER CONTACTS		
Derval Thomas	EPA Region 2	Regional contact

FACILITY CONTACT INFORMATION

Table 2 lists the primary facility contacts.

Table 2. FACILITY CONTACT INFORMATION		
Name, Title	**Phone No.**	**Email Address**
Fermin Rodriguez, Refinery Manager	(340) 643-2265	Fermin.Rodriguez@PHRT.com

FACILITY OVERVIEW

PHRT is a petroleum refinery that has been inactive since May 2021. The refinery is co-located with Ocean Point Terminals (OPT), a separate company which currently operates the terminal assets at the site. The footprint for both PHRT and OPT covers approximately 1,500 acres. At the time of the inspection, PHRT employed 53 personnel.

Originally built in 1966, the refinery began operations as a joint venture between the Hess Oil Virgin Islands Corporation (HOVIC) and Petróleos de Venezuela, S.A. (PDVSA). The majority of crude oil received and processed at the refinery was sourced from Venezuela. Several expansions throughout the years brought the design capacity of the refinery to 545,000 barrels of crude oil per day, making it one of the largest refineries in the world. In 1998, the parent company of HOVIC, the Amerada Hess Corporation, and PDVSA formed HOVENSA LLC (HOVENSA), a new corporation which acquired ownership and operational control of the refinery.

Disruptions in crude oil supply and changing economic circumstances led HOVENSA to shut down refinery operations in 2012. HOVENSA continued to operate the terminal and storage assets until declaring bankruptcy in September 2015. A private equity firm, Limetree Bay Holdings, LLC purchased the facility in January 2016. In December of 2018, the terminal assets were separated out from the refinery and the facility became two separate entities, Limetree Bay Terminals, LLC and Limetree Bay Refining, LLC (Limetree Bay).

The refinery was partially restarted under Limetree Bay on September 28, 2020, and ran until May 14, 2021. During this time, multiple air emission incidents occurred, including repeat contamination of drinking water cisterns in nearby neighborhoods by oil droplets emitted from flare mishaps. EPA Region 2 issued an emergency order for the refinery to pause operations on May 14, 2021, under the Clean Air Act Section 303, citing imminent and substantial endangerment to public health and the environment. The order was augmented and extended on July 12, 2021.

Instead of making further investments in the refinery to comply with the order to update equipment and processes, Limetree Bay initiated a long-term shut down and declared bankruptcy on July 12, 2021. Through an auction held in bankruptcy court, Port Hamilton Refining and Transportation, LLLP acquired Limetree Bay in January 2022. The terminal assets remained separate under Limetree Bay Terminals. Limetree Bay Terminals continues to be the legal name of the terminal assets but has since rebranded under the new business name of Ocean Point Terminals (OPT). A service agreement currently exists between PHRT and OPT to facilitate shared used of the site.

According to the EPA Enforcement and Compliance History Online (ECHO) database, PHRT (EPA Registry Identification No. 110071301064) has the following North American Industry Classification System (NAICS) code (**Table 3**):

Table 3. APPLICABLE NAICS CODE

NAICS Code	Description
324110	Petroleum Refinery

FACILITY OPERATIONS SUMMARY

PHRT consists of an east refinery, west refinery, office buildings, warehouses, and various supporting operations including sulfur recovery plants, steam and electric power generation, wastewater treatment, and bulk storage. The east and west refineries were constructed to operate independently of each other. The west refinery was originally built in the 1960s. The east refinery was constructed in the 1970s to expand operational capacity at the site. The site also has a delayed coker unit complex as well as a fluid catalytic cracking complex. The catalytic cracker has not run since 2012.

The wastewater treatment plant on-site is owned by PHRT but operated by OPT. It is referred to as the Advanced Wastewater Treatment Unit (AWWTU). PHRT and OPT are currently both regulated under one Territorial Pollutant Discharge Elimination System (TDPES) permit, issued locally by the Virgin Islands Department of Planning & Natural Resources (DPNR). PHRT representatives stated that PHRT and OPT will have separate permits within the next two years, as the current permit was issued for Limetree Bay Terminal and Refinery as one entity. According to PHRT, the AWWTU is not processing enough volume to generate significant quantities of sludge since the refinery shut down. The AWWTU is designed for a large-scale refinery, and as a result, current operations are only resulting in de minimis amounts of sludge generation. The AWWTU is currently processing reclaimed groundwater from HERT, stormwater from process areas, and wastewater produced by OPT from decanting incoming products and ballast water from ships.

Process Units in Operation during Limetree Bay Restart, September 2020 to May 2021

Not all process units were utilized during the Limetree Bay refinery restart. Only equipment and processes within the east refinery and the delayed coker unit were utilized, as described in **Appendix A**. The restart was a limited operation and was not long enough in duration for the refinery to achieve full rates of intended production.

The #5 crude distillation unit (#5 CDU) was utilized during the restart to fractionate crude and fuel oil into components for further processing. Fractions produced from the crude fractionation column in this unit included overhead gases, naphtha, kerosene, diesel, and gas oil. Tower bottoms were routed to the #3 vacuum unit (VAC). Process wastewater was treated in the AWWTU, and sour water was processed through sour water strippers.

PHRT representatives stated that only the naphtha stripper on the #6 CDU was utilized during the restart. This included a light naphtha stabilizer and a light naphtha fractionator.

Liquid petroleum gas treaters (LPG) 1, 2, and 3 were all utilized in the restart to process liquified petroleum gas.

The #3 VAC operated during the restart and processed feed from the #5 CDU tower bottoms. Diesel and other light products were removed at the pre-stripper tower associated with the #3 VAC. Heavier components continued processing through the unit in a vacuum tower which produced a light vacuum gas oil routed to the #6 distillate desulfurizer (DD) and bottoms which went to the coker feed tank 8501 at the delayed coker unit (DCU).

The #6 DD, #7 DD, and #9 DD ran during the restart. These units were utilized to remove sulfur from a wide range of distillate streams as well as refined petroleum products including diesel fuel and fuel oils.

The #3 platformer and #4 platformer are catalytic reforming units and were used to convert petroleum refinery naphthas typically having low octane ratings to reformates which are high-octane liquid products used as blend stocks to make high-octane gasoline. Desulfurization units Hydrobon 3 and Hydrobon 4 were respectively utilized as part of each platforming unit to remove sulfur compounds prior to processing naphtha in the platformers. PHRT representatives stated that only Hydrobon 3 ran on the #3 platformer during the restart.

The Penex unit in conjunction with a Par-Isom isomerization unit was intended to operate to process light naphtha. However, facility representatives stated that this unit was never operated during the Limetree Bay run.

The delayed coker unit (DCU) received feed from the #3 VAC and processed it by thermally cracking the heavy residuals into lighter materials to be sold as products. Tank 8501 is the coker feed tank for the DCU, and tank 8502 holds coker cutting water. Feed for the DCU was preheated and mixed with bottoms recycled from the DCU coker main fractionator and then fed to the DCU heaters and coke drums. Coke exiting the bottoms of the coke drums were transported from the coke pit to the coke piles via an enclosed conveyor system.

Other process equipment that operated during the restart included boilers #5, 8, 9, and 10 to produce steam, gas turbines #7, 8, 9, 10, and 13 for electrical power, and amine units to remove acid gas from process gases. The #2 gas recovery unit was operated to remove hydrogen sulfide from gas that could be subsequently used as fuel gas. The east sulfur recovery plant was operated to recover sulfur and included the #3 and #4 sulfur recovery units (SRU) as well as a tail gas treating unit (TGTU). The #4 and #5 sour water strippers (SWS) processed sour water generated during refinery operations during the restart. The AWWTU also operated during the restart to process wastewater at the facility.

Operations following Shutd Down in May 2021

Limetree Bay conducted a long-term shut down of activities in 2021 to bring the refinery into an idled state before it was purchased by PHRT. According to PHRT representatives, all raw materials and products were sold following the shut down and bankruptcy of Limetree Bay.

During the cleanout, operators reportedly drained most process vessels within the following units: #5 CDU, #7 DD, #3 platformer, #4 platformer, #3 SRU and #4 SRU. Additionally, PHRT stated that operators used #2 oil (diesel) to flush out many of the units including #3 VAC, # 5 CDU, and the #6 CDU naphtha stripper. The DCU was not cleaned out during the shut down.

EPA Region 2 began a general assessment of the facility in August 2022. This resulted in an Order of Consent signed in December 2022, requiring PHRT to safely remove specific materials that EPA determined were not being properly managed. The materials removed under this order included anhydrous ammonia, amine solutions, and liquified petroleum gas. PHRT removed and sold liquid material from LPG 3. Vapors in LPG 3 were flushed with nitrogen and routed to a portable thermal oxidizer that was brought in by a third-party contractor. LPG 1 and LPG 2 contained heavier hydrocarbons than LPG 3 and were not de-inventoried at this time. PHRT assembled an inventory of materials remaining in the process units as of July 28, 2023, which is included in Clean Air Act 114 Response in **Appendix B**.

At the time of the NEIC inspection, PHRT representatives stated that material remaining in many of the process vessels and associated piping is necessary to facilitate a restart of the refinery. Representatives further described that feed is required to restart the units which cannot be operated if empty and dry and offered this as an explanation as to why material remains in the units.

Current Generation and Management of Hazardous Wastes

At the time of the NEIC inspection, PHRT maintained one central hazardous waste accumulation area. Management of PHRT's waste is subcontracted to National Industrial Services (NIS), and NIS manages this central accumulation area. Another waste company, WTS, organizes shipments of wastes off-site and coordinates transporters. WTS does not have personnel physically working on-site. WTS also puts together waste profiles and maintains a database for PHRT's wastes. When necessary, samples of wastes are shipped off the island for analysis and characterization at a third-party laboratory.

Wastes observed in the central accumulation area during the inspection included flammable waste paint, non-hazardous oily debris generated from various cleaning operations, non-hazardous spent carbon from vents and the AWWTU, non-hazardous coke from a smoldering incident in 2022, and universal waste batteries, mercury switches, and lamps.

PHRT representatives reported that hazardous waste is shipped off-site for treatment and disposal every 60 days.

FIELD ACTIVITIES SUMMARY

On April 2, 2024, NEIC inspectors presented credentials to PHRT representative Sloan Schoyer and conducted an opening meeting. NEIC performed the following activities to accomplish the investigation objectives:

- Interviewed facility personnel to discuss process and shut down operations.
- Conducted a site tour, focusing on process units active during the Limetree Bay restart, waste accumulation areas, the chemical storage area, and wastewater treatment systems.
- Photographed and documented site conditions (photographs are included in **Appendix C**).
- Reviewed current inventory of materials remaining in process units.
- Collected samples from a frac tank in the coker unit for analysis at the NEIC laboratory. Split samples were provided to Port Hamilton.
- Received samples of liquid waste from process units. These samples were collected by Port Hamilton representatives and provided to NEIC. Split samples were retained by Port Hamilton.
- Reviewed documents including process flow diagrams, safety data sheets (SDS) for materials on-site, waste profiles, analytical records, and manifests.

Measurement and Sampling Activities

The NEIC field team provided support to this investigation by sampling material from process vessels at different points in the refinery process. **Table 4** summarizes field sampling activities. A copy of the chain of custody record is provided in **Appendix D**.

All environmental measurement activities were performed in accordance with the NEIC quality system. All field sampling, field measurements/monitoring, and/or laboratory measurements described in this report are within the scope of NEIC's ISO/IEC 17025 accreditation issued by the ANSI National Accreditation Board (certificate No. FT-0303). NEIC also provided support to this investigation by receiving and analyzing the following samples of liquid waste from process units that required the facility to access: S01-1, S01-2, S03-1, S03-2, S03-3 (in triplicate), S04-1, S04-2, S07-1, S07-2, S09-1 (in triplicate), S09 (in triplicate). The samples were collected by the facility while under the observation of NEIC inspectors.

Table 4. FIELD MEASUREMENT AND FIELD SAMPLING ACTIVITIES					
Location Identifier	**Date(s) and Time**	**Method, and/or Procedure[1], and Equipment**			**Measurer Name**
MEASUREMENTS					
Used to screen location for safety; RadEye used additionally to screen samples for radiation	April 2-9, 2024	**NEIC procedure:** *Safety and Sample Screening Instruments,* NEICPROC/17-002 **Instrument guides:** *MSA Altair 5X Multi-Gas Monitoring Equipment* *RadEye B20-ER – Radiation Detection Equipment* **Equipment:** • MSA Altair 5X multiple gas meter • RadEye B20-ER radiation detector			Craig Lutz, Laura Kanopkin, Brian Kennedy
SAMPLING					
Station No.	**Sample Location**	**Appendix C Photo Nos.**	**Date and Time**	**Method, and/or Procedure[1], and Equipment**	**Sampler**
S01-1 S01-2	#5 CDU, Tower T-3102, Pump P-3107B	12, 13	4/4/2024 09:43	**Method:** Sampled from tap installed by PHRT representatives on the line to pump P-4119B directly into sample container.	Laura Kanopkin
S02-1[2] S02-2[2]	#6 CDU, Tower T-4109	15	4/4/2024 09:59	**Method:** Valved sample port on pump P-3107B was opened by PHRT representatives and sample was collected directly into sample container,	Laura Kanopkin
S03-1 S03-2	LPG1, Drum D-3206	16, 17,18	4/4/2024S 10:23	**Method:** Valved sample port on drum D-3206 was opened by PHRT representatives and sample was collected directly into sample container.	Andrew Rippert
S03-3A S03-3B S03-3C	LPG1, Drum D-3206	16, 17,18	4/4/2024 10:23	**Method:** Valved sample port on drum D-3206 was opened by PHRT representatives and samples were collected directly into sample containers	Andrew Rippert
S04-1 S04-2	#3 Vacuum Unit, Tower T-4401	21, 22	4/4/2024 10:57	**Method:** Sampled from tap installed by PHRT representatives on the line to pump P-4231A directly into sample container.	Andrew Rippert

Table 4. FIELD MEASUREMENT AND FIELD SAMPLING ACTIVITIES					
S05-1A[2] S05-1B[2] S05-1C[2] S05-2A[2] S05-2B[2] S05-2C[2]	Platformer #4, Drum D-5402	25	4/4/2024 11:29	**Method:** Sampled from tap installed by PHRT representatives on the line to "spool" on the line to drum D5402 directly into sample container.	Andrew Rippert
S06-1	Coker Unit Frac Tank	29, 30	4/5/2024 10:57	**Method:** ASTM D5495: Standard Practice for Sampling with a Composite Liquid Waste Sampler (COLIWASA) **NEIC procedure:** *Container Sampling,* NEICPROC/00-048 **Equipment:** Plastic tank COLIWASA	Laura Kanopkin
S07-1 S07-2	Coker Unit, Tank TK-8502, Pump P-8523B	31, 32, 33	4/5/2024 14:02	**Method:** Sampled from tap installed by PHRT representatives on the line to pump P-8523B	Andrew Rippert
S08-1 S08-2	Coker Unit, Tank TK-8501	35, 36, 37	4/5/2024 14:11	**Method:** Valved sample port on pump P-85201B was opened by PHRT representatives and sample was collected directly into sample container.	Andrew Rippert
S09-1A S09-1B S09-1C S09-2A S09-2B S09-2C	Tail Gas Treatment Unit, Quench Tower T-4762	38, 39	4/5/2023 14:38	**Method:** Valved sample port on pump P-4770B was opened by PHRT representatives and sample was collected directly into sample container.	Andrew Rippert
[1] The current version of each procedure, at the time of the investigation, was followed. [2] Samples were collected but not returned to the NEIC lab for analysis.					

Site conditions and activities were documented in field records, and field photographs are attached as **Appendix C**. Samples collected during the field activities were shipped via FedEx to the NEIC laboratory in Denver, Colorado, for analysis.

The following samples were collected but not shipped to the NEIC laboratory for safety reasons as decided by the PM. Samples S02-1 and S02-2 were collected from Tower T-4109 in Crude Unit #6. Samples S05-1A, B, and C, along with samples S05-2A, B, and C were collected from drum D-5402 (a process unit tank) in the Platformer #4 unit. Approximately one hour after these samples were collected, the sample container lids were observed to be bulging due the apparent vapor pressure inside the containers. The samples were put on ice. It was later

decided not to ship the samples to the NEIC laboratory because of the risk of leaks or broken containers during transit. The samples were returned to PHRT's custody. **Appendix C**, photos 25 and 26, show the sample containers shortly after the containers were removed from the ice. The lids on the S02 sample containers are noticeably bulging in the photos.

LABORATORY ACTIVITIES SUMMARY

Dr. Bradley W. Miller of the laboratory team received the samples at the NEIC laboratory in Denver, Colorado via FedEx (tracking # 7223 9492 7349 and 7223 9492 7350) from Andrew Rippert on April 9, 2024. The custody tape on each sample was intact. The laboratory team analyzed the samples at the NEIC laboratory to determine if the samples had properties of the RCRA ignitability, corrosivity, or toxicity hazardous waste characteristics. **Table 5** summarizes the analytical objective, techniques and methods followed, as well as the analysts and dates of the analyses. A copy of the chain of custody record is provided in **Appendix D**. Laboratory photographs are attached in **Appendix E**.

Table 5. ANALYTICAL OBJECTIVE, TECHNIQUE, AND METHOD; ANALYST; AND DATE PERFORMED

Analytical Objective, Technique, and Method[1]	NEIC Analyst	Samples Analyzed by Method (Station Nos.)	Date(s) Performed
Objective: Determine if the samples have properties of the corrosivity characteristic. **Technique: Potentiometric pH measurement of** liquids **Determinative Method:** Method 9040C, pH Electrometric Measurement, Revision 3, November 2004, Final Update IIIB to the Third Edition of the Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA publication SW-846.	Claresta Joe-Wong	S03-3A S03-3B S03-3C	April 29 - May 1, 2024
Objective: Determine if sample liquids contain some water. **Technique:** Karl Fischer Titrations **Determinative Methods:** Method 9000, Determination of Water Content in Waste Materials by Karl Fischer Titration, Revision 0, February 2007, Final Update IV to the Third Edition of the Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA publication SW-846.	Alexis Espino	S03-3A S03-3B S03-3C	May 16, 2024

Table 5. ANALYTICAL OBJECTIVE, TECHNIQUE, AND METHOD; ANALYST; AND DATE PERFORMED			
Analytical Objective, Technique, and Method[1]	**NEIC Analyst**	**Samples Analyzed by Method (Station Nos.)**	**Date(s) Performed**
Objective: Determine if samples have characteristic of toxicity for volatile organic compounds and inorganic analytes **Technique:** Method 1311 extractions of samples followed by purge-and-trap gas chromatography/mass spectrometry (P&T-GC/MS) of TCLP extracts **Preparatory Methods:** *Preparatory method for samples extracts:* SW-846 Method 1311: Toxicity Characteristic Leaching Procedure	Justin Bordoff Bradley W. Miller	S01-1 S03-1 S04-2 S06-1 S07-1 S08-2 S09-1A S09-1B S09-1C	April 17 – May 2, 2024
Objective: Determine if samples have characteristic of toxicity for volatile organic compounds **Determinative method:** Gas chromatography/mass spectrometry (GC-MS) by SW-846 Test Method 8260B: Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Justin Bordoff	S01-1 S03-1 S04-2 S06-1 S07-1 S08-2 S09-1A S09-1B S09-1C	May 7-9, 2024
Objective: Determine if samples have characteristic of toxicity for metals (excluding mercury) **Technique:** Method 1311 extractions of samples followed by acid digestions for metals **Preparatory method:** Acid digestion of TCLP extracts following Aqua Regia Sample Preparation Guide. NEICGUID/18-001R0: Elemental Analyses, 08/07/2018. Modified **Determinative method for metals (excluding mercury):** Method 6010D, Inductively Coupled Plasma – Optical Emission Spectrometry, Revision 5, July 2018, Final Update VI to the Third Edition of the Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA publication SW-846. Modified.	Bradley Miller Matt Moan	S01-1 S03-1 S04-2 S06-1 S07-1 S08-2 S09-1A S09-1B S09-1C	May 7-10, 2024

Table 5. ANALYTICAL OBJECTIVE, TECHNIQUE, AND METHOD; ANALYST; AND DATE PERFORMED			
Analytical Objective, Technique, and Method[1]	**NEIC Analyst**	**Samples Analyzed by Method (Station Nos.)**	**Date(s) Performed**
Objective: Determine if samples have characteristic of toxicity for mercury **Technique:** Method 1311 extractions of samples followed by digestions and CVAA **Preparatory and Determinative method:** Method 245.1, Determination of Mercury in Water by Cold Vapor Atomic Absorption Spectrometry. Revision 3, in Supplement I of "Methods for the Determination of Metals in Environmental Samples" EPA/600R–94/111, May 1994. Modified.	Allison Vaughan	S01-1 S03-1 S04-2 S06-1 S07-1 S08-2 S09-1A S09-1B S09-1C	May 8-9, 2024
Objective: Determine if samples have characteristic of ignitability by measuring the flashpoint of sample liquids **Technique:** Seta-flash, closed-cup flashpoint tester **Determinative Method:** ASTM D8174-18 Standard Test Method for Finite Flash Point Determination of Liquid Wastes by Small-Scale Closed Cup Tester, Book of Standards Volume: 11.04, ASTM International, West Conshohocken, PA	Bradley W. Miller	S01-2 S03-2 S04-2 S06-1 S07-2 S08-2 S09-2A S09-2B S09-2C	May 16-22, 2024
[1] The current version of each procedure, at the time of the investigation, was followed.			

ANALYTICAL RESULTS

Table 6 summarizes the laboratory observations and analytical results for flash point, water content, and pH. **Table 7** summaries the analytical results of the TCLP extracts for volatile compounds. **Table 8** summarizes the elemental analytical results of the TCLP extracts. Data quality summaries, including uncertainty measurements, are included in the project files. Laboratory sample descriptions, observations, method modifications, and notes are also documented in the project file.

Table 6. LABORATORY OBSERVATIONS, FLASH POINT, WATER CONTENT, AND PH RESULTS						
Station No. and Sample Phases	**Station Location/ Description of Sample Location**	**Appendix E Photo Nos.**	**Laboratory Sample Physical Description**	**Flash Point Results (degrees Celsius [°C])**	**Water Content Percentage (%)**	**pH**
S01-1	#5 CDU, Tower T-3102, Pump P-3107B	IMG_0914.JPG IMG_0915.JPG IMG_0916.JPG IMG_0917.JPG	Black, opaque, nonviscous liquid	N/A[1]	N/A	N/A
S01-2				No Flash (<70)	N/A	N/A
S03-1	LPG1, Drum D3206	IMG_0918.JPG IMG_0919.JPG IMG_0920.JPG	Colorless, clear, nonviscous liquid	N/A	N/A	N/A
S03-2				No Flash (<70)	N/A	N/A
S03-3A		IMG_0921.JPG IMG_0922.JPG IMG_0923.JPG IMG_0924.JPG	Colorless, clear, nonviscous liquid	N/A	94[2]	> 13.0[3]
S03-3B				N/A	95	> 13.0[3]
S03-3C				N/A	94	> 13.0[3]
S04-1	#3 Vacuum Unit, Tower T-4401	IMG_0925.JPG IMG_0926.JPG IMG_0927.JPG	Black, opaque, viscous liquid	N/A	N/A	N/A
S04-2				No Flash (<70)	N/A	N/A

Table 6. LABORATORY OBSERVATIONS, FLASH POINT, WATER CONTENT, AND PH RESULTS						
Station No. and Sample Phases	**Station Location/ Description of Sample Location**	**Appendix E Photo Nos.**	**Laboratory Sample Physical Description**	**Flash Point Results (degrees Celsius [°C])**	**Water Content Percentage (%)**	**pH**
S06-1 1st Liquid layer	Coker Unit Frac Tank	IMG_0928.JPG IMG_0929.JPG IMG_0930.JPG IMG_0931.JPG IMG_0946.JPG	Black, opaque, viscous liquid	No Flash (<70)	N/A	N/A
S06-1 2nd Liquid layer			Colorless, clear, nonviscous liquid	No Flash (<70)	N/A	N/A
S07-1	Coker Unit, Tank TK-8502, Pump P-8523B	IMG_0932.JPG IMG_0933.JPG IMG_0934.JPG	Colorless, clear, nonviscous liquid, with suspended black particulates	N/A	N/A	N/A
S07-2				No Flash (<70)	N/A	N/A
S08-1	Coker Unit, Tank TK-8501	IMG_0935.JPG IMG_0936.JPG IMG_0937.JPG	Black, opaque, viscous liquid	N/A	N/A	N/A
S08-2				No Flash (<70)	N/A	N/A
S09-1A	Tail Gas Treatment Unit, Quench Tower T-4762	IMG_0938.JPG IMG_0939.JPG IMG_0940.JPG	Colorless, clear, nonviscous liquid with orange particulates	N/A	100	N/A

Table 6. LABORATORY OBSERVATIONS, FLASH POINT, WATER CONTENT, AND PH RESULTS						
Station No. and Sample Phases	**Station Location/ Description of Sample Location**	**Appendix E Photo Nos.**	**Laboratory Sample Physical Description**	**Flash Point Results (degrees Celsius [°C])**	**Water Content Percentage (%)**	**pH**
S09-1B				N/A	100	N/A
S09-1C				N/A	100	N/A
S09-2A	Tail Gas Treatment Unit, Quench T-4762	IMG_0941.JPG IMG_0942.JPG IMG_0943.JPG IMG_0944.JPG	Colorless, clear, nonviscous liquid with orange particulates	No Flash (<70)	N/A	N/A
S09-2B				No Flash (<70)	N/A	N/A
S09-2C				No Flash (<70)	N/A	N/A

[1] N/A: Not applicable - the analysis is not applicable because a different field sample replicate was tested or the analysis is not applicable to the sample replicate.
[2] Reported value is the average from the determinative method measurement replicates (n=3).
[3] Reported value is the average from the determinative method consecutive measurement replicates (n=2).

Table 7. TCLP VOLATILE RESULTS AND 40 CFR § 261.24 "TABLE 1—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC"

TCLP (milligrams per liter [mg/L])	Station ID									
	Regulatory Level	S01-1[12]	S03-1[1]	S04-2[12]	S06-1[1]	S07-1[1]	S08-2[13]	S09-1A[1]	S09-1B[1]	S09-1C[1]
1,1-Dichloroethylene	0.7	< 0.10								
Methyl ethyl ketone (2-Butanone)	200.0	0.197	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chloroform	6.0	< 0.10								
Carbon tetrachloride	0.5	< 0.10								
Benzene	0.5	1.07		0.114	< 0.10	< 0.10	0.472			
1,2-Dichloroethane	0.5	< 0.10		< 0.10	< 0.10	< 0.10	< 0.10			
Trichloroethylene	0.5									
Tetrachloroethylene	0.7									
Chlorobenzene	100.0									
1,4-Dichlorobenzene	7.5									
Hexachlorobutadiene	0.5									

[1] Method 1311 holding time exceeded. Concentrations shall be considered minimum values.
[2] Reported value is the average from the determinative method measurement replicates (n=3).
[3] Reported value is the average from the determinative method measurement replicates (n=6).

TABLE 8. TCLP ELEMENTAL RESULTS AND 40 CFR § 261.24 "TABLE 1—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC"

Station No.	TCLP (milligrams per liter [mg/L])							
	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Silver	Selenium
S01-1[1]	< 0.2	< 3.0	< 0.2	6.47	< 1.0	< 0.02	< 1.0	< 1.0
S03-1				< 0.2				
S04-2[2]								
S06-1[3]								
S07-1								
S08-2								
S09-1A								
S09-1B								
S09-1C								
40 CFR § 261.24 "Table 1- Maximum Concentration…"	5.0	100.0	1.0	5.0	5.0	0.2	5.0	1.0

[1] Reported value is the average from preparatory digestion replicates (n=2) for all analytes except mercury.
[2] Reported value for mercury is the average from the determinative method measurement replicates (n=3).
[3] Reported value for mercury is the average from the determinative method measurement replicates (n=4).

INVESTIGATION OBSERVATIONS

NEIC made the following observations during the RCRA compliance inspection. NEIC field team members discussed some observations with Facility representatives during the closeout meeting and indicated that additional findings may be added pending the NEIC sample analytical results and review of the information received during the inspection.

These observations are not final compliance determinations. Region 2 will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information. The U.S. Virgin Islands have not adopted the RCRA program for implementation. EPA Region 2 has direct enforcement authority.

Observation: 1

Observation Summary: The former owner, Lime Tree Bay shut down refinery operation on May 21, 2020, and declared bankruptcy on July 12, 2021. PHRT acquired the facility in a bankruptcy auction in January 2022. The refinery remained shut down at the time of the NEIC inspection. On June 28, 2023, PHRT reported that there were 100,800 gallons of hydrocarbon material still stored in #5 CDU from when the refinery was in operation. During the inspection, PHRT told the inspectors that the hydrocarbon material storage was occuring in tower T-3102.

With the Lime Tree Bay bankruptcy filing, the hydrocarbon material in tower T-3102 was abandoned by being accumulated and stored in lieu of disposal. In bankruptcy, Lime Tree Bay had no means to dispose of the material and PHRT has not restarted the refinery. Samples of the material stored in tower T-3102 analyzed by NEIC exceeded the hazardous waste toxicity characteristic regulatory limits for benzene and chromium. Manufacturing process units, such as tower T-3102, are required to meet the hazardous waste requirements for tanks for storing hazardous waste after operations have ceased for 90 days. 90 days after the Lime Tree Bay filing for bankruptcy, on September 10, 2021, tower T-3102 became a hazardous waste management unit. PHRT was not managing tower T-3102 as a hazardous waste tank at the time of the inspection.

Citation:

§261.2 Definition of solid waste.

(a)(1) A *solid waste* is any discarded material that is not excluded under §261.4(a) or that is not excluded by a variance granted under §§260.30 and 260.31 or that is not excluded by a nonwasted determination under §§260.30 and 260.34.

(2)(i) A *discarded material* is any material which is:

(A) Abandoned, as explained in paragraph (b) of this

Observation: 1

(b) Materials are solid waste if they are *abandoned* by being:

(3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated; or

40 CFR § 261.4 Exclusions.

(c) Hazardous wastes which are exempted from certain regulations. A hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment-manufacturing unit, is not subject to regulation under parts 262 through 265, 268, 270, 271 and 124 of this chapter or to the notification requirements of section 3010 of RCRA until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials.

40 CFR § 261.20 General.

(a) A solid waste, as defined in §261.2, which is not excluded from regulation as a hazardous waste under §261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this subpart.

40 CFR § 261.24 Toxicity characteristic.

(b) A solid waste that exhibits the characteristic of toxicity has the EPA Hazardous Waste Number specified in Table 1 which corresponds to the toxic contaminant causing it to be hazardous.

Table 1—Maximum Concentration of Contaminants for the Toxicity Characteristic

EPA HW No.	Contaminant	CAS No.	Regulatory Limit (mg/L)
D018	Benzene	71-43-2	0.5
D007	Chromium	7440-47-3	5.0

40 CFR § 262.17 Conditions for exemption for a large quantity generator that accumulates hazardous waste.

A large quantity generator may accumulate hazardous waste on site without a permit or interim status, and without complying with the requirements of parts 124, 264 through 267, and 270 of this chapter, or the notification requirements of section 3010 of RCRA for treatment, storage, and disposal facilities, provided that all of the following conditions for exemption are met:

Observation: 1

(a) Accumulation. A large quantity generator accumulates hazardous waste on site for no more than 90 days, unless in compliance with the accumulation time limit extension or F006 accumulation conditions for exemption in paragraphs (b) through (e) of this section. The following accumulation conditions also apply:

(2) Accumulation of hazardous waste in tanks. If the waste is placed in tanks, the large quantity generator must comply with the applicable requirements of subpart J (except §§ 265.197(c) and 265.200 of this subchapter) as well as the applicable requirements of 40 CFR part 265, subparts AA through CC.

(5) Labeling and marking of containers and tanks -

(ii) Tanks. A large quantity generator accumulating hazardous waste in tanks must do the following:

(A) Mark or label its tanks with the words "Hazardous Waste";

(B) Mark or label its tanks with an indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704);

(C) Use inventory logs, monitoring equipment or other records to demonstrate that hazardous waste has been emptied within 90 days of first entering the tank if using a batch process, or in the case of a tank with a continuous flow process, demonstrate that estimated volumes of hazardous waste entering the tank daily exit the tank within 90 days of first entering; and

(D) Keep inventory logs or records with the above information on site and readily available for inspection.

Evidence:

Appendix B – CAA 114 Response 7-28-2023

Table 7. TCLP VOLATILE RESULTS AND 40 CFR § 261.24 "TABLE 1—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC" (mg/L).

TABLE 9. TCLP ELEMENTAL RESULTS AND 40 CFR § 261.24 "TABLE 1—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC**"**

Description of Observation:

Observation: 1

On May 21, 2020, the refinery had a flaring incident and the owners at the time, Lime Tree Bay, suspended operations. Operations remained shut down through Lime Tree Bay declaring bankruptcy in July 2021 and PHRT buying the refinery through a bankruptcy auction in January 2022. The refinery remained shut down at the time of the NEIC inspection. On July 28, 2023, PHRT reported that there were 2,400 barrels (100,800 gallons) of liquid hydrocarbon material remaining in #5 CDU **(Appendix B,** page 3). After discussion with the facility about where liquid remained in #5 CDU, NEIC collected sample S01-1 from tower T-3102 using a sample tap installed near pump P-3107B. This sample exceeded the toxicity characteristic limits for benzene (EPA hazardous waste No. D018) and chromium (EPA hazardous waste No. D007). The results from Tables 7 and 8 above are summarized below.

EPA Waste No.	Contaminant	Regulatory Level (mg/l)	S01-1 Result (mg/l)
D018	Benzene	0.5	1.07
D007	Chromium	5.0	6.47

When the refinery is in operation, tower T-3102 is a tank that meets the hazardous waste management exclusion for a manufacturing process unit under 40 CFR § 261.4(c) unless hazardous waste remains in the unit for more than 90 days after operations cease. Operations ceased on July 12, 2021, when Lime Tree bay filed for bankruptcy and no longer had the capacity to restart the operations. The hydrocarbon material is abandoned by being stored in lieu of disposal making the material a solid waste. The analytical results demonstrate that the material in the tower T-3102 has the hazardous waste toxicity characteristics for benzene (D018) and chromium (D007). Tower T-3102 started managing hazardous waste and was subject to the full requirements of 40 CFR Parts 262 and 265 on September 10, 2021, 90 days after Lime Tree Bay declared bankruptcy and the manufacturing process unit exemption expired. At the time of the inspection, PHRT was not managing tower T-3102 as hazardous waste tank and was not in compliance with the tank requirements applicable for large quantity generators of hazardous waste because the tank stored hazardous waste for greater than 90 days without complying with the appropriate requirements of 40 CFR Subparts J, BB, and CC, and the labeling and marking requirements of 40 CFR § 262.17(a)(5)(iii).

Observation: 2

Observation Summary: The former owner, Lime Tree Bay shut down refinery operation on May 21, 2020, and declared bankruptcy on July 12, 2021. PHRT acquired the facility in a bankruptcy auction in January 2022. The refinery remained shut down at the time of the NEIC inspection. On June 28, 2023, PHRT reported that there were 1,320 gallons of caustic soda (sodium hydroxide) still stored in the LPG1 unit from when the refinery was in operation. During the inspection, PHRT told the inspectors that the caustic soda storage was occuring in drum D-3206.

Observation: 2

With the Lime Tree Bay bankruptcy filing, the sodium hydroxide in drum D-3206 was abandoned by being accumulated and stored in lieu of disposal. In bankruptcy, Lime Tree Bay had no means to dispose of the material and PHRT has not restarted the refinery. Samples of the material stored in drum D-3206 analyzed by NEIC exhibit the hazardous waste toxicity characteristic regulatory limits for corrosivity. Manufacturing process units, such as drum D-3206, are required to meet the hazardous waste requirements for tanks for storing hazardous waste after operations have ceased for 90 days. 90 days after the Lime Tree Bay filing for bankruptcy, on September 10, 2021, drum D-3206 became a hazardous waste management unit. PHRT was not managing drum D-3206 as a hazardous waste tank at the time of the inspection.

Citation:

§261.2 Definition of solid waste.

(a)(1) A *solid waste* is any discarded material that is not excluded under §261.4(a) or that is not excluded by a variance granted under §§260.30 and 260.31 or that is not excluded by a nonwasted determination under §§260.30 and 260.34.

(2)(i) A *discarded material* is any material which is:

(A) Abandoned, as explained in paragraph (b) of this

(b) Materials are solid waste if they are *abandoned* by being:

(3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated; or

40 CFR § 261.4 Exclusions.

(c) Hazardous wastes which are exempted from certain regulations. A hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment-manufacturing unit, is not subject to regulation under parts 262 through 265, 268, 270, 271 and 124 of this chapter or to the notification requirements of section 3010 of RCRA until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials.

40 FR § 261.20 General.

(a) A solid waste, as defined in §261.2, which is not excluded from regulation as a hazardous waste under §261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this subpart.

Observation: 2

§ 261.22 Characteristic of corrosivity.

(a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using Method 9040C in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in § 260.11 of this chapter.

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55 °C (130 °F) as determined by Method 1110A in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, and as incorporated by reference in § 260.11 of this chapter.

(b) A solid waste that exhibits the characteristic of corrosivity has the EPA Hazardous Waste Number of D002.

40 CFR § 262.17 Conditions for exemption for a large quantity generator that accumulates hazardous waste.

A large quantity generator may accumulate hazardous waste on site without a permit or interim status, and without complying with the requirements of parts 124, 264 through 267, and 270 of this chapter, or the notification requirements of section 3010 of RCRA for treatment, storage, and disposal facilities, provided that all of the following conditions for exemption are met:

(b) Accumulation. A large quantity generator accumulates hazardous waste on site for no more than 90 days, unless in compliance with the accumulation time limit extension or F006 accumulation conditions for exemption in paragraphs (b) through (e) of this section. The following accumulation conditions also apply:

(2) Accumulation of hazardous waste in tanks. If the waste is placed in tanks, the large quantity generator must comply with the applicable requirements of subpart J (except §§ 265.197(c) and 265.200 of this subchapter) as well as the applicable requirements of 40 CFR part 265, subparts AA through CC.

(5) Labeling and marking of containers and tanks -

(ii) Tanks. A large quantity generator accumulating hazardous waste in tanks must do the following:

(C) Mark or label its tanks with the words "Hazardous Waste";

(D) Mark or label its tanks with an indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the

Observation: 2

Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704);

(C) Use inventory logs, monitoring equipment or other records to demonstrate that hazardous waste has been emptied within 90 days of first entering the tank if using a batch process, or in the case of a tank with a continuous flow process, demonstrate that estimated volumes of hazardous waste entering the tank daily exit the tank within 90 days of first entering; and

(D) Keep inventory logs or records with the above information on site and readily available for inspection.

Evidence:

Appendix B – CAA 114 Response 7-28-2023
Table 6 - LABORATORY OBSERVATIONS, FLASH POINT, WATER CONTENT, AND PH RESULTS
Appendix C - Field Photographs (Contains CBI)

Description of Observation 2:

On May 21, 2020, the refinery had a flaring incident and the owners at the time, Lime Tree Bay, suspended operations. Operations remained shut down through Lime Tree Bay declaring bankruptcy in July 2021, and PHRT buying the refinery through a bankruptcy auction in January 2022. The refinery remained shut down at the time of the NEIC inspection. On July 28, 2023, PHRT reported that there were 30 barrels (1,320 gallons) of liquid caustic soda (sodium hydroxide) remaining in the LPG1 unit (**Appendix B**, page 3). After discussion with the facility about where the caustic soda remained in LPG1, NEIC collected a triplicate sample S03-3A, B and C, from drum D-3206 from a sample tap on the unit. The samples analyzed by the NEIC laboratory determined the pH of all three samples was greater than 13, above the regulatory limit of 12.5 for the characteristic of corrosivity. The results are shown in **Table 6** above.

When the refinery is in operation, drum D-3206 is a tank (**Appendix C**, photo 17) that meets the hazardous waste management exclusion for a manufacturing process unit under 40 CFR § 261.4(c) unless hazardous waste remains in the unit for more than 90 days after operations cease. Operations ceased on July 12, 2021, when Lime Tree bay filed for bankruptcy and no longer had the capacity to restart the operations. The liquid caustic soda is abandoned by being stored in lieu of disposal making the caustic soda a solid waste. The analytical results demonstrate that the material drum D-3206 has the hazardous waste toxicity characteristics for corrosivity (D002). Drum D-3206 started managing hazardous waste and was subject to the full requirements of 40 CFR Parts 262 and 265 on September 10, 2021, 90 days after Lime Tree Bay declared bankruptcy and the manufacturing process unit exemption expired. At the time of the inspection, PHRT was not managing drum D-3206

Observation: 2

as hazardous waste tank and was not in compliance with the tank requirements applicable for large quantity generators of hazardous waste because the tank stored hazardous waste for greater than 90 days without complying with the appropriate requirements of 40 CFR Subparts J, BB, and CC, and the labeling and marking requirements of 40 CFR § 262.17(a)(5)(iii).

Observation: 3

Observation Summary: The former owner, Lime Tree Bay shut down refinery operation on May 21, 2020, and declared bankruptcy on July 12, 2021. PHRT acquired the facility in a bankruptcy auction in January 2022. The refinery remained shut down at the time of the NEIC inspection. On June 28, 2023, PHRT reported that there were 42,000 gallons of hydrocarbon material still stored in #6 CDU from when the refinery was in operation. During the inspection, PHRT told the inspectors that the hydrocarbon material storage was occuring in tower T-4109.

With the Lime Tree Bay bankruptcy filing, the hydrocarbon material in tower T-4109 was abandoned by being accumulated and stored in lieu of disposal. In bankruptcy, Lime Tree Bay had no means to dispose of the material and PHRT has not restarted the refinery. PHRT stored ignitable material in #6 CDU a manufacturing process unit, for more than 90 days after the process was shut down.

Samples of the material stored in tower T-4109 were collected by NEIC but not shipped because bulging sample lids made the samples unsafe to transport. PHRT identified the material that was sampled as light naptha and provided a safety data sheet (SDS) that provided a flash point of -18 °C (0 degrees Fahrenheit [°F]). This is lower than the regulatory limit of 60 °C that defines the hazardous waste characteristic of ignitibility. Manufacturing process units are required to meet the hazardous waste requirements for tanks storing hazardous waste after operations have ceased for 90 days. 90 days after the Lime Tree Bay filing for bankruptcy, on September 10, 2021, tower T-4109 became a hazardous waste management unit. PHRT was not managing tower T-4109 as a hazardous waste tank at the time of the inspection.

Citation:

§261.2 Definition of solid waste.

(a)(1) A *solid waste* is any discarded material that is not excluded under §261.4(a) or that is not excluded by a variance granted under §§260.30 and 260.31 or that is not excluded by a nonwasted determination under §§260.30 and 260.34.

(2)(i) A *discarded material* is any material which is:

(A) Abandoned, as explained in paragraph (b) of this

Observation: 3

(b) Materials are solid waste if they are *abandoned* by being:

(3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated; or

40 CFR § 261.4 Exclusions.

(c) Hazardous wastes which are exempted from certain regulations. A hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment-manufacturing unit, is not subject to regulation under parts 262 through 265, 268, 270, 271 and 124 of this chapter or to the notification requirements of section 3010 of RCRA until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials.

40 FR § 261.20 General.

(a) A solid waste, as defined in §261.2, which is not excluded from regulation as a hazardous waste under §261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this subpart.

40 CFR § 261.21 Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than a solution containing less than 24 percent alcohol by volume and at least 50 percent water by weight, that has a flash point less than 60 °C (140 °F), as determined by using one of the following ASTM standards: ASTM D93-79, D93-80, D3278-78, D8174-18, or D8175-18 as specified in SW-846 Test Methods 1010B or 1020C (all incorporated by reference, see § 260.11 of this subchapter).

(b) A solid waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

40 CFR § 262.17 Conditions for exemption for a large quantity generator that accumulates hazardous waste.

A large quantity generator may accumulate hazardous waste on site without a permit or interim status, and without complying with the requirements of parts 124, 264 through 267, and 270 of this chapter, or the notification requirements of section 3010 of RCRA for

Observation: 3

treatment, storage, and disposal facilities, provided that all of the following conditions for exemption are met:

(c) Accumulation. A large quantity generator accumulates hazardous waste on site for no more than 90 days, unless in compliance with the accumulation time limit extension or F006 accumulation conditions for exemption in paragraphs (b) through (e) of this section. The following accumulation conditions also apply:

(2) Accumulation of hazardous waste in tanks. If the waste is placed in tanks, the large quantity generator must comply with the applicable requirements of subpart J (except §§ 265.197(c) and 265.200 of this subchapter) as well as the applicable requirements of 40 CFR part 265, subparts AA through CC.

(5) Labeling and marking of containers and tanks -

(ii) Tanks. A large quantity generator accumulating hazardous waste in tanks must do the following:

(A) Mark or label its tanks with the words "Hazardous Waste";

(B) Mark or label its tanks with an indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704);

(C) Use inventory logs, monitoring equipment or other records to demonstrate that hazardous waste has been emptied within 90 days of first entering the tank if using a batch process, or in the case of a tank with a continuous flow process, demonstrate that estimated volumes of hazardous waste entering the tank daily exit the tank within 90 days of first entering; and

(D) Keep inventory logs or records with the above information on site and readily available for inspection.

Evidence:
Appendix B – CAA 114 Response 7-28-2023
Appendix C - Field Photographs (Contains CBI)
Appendix F – Light Naphtha SDS

Description of Observation 3:

On May 21, 2020, the refinery had a flaring incident and the owners at the time, Lime Tree Bay, suspended operations. Operations remained shut down through Lime Tree Bay declaring bankruptcy in July 2021, PHRT buying the refinery through a bankruptcy auction in January 2022, and remained shut down at the time of the NEIC inspection. On July 28, 2023, PHRT

Observation: 3

reported that there were 1,000 barrels (42,000 gallons) of liquid hydrocarbon material remaining in #6 CDU **(Appendix B**).

After discussion with the facility regarding where the hydrocarbon material was located, samples S02-1 and S02-2 were collected by NEIC from tower T-4109 in #6 CDU. Approximately an hour and 45 minutes after the samples were collected, the lids on the sample jars were observed to be bulging and the samples were put on ice. Photos of samples S02-1 and S02-2 (**Appendix C,** photos 25 and 26) were taken after the samples had been stored on ice for approximately 3 hours. In photo 26, the lids on samples S02-1 and S02-2 are still bulging after cooling. The PM returned the samples to PHRT after determining the sample jars were likely to leak and cause a hazard during shipping.

PHRT representatives stated that while the refinery was in operation, #6 CDU was processing the hydrocarbon light ends from #5 CDU. The #2 oil (diesel) was used to flush the lines and might not have been fully effective in flushing material from units that were physically higher than the flushing level. Under normal operation, #6 CDU contained naphtha material for which an SDS was provided (**Appendix F**). The SDS provided by PHRT, documents the flashpoint of the light naptha at -18 °C. Liquid hazardous wastes with a flash point of less than 60 °C have the characteristic of ignitability and a waste code of D001. This is consistent with a material that would have a vapor pressure to cause bulging lids on the sample containers.

When the refinery is in operation, tower T-4109 is a tank that meets the hazardous waste management exclusion for a manufacturing process unit under 40 CFR § 261.4(c) unless hazardous waste remains in the unit for more than 90 days after operations cease. Operations ceased on July 12, 2021, when Lime Tree bay filed for bankruptcy and no longer had the capacity to restart the operations. The hydrocarbon material (light naphtha) is abandoned by being stored in lieu of disposal making it a solid waste. The light naptha SDS (**Appendix F**) indicates that the contents of Tower T-4109 were hazardous waste for the characteristic of ignitability and subject to the full requirements of 40 CFR Parts 262 and 265. PHRT started managing hazardous waste and was subject to the full requirements of 40 CFR Parts 262 and 265 on September 10, 2021, 90 days after Lime Tree Bay declared bankruptcy and the manufacturing process unit exemption expired. At the time of the inspection, PHRT was not managing tower T-4109 as hazardous waste tank and was not in compliance with the tank requirements applicable for large quantity generators of hazardous waste because the tank stored hazardous waste for greater than 90 days without complying with the appropriate requirements of 40 CFR Subparts J, BB, and CC and the labeling and marking requirements of 40 CFR § 262.17(a)(5)(iii).

Observation: 4

Observation Summary:

The former owner, Lime Tree Bay shut down refinery operation on May 21, 2020, and declared bankruptcy on July 12, 2021. PHRT acquired the facility in a bankruptcy auction in January 2022. The refinery remained shut down at the time of the NEIC inspection. On June 28, 2023, PHRT reported that there were 16,800 gallons of hydrocarbon material still stored

Observation: 4

in #4 Platformer from when the refinery was in operation. During the inspection, PHRT told the inspectors that the hydrocarbon material storage was occuring in drum D-5402.

With the Lime Tree Bay bankruptcy filing, the hydrocarbon material in drum D-5402 was abandoned by being accumulated and stored in lieu of disposal. In bankruptcy, Lime Tree Bay had no means to dispose of the material and PHRT has not restarted the refinery. Samples of the material stored in drum D-5402 were collected by NEIC, but not shipped because bulging sample lids made the samples unsafe to transport. PHRT identified the material as platformate and provided an SDS that listed the flash point of the material as less than 21 °C (<70 °F). This is lower than the regulatory limit of 60 °C that defines the hazardous waste characteristic of ignitability. Manufacturing process units are required to meet the hazardous waste requirements for tanks storing hazardous waste after operations have ceased for 90 days. 90 days after the Lime Tree Bay filing for bankruptcy, on September 10, 2021, drum D-5402 became a hazardous waste management unit. PHRT was not managing drum D-5402 as a hazardous waste tank at the time of the inspection.

Citation:

§261.2 Definition of solid waste.

(a)(1) A *solid waste* is any discarded material that is not excluded under §261.4(a) or that is not excluded by a variance granted under §§260.30 and 260.31 or that is not excluded by a nonwasted determination under §§260.30 and 260.34.

(2)(i) A *discarded material* is any material which is:

(A) Abandoned, as explained in paragraph (b) of this

(b) Materials are solid waste if they are *abandoned* by being:

(3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated; or

40 CFR § 261.4 Exclusions.

(c) Hazardous wastes which are exempted from certain regulations. A hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment-manufacturing unit, is not subject to regulation under parts 262 through 265, 268, 270, 271 and 124 of this chapter or to the notification requirements of section 3010 of RCRA until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials.

Observation: 4

40 CFR § 261.20 General.

(a)A solid waste, as defined in §261.2, which is not excluded from regulation as a hazardous waste under §261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this subpart.

40 CFR § 261.21 Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than a solution containing less than 24 percent alcohol by volume and at least 50 percent water by weight, that has a flash point less than 60 °C (140 °F), as determined by using one of the following ASTM standards: ASTM D93-79, D93-80, D3278-78, D8174-18, or D8175-18 as specified in SW-846 Test Methods 1010B or 1020C (all incorporated by reference, see § 260.11 of this subchapter).

(b) A solid waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

40 CFR § 262.17 Conditions for exemption for a large quantity generator that accumulates hazardous waste.

A large quantity generator may accumulate hazardous waste on site without a permit or interim status, and without complying with the requirements of parts 124, 264 through 267, and 270 of this chapter, or the notification requirements of section 3010 of RCRA, provided that all of the following conditions for exemption are met:

(A) Accumulation. A large quantity generator accumulates hazardous waste on site for no more than 90 days, unless in compliance with the accumulation time limit extension or F006 accumulation conditions for exemption in paragraphs (b) through (e) of this section. The following accumulation conditions also apply:

(2) Accumulation of hazardous waste in tanks. If the waste is placed in tanks, the large quantity generator must comply with the applicable requirements of subpart J (except §§ 265.197(c) and 265.200 of this subchapter) as well as the applicable requirements of 40 CFR part 265, subparts AA through CC.

(5) Labeling and marking of containers and tanks –

(ii) Tanks. A large quantity generator accumulating hazardous waste in tanks must do the following: 262.17(a)(5)(ii)

(A) Mark or label its tanks with the words “Hazardous Waste”;

Observation: 4

(B) Mark or label its tanks with an indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704);

(C) Use inventory logs, monitoring equipment or other records to demonstrate that hazardous waste has been emptied within 90 days of first entering the tank if using a batch process, or in the case of a tank with a continuous flow process, demonstrate that estimated volumes of hazardous waste entering the tank daily exit the tank within 90 days of first entering; and

(D) Keep inventory logs or records with the above information on site and readily available for inspection.

Evidence:
Appendix B – CAA 114 Response 7-28-2023
Appendix C – Field Photographs (Contains CBI)
Appendix G – Platformate SDS

Description of Observation 4:

The former owner, Lime Tree Bay shut down refinery operation on May 21, 2020, and declared bankruptcy on July 12, 2021. PHRT acquired the facility in a bankruptcy auction in January 2022. The refinery remained shut down at the time of the NEIC inspection. On July 28, 2023, PHRT reported that there were 400 barrels (16,800 gallons) of hydrocarbon material in the #4 Platformer **(Appendix B**, page 3). After discussion with the facility regarding where the hydrocarbon material was located in #4 Platformer, triplicate samples S05-1A, B, C and S05-2A, B, C were collected from drum D-5402. Approximately 15 minutes after the samples were collected, the lids on the sample jars were observed with bulging lids and the samples were put on ice. Photos of samples S05-1A, B, C and S05-2A, B, C (**Appendix C**, photos 25 and 26) were taken after the samples had been stored on ice for approximately 3 hours. In photo 26, the lids on the samples have a slight bulge after cooling. The PM returned the samples to PHRT after determining the samples were likely to leak and cause a hazard during shipping.

PHRT representatives stated that the material in #4 Platformer during operations was a platformate and provided an SDS (**Appendix G**). The No. 2 oil (diesel) that was used to flush the lines and units might not have been fully effective in flushing material from units that were physically higher than the flushing level. The SDS documents the flashpoint of the platformate at less than 21 °C. Liquid hazardous wastes with a flash point of less than 60 °C have the characteristic of ignitability and a waste code of D001.

Observation: 4

When the refinery is in operation, drum D-5402 is a tank that meets the hazardous waste management exclusion for a manufacturing process unit under 40 CFR § 261.4(c) unless hazardous waste remains in the unit for more than 90 days after operations cease. Operations ceased on July 12, 2021, when Lime Tree bay filed for bankruptcy and no longer had the capacity to restart the operations. The hydrocarbon material (platformate) is abandoned by being stored in lieu of disposal making it a solid waste. The platformate SDS indicates that the material in drum D-5402 has the hazardous waste toxicity characteristics for ignitability (D001). Drum D-5402 started managing hazardous waste and was subject to the full requirements of 40 CFR Parts 262 and 265 on August 14, 2021, on September 10, 2021, 90 days after Lime Tree Bay declared bankruptcy and the manufacturing process unit exemption expired. PHRT was not managing drum D-5402 as hazardous waste tank and was not in compliance with the tank requirements applicable for large quantity generators of hazardous waste because the tank stored hazardous waste for greater than 90 days without complying with the appropriate requirements of 40 CFR Subparts J, BB, and CC, and the labeling and marking requirements of 40 CFR § 262.17(a)(5)(iii).

Observation: 5

Observation Summary 5: The former owner, Lime Tree Bay shut down refinery operation on May 21, 2020, and declared bankruptcy on July 12, 2021. PHRT acquired the facility in a bankruptcy auction in January 2022. The refinery remained shut down at the time of the inspection. On June 28, 2023, PHRT reported that there were 3,780 gallons of hydrocarbon material still stored in the Lean Oil Absorber - Disulfide Oil Recovery unit from when the refinery was in operation. During the inspection, PHRT told the inspectors that the hydrocarbon material storage was occuring in tower T-4184.

With the Lime Tree Bay bankruptcy filing, the hydrocarbon material in drum D-4814 were abandoned by being accumulated and stored in lieu of disposal. In bankruptcy, Lime Tree Bay had no means to dispose of the material and PHRT has not restarted the refinery. PHRT identified the material normally processed in the unit as disulfide oil and provided an SDS for the material indicating it has a flash point of 15 °C (59 °F). This is below the hazardous waste characteristic of ignitibility regulatory limit of 60 °C. Manufacturing process units, such as drum D-4184, are required to meet the hazardous waste requirements for tanks for storing hazardous waste after operations have ceased for 90 days. 90 days after the Lime Tree Bay filing for bankruptcy, on September 10, 2021, drum D-4184 became a hazardous waste management unit. PHRT was not managing drum D-4184 as a hazardous waste tank at the time of the inspection.

Citation:

§261.2 Definition of solid waste.

(a)(1) A *solid waste* is any discarded material that is not excluded under §261.4(a) or that is not excluded by a variance granted under §§260.30 and 260.31 or that is not excluded by a nonwasted determination under §§260.30 and 260.34.

Observation: 5

(2)(i) A *discarded material* is any material which is:

(A) Abandoned, as explained in paragraph (b) of this

(b) Materials are solid waste if they are *abandoned* by being:

(3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated.

40 CFR § 261.4 Exclusions.

(c) Hazardous wastes which are exempted from certain regulations. A hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment-manufacturing unit, is not subject to regulation under parts 262 through 265, 268, 270, 271 and 124 of this chapter or to the notification requirements of section 3010 of RCRA until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials.

40 CFR § 261.20 General.

(E) A solid waste, as defined in §261.2, which is not excluded from regulation as a hazardous waste under §261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this subpart.

40 CFR § 261.21 Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than a solution containing less than 24 percent alcohol by volume and at least 50 percent water by weight, that has a flash point less than 60 °C (140 °F), as determined by using one of the following ASTM standards: ASTM D93-79, D93-80, D3278-78, D8174-18, or D8175-18 as specified in SW-846 Test Methods 1010B or 1020C (all incorporated by reference, see § 260.11 of this subchapter).

(b) A solid waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

40 CFR § 262.17 Conditions for exemption for a large quantity generator that accumulates hazardous waste.

Observation: 5

A large quantity generator may accumulate hazardous waste on site without a permit or interim status, and without complying with the requirements of parts 124, 264 through 267, and 270 of this chapter, or the notification requirements of section 3010 of RCRA, provided that all of the following conditions for exemption are met:

(F) Accumulation. A large quantity generator accumulates hazardous waste on site for no more than 90 days, unless in compliance with the accumulation time limit extension or F006 accumulation conditions for exemption in paragraphs (b) through (e) of this section. The following accumulation conditions also apply:

(ii) Tanks. A large quantity generator accumulating hazardous waste in tanks must do the following: 262.17(a)(5)(ii)

(A) Mark or label its tanks with the words “Hazardous Waste”;

(B) Mark or label its tanks with an indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704);

(C) Use inventory logs, monitoring equipment or other records to demonstrate that hazardous waste has been emptied within 90 days of first entering the tank if using a batch process, or in the case of a tank with a continuous flow process, demonstrate that estimated volumes of hazardous waste entering the tank daily exit the tank within90 days of first entering; and

(D) Keep inventory logs or records with the above information on site and readily available for inspection.

Evidence:
Appendix B – CAA 114 Response 7-28-2023
Appendix H – Disulfide Oil SDS

Description of Observation 5:

The former owner, Lime Tree Bay shut down refinery operation May 21, 2020 and declared bankruptcy on July 12, 2021. PHRT acquired the facility in a bankruptcy auction in January 2022. The refinery remained shut down at the time of the NEIC inspection. On July 28, 2023, PHRT reported that there were 90 barrels (3,780 gallons) of liquid hydrocarbon material in the Lean Oil Absorber - Disulfide Oil Recovery unit (**Appendix B**, page 3). After discussion with

Observation: 5

the facility where the hydrocarbon material was located, it was determined that samples could not be collected in this unit without Level B respiratory protection due to the potential for hydrogen sulfide exposure. NEIC was not able to ship Level B equipment so samples could not be taken in this unit.

PHRT reported the material as disulfide oil (**Appendix B**, page 3) and provide an SDS for the material (**Appendix H**). The SDS documents the flashpoint of the disulfide oil as 15 °C. Liquid hazardous wastes with a flash point of less than 60 °C have the characteristic of ignitability and a waste code of D001. PHRT stated that the material is in drum D-4813 as determined visually with a sight glass.

When the refinery is in operation, drum D-4184 is a tank that meets the hazardous waste management exclusion for a manufacturing process unit under 40 CFR § 261.4(c) unless hazardous waste remains in the unit for more than 90 days after operations cease. Operations ceased on July 12, 2021, when Lime Tree bay filed for bankruptcy and no longer had the capacity to restart the operations. The disulfide oil is abandoned by being stored in lieu of disposal making it a solid waste. Drum D-4184 started managing hazardous waste and was subject to the full requirements of 40 CFR Parts 262 and 265 on September 10, 2021, 90 days after Lime Tree Bay declared bankruptcy and the manufacturing process unit exemption expired. The disulfide SDS provided by PHRT has a flash point that meets the criteria for the characteristic for ignitability (D001). At the time of the NEIC inspection, PHRT was not managing drum D-4814 as hazardous waste tank and was not in compliance with the tank requirements applicable for large quantity generators of hazardous waste because the tank stored hazardous waste for greater than 90 days without complying with the appropriate requirements of 40 CFR Subparts J, BB, and CC, and the labeling and marking requirements of 40 CFR § 262.17(a)(5)(iii).

Observation: 6

Observation Summary: The former owner, Lime Tree Bay shut down refinery operation on May 21, 2020, and declared bankruptcy on July 12, 2021. PHRT acquired the facility in a bankruptcy auction in January 2022. The refinery remained shut down at the time of the inspection. On July 28, 2023, PHRT reported that there were 16,800 gallons of liquid hydrocarbon material in the LPG1 unit and 8,400 gallons in the LPG2 unit.

With the Lime Tree Bay bankruptcy filing, the hydrocarbon materials in LPG1 and LPG2 were abandoned by being accumulated and stored in lieu of disposal. In bankruptcy, Lime Tree Bay had no means to dispose of the material and PHRT has not restarted the refinery. PHRT provided analytical data for the material in LPG1 and LPG2. The highest flashpoint of the chemicals detected was -49 °C for n-pentane. This is below the hazardous waste characteristic of ignitibility regulatory limit of 60 °C. The material in LPG1 and LPG2 units have a flash point below the regulatory limits for hazardous waste. Manufacturing process units are required to meet the hazardous waste requirements for tanks for storing hazardous waste after operation have ceased for 90 days. 90 days after the Lime Tree Bay filing for bankruptcy, on September 10, 2021, the units in LPG1 and LPG2 became hazardous waste

Observation: 6

management units. PHRT was not managing the units as hazardous waste tanks at the time of the inspection.

Citation:

§261.2 Definition of solid waste.

(a)(1) A *solid waste* is any discarded material that is not excluded under §261.4(a) or that is not excluded by a variance granted under §§260.30 and 260.31 or that is not excluded by a nonwasted determination under §§260.30 and 260.34.

(2)(i) A *discarded material* is any material which is:

(A) Abandoned, as explained in paragraph (b) of this

(b) Materials are solid waste if they are *abandoned* by being:

(3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated; or

40 CFR § 261.4 Exclusions.

(c) Hazardous wastes which are exempted from certain regulations. A hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment-manufacturing unit, is not subject to regulation under parts 262 through 265, 268, 270, 271 and 124 of this chapter or to the notification requirements of section 3010 of RCRA until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials.

40 CFR § 261.20 General.

(c) A solid waste, as defined in §261.2, which is not excluded from regulation as a hazardous waste under §261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this subpart.

40 CFR § 261.21 Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than a solution containing less than 24 percent alcohol by volume and at least 50 percent water by weight, that has a flash point less than 60 °C (140 °F), as determined by using one of the following ASTM standards: ASTM D93-79, D93-80, D3278-78, D8174-18, or D8175-18 as specified in SW-846 Test

Observation: 6

Methods 1010B or 1020C (all incorporated by reference, see § 260.11 of this subchapter).

(b) A solid waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

40 CFR § 262.17 Conditions for exemption for a large quantity generator that accumulates hazardous waste.

A large quantity generator may accumulate hazardous waste on site without a permit or interim status, and without complying with the requirements of parts 124, 264 through 267, and 270 of this chapter, or the notification requirements of section 3010 of RCRA, provided that all of the following conditions for exemption are met:

(2) Accumulation. A large quantity generator accumulates hazardous waste on site for no more than 90 days, unless in compliance with the accumulation time limit extension or F006 accumulation conditions for exemption in paragraphs (b) through (e) of this section. The following accumulation conditions also apply:

(5) Labeling and marking of containers and tanks -

(ii) Tanks. A large quantity generator accumulating hazardous waste in tanks must do the following: 262.17(a)(5)(ii)

(A)Mark or label its tanks with the words “Hazardous Waste”;

(B) Mark or label its tanks with an indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704);

(C) Use inventory logs, monitoring equipment or other records to demonstrate that hazardous waste has been emptied within 90 days of first entering the tank if using a batch process, or in the case of a tank with a continuous flow process, demonstrate that estimated volumes of hazardous waste entering the tank daily exit the tank within 90 days of first entering; and

Observation: 6

(D) Keep inventory logs or records with the above information on site and readily available for inspection.

Evidence:
Appendix B – CAA 114 Response 7-28-2023

Appendix I - LPG Sample Analysis

Description of Observation 6:

On May 21, 2020, the refinery had a flaring incident and the owners at the time, Lime Tree Bay, suspended operations. Operations remained shut down through Lime Tree Bay declaring bankruptcy in July 2021, PHRT buying the refinery through a bankruptcy auction in January 2022, and remained shut down at the time of the NEIC inspection. On July 28, 2023, PHRT reported that there were 400 barrels (16,800 gallons) of liquid hydrocarbon material in the LPG1 unit and 200 barrels (8,400 gallons) in the LPG2 unit (**Appendix B**, page 3). After discussion with, it was determined that samples could not be collected because LPG1 and LPG2 were under a pressure of 55-60 pounds per square inch (PSI) at the ambient temperature. Pressurized sampling canisters were needed and not available. In addition, shipping flammable pressure canisters by air is not allowed.

PHRT provided analytical data for the material in the units for samples collected on February 16, 2024 (**Appendix I**). The table below summarizes the sampling results and the flash point for each component in the sample.

Chemical	Flash Point (°C)[1]	LPG1 Caustic Scrubber Sample 1 (% vol)	LPG2 Caustic Scrubber Sample 1 (% vol)	LPG2 Wash Water Drum
Ethane	-135	1.07	0.03	0.18
Propane	-104	13.36	4.24	6.18
Isobutane	-83	N.D.	6.67	4.89
N-Butane	-60	7.82	34.01	23.52
Isobutylene	-76	0.13	0.03	0.11
Cis-2-Butene	-12	0.34	0.33	1.19
Isopentane	-57	21.38	30.74	26.15
N-Pentane	-49	18.14	22.67	22.94
C6&Heavier	Unknown	N.D.	0.70	14.77

[1] From CAMEO Chemicals (https://cameochemicals.noaa.gov) except for cis-2-butene which was from https://pubchem.ncbi.nlm.nih.gov/.

For the LPG1 and LPG2 caustic scrubbers, highest flashpoint for an analyte detected at above 1% is n-pentane with a flash point of -49 °C. This is below the characteristic of ignitability flashpoint of 60 °C. For the LPG2 Wash Water Drum, 85% of the components have a flashpoint of -49 °C or lower and the flash point would be less than 60 °C.

Observation: 6

When the refinery is in operation, the equipment in the LPG1 and LPG2 units are tanks that meet the hazardous waste management exclusion for a manufacturing process unit under 40 CFR § 261.4(c) unless hazardous waste remains in the unit for more than 90 days after operations cease. Operations ceased on July 12, 2021, when Lime Tree bay filed for bankruptcy and no longer had the capacity to restart the operations. The hydrocarbon materials are abandoned by being stored in lieu of disposal making the materials solid wastes. The PHRT analysis of the material in the LPG1 and LPG2 units indicated that the material has the hazardous characteristic for ignitability (D001). LPG1 and LPG2 started managing hazardous waste and were subject to the full requirements of 40 CFR Parts 262 and 265, September 10, 2021, 90 days after Lime Tree Bay declared bankruptcy and the manufacturing process unit exemption expired. According to the process flow diagram provide by PHRT (**Appendix B**, page 10), there are 7 units in LPG1 that are currently in liquid service: drum D-4828, tower T-3202, Coalescer S-3357, drum D-3202, tower T-3206, drum D-3206, drum D-3204, and tower T3207. The process flow diagram for LPG2 **(Appendix B,** page 36) identifies 11 units in liquid service: drum D-4828, drum D-4829, tower T-4824, coalescer S-4824, drum D-4823, drum D-4824, tower T-4821, drum D-4822, towers T-4822 (2 towers with this identification), and drum D-4825.

PHRT was not managing the units in LPG1 and LPG2 as hazardous waste tanks in compliance with the tank requirements applicable to large quantity generators. At the time of the inspection, PHRT stored hazardous waste for greater than 90 days without complying with the appropriate requirements of 40 CFR Subpart J, BB, and CC and the labeling and marking requirements of 40 CFR § 262.17(a)(5)(iii). PHRT has stated that the company was pursuing selling this material but had not found a buyer at the time of the inspection.

Observation: 7

Observation Summary: PHRT may have stored chemicals in lieu of disposal. NEIC observed several containers of chemicals present in the chemical storage area that were degraded, not maintained as a valuable product, and would meet the definition of hazardous waste when disposed.

Citation:

40 CFR § 261.2 Definition of solid waste.

(a)

(1) A solid waste is any discarded material that is not excluded under § 261.4(a) or that is not excluded by a variance granted under §§ 260.30 and 260.31 or that is not excluded by a non-waste determination under §§ 260.30 and 260.34.

(2)

(i) A discarded material is any material which is:

(A) Abandoned, as explained in paragraph (b) of this section;

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(b) Materials are solid waste if they are abandoned by being:

(3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned or incinerated;

Evidence:
Appendix C – Field Photographs (Contains CBI)
Appendix J –Hydrochloric Acid 20BE SDS
Appendix K – Saureisen 89 High Temperature Membrane SDS
Appendix L – TOLAD 500 Additive SDS
Appendix M – EC9254A Antifoam SDS
Appendix N – BPW 76050 SDS

Interviews with facility personnel

Description of Observation 7:

PHRT operates a chemical storage area which consists of a large outdoor concrete pad located within the west refinery. Use of the area is shared between PHRT and OPT.

At the time of the inspection, chemicals stored here included leftover raw materials used during the Limetree Bay restart in 2020. PHRT representatives stated that some of the materials present in the storage area could date back as far as operations under HOVENSA prior to the shut down in 2012.

On April 8 and 9, 2024, NEIC inspectors conducted a walk-through of this area and documented several containers of chemicals that were in poor condition, leaking, unstable, and/or open. Many of these containers were holding chemicals which exhibit a characteristic of hazardous waste. NEIC inspectors observed the following chemicals that were not stored in good condition or in a manner that maintains these chemicals as valuable products:

- Hydrochloric acid: 57 drums observed stored on pallets. Several of these drums were bulging (**Appendix C**, photos 58 and 61). Inspectors observed white and yellow crystalline chemical residues on the ground near the containers of hydrochloric acid (**Appendix C**, photo 60). One drum was missing a cap, and inspectors observed visible fumes emanating from the open bung into to the atmosphere (**Appendix C**, photo 59). Many of the wooden pallets the drums were stored on were damaged, causing the drums to tilt at a potentially unstable angle (**Appendix C**, photo 58). Additionally, these drums of acid were stored adjacent to drums of ammonium hydroxide, a strong base, which presents a chemical incompatibility risk (**Appendix C**, photo 62). The SDS for hydrochloric acid provided by PHRT lists the pH as less than 2, which indicates that the contents of these drums would exhibit the hazardous waste characteristic of corrosivity, EPA hazardous waste number D002 (**Appendix J**).
- Saureisen High Temperature 89: seven drums observed stored on pallets. Some drums were damaged, bulging, and/or seeping from under the lid (**Appendix C**, photo 53). The SDS for this chemical lists the flashpoint as 105 °F which indicates that the

Observation: 7

contents of these drums would exhibit the hazardous waste characteristic of ignitibility, EPA hazardous waste number D001 (**Appendix K**).

- TOLAD 500 additive: one tote was observed with a broken corner (**Appendix C**, photos 54 and 55). Two additional leaking totes were observed within a flexible plastic temporary secondary containment system (**Appendix C**, photos 56 and 57). Rainfall occurring between April 8 and 9, 2024, exacerbated the leak as seen in **Appendix C**, photo 70. The SDS for this chemical lists the flashpoint as 118 °F which indicates that the contents of these totes would exhibit the hazardous waste characteristic of ignitibility, EPA hazardous waste number D001 (**Appendix L**).
- Nalco EC9254A Antifoam: of the 18 totes present, four were damaged and open to the atmosphere (**Appendix C**, photos 65 and 66). The SDS for this chemical lists the flashpoint as 45 °C which indicates that the contents of these totes would exhibit the hazardous waste characteristic of ignitibility, EPA hazardous waste number D001 (**Appendix M**).
- BPW 76050 inorganic coagulant: one tote containing this material appeared to be leaking contents onto the ground from a puncture in the bladder, and the metal cage showed signs of corrosion (**Appendix C**, photo 67). The SDS for this chemical lists the pH as 1, which indicates that the contents of this tote would exhibit the hazardous waste characteristic of corrosivity, EPA hazardous waste number D002 (**Appendix N**).

On April 9, 2024, the second day that NEIC inspectors observed this area, a large amount of standing water had collected within the southwestern corner of the containment pad (**Appendix C**, photos 71 and 73). Significant rainfall had occurred the night prior, and several containers were partially submerged in the water. The pallets underneath the hydrochloric acid drums were fully submerged under the water. Residues on the ground the day prior were no longer present, and NEIC inspectors observed an oily sheen on the surface of the standing water (**Appendix C**, photos 72 and 74).

According to PHRT representatives, the pad is designed for storm water to collect in the southwestern corner. A valved pipe is built into the side of the containment wall which allows water to drain outside of the containment pad when the valve is opened. Whenever the containment area collects stormwater, an operator will evaluate if the accumulated water is clean before opening the valve and allowing the water to drain out onto the ground. If the water appears to have a sheen, the operator will use a vacuum truck to collect the water and discharge it at the API for treatment through the AWWTU. NEIC inspectors observed an operator arrive with a vacuum truck to pump out the standing water later that day on April 9, 2024.

The practice of storing chemical containers in a manner that allows them to degrade and leak suggests that the material may meet the definition of solid waste by being abandoned, and that PHRT was storing waste in lieu of disposal. The storage of chemicals within a flooded section of the containment pad further illustrates a lack of proper maintenance of these chemicals. Abandoned chemicals in degraded containers have the potential to leak and cause harm to workers and the environment. PHRT must demonstrate that there is an expectation

Observation: 7

for use of these chemicals and to further maintain the containers in good condition to avoid the potential for releases.

On June 24, 2024, PHRT emailed an update on the chemical storage area (**Appendix O**) with photographs. The photographs are attached to **Appendix O**.

Observation: 8

Observation Summary: PHRT operates a lamp crushing system to treat mercury-containing fluorescent light lamps. Treatment of universal waste lamps is prohibited. The treated lamps are stored in satellite accumulation containers that are not near the point of generation. The treated lamps may have been stored on site for greater than 90 days.

Citation:

40 CFR *§ 260.10 Definitions.*

> *Treatment means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.*

40 CFR *§ 262.15 Satellite accumulation area regulations for small and large quantity generators.*

> *(a) A generator may accumulate as much as 55 gallons of non-acute hazardous waste and/or either one quart of liquid acute hazardous waste listed in § 261.31 or § 261.33(e) of this chapter or 1 kg (2.2 lbs) of solid acute hazardous waste listed in § 261.31 or § 261.33(e) of this chapter in containers at or near any point of generation where wastes initially accumulate which is under the control of the operator of the process generating the waste, without a permit or interim status and without complying with the requirements of parts 124, 264 through 267, and 270 of this chapter, provided that all of the conditions for exemption in this section are met. A generator may comply with the conditions for exemption in this section instead of complying with the conditions for exemption in § 262.16(b) or § 262.17(a), except as required in § 262.15(a)(7) and (8). The conditions for exemption for satellite accumulation are:*
>
> > *(5) A generator must mark or label its container with the following:*
> >
> > > *(i) The words "Hazardous Waste" and*
> > >
> > > *(ii) An indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent*

Observation: 8

with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704).

40 CFR *§ 262.17 Conditions for exemption for a large quantity generator that accumulates hazardous waste.*

A large quantity generator may accumulate hazardous waste on site without a permit or interim status, and without complying with the requirements of parts 124, 264 through 267, and 270 of this chapter, or the notification requirements of section 3010 of RCRA for treatment, storage, and disposal facilities, provided that all of the following conditions for exemption are met:

(a) Accumulation. A large quantity generator accumulates hazardous waste on site for no more than 90 days, unless in compliance with the accumulation time limit extension or F006 accumulation conditions for exemption in paragraphs (b) through (e) of this section.

40 CFR *§ 273.1 Scope.*

(b) This part provides an alternative set of management standards in lieu of regulation under 40 CFR parts 260 through 272.

40 CFR *§ 273.5 Applicability—lamps.*

(c) Generation of waste lamps.

(1) A used lamp becomes a waste on the date it is discarded.

(2) An unused lamp becomes a waste on the date the handler decides to discard it.

40 CFR *§ 273.11 Prohibitions.*

A small quantity handler of universal waste is:

(b) Prohibited from diluting or treating universal waste, except by responding to releases as provided in 40 CFR 273.17; or by managing specific wastes as provided in 40 CFR 273.13.

40 CFR *§ 273.13 Waste management.*

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(d) Lamps. A small quantity handler of universal waste must manage lamps in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

(1) A small quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.

Evidence:
Appendix C – Field Photographs (Contains CBI)
Appendix P – FR Vol 64 No 128

Description of Observation:

PHRT accumulates waste mercury-containing fluorescent light lamps that are collected from buildings and process units throughout the site in the central accumulation area. The lamps are consolidated into a roll-off container that is marked "universal waste" and "lamps various locations" (**Appendix C**, photos 51 and 52). Facility representatives explained that the roll-off container is considered by the refinery to be a satellite accumulation area for lamps collected throughout the site. Hazardous waste managed under the alternative set of universal waste management standards set forth in 40 CFR Part 273 is not suitable for management under the satellite accumulation area regulations. The roll-off was marked as "universal waste" but is continuously loaded and unloaded for processing in the lamp crushing system. The universal waste label on the roll-off was not marked with the accumulation start date of the contents of the container (**Appendix C,** photo 52). Information recording when individual lamps became waste lamps and were accumulated in the roll-off was not readily available at the time of inspection.

PHRT workers move the lamps from the roll-off container and stage them in open bins and cardboard boxes on top of an office shack to load into a machine in batches for crushing (**Appendix C,** photos 48 and 50). The crushed lamps are discharged from the crushing machine into 55-gallon steel drums that are managed by PHRT as hazardous waste satellite accumulation containers.

The bins and cardboard boxes used to store the mercury-containing lamps on top of the office shack prior to loading into the crushing machine were not closed at the time of inspection and were not of a construction that would allow them to be properly closed (**Appendix C**, photo 50). Some of the bins and cardboard boxes were overfilled with stacked lamps, which could fall from the elevated area and break, releasing mercury to the environment. Containers used to store universal waste lamps must be kept closed per 40 CFR § 273.13(d)(1).

The crushing machine contains a filter to capture mercury emissions. The filters are managed as hazardous waste in a satellite accumulation area 55-gallon container (**Appendix C**, photo 49). The 55-gallon container was not marked with an indication of the hazards of the contents as required by 40 CFR § 262.15(a)(5)(ii).

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The crushing of mercury-containing lamps is a form of treatment because doing so changes the physical composition of the lamps to reduce their volume and make them more amenable for storage as defined by 40 CFR § 260.10. Treatment of universal wastes by handlers of universal wastes is prohibited per 40 CFR § 273.11 and § 273.13. EPA explained the purpose behind this prohibition in the preamble to the final rule for the management of universal waste lamps in the Federal Register (**Appendix P,** 64 Federal Register 36477-36479).

40 CFR § 273.5 specifies that a mercury-containing lamp becomes a waste on the date that it is discarded. Lamps managed as universal waste must be shipped off within one year of generation for disposal. PHRT manages lamps at the point of generation as universal wastes, aggregates the lamps in a roll-off container, treats the lamps using a crushing system to reduce volume, and stores the crushed material in 55-gallon satellite accumulation area drums as hazardous waste. The point of generation of the lamps is at process units and office spaces throughout the facility, which are not near the 55-gallon drums receiving the crushed lamps and ballasts. The 55-gallon drums used to store the mercury-contaminated crushed lamps and ballasts are not suitable for use as hazardous waste satellite accumulation area containers because they are not near the point of generation and are transferred from a roll-off container.

NEIC inspectors reviewed manifests for the prior two years and found that the most recent date that D009 characteristic hazardous waste was shipped off-site was September 19, 2022 (manifest 022860186JJK). Treated lamps that are managed as hazardous waste must be shipped off-site within 90-days of generation to comply with the 40 CFR § 262.17(a) permit exemption condition for a large quantity generator. PHRT may have stored D009 characteristic hazardous waste for over 90 days from the point of generation by inappropriately managing hazardous crushed mercury-containing light lamps in satellite accumulation area containers.

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Observation Summary: PHRT stored containers of universal waste batteries and mercury switches for greater than one year. Additionally, PHRT did not record the accumulation start dates on containers of universal waste batteries.

Citation:
40 CFR Part 273, Subpart B—Standards for Small Quantity Handlers of Universal Waste
40 CFR § 273.15 Accumulation time limits.

(a) A small quantity handler of universal waste may accumulate universal waste for no longer than one year from the date the universal waste is generated, or received from another handler, unless the requirements of paragraph (b) of this section are met.

(b) A small quantity handler of universal waste may accumulate universal waste for longer than one year from the date the universal waste is generated, or received from another handler, if such activity is solely for the purpose of accumulation of such quantities of

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universal waste as necessary to facilitate proper recovery, treatment, or disposal. However, the handler bears the burden of proving that such activity is solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal.

(c) A small quantity handler of universal waste who accumulates universal waste must be able to demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste or is received. The handler may make this demonstration by:

(1) Placing the universal waste in a container and marking or labeling the container with the earliest date that any universal waste in the container became a waste or was received.

(2) Marking or labeling each individual item of universal waste (e.g., each battery or thermostat) with the date it became a waste or was received;

(3) Maintaining an inventory system on-site that identifies the date each universal waste became a waste or was received;

(4) Maintaining an inventory system on-site that identifies the earliest date that any universal waste in a group of universal waste items or a group of containers of universal waste became a waste or was received;

(5) Placing the universal waste in a specific accumulation area and identifying the earliest date that any universal waste in the area became a waste or was received; or

(6) Any other method which clearly demonstrates the length of time that the universal waste has been accumulated from the date it becomes a waste or is received.

Evidence:
Appendix C – Field Photographs (Contains CBI)

Description of Observation:

On April 8, 2024, the NEIC inspection team toured PHRT's central waste accumulation area and observed several containers of universal waste batteries and mercury switches. Several of these containers were either marked with dates exceeding one year or did not have an accumulation start date labeled on the container. Inspectors observed the following:

- One 55-gallon poly drum containing batteries, dated 2015 (**Appendix C**, photo 45)
- One 55-gallon steel drum containing mercury switches, dated "6-23-2020" (**Appendix C**, photo 43)
- Three 5-gallon buckets containing batteries, dated 2020, 2020, and 2021 (**Appendix C**, photo 45)
- Three 55-gallon steel drums containing batteries, no accumulation start date (**Appendix C**, photo 42 and 43)

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- One 55-gallon poly drum containing batteries, no accumulation start date (**Appendix C**, photo 44)

Universal waste may be accumulated for no longer than one year. PHRT did not meet this requirement and stored waste batteries and mercury switches beyond the accumulation time limit. Additionally, PHRT must be able to demonstrate the length of time a universal waste has been accumulated from the date the material becomes a waste. Several containers of batteries were not labeled with an accumulation start date and may have been stored for greater than one year. PHRT did not provide documentation to demonstrate the length of time that these materials had been stored on-site.