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

National Enforcement Investigations Center

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EPA Region 10
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NEIC CIVIL INVESTIGATION REPORT
Marathon Anacortes
Anacortes, Washington

Investigation Dates:
September 23-27, 2024

LAURA KANOPKIN
Digitally signed by LAURA KANOPKIN
Date: 2024.11.26 14:45:17 -07'00'
Laura Kanopkin
Project Manager, NEIC

Digitally signed by BRADLEY MILLER
Date: 2024.11.26 14:57:24 -07'00'
Bradley W. Miller, Ph.D.
Analytical Project Manager, NEIC

Authorized for Release by:

Digitally signed by LINDA TEKRONY
DN: c=US, o=U.S. Government, ou=Environmental Protection Agency, cn=LINDA TEKRONY, 0.9.2342.19200300.100.1.1=68001003671918
Date: 2024.11.26 15:55:47 -07'00'
Linda TeKrony, Field Branch Manager, NEIC

Report Prepared for:
Matthew Quarterman
EPA Region 10
1200 Sixth Avenue, Suite 155
Seattle, Washington 98101

NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
P.O. Box 25227
Building 25, Denver Federal Center
Denver, Colorado 80225

NEIC

CONTENTS

TABLES

APPENDICES (*NEIC-created documents)

CONTENTS (Continued)

These Contents pages show all the sections contained in this report and provide a clear indication of the end of this report.

INVESTIGATION OVERVIEW

PROJECT OBJECTIVE

At the request of U.S. Environmental Protection Agency (EPA) Region 10 (Region), EPA's National Enforcement Investigations Center (NEIC) conducted a Resource Conservation and Recovery Act (RCRA) compliance investigation of Marathon Anacortes (Marathon), located at 10200 March's Point Road, Anacortes, Washington. The scope of the investigation was to evaluate Marathon's dangerous waste designations, including applicability of exemptions and exclusions, and Marathon's waste management practices, including management of wastewater in sewer systems and surface impoundments.

Table 1 lists the project team members.

Table 1. PROJECT TEAM MEMBERS		
Team Member	**Organization**	**Project Role**
Laura Kanopkin	NEIC	Project manager
Craig Lutz	NEIC	Field team member
Olivia Salmon	NEIC	Field team member
Bradley W. Miller	NEIC	Analytical project manager
Christian Beauchemin	NEIC	Laboratory team member
REGIONAL AND OTHER CONTACTS		
Jon Jones	EPA Region 10	Regional field team member
Greg Gould	Washington State Department of Ecology	State field team member
Sarah Penfield	Washington State Department of Ecology	State field team member

FACILITY CONTACT INFORMATION

Table 2 lists the primary facility contacts.

Table 2. FACILITY CONTACT INFORMATION		
Name, Title	**Phone No.**	**Email Address**
Monica Bohnert, Environmental Supervisor	360-293-1680	mmbohnert@marathonpetroleum.com
Cameron Hunt, General Manager	808-479-6151	crhunt@marathonpetroleum.com
Amber Larsen, Corporate Environmental Manager	225-573-0173	aclarsen@marathonpetroleum.com
Shannon Logan, Environmental Department Manager	360-319-5943	slogan2@marathonpetroleum.com
Dave Schwab, Waste Coordinator	360-708-7705	dmschwab@marathonpetroleum.com

FACILITY OVERVIEW

Marathon is a petroleum refinery (EPA Registry Identification No. 110000537250) located approximately 70 miles north of Seattle, Washington, next to Fidalgo Bay and Padilla Bay. The facility operates on roughly 900 acres of land on the northern portion of the March Point peninsula.

The refinery operates 24 hours a day, seven days a week, and has a total crude oil capacity of about 120,000 barrels per day. Crude is processed to manufacture gasoline, distillates, heavy fuel oil, propane and natural gas liquids, and petrochemicals. The refinery distributes products through pipeline-connected terminals and a marine terminal via ships and barges. At the time of the NEIC inspection, Marathon reported employing approximately 400 employees and 350 contractors at the site.

Shell Oil Company purchased the land in 1950 and built the refinery which began operating in 1955. It was operated by Shell Oil until purchased by the Tesoro Petroleum Corporation in 1998, becoming the Tesoro Anacortes Refinery. The refinery briefly operated under the name Andeavor in 2017. In 2018, Marathon Petroleum acquired Tesoro and assumed ownership of the Anacortes facility. Although owned by Marathon, the Anacortes refinery continues to conduct business under the name Tesoro Refining and Marketing Company.

Marathon (EPA ID No. WAD009275082) is a large quantity generator of dangerous waste. (Washington State uses the term "dangerous waste" rather than the federal term of "hazardous waste." The Washington State's Dangerous Waste Regulations are broader in scope and more stringent than federal regulations.) The facility's 2021 biennial report lists dangerous wastes generated on-site as EPA hazardous waste numbers D001, D008, D009, D018, F002, F037, K049, K050, K051, K169, K170, and K171, and Washington State dangerous waste codes WPCB, WSC2, WT01, and WT02. Types of dangerous wastes managed on-site included: sewer solids, waste flammable liquids, clarified slurry oil (CSO) sediments, crude tank bottoms, spent chemical oxygen demand (COD) test reagent, paint chips/blast grit, and contaminated personal protective equipment.

Marathon operates an oily water sewer (OWS) which was constructed in the 1950s when the refinery first began operations. The OWS is an underground piping system which conveys process wastewater and stormwater runoff from process areas to the refinery's wastewater treatment system. Under EPA's RCRA Corrective Action 2020 Initiative, the OWS was identified as a solid waste management unit (SWMU) with potential for releases of hazardous substances into the environment. The Washington State Department of Ecology (Ecology) issued a RCRA corrective action permit, along with Agreed Order No. DE 16299, which became effective November 1, 2021, requiring Marathon to address soil or groundwater contamination resulting from releases from the OWS.

Additionally, the refinery historically disposed of wastes generated from process units, crude or product storage tanks, and the wastewater treatment system (WWTS) in a land treatment field from the 1970s until 2006. The land treatment field was divided into Sites 1, 2, and 3. Site 3 received some refinery dangerous wastes for land treatment. In 1988, Ecology issued a RCRA permit to the refinery for the land treatment of dangerous waste. The land treatment of dangerous wastes ended in 1998 after which no further wastes were applied at Site 3. Remediation of Site 3 was conducted in 2006 under a RCRA Class 3 permit modification. Contaminated soils were moved into a corrective action management unit (CAMU) at Site 1, and landfarm Site 3 was clean-closed later the same year. Ecology approved a Class 3 permit modification on October 12, 2021, allowing Marathon to end the post-closure care period for Site 1 under conditions which include deed restrictions and continued annual inspections of fencing, signage, and vegetative cover. At the time of the NEIC inspection, Marathon had ended the practice of disposing of WWTS sludges characterized as non-hazardous in land treatment Site 2.

EPA's Enforcement and Compliance History Online database (ECHO) indicates the facility was last inspected in October 2022 by Ecology, and no violations were identified. The previous state inspection was conducted in June 2021 and resulted in a written informal enforcement action.

According to the EPA ECHO database, this facility has the following North American Industry Classification System (NAICS) code (**Table 3**):

Table 3. APPLICABLE NAICS CODE

NAICS Code	Description
324110	Petroleum Refineries

FACILITY OPERATIONS SUMMARY

Refining Operations

A basic overview of refining operations conducted at Marathon is depicted in **Appendix A** and a more detailed process flow diagram is shown in **Appendix B (CBI)**.

Marathon receives crude oil, primarily by ship and pipeline, from domestic sources in North Dakota and Alaska and from international sources including Canada. Crude oil is stored in storage tanks before processing. Prior to distillation, the crude oil is processed through desalters to remove contaminants and to precipitate out solids. The brine from desalting is treated in the facility's on-site wastewater treatment plant, referred to as the Effluent Plant (EP). The crude feed is then heated and charged to the crude distillation unit (CDU).

Marathon operates an atmospheric crude distillation tower to separate hydrocarbon fractions. Overhead liquid from the top of the column is collected in an overhead accumulator and further refined. Lighter fractions from the CDU are separated into butane, propane, gasoline, and naphtha, then processed into finished products or blend stocks. Heavier fractions from the CDU are separated and processed into jet fuel, diesel, and fuel oil.

Straight run naphtha and gasoline cuts from the CDU are processed in the naphtha hydrotreater (NHT) which uses hydrogen and a fixed bed catalyst to remove contaminants. According to Marathon representatives, the NHT catalyst is currently replaced at a frequency of seven to 10 years. Downstream of the NHT, a catalytic reformer processes the gasoline feed through a system of fixed bed catalytic reactors to increase octane rating. After the NHT, a reformate splitter column further refines octane rating and separates out benzene feed which is directed to a benzene saturation (BenSat) unit. The BenSat unit also receives feed from the NHT dehexanizer tops and hydrogen-rich makeup gas. The unit is interconnected with an isomerization unit. This process adds hydrogen to convert benzene into cyclohexane, and isomerizes pentane and hexane present in the feed stream, to produce a low-benzene blend stock product.

Light gas oil (LGO) from the CDU is processed through the Jet Fuel Treater (JFT) which involves a series of caustic, cobalt, and water washes. The oil then passes through a salt drier and clay filter to further remove contaminants and produce jet fuel. Brine from the salt driers is sent to the EP for treatment. When changed out, the clay filters are tested and sent off-site as non-hazardous waste.

Heavy gas oil (HGO) from the CDU is processed through the distillate hydrotreater using hydrogen and a fixed bed catalyst to remove contaminants and produce diesel. The clean fuels hydrotreater receives feed from the CDU and various additional streams from throughout the refining process and uses hydrogen and a fixed bed catalyst to remove sulfur from fuel products prior to blending.

Marathon operates a catalytic cracker unit (CCU) which receives extra heavy gas oil (XHGO) from the CDU as well as feed from the vacuum flasher unit and the residuum oil supercritical extraction (ROSE) de-asphalter unit. The CCU cracks these heavier streams into lighter fractionated materials using a circulating fluidized silica-based catalyst. Gasoline and gases from the CCU are further processed in the gas recovery unit while naphtha and LGO are treated and stored as products. Heavier fractions from the CCU are blended into products such as fuel oils and decanted oils. Spent catalyst from the CCU is sent off-site as a non-hazardous waste and recycled into cement. Marathon representatives reported that the spent catalyst is sampled and analyzed for RCRA characteristics of hazardous waste on an annual basis.

The CCU regenerator regenerates the CCU catalyst by removing coke formed during catalytic cracking. Flue gas from the regenerator is then routed to two carbon monoxide boilers, referred to as the “CO boilers,” to combust residual organic hazardous air pollutants in the gas.

Exhaust gases from the CO boilers are subsequently treated with caustic in the flue gas scrubber to remove particulate matter and sulfur dioxide. The resulting scrubbing liquor used in the flue gas scrubber is pumped to the pretreatment unit (PTU) for treatment. The PTU is located in the Boiler House and consists of a sulfite oxidation tank which aerates the liquor to create a type of salt within the slurry. This slurry is processed through a filter press to remove solids which are collected in a roll-off container and shipped off-site as non-hazardous waste. Marathon representatives stated that this waste is shipped off-site approximately once per week and that it is sampled and analyzed for RCRA characteristics of hazardous waste about once per year. The water removed from the solids in the PTU is discharged into the OWS. At the time of the NEIC inspection, Marathon's filter press was not operational, and the facility was utilizing roll-off containers to separate out solids. A diagram of the flue gas scrubber and the PTU is included in **Appendix C (CBI)**.

Bottoms from the CDU are processed through the vacuum flasher unit which operates under vacuum to separate the feed into fractions that are then mainly routed to the distillate hydrotreater or the CCU. Pitch from the bottom fractions of the vacuum flasher are either directed into the ROSE de-asphalter or blended into fuel oil or asphalt binder. The ROSE unit uses a butane solvent to extract oils for further processing in the CCU. The remaining asphaltene from the ROSE unit is managed similarly to bottoms from the vacuum flasher and blended into fuel oil or asphalt binder. According to Marathon representatives, the refinery was designed to process heavier crudes but at the time of the NEIC inspection was processing lighter crudes, and as a result, all bottoms from the CDU were able to be processed in the ROSE unit.

The gas recovery unit receives feed gases from several sources including the CCU, the NHT, and the CDU. The unit separates the material into several fractions: dry gas which is treated and blended into product, butane/propane feed which is directed into the butane isomerization unit or into the alkylation plant, and cracked gasoline which is further refined and blended into product.

The alkylation plant produces isobutane and alkylate using sulfuric acid as a catalyst. Once the acid is determined to be spent, it is sent off-site via pipeline to the neighboring Chemtrade facility for regeneration and returned to Marathon for continued use. Marathon operates an in-ground concrete tank at the alkylation plant referred to as the alky neutralization pit. The pit receives both acid from a trench collection system and spent caustic from processes within the alkylation plant. Marathon representatives stated that the material in the pit can have a pH ranging anywhere between 2 and 13, although it is typically at a pH of approximately 12. The alky neutralization pit discharges to the OWS.

Amine solution is used to remove acid gases during refining operations, primarily from gases recovered from the gas recovery unit. Marathon operates two amine regeneration systems which remove sulfur from the amine solution, allowing the stripped amine to continue circulating. The sulfur is sent off-site via pipeline to the neighboring Chemtrade facility which operates a sulfur treatment plant and reclaims the waste sulfur into product. Marathon representatives stated that all recoverable sulfur from refining operations is sent to Chemtrade.

Wastewater Management in the Oily Water Sewer and Effluent Plant

The facility OWS runs through all major zones of the refinery and conveys process wastewater, stormwater from process areas, laboratory wastewater, and firefighting training area water to the EP. Marathon's EP also receives effluent from Tanks 39, 40, 57, and 161, located in the effluent tank yard that adjoins the EP to the south. Tank 40 (**Appendix D**, photo 87) stores slop oil from process activities, as well as slop oil recovered in the EP. Tank 39, Tank 57, and Tank 161 store slop oil emulsions, alkaline utility water, and brine wastewater from the facility desalter, respectively, and all three tanks discharge to the EP. Tank 44 is also located in the effluent tank yard and was recently taken out of service but had not been emptied at the time of the NEIC inspection. It was used for spent caustic and catalytic reforming washwater storage and formerly discharged to the EP. The EP also receives sanitary wastewater and utility wastewater via separate sewer lines.

Flow through the EP is depicted in **Appendix E (CBI)** and **Appendix F (CBI)**. The EP treatment system begins with an American Petroleum Institute (API) separator (**Appendix D**, photo 1), which contains two channels (west and east). Oil skimmed from the API separator discharges to Tank 40 in the effluent tank yard. Sludge from the API separator is discharged to the EP sludge thickener (**Appendix D**, photo 2), which returns oil and water to the API separator. Sludge from the sludge thickener is removed approximately every two years and centrifuged in a trailer staged at the EP (**Appendix D**, photos 4, 5, and 10). Centrate from the centrifuge is returned to the API separator, and solids are characterized as K051 dangerous waste and disposed off-site. Two primary clarifiers receive wastewater from the API separator (**Appendix D**, photos 78, 79, 84, and 85). Skimmed oil and sludge from the primary clarifiers are directed to a sludge reservoir, which discharges to the EP sludge thickener. Wastewater from the primary clarifiers overflows to aeration basins for biological treatment and then through final clarifiers for additional settling. From the final clarifiers, treated wastewater is directed to the retention pond manifold (**Appendix G [CBI]**) and then to the east and west stormwater retention ponds (**Appendix D**, photos 21, 22, and 77) before discharging to Fidalgo Bay under National Pollutant Discharge Elimination System (NPDES) Permit No. WA0000761. Sludge from the aerated basins and final clarifiers is directed to a belt press for dewatering. A portion of the sludge, along with water coming off the press, is recycled back into the aerated basins; the remainder of the sludge is characterized as non-hazardous waste. Until 2021, the facility placed the biological sludges in the on-site landfarm at Site 2. Since 2021, the facility has shipped biological sludges off-site as non-hazardous waste.

During a process upset, maintenance, or high rainfall events, wastewater exiting the primary clarifiers can be diverted to Tank 216 to protect the biological wastewater treatment system. The contents of Tank 216 are then discharged to the beginning of the EP treatment train at the API separator.

Marathon representatives reported that non-contact stormwater is managed in a dedicated sewer system. The non-contact stormwater sewer discharges into the stormwater flume, which is an in-ground water retention unit located to the west of the retention pond manifold. Wastewater accumulated in the stormwater flume is discharged through the retention pond manifold into the west retention pond, bypassing treatment in the EP.

A pond at the EP, called the “neutralization pond” by the facility (**Appendix D**, photos 12 through 14), receives sanitary wastewater from an adjoining septic tank and acid waste generated from demineralizer regenerations at the facility Boiler House (**Appendix D**, photo 25). The acid waste travels from the Boiler House to the neutralization pond on a batch basis via a dedicated chemical sewer. Facility representatives stated that the acid waste stream is used in the neutralization pond to treat the sanitary wastewater. After the spent acid and sanitary wastewater mixes in the neutralization pond, the wastewater is directed to the top of the API separator and travels through the EP wastewater treatment train. The neutralization pond is also capable of overflowing into the stormwater flume. Facility representatives indicated that operators are trained to communicate with staff at the Boiler House to ensure that waste is not sent to the neutralization pond when its level is approaching the overflow height; more information can be found in the facility’s Effluent Training Manual (**Appendix H [CBI]**).

A dedicated sewer system is present within the footprint of the EP. This EP sewer system includes four open manholes in the vicinity of the API separator, primary clarifiers, and further north in proximity to the stormwater flume (**Appendix D,** photos 23, 24, and 76). These manholes are present at numbered locations 1, 2, 4, and 6 in the figure shown in **Appendix I**. Additional information about the EP sewer system is provided in **Observation 4**.

Laboratory

Marathon’s laboratory building houses six labs (see **Appendix J**). Lab #1 is used for physical testing of product. Analysis conducted in Lab #1 includes vapor pressure, viscosity, pH, basic organic nitrogen, alkalinity, moisture content, simulated distillations, and hydrogen sulfide in vapor space. Lab #2 is used for wastewater testing. Analysis performed in Lab #2 includes phenols, ammonia, oil & grease, COD, alkalinity, sulfide, and mercaptide. Testing at Lab #3 includes acid strength, maleic anhydride value, foaming tendency, and n-heptane insolubles. Testing at Lab #4 includes bromine number, near infrared spectroscopy, and metals digestion and analysis. A high-performance liquid chromatography instrument is also present in Lab #4 for jet fuel testing. Lab #5 is the gas chromatograph laboratory used for analysis of refinery gas and liquified petroleum gasoline samples. Lab #6 is used for sulfur and nitrogen testing and high temperature simulated distillations.

Four dangerous waste satellite accumulation areas (SAAs) are present in the laboratory building (**Appendix J**). An SAA housed in a Lab #1 hood is used for accumulation of waste vials generated in simulated distillation testing (**Appendix D**, photos 43 and 44). Two additional SAAs are located in a roofed exterior area of the laboratory building in an approximately central location to each of the six labs (**Appendix D**, photos 56 and 57). The first SAA at this location consists of a 55-gallon drum containing used COD vials; the second SAA consists of a 5-gallon container with a label indicating mercury (thermometer) waste and was empty at the time of the NEIC inspection. A fourth SAA at the laboratory is present in the Lab #4 metals digestion hood and contains corrosive iron activator CHEMets® vials (**Appendix D**, photo 69).

Sample and reagent waste at the laboratory building are managed in several ways. Spent COD vials containing silver, mercury, and chromium, along with simulated distillation vials containing carbon disulfide, are managed as dangerous waste and accumulated in laboratory SAAs before being collected in a less than 90-day central accumulation area and disposed of off-site. Spent CHEMets® vials used in the analysis of ammonia and phenols and spent Draeger tubes used in the analysis of hydrogen sulfide gas (**Appendix D**, photos 50, 60, and 61) are managed as non-dangerous waste that are disposed in a dumpster (spent ammonia CHEMets® vials) or non-dangerous waste “hydrocarbon” trash cans (spent phenol CHEMets® vials and spent Draeger tubes).

The remainder of sample and reagent waste streams observed during the NEIC inspection were reported by facility representatives to discharge to the OWS via several pathways. Many sample waste streams combined with testing reagents are dumped directly into laboratory sinks or drains within laboratory hoods, all of which discharge to the OWS. Other sample and reagent waste streams are accumulated in jugs beneath a bench and regularly discharged to the OWS via a laboratory sink drain. Accumulated sample and reagent waste staged in jugs beneath lab benches are not managed as dangerous waste. In Lab #1, sample wastes in one-liter bottles are staged on carts and then sent through a bottle washing machine that discharges to the OWS (**Appendix D**, photos 51 through 53).

FIELD ACTIVITIES SUMMARY

The NEIC inspection team consisted of Laura Kanopkin, Craig Lutz, and Olivia Salmon. Jon Jones from EPA Region 10 as well as Greg Gould and Sarah Penfield from Ecology also joined the on-site inspection. On September 23, 2024, NEIC conducted an opening meeting and presented credentials to Monica Bohnert of Marathon. With the participation of Region 10 and Ecology, NEIC performed the following activities to accomplish the investigation objectives:

- Interviewed facility personnel to discuss process operations, waste designations, waste management practices, and recordkeeping associated with RCRA.
- Conducted a walk-through tour of the facility to observe the waste management practices, laboratory operations, and process operations associated with the Effluent Plant and the oily water and stormwater sewer systems.
- Photographed and documented site conditions at Marathon; photographs are included in **Appendix D**.
- Collected samples of wastewater from the stormwater flume.
- Reviewed documents, including process flow diagrams, waste designation records, waste profiles, analytical records, hazardous waste manifests, weekly inspection logs, training records, emergency response procedures, and leak detection and repair monitoring records for hazardous waste containers.

Measurement and Sampling Activities

The NEIC field team provided support to this investigation by collecting a split triplicate liquid sample from the facility stormwater flume. NEIC collected two triplicate samples from the western end of the stormwater flume, immediately adjacent to the corroded end of the stormwater flume's only inlet, using a dipper cup (**Appendix D**, photos 80 and 81). The sample was transferred from the dipper cup into 16-ounce glass jars. Marathon selected samples S01-B, D, and F as the facility split sample, and samples S01-A, C, and E were retained by NEIC. **Table 4** summarizes field measurement and field sampling activities. A copy of the chain of custody record is provided in **Appendix K**.

All environmental measurement activities were performed in accordance with the NEIC quality system. All field sampling, field measurements/monitoring, and 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).

Sampling activities were documented in field logbooks. Samples collected during the field activities were shipped via FedEx to the NEIC laboratory in Denver, Colorado, for analysis.

<table>
<tr><th colspan="6">Table 4. FIELD MEASUREMENT AND FIELD SAMPLING ACTIVITIES</th></tr>
<tr><th colspan="2">Location Identifier</th><th>Dates</th><th colspan="2">Method, and/or Procedure,[1] and Equipment</th><th>Measurer Name</th></tr>
<tr><th colspan="6">MEASUREMENTS</th></tr>
<tr><td colspan="2">Used to screen location for safety; RadEye used additionally to screen samples for radiation</td><td>September 23-27, 2024</td><td colspan="2">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 multi-gas meter, SN229418
• RadEye B20-ER radiation survey meter, SN34382</td><td>Craig Lutz</td></tr>
<tr><th colspan="6">SAMPLING</th></tr>
<tr><th>Station No.</th><th>Appendix D Photo Nos.</th><th colspan="2">Date and Time</th><th>Method and Equipment</th><th>Sampler Name</th></tr>
<tr><td>S01-A</td><td>80</td><td colspan="2">September 26, 2024, 9:25 a.m.</td><td rowspan="3">Method: ASTMD5358-93: Standard Practice for Sampling with a Sipper or Pond Sampler

Equipment: Dipper cup</td><td rowspan="3">Olivia Salmon</td></tr>
<tr><td>S01-C</td><td>80</td><td colspan="2">September 26, 2024, 9:26 a.m.</td></tr>
<tr><td>S01-E</td><td>80</td><td colspan="2">September 26, 2024, 9:30 a.m.</td></tr>
<tr><td colspan="6">[1] The current version of each procedure, at the time of the investigation, was followed.</td></tr>
</table>

Site activities were documented in field records, and field photographs are attached as **Appendix D**. Additional photos are maintained in the project file.

LABORATORY ACTIVITIES SUMMARY

Bradley W. Miller of the laboratory team took custody of the samples at the NEIC laboratory located in Denver, Colorado, via FedEx from Laura Kanopkin on October 1, 2024. Christian Beauchemin analyzed the samples at the NEIC laboratory following the Toxicity Characteristic Leaching Procedure (TCLP) to determine the concentration of volatile organic compounds (VOCs) including benzene, carbon tetrachloride, chlorobenzene, chloroform, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethylene, hexachlorobutadiene, methyl ethyl ketone (2-butanone), trichloroethylene, and tetrachloroethylene. **Table 5** summarizes the analytical methods followed, as well as the analyst and dates of the analysis. Data quality summaries including uncertainty for all laboratory measurements are maintained in the project file.

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.)**	**Dates Performed**
Objective: Determine if samples have hazardous waste characteristic of toxicity for volatile organic compounds **Technique:** Method 1311 (TCLP) extractions by purge-and-trap gas chromatography/mass spectrometry (P&T-GC/MS) of extracts. **Methods:** **Preparatory method for sample extracts:** SW-846 Method 1311: Toxicity Characteristic Leaching Procedure **Preparatory method for TCLP aqueous extracts:** SW-846 Test Method 5030B: Purge-and-Trap for Aqueous Samples **Determinative method:** Gas chromatography/mass spectrometry (GC-MS) by SW-846 Test Method 8260B: Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Christian Beauchemin	S01-A S01-C S01-E	October 8-18, 2024
[1] Data quality summaries, including uncertainty measurements, for all laboratory measurements are maintained in the project file.			

ANALYTICAL RESULTS

Table 6 summarizes the analytical results. Laboratory sample descriptions, observations, method modifications, and notes are documented in the project file. A copy of the chain of custody record is provided in **Appendix K**. Pertinent photographs from the laboratory activities are provided in **Appendix L**.

Table 6. SUMMARY OF LABORATORY OBSERVATIONS			
Station No.	**Station Location/ Description of Sample Location**	**Appendix L Photo Nos.**	**Laboratory Sample Physical Description**
S01-A	Stormwater flume inlet	DSC_0001.JPG	Colorless, clear, nonviscous liquid
S01-C	Stormwater flume inlet	DSC_0002.JPG	Colorless, clear, nonviscous liquid
S01-E	Stormwater flume inlet	DSC_0003.JPG	Colorless, clear, nonviscous liquid

Table 7. TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP) VOLATILE RESULTS

Station ID	TCLP (milligrams per liter [mg/L])										
	Benzene	Carbon tetrachloride	Chlorobenzene	Chloroform	1,4-Dichlorobenzene	1,2-Dichloroethane	1,1-Dichloroethylene	Hexachloro-butadiene	Methyl ethyl ketone	Tetrachloro-ethylene	Trichloro-ethylene
S01-A[1] / S01-C / S01-E	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01
Regulatory Level[2]	0.5	0.5	100	6.0	7.5	0.5	0.7	0.5	200	0.7	0.5

[1] S01-A results are the average of a measurement triplicate.
[2] Regulatory level as cited in 40 CFR § 261.24 "Table 1—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC."

INVESTIGATION OBSERVATIONS

NEIC made the following observations during the RCRA compliance inspection. NEIC field team members discussed observations with facility representatives during the closeout meeting unless otherwise noted in the observation description below.

These observations are not final compliance determinations. Region 10 will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information. Region 10 is enforcing State of Washington Department of Ecology Dangerous Waste Regulations, Chapter 173-303, publication number 92-91, as amended December 2014.

Observation 1
Observation Summary: Marathon is land disposing corrosive dangerous waste in an unpermitted surface impoundment. Spent acid waste generated from regenerations of the demineralizer for boiler feed water is managed in the neutralization pond. The corrosive waste does not meet land disposal restriction (LDR) treatment standards before placement in the land-based unit. The neutralization pond is not a permitted RCRA unit and cannot be used to manage a dangerous waste in this manner without a permit.
Citation: **Definitions. WAC 173-303-040 [40 CFR §§ 260.10 and 268.2]** *When used in this chapter, the following terms have the meanings given below.* *“Land disposal” means placement in or on the land, except in a corrective action management unit or staging pile, and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, underground mine or cave, or placement in a concrete vault, or bunker intended for disposal purposes.* *“Recycle” means to use, reuse, or reclaim a material.* *"Surface impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), and which is designed to hold an accumulation of liquid wastes or wastes containing free liquids. The term includes holding, storage, settling, and aeration pits, ponds, or lagoons, but does not include injection wells.* **Identifying solid waste, WAC 173-303-016 [40 CFR § 261.2(c)(1)]** *(5) Materials are solid wastes if they are recycled—or accumulated, stored, or treated before recycling—as specified in (a) through (d) of this subsection.* *(a) Used in a manner constituting disposal. Materials noted with a "*" in column 1 of Table 1 are solid wastes when they are:*

Observation 1

(i)(A) Applied to or placed on the land in a manner that constitutes disposal;

TABLE 1

	Use constituting Disposal WAC 173-303-016 (5)(a)	*Energy recovery/fuel WAC 173-303-016 (5)(b)*	*Reclamation WAC 173-303-016 (5)(c)*	*Speculative accumulation WAC 173-303-016 (5)(d)*
Spent materials	*(*)*	*(*)*	*(*)*	*(*)*
Commercial chemical products	*(*)*	*(*)*	—	—
By-products listed in WAC 173-303-9904	*(*)*	*(*)*	*(*)*	*(*)*
Sludges listed in WAC 173-303-9904	*(*)*	*(*)*	*(*)*	*(*)*
By-products exhibiting a characteristic[1] or criteria[2]	*(*)*	*(*)*	—	*(*)*
Sludges exhibiting a characteristic[1] or criteria[2]	*(*)*	*(*)*	—	*(*)*
Scrap metal that is not excluded under WAC 173-303-071(3)(ff)	*(*)*	*(*)*	*(*)*	*(*)*

Note: The terms "spent materials," "sludges," "by-products," "scrap metal" and "processed scrap metal" are defined in WAC 173-303-040.

[1] The characteristics of dangerous waste are described in WAC 173-303-090.

[2] The dangerous waste criteria are described in WAC 173-303-100.

Dangerous waste characteristics, WAC 173-303-090 [40 CFR § 261.22]

(6) Characteristic of corrosivity.

(a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has any one or more of the following properties:

(i) 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 WAC 173-303-110(3)(a);

Land disposal restrictions, WAC 173-303-140 [40 CFR § 268]

(2) Applicability.

The land disposal restrictions of this section apply to any person who owns or operates a dangerous waste treatment, storage, or disposal facility in Washington state and to any person who generates or transports dangerous waste.

(a) Land disposal restrictions for wastes designated in accordance with WAC 173-303-070 (3)(a)(i), (ii), and (iii) are the restrictions set forth by the Environmental Protection Agency in 40 C.F.R. Part 268 which are incorporated by reference into this regulation,

Observation 1
as modified in (c) through (f) of this subsection, and the restrictions set forth in subsections (3) through (7) of this section. **Special rules regarding wastes that exhibit a characteristic, 40 CFR § 268.9** *(c) In addition to any applicable standards determined from the initial point of generation, no prohibited waste which exhibits a characteristic under 40 CFR part 261, subpart C may be land disposed unless the waste complies with the treatment standards under subpart D of this part.*
Evidence: **Appendix D** – Field Photographs **Appendix E** – Effluent Flow Diagram **(Contains Facility-Claimed CBI)** **Appendix F** – Effluent Flow Schematic **(Contains Facility-Claimed CBI)** **Appendix M** – Boiler House Process Flow Diagram **(Contains Facility-Claimed CBI)** **Appendix N** – Boiler House Cation P&ID **(Contains Facility-Claimed CBI)** **Appendix O** – Discharge Monitoring Reports, April-August 2024 **Appendix P** – RO12104 **Appendix Q** – RO14843 **Appendix R** – Marathon Update on Wastewater Projects Interviews
Description of Observation: Marathon operates an in-ground pit referred to as the neutralization pond (**Appendix D**, photos 12 through 14). The pond is constructed of primarily earthen materials and has both a clay and a synthetic liner. Facility personnel reported the capacity of the pond to be 150,000 gallons. The neutralization pond is located within the EP and is depicted in **Appendix E (CBI)** as "NEUT. POND" and in **Appendix F (CBI)** as "dilute spent demineralizer acid." The neutralization pond receives spent acid generated from the boiler feed water demineralization process. This process is depicted in **Appendix M (CBI)** and occurs in the Boiler House. Raw water is demineralized for use as boiler feed water using a cation train and an anion train consisting of four exchangers each. When the cation exchangers begin to exhibit an increase in conductivity, operators will regenerate the resin bead media in the vessels by flushing the media with a mixture of 96 percent (%) sulfuric acid and water. Facility operators explained that the first stage of regeneration mixes two gallons per minute (gpm) of 96% sulfuric acid with 160 gpm of water, while the second stage of regeneration mixes 4.4 gpm of 96% sulfuric acid with 160 gpm of water. This spent acid is then discharged from the cation vessels through a dedicated piping system referred to as the chemical sewer. Marathon operators estimated between 60 and 100 hours of run time between regenerations, and NEIC observations of data from the control room screens for the past week supported this estimate. A diagram for a single cation exchanger (**Appendix N [CBI])** shows the discharge from the exchanger into the chemical sewer; all four exchangers are regenerated and piped into the chemical sewer in the same way. The chemical sewer discharges into the neutralization pond, as shown in **Appendix E (CBI)** and **Appendix F (CBI)**. The flow of the acid waste into the pond is controlled by a metering system which is operated within the Boiler House.

Observation 1
The neutralization pond receives a second waste stream from the facility's sanitary septic tank. Marathon representatives explained that the wastes are combined in the neutralization pond because the acidic waste from the boiler feed water demineralization process is used to disinfect the sanitary sewer wastewater. From the neutralization pond, the combined waste is discharged into the API separator. At the time of the NEIC inspection, there was no in-line monitoring of pH of the acid discharging into the neutralization pond from the chemical sewer. On the opposite end, Marathon's latest NPDES permit, effective April 1, 2024, initiated the requirement for continuous monitoring of effluent pH discharging from the neutralization pond into the API separator. Marathon reports the daily minimum and maximum pH of the neutralization pond effluent in their monthly discharge monitoring reports (DMRs). NEIC reviewed the effluent pH data for the period between April 4, 2024, and August 31, 2024, (**Appendix O**, Pages 3, 17, 31, 45, and 59) and observed that on 134 out of 150 days, the minimum pH of the effluent was measured as less than 2; on 58 out of 150 days, the maximum pH of the effluent was also measured as less than 2. This data shows that the material exiting the neutralization pond has a pH measuring less than 2 on about 89% of the days for which the data is available. During the NEIC inspection, Marathon representatives explained their position that the spent acid from the Boiler House is not a solid waste because it is being used for disinfection of the sanitary sewer wastewater. Similarly, Marathon representatives explained that the acidic effluent discharging into the API separator is also not a waste because it is being used for pH adjustment in the API separator. However, WAC 173-303-016(5)(a) specifies that recycled materials used in a manner constituting disposal are a solid waste if they are a spent material and applied to or placed on the land in a manner that constitutes disposal. The acid from the Boiler House demineralization process is a spent material because it can no longer be used in the demineralization process and is piped to the chemical sewer system. Recycling (reuse) of the spent acid to disinfect the sanitary sewer wastewater is a use of the spent acid constituting disposal. Finally, the neutralization pond meets the definition of a surface impoundment, and therefore the spent acid is being applied to the land and is a solid waste. Although the pH information is unavailable for the acid waste at the point of generation in the Boiler House, the 96% sulfuric acid used in the demineralization process is a strong acid. Additionally, pH data are available for the waste exiting the pond after it is diluted with sanitary sewage, as noted above. The pH monitoring data for the effluent leaving the neutralization pond is less than 2 for the majority of Marathon's operating days since the requirement to measure the pH was implemented. A pH less than 2 meets the criteria for the dangerous waste characteristic of corrosivity, dangerous waste number D002. Marathon is managing the corrosive dangerous waste in an unpermitted surface impoundment as defined in WAC 173-303-040. The neutralization pond is an in-ground pit constructed of earthen materials and sloped walls, designed to hold an accumulation of liquid wastes. The pond is not capable of retaining its structural integrity without the support of the surrounding earthen materials. The guidance provided in RCRA Online document RO12104 (**Appendix P**) further describes the designation of a unit as a surface impoundment:

Observation 1

"*The unit should be evaluated as if it were free standing, and filled to its design capacity with the material it is intended to hold. If the walls or shell of the unit alone provide sufficient structural support to maintain the structural integrity of the unit under these conditions, the unit can be considered a tank. Accordingly, if the unit is not capable of retaining its structural integrity without supporting earthen materials, it must be considered a surface impoundment.*"

Although the neutralization pond is connected to the facility's EP, unlike tanks, surface impoundments are not exempt from RCRA regulations under the wastewater treatment unit exemption. Surface impoundments are land units and subject to land disposal restrictions. Land disposal under the regulations is defined as placement in or on the land and includes placement in a surface impoundment. RO14843 (**Appendix Q**) clarifies that hazardous waste may not even be temporarily placed in a land disposal unit, as RCRA "*draws no distinction in the duration of disposal. 'Temporary' placement in a land disposal unit is " land disposal" just as much as is permanent disposal. See RCRA Section 3004(k) and implementing regulations at 40 CFR Part 268.2 (c) (defining "land disposal" as including "any placement").*"

The sulfuric acid waste, as it enters the neutralization pond, does not meet LDR treatment standards for D002 dangerous waste. If at any time a dangerous waste enters the surface impoundment, the unit becomes subject to RCRA regulations. This unit is not permitted and does not meet the design and operating requirements necessary for a permitted surface impoundment.

Additionally, the neutralization pond is plumbed to overflow to the stormwater flume, as shown in **Appendix E (CBI)**. During the NEIC inspection, Marathon representatives explained that this is an overflow line engineered for catastrophic events and it is not used as part of normal refinery operations. However, the existence of an overflow connection on a unit managing dangerous waste raises concerns about potential discharge of the dangerous waste into the stormwater flume. Wastewater entering the stormwater flume bypasses the EP and is not treated before discharge into the west retention pond and subsequently into the Fidalgo Bay. See **Observation 5** for more on this subject.

On the final day of the NEIC inspection, September 27, 2024, Marathon representatives informed NEIC of their intention to close the neutralization pond and change the process to no longer manage corrosive waste in a surface impoundment. Further details of this plan were communicated on October 25, 2024 (**Appendix R**). In this document, Marathon describes their intent to separate the acid waste from the sanitary waste and directly route the acid waste into the OWS. The sanitary waste will be pumped into temporary tanks where it will be disinfected using an acid metering system and then pumped to the API separator. Marathon reported that they expect to have the new processes operational at the end of November 2024, after which the neutralization pond will be closed and removed from service.

Observation 2

Observation Summary: Solvents used in the lab are disposed of in the sink drains that are connected to the OWS. The solvents include methylene chloride (F002 listed waste) and toluene (F005 listed waste). Washington State has not adopted the federal "headworks exemption" for spent solvent codified at 40 CFR § 261.3(a)(2)(iv). Therefore, wastewaters mixed with F002 or F005 dangerous wastes retain those listings. These listings would also apply to the wastewater sludges generated from the API separator, primary clarifiers, and secondary clarifiers located at the EP.

Currently, the solids removed from the primary clarifiers are managed as a F037 dangerous waste, but the listing does not carry over to the secondary clarifier solids because primary clarifiers are aggressive biological treatment units. Currently the solids from the secondary clarifiers are disposed of as non-hazardous waste.

Citations:

Dangerous waste sources, WAC 173-303-082 [40 CFR §§ 261.3(a)(2)(iv), (b)(1-2), (c)(2)(i)]

(1) The dangerous waste sources list appears in WAC 173-303-9904. Any waste that is listed or is a residue from the management of a waste listed on the dangerous waste sources list must be designated a dangerous waste, and identified as DW. Dangerous waste sources codes include WPCB [state source listed polychlorinated biphenyl] or codes that begin with an "F" or "K."

(3) Care should be taken in the proper designation of these wastes and of mixtures of these wastes and solid wastes. A mixture of solid waste with a waste that would be designated as a dangerous waste source under this section must be designated as a dangerous waste source unless it has been excluded under WAC 173-303-070(2)(c). The mixture has the same designation (DW), and the same dangerous waste number as the dangerous waste source which was mixed with the solid waste.

Dangerous waste sources list, WAC 173-303-9904 [40 CFR § 261.32]

Nonspecific Sources Generic:

> *F002: The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane and 1,1,2 trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. (T)*
>
> *F005: The following spent nonhalogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above nonhalogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. (I,T)*

Observation 2
Designation of dangerous waste, WAC 173-303-070 [40 CFR §261.3(c)(i)] *(2)(a) Except as provided at WAC 173-303-070(2)(c), once a material has been determined to be a dangerous waste, then any solid waste generated from the recycling, treatment, storage, or disposal of that dangerous waste is a dangerous waste unless and until:* *(ii)(B) If it was a listed waste under WAC 173-303-080 through 173-303-083, it also has been exempted pursuant to WAC 173-303-910(3)*
Evidence: **Appendix D** – Field Photographs **Appendix S** – Aqua Solutions Bromine Number Titration Solvent SDS **Appendix T** – Marathon Response to Lab Chemical Disposal **Appendix U** – Washington Ecology Hazardous Waste Compliance Inspection Report, August 31, 2021 Interviews
Description of Observation: Facility representatives described that many of the sample waste streams discharged to the OWS included listed reagents. For example, in Lab #1, sample wastes containing spent toluene solvent from Method UOP269 analysis ("Nitrogen Bases in Hydrocarbons by Potentiometric Titration") and ASTM Method D4928 analysis ("Standard Test Method for Water in Crude Oils by Coulometric Karl Fischer Titration") are disposed in a laboratory sink drain adjoining the testing hoods (**Appendix D**, photos 40 through 42). In Lab #3, sample waste combined with spent toluene solvent used in maleic anhydride value analysis is emptied down a drain that is installed into the hood where the analysis is conducted (**Appendix D**, photo 62). According to laboratory representatives, this drain discharges to the OWS. In Lab #4, sample waste mixed with methylene chloride solvent (**Appendix D**, photos 65 and 66) generated from bromine analysis is poured into a funnel within the testing hood that discharges to a drain and the OWS. The solvent, Aqua Solutions Bromine Number Titration Solvent, is 17% methylene chloride as listed on the product safety data sheet (SDS) (**Appendix S**). Because the methylene chloride concentration is greater than 10% by volume before use and is used for its solvent properties, this material meets the definition of a F002 dangerous waste. During the inspection, NEIC observed toluene wash bottles next to most laboratory sinks and some of the hood and bench drains that discharge to the OWS (**Appendix D**, photos 41, 43, 49, 59, 66). According to laboratory representatives, glassware is typically cleaned with toluene and/or acetone, with rinsewater discharged to the OWS. Additionally, at Lab #1, laboratory representatives stated that viscosity and vapor pressure testing instrument tubing is washed with toluene and then acetone after each sample run, with the rinsewater discharging to the OWS via drains installed adjacent to the instruments. The toluene used in the lab as a solvent, if greater than 10% toluene before use, would meet the definition of an F005 dangerous waste. When F005 waste is disposed of in the OWS, it

Observation 2
flows to the wastewater treatment plant. Sludges produced during wastewater treatment would retain the F005 dangerous waste listing. A storeroom of unused chemical products is located in the laboratory building. Laboratory representatives stated that when these chemicals expire, they contact the environmental department, which directs them to either dispose of the chemicals down the sink drain to the OWS or to dispose of the chemical as dangerous waste. NEIC requested additional information about facility protocols for designating expired chemical products. The facility provided a follow-up response on October 25, 2024, (**Appendix T**) indicating that all solid expired chemicals and the majority of liquid expired chemicals are disposed off-site. The follow-up response also provided a list of chemicals most recently disposed off-site on January 16, 2024. The January 16, 2024, response does not describe how these chemicals were designated. The follow-up response indicated that the facility is reviewing their procedures to ensure that P- and U-listed expired chemicals are not poured down laboratory drains. It appears that Marathon disposed of F002 and F005 dangerous wastes in the OWS through laboratory sink drains consistently over its operational history. The State of Washington has not adopted the federal 40 CFR § 261.3(a)(2)(iv) wastewater headworks exemptions for spent solvents. Therefore, dangerous wastes disposed of in the laboratory drains that meet listing criteria due to their toxicity remain listed dangerous wastes in the OWS. Further, all residuals removed from the EP continue to be listed wastes as specified in WAC 173-303-070(2)(a). Marathon should evaluate all the waste streams that are discharged to the OWS, including expired chemicals, to determine if any other listed dangerous waste codes should be applied to wastewater treatment residuals. At the time of the NEIC inspection, sludges from the aeration basins and final clarifiers were disposed of as non-hazardous waste. Based on their characterization of biological wastewater treatment sludges as non-hazardous, Marathon managed the sludges in an on-site land farm until at least 2021 (**Appendix U**, Page 3). Under the “mixture” and “derived from” rules, the facility is required to manage their biological wastewater treatment sludges with the appropriate dangerous waste listings.

Observation 3
Observation Summary: The facility generates listed K050, K170, and K171 dangerous waste during cleanouts of heat exchanger bundles, equipment containing CSO, and equipment containing spent hydrotreating catalyst, respectively. Washington State has not adopted the federal “headworks exemption” for refinery wastes codified at 40 CFR § 261.3(a)(2)(iv)(C). Therefore, wastewaters mixed with listed K050, K170, and K171 dangerous wastes retain the K050, K170, and K171 listings. However, the facility is not managing these wastewaters or downstream biological wastewater treatment sludges as listed dangerous waste. This observation was not discussed at the closing conference.
Citations: **Dangerous waste sources, WAC 173-303-082 [40 CFR §§ 261.3(a)(2)(iv), (b)(1-2), (c)(2)(i)]**

Observation 3
(1) The dangerous waste sources list appears in WAC 173-303-9904. Any waste that is listed or is a residue from the management of a waste listed on the dangerous waste sources list must be designated a dangerous waste, and identified as DW. Dangerous waste sources codes include WPCB [state listed polychlorinated biphenyl] or codes that begin with an "F" or "K." *(3) Care should be taken in the proper designation of these wastes and of mixtures of these wastes and solid wastes. A mixture of solid waste with a waste that would be designated as a dangerous waste source under this section must be designated as a dangerous waste source unless it has been excluded under WAC 173-303-070(2)(c). The mixture has the same designation (DW), and the same dangerous waste number as the dangerous waste source which was mixed with the solid waste.* **Dangerous waste sources list, WAC 173-303-9904 [40 CFR § 261.32]** *Petroleum Refining:* *K050: Heat exchanger bundle cleaning sludge from the petroleum refining industry. (T)* *K170: Clarified slurry oil tank sediment and/or in-line filter separation solids from petroleum refining operations. (T)* *K171: Spent hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media). (I, T)* **Designation of dangerous waste, WAC 173-303-070 [40 CFR §261.3(c)(2)(i), 40 CFR §261.3(d)(2)]** *(2)(a) Except as provided at WAC 173-303-070(2)(c), once a material has been determined to be a dangerous waste, then any solid waste generated from the recycling, treatment, storage, or disposal of that dangerous waste is a dangerous waste unless and until:* *(ii)(B) If it was a listed waste under WAC 173-303-080 through 173-303-083, it also has been exempted pursuant to WAC 173-303-910(3)*
Evidence: **Appendix D** – Field Photographs **Appendix V** – E-manifest Data for K170 Dangerous Waste **Appendix W** – E-manifest Data for K171 Dangerous Waste **Appendix X** – June 14, 2023, Manifests for K171 Dangerous Waste **Appendix Y** – 60 FR 57747-57780 **Appendix U** – Washington Ecology Hazardous Waste Compliance Inspection Report, August 31, 2021 Interviews
Description of Observation:

Observation 3
The facility generates K050, K170, and K171 waste from the dangerous waste sources list codified at WAC 173-303-9904 when it cleans out heat exchanger bundles, equipment containing CSO, or equipment containing spent hydrotreating catalyst, respectively. The facility generates K050 listed dangerous waste during cleanouts of heat exchanger bundles, which takes place at the facility “bundle pad” (**Appendix D**, photos 30 through 32 and photo 38). The sludge from the heat exchanger bundles is sprayed out with water, and waste sludge and wastewater from the bundles accumulates in an approximately 24-inch wide, 30-inch deep grated trench that runs the length of the concrete-paved bundle pad (**Appendix D**, photo 31). Wastewater and sludges from cleanouts of pumps and sewer pipe segments are also discharged intermittently to the bundle pad trench. Facility representatives stated that waste typically accumulates in the bundle pad trench for one to three months and is then transported with an excavator to nearby dewatering bins equipped with a filter/mesh screen (**Appendix D**, photos 35 and 36). Water and oil from the dewatering bins discharges via a flexible hose to a grated catch basin that discharges to the OWS and travels to the EP. The facility characterizes solids from the dewatering bins as F037 (petroleum refinery primary oil/water/solids separation sludge) dangerous waste and ships it off-site. The facility does not apply a K050 dangerous waste code to this waste stream or any other waste they generate. NEIC reviewed publicly-available electronic manifest data for the facility for the time period between June 30, 2018, and October 1, 2024, and did not identify any K050 dangerous waste codes disposed by the facility on their manifests during this time. However, at its point of generation, the heat exchanger bundle sludge generated by the facility meets the definition of K050 listed dangerous waste found at WAC 173-303-9904 and mixes with oils and wastewaters that are ultimately discharged to the EP. The majority of the K170 dangerous waste that the facility generates comes from cleanout of two tanks. Facility representatives stated that Tank 8 and Tank 9 receive bottoms from two fractionation columns at the CCU. Tanks 8 and 9 are cleaned out and inspected on a regular schedule. The waste residues from the cleanouts of Tank 8 and Tank 9 are characterized as K170 dangerous waste and disposed of off-site. According to facility representatives, after the bulk of the contents of Tank 8 or Tank 9 are removed, the tanks are washed with water. The resulting wastewater travels through hard-pipe to slop oil Tank 19. The water draw from Tank 19 travels to the OWS and then the EP. According to manifests reviewed by NEIC during the inspection and discussion with facility representatives, recent, large-scale generation of K170 dangerous wastes occurred during the cleanout of Tank 8 in August through September of 2023 and during the cleanout of Tank 9 in January through April of 2021 (**Appendix V**, Pages 1-7). Publicly available electronic manifests indicate that the facility shipped 1,618,033 kilograms (kg) of K170 waste off-site between August 3 and September 26, 2023, during the cleanout of Tank 8 (**Appendix V**, Pages 11-13). These manifest data indicate that the facility shipped 1,910,242 kg of K170 waste off-site between January 29, and April 18, 2021, during the cleanout of Tank 9 (**Appendix V**, Pages 8-10). Facility representatives stated that K171 dangerous waste is generated during the cleanout of diesel hydrotreating (DHT) and NHT hydrotreating reactors. Spent hydrotreating catalyst is

Observation 3
removed from the reactors, designated as K171 dangerous waste, and disposed of off-site. Facility representatives explained that after removal and disposal of the bulk of the spent catalyst from the reactors, an initial washing step is conducted that directs washwater from the reactor through a filter to capture additional K171 dangerous waste that is also disposed of off-site. The wastewater that passes through the filter is discharged to the OWS. Then, the reactor is washed again, and the resulting wastewater is discharged to the OWS for treatment at the EP. According to publicly available electronic manifests, the facility's most recent shipment of K171 dangerous waste occurred on June 14, 2023, when the facility shipped 297,473 kg of spent DHT and NHT hydrotreating catalyst off-site using six manifests (**Appendix W**, Page 2, **Appendix X**). Federal hazardous waste regulations include a "headworks exemption" for refinery wastes (40 CFR § 261.3(a)(2)(iv)(C)). The "headworks exemption" exempts de minimis quantities of specific refinery wastes, including K050, K170, and K171 wastes, from the definition of hazardous waste when they are mixed with wastewater and discharged to the headworks of a wastewater treatment system subject to regulation under section 402 or 307(b) of the Clean Water Act. EPA's rationale for the 40 CFR § 261.3(a)(2)(iv)(C) exemption is outlined in its proposal to list K170, K171, and K172 hazardous wastes (**Appendix Y**). In this proposal, EPA acknowledged that some refineries manage K170, K171, and K172 wastes in their wastewater treatment systems when vessels or tanks are cleaned and that "a consequence of potentially listing certain residuals as hazardous waste would be to cause all wastewaters and wastewater treatment sludges to be derived from those wastes" (**Appendix Y**, Page 57781). To address this scenario, EPA went on to propose (and ultimately adopt) the "headworks exemption" to exclude these listed wastes when mixed with wastewater. In its rationale for the proposed "headworks exemption," EPA stated: "The Agency believes those listed petroleum refining residuals carried into the wastewater system would be removed during primary treatment as sludges that are already regulated hazardous wastes (e.g., K048, K051, F037, or F038) provided they are discharged to the oil recovery sewer system" (**Appendix Y**, Page 57781). However, Washington State has not adopted the "headworks exemption" at 40 CFR § 261.3(a)(2)(iv)(C). State hazardous waste programs may contain requirements that are more stringent than federal requirements. Therefore, the wastewater that the facility generates during the cleanout of K050 heat exchanger bundle sludge and equipment containing K170 or K171 waste, along with downstream wastewater sludges, retain their K-listings through the "mixture" rule (WAC 173-303-082(3)) and the "derived from" rule (WAC 173-303-070(2)(a)). Notably, sludges generated during primary wastewater treatment or gravitational separation are captured in K048, K051, F037, or F038 dangerous waste listings for refinery sludges. The F037 and F038 definitions specifically exclude sludges generated from aggressive biological treatment. However, in the absence of the "headworks exemption," sludges generated downstream of primary treatment or gravitational separation retain the listing(s) of the wastewater they have mixed with and are derived from, if that wastewater contains a listed dangerous waste.

Observation 3
The facility currently characterizes and manages wastewater sludges from primary treatment or gravitational separation as K051 or F037 dangerous waste. However, the facility characterizes the sludges from biological wastewater treatment as non-hazardous waste. Based on their characterization of biological wastewater treatment sludges as non-hazardous, the facility managed the sludges in an on-site land farm until at least 2021 (**Appendix U**, Page 3) and now ships them off-site as non-hazardous waste. Under the "mixture" and "derived from" rules, the facility is required to manage their biological wastewater treatment sludges as listed K050, K170, and K171 dangerous waste.

Observation 4
Observation Summary: A dedicated sewer system is present within the EP footprint. Data obtained from a prior NEIC Clean Air Act (CAA) inspection in 2023 and more recent data collected by the facility in February and June 2024 indicate that hydrocarbons containing elevated concentrations of benzene are present within the sewer system and may be leaking into surrounding subsurface soils and/or groundwater. The facility has not identified the source of organic material in the sewer system or outside of it. The facility is not able to provide documentation about inspections or determinations regarding the structural integrity of the EP sewer system or primary wastewater treatment units. Taken together, the facility does not appear to be operating, maintaining, or inspecting the EP units and sewer system in a way that ensures that their contents are managed in an environmentally protective manner as required by the dangerous waste regulations for both permit-by-rule and units managing oil-bearing hazardous secondary materials. If a release of dangerous waste has occurred from the EP units or EP sewer system to the ground without being immediately recovered, permit-by-rule and oil-bearing secondary hazardous waste exclusions under RCRA do not apply, and the released material is subject to regulation as dangerous wastes that have been land-disposed. Additionally, the contents of the EP sewer may have historically discharged to the facility stormwater ponds. Because the stormwater ponds appear to meet the definition of a surface impoundment, this practice would likely represent unpermitted land disposal of dangerous waste. However, at the time of the inspection, the outflow of the EP sewer appeared to be directed back to the API separator in a closed-loop configuration.
Citation: **Permits by rule, WAC 173-303-802 [40 CFR § 270.1(c)(2)(v)]** *(1) Purpose and applicability. This section provides for permit by rule for particular facilities and activities managing dangerous wastes, provided that certain conditions are met. These facilities, activities, and conditions are listed in this section. Owners and operators of facilities with permits by rule are not required to submit an application for a dangerous waste facility permit.* *(5) Totally enclosed treatment facilities or elementary neutralization or wastewater treatment units.*

Observation 4

(a) The owner or operator of a . . .wastewater treatment unit that treats dangerous wastes generated on or offsite, will have a permit by rule, subject to limitations in (b) and (c) of this subsection, if they:

(iv) Comply with the following regulations:

(C) WAC 173-303-283, performance standards

Performance standards, WAC 173-303-283

(3) Performance standards. Unless authorized by state, local, or federal laws, or otherwise authorized in this regulation, the owner/operator must design, construct, operate, or maintain a dangerous waste facility that to the maximum extent practical given the limits of technology prevents:

(a) Degradation of groundwater quality;

(c) Degradation of surface water quality;

(h) The use of processes that do not treat, detoxify, recycle, reclaim, and recover waste material to the extent economically feasible

Excluded categories of waste, WAC 173-303-071 [40 CFR § 261.4(a)(12)]

(3) Exclusions. The following categories of waste are excluded from the requirements of chapter 173-303 WAC, except for WAC 173-303-050, 173-303-145, and 173-03-960, and as otherwise specified:

(cc)(i) Oil-bearing hazardous secondary materials (that is, sludges, byproducts, or spent materials) that are generated at a petroleum refinery (NAICS code 324110) and are inserted into the petroleum refining process (NAICS code 324110 – Including, but not limited to, distillation, catalytic cracking, fractionation, or thermal cracking units (that is, cokers)) unless the material is placed on the land, or speculatively accumulated before being so recycled.

(ii) Recovered oil that is recycled in the same manner and with the same conditions as described in paragraph (cc)(i) of this subsection.

Permit requirements for dangerous waste management facilities, WAC 173-303-800 [40 CFR § 270.1(c)]

(2) The owner/operator of a dangerous waste facility that transfers, treats, stores, or disposes (TSD) or recycles dangerous waste must, when required by this chapter, obtain a permit in accordance with WAC 173-303-800 through WAC 173-303-840 covering the active life, closure period, groundwater protection compliance period, and for any regulated unit (as defined in WAC 173-303-040) or for any facility which at closure does not meet the removal or decontamination limits of WAC 173-303-610(2)(b), post-closure care period, unless they demonstrate closure by removal or decontamination as provided under WAC 173-303-800 (9)

Observation 4
and (10), or obtain an enforceable document in lieu of a post-closure permit, as provided under subsection (12) of this section. **Definitions, WAC 173-303-040 [40 CFR § 260.10]** *"Wastewater Treatment Unit" means a device that . . .Meets the definition of tank or tank system in this section.* *"Tank" means a stationary device, designed to contain an accumulation of dangerous waste, and which is constructed primarily of nonearthen materials to provide structural support.* *"Tank system" means a dangerous waste storage or treatment tank and its associated ancillary equipment and containment system.* *"Ancillary equipment" means any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter, or control the flow of dangerous waste from its point of generation to a storage or treatment tank(s), between dangerous waste storage and treatment tanks to a point of disposal on-site, or to a point of shipment for disposal off-site.* *"Land disposal" means placement in or on the land, except in a corrective action management unit or staging pile, and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, underground mine or cave, or placement in a concrete vault, or bunker intended for disposal purposes.* *"Surface impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), and which is designed to hold an accumulation of liquid wastes or wastes containing free liquids. The term includes holding, settling, and aeration pits, ponds, or lagoons, but does not include injection wells.*
Evidence: **Appendix Z** – Observation 4, Description of Observation **(Contains Facility-Claimed CBI)** **Appendix AA** – NEIC CAA Inspection Report **Appendix D** – Field Photographs **Appendix I** – Map Location of Effluent Plant Sewer Manholes **Appendix BB** – Effluent Plant Sewer Drawings **(Contains Facility-Claimed CBI)** **Appendix G** – Detail of Retention Pond Manifold **(Contains Facility-Claimed CBI)** **Appendix H** – Effluent Training Manual **(Contains Facility-Claimed CBI)** **Appendix CC** – Marathon Response to Questions Received on October 16, 2024 **Appendix DD** – Effluent Plant Sewer Sample Benzene Results - Oil **Appendix EE** – Sampler Notes from Effluent Sewer Sampling and PSG Deployment **Appendix FF** – Effluent Plant Sewer Sample Results - Aqueous **Appendix GG** – Effluent Sewer Investigation, PSG Report **Appendix O** – Discharge Monitoring Reports, April-August 2024 **Appendix HH** – Marathon Response to Primary Clarifier Inspection Records **Appendix II** – 45 FR 76076-76083

Observation 4
Appendix JJ – 63 FR 42109-42189 **Appendix R** – Marathon Update on Wastewater Projects Interviews
Description of Observation: The description of Observation 4 contains CBI and is attached as **Appendix Z**.

Observation 5
Observation Summary: The stormwater flume may be receiving process wastewaters that have not been treated in the facility's EP. NEIC inspectors observed an oily sheen on water in the unit as well as steam, indicating that flow from sources other than non-contact stormwater may be entering the unit. Piping connects the neutralization pond to the stormwater flume, and at least one overflow event of dangerous waste from the neutralization pond may have occurred in the past. Marathon acknowledged a potential gap in tracking the wastewaters that discharge into the flume and indicated that effluent from the PTU may also be entering the stormwater flume instead of the OWS. Wastewater in the stormwater flume is not treated in the facility EP and is ultimately discharged into the Fidalgo Bay. Marathon may not have made an accurate waste designation for all wastewater streams managed in the stormwater flume.
Citation: **Designation of dangerous waste, WAC 173-303-070 [40 CFR § 262.11]** *(1) Purpose and applicability.* *(a) This section describes the procedures for determining whether or not a solid waste is DW or EHW.* *(b) The procedures in this section are applicable to any person who generates a solid waste, as defined in WAC 173-303-016, (including recyclable materials) that is not exempted or excluded by this chapter or by the department. Any person who generates a solid waste must determine if that waste is a dangerous waste by following the procedures set forth in subsection (3) of this section. Any person who determines by these procedures that their waste is designated DW or EHW is subject to all applicable requirements of this chapter.*
Evidence: **Appendix D** – Field Photographs **Appendix KK** – North Half General Sewer Plot Plan **(Contains Facility-Claimed CBI)** **Appendix E** – Effluent Flow Diagram **(Contains Facility-Claimed CBI)** **Appendix F** – Effluent Flow Schematic **(Contains Facility-Claimed CBI)** **Appendix G** – Detail of Retention Pond Manifold **(Contains Facility-Claimed CBI)** **Appendix LL** – Stormwater Flume Solids Analytical Results **Appendix R** – Marathon Update on Wastewater Projects **Appendix C** – Pretreatment Unit Process Flow Diagram **(Contains Facility-Claimed CBI)** Interviews

Observation 5
Description of Observation:

The stormwater flume is an in-ground water retention unit located in the facility's EP with a 200,000-gallon capacity (**Appendix D**, photos 16 and 18). Marathon representatives stated that the stormwater flume receives non-contact stormwater from outside of process areas throughout the refinery (**Appendix KK [CBI]**). The storm sewer lines converge into a main trunk line which discharges into the stormwater flume, depicted in **Appendix E (CBI)** and **Appendix F (CBI)**.

Water collected in the stormwater flume passes over a weir into the west laundre then combines with EP effluent and discharges into the west retention pond (**Appendix G [CBI]**). Marathon representatives described the function of the stormwater flume is to settle out solids. Operators visually observe the flume on a daily basis and use a skimmer to remove any oil, if present (**Appendix D**, photos 20, 76). Marathon representatives described that a daily sample is collected from the flume and analyzed for pH, chlorine, coliform, and phenols. Marathon representatives estimated that sludge from the bottom of the flume is removed and pumped out into dewatering bags every 2 to 4 years. Marathon provided analytical data for stormwater flume solids from 2019 (**Appendix LL**).

The stormwater flume is also piped to both send and receive water from a stormwater diversion pond in the Tank 165 yard. The Tank 165 yard is a diked secondary containment area for Marathon's two 600,000-barrel crude oil tanks (Tank 165 and Tank 166). The Tank 165 yard stormwater diversion pond is located to the east of Tank 165 and Tank 166. According to facility representatives, the diversion pond is used approximately once a month to accept excess stormwater from the stormwater flume during heavy precipitation events when the capacity of the stormwater flume may be exceeded. NEIC inspectors observed this practice on September 26, 2024, after a heavy rain event the day prior (**Appendix D**, photos 77 and 89). Marathon operates a second diversion pond located near Tank 216 for overflow from the Tank 165 yard. Facility representatives estimated the secondary diversion pond is used approximately once per year. Excess stormwater pumped into either of the two diversion ponds is pumped back into the stormwater flume as capacity allows.

Additionally, the neutralization pond is plumbed to the stormwater flume, as shown in **Appendix E (CBI)**. Marathon representatives explained that this is an overflow line engineered for catastrophic events, and it is not used as part of normal refinery operations. Marathon representatives further stated that an overflow alarm was installed following an incident in 2019 in which material from the neutralization pond overflowed into the stormwater flume.

The storm sewer is designed to convey non-contact stormwater into the stormwater flume, bypassing treatment in the EP. However, evidence suggests that oily materials and corrosive wastes are entering the flume. On September 23, 2024, NEIC inspectors observed the stormwater flume and noted an oily sheen present as well as steam rising from the water (**Appendix D**, photos 16 and 18). Marathon representatives did not have an explanation for why non-contact stormwater would have enough heat to create the steam coming from the flume. Nor was an explanation provided as to why oily materials are accumulating in non-

Observation 5
contact stormwater. Oil in the stormwater flume is a frequent occurrence, and Marathon operators regularly remove oil from the flume using a dedicated skimmer. Analytical results for sludge removed from the stormwater flume in 2019 show that hydrocarbon materials are accumulating in the bottom of the unit (**Appendix LL**). Additional information submitted by Marathon on October 25, 2024 (**Appendix R**) indicates potential concerns about effluent from the PTU bypassing the API separator and entering the stormwater flume instead of the OWS for treatment, as intended (**Appendix C – CBI**). Marathon described that following the NEIC inspection, effluent from the PTU has been re-routed to a different OWS location while Marathon conducts an internal investigation of the accuracy of drawings, potential cross over, or overflow situations. Additionally, Marathon described at least one instance in 2019 in which materials from the neutralization pond overflowed into the stormwater flume, necessitating the installation of an overflow alarm. As described in **Observation 1**, the neutralization pond holds D002 corrosive dangerous waste. In 2019 at the time of the overflow incident, Marathon was not required to measure and record the pH of the wastewater exiting the neutralization pond. However, in 2019, the neutralization pond was in service and used for the same purpose in Marathon's process which means that the pond likely discharged corrosive waste into the stormwater flume during this incident. The existence of an overflow connection from a unit managing dangerous waste to a non-contact stormwater unit could lead to further incidents where dangerous waste is discharged into a management unit not designed to receive it. Various concerns exist about flows other than non-contact stormwater entering the stormwater flume. Marathon may not have made an accurate waste designation for all wastes that are managed in the unit. Failure to separate contact and non-contact wastewaters prior to accumulation in the stormwater flume could be resulting in dangerous wastes bypassing treatment in the EP, and ultimately discharging into the Fidalgo Bay. The stormwater flume is not a tank. Marathon's NPDES permit describes the stormwater flume as having an unlined clay bottom. The unit has sloped walls and may meet the definition of surface impoundment, which would have implications of dangerous waste land disposal if dangerous wastes are entering the unit.

Observation 6
Observation Summary: Marathon conducts vehicle and equipment maintenance in the auto shop/garage (auto shop) generating used oil that is stored on-site in a container. According to facility representatives, the used oil is periodically discharged to the OWS. Wastewaters that receive de minimis quantities of used oil (small drips, leaks, or drippings from equipment) are not subject to the used oil requirements. Discharging oil from a container to wastewater does not meet the definition of de minimis quantities, making the wastewater unit subject to the requirements of the used oil regulations. The wastewater tanks were not labeled with the words "used oil" as required by the regulations.
Citation:

Observation 6
Standards for the management of used oil, WAC 173-303-515 [40 CFR § 279] *(1) Purpose. The purpose of this section is to provide used oil management standards for generators, transporters, collection centers, aggregation points, transfer facilities, processors, and re-refiners, burners, and marketers of used oil.* *(2) Definitions. In addition to the terms used in this chapter, the definitions of 40 C.F.R. Part 279 are incorporated by reference when managing used oil under this section. The term "hazardous waste" used in 40 C.F.R. Part 279 means "dangerous waste" as defined in WAC 173-303-040.* *(3) Applicability. This section identifies those materials subject to regulation as used oil. For the purpose of this section, the applicability statements of 40 C.F.R. Part 279.10 are incorporated by reference, except 40 C.F.R. Part 279.10 (b)(2) and (3), and as modified below. In addition, the test methods at WAC 173-303-110(3) must be used. Materials containing or otherwise contaminated with or derived from used oil: The term "materials" used in 40 C.F.R. Part 279.10 does not include dangerous waste.* *(6) Standards for used oil generators. This subsection applies to all used oil generators and persons managing materials under this section. The standards for used oil generators of 40 C.F.R. Parts 279.20 through 279.24 are incorporated by reference except 40 C.F.R. Part 279.21. Used oil generators and persons managing materials under this subsection are subject to the federal regulations listed above and the following:* **40 CFR §279.10 Applicability.** *This section identifies those materials which are subject to regulation as used oil under this part. This section also identifies some materials that are not subject to regulation as used oil under this part, and indicates whether these materials may be subject to regulation as hazardous waste under parts 260 through 266, 268, 270, and 124 of this chapter.* *(a) Used oil. EPA presumes that used oil is to be recycled unless a used oil handler disposes of used oil, or sends used oil for disposal. Except as provided in §279.11, the regulations of this part apply to used oil, and to materials identified in this section as being subject to regulation as used oil, whether or not the used oil or material exhibits any characteristics of hazardous waste identified in subpart C of part 261 of this chapter.* *(f) Wastewater. Wastewater, the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act (including wastewaters at facilities which have eliminated the discharge of wastewater), contaminated with de minimis quantities of used oil are not subject to the requirements of this part. For purposes of this paragraph, "de minimis" quantities of used oils are defined as small spills, leaks, or drippings from pumps, machinery, pipes, and other similar equipment during normal operations or small amounts of oil lost to the wastewater treatment system during washing or draining operations. This exception will not apply if the used*

Observation 6
oil is discarded as a result of abnormal manufacturing operations resulting in substantial leaks, spills, or other releases, or to used oil recovered from wastewaters. **40 CFR §279.22 Used oil storage**. *(c) Labels.* *(1) Containers and aboveground tanks used to store used oil at generator facilities must be labeled or marked clearly with the words "Used Oil."*
Evidence: **Appendix D** – Field Photographs **Appendix MM** – Marathon Response to Used Oil Processor Question Interviews
Description of Observation: During the inspection, NEIC inspectors observed a container labeled "used oil" in the auto shop (**Appendix D**, photo 93). Facility representatives stated that the container is emptied by discharging the used oil into the OWS. The used oil regulations do not apply to wastewaters that receive de minimis quantities of used oil. "De minimis" is defined by 40 CFR §279.10(f) as small spills, leaks, or drippings from pumps, machinery, pipes, and other similar equipment during normal operations or small amounts of oil lost to the wastewater treatment systems during washing or draining operations. Discharging used oil from a container does not meet the definition of de minimis because it is not a small spill, leak, or dripping and it is not associated with the normal operations of a wastewater treatment system. The wastewater tanks that are part of the wastewater treatment system were not labeled with the words "used oil" as required by the regulations (**Appendix D**, photos 1, 2, 84 and 85). Marathon stated in a response to the inspection (**Appendix MM**) that 40 CFR §270.10(g) exempts the facility from the used oil processor regulations. Although this citation exempts used oil that is reinserted into the refinery from the used oil regulations, 40 CFR § 279.10(g)(4) states that prior to insertion into the petroleum refinery process, the used oil is subject to the requirements. This includes the tank storage requirements. Furthermore, 40 CFR 40 CFR § 279.10(g)(5) states that used oil that is incidentally captured by a hydrocarbon recovery system or wastewater treatment system as part of routine process operations at a petroleum refining facility and inserted into the petroleum refining facility process is exempt from the requirements of this part. This exemption does not extend to used oil which is intentionally introduced into a hydrocarbon recovery system (e.g., by pouring collected used oil into the wastewater treatment system).

Observation 7
Observation Summary: Marathon did not collect a representative sample to complete a dangerous waste designation for the spent carbon drums used for benzene emission control. The sample is taken from the top of the drum. This is where the benzene concentration would be the lowest because the emissions enter the container from the bottom. The

Observation 7
activated carbon would be the most saturated (highest concentrations of benzene) at the bottom and decrease towards the top of the container. To make a dangerous waste designation, the sample should be representative of all waste within the container, not just the activated carbon on top. This observation was not discussed at the closing conference.
Citation: **Designation of dangerous waste, WAC 173-303-070 [40 CFR §262.11(d)(2)(i)]** *(3) Designation procedures* *(c) For the purpose of determining if a solid waste is a dangerous waste as identified in WAC 173-303-080 through 173-303-100, a person must either:* *(i) Test the waste according to the methods, or an approved equivalent method, set forth in WAC 173-303-110; or* *(ii) Apply knowledge of the waste in light of the materials or the process used* **Sampling, testing methods, and analytes, WAC 173-303-110** *(1) Purpose. This section sets forth the testing methods to be used to comply with the requirements of this chapter. Quality control procedures specified by the testing method or an approved equivalent method must be followed for the analytical result to be considered valid for designation. All methods and publications listed in this section are incorporated by reference.* *(2) Representative samples.* *(a) The methods and equipment used for obtaining representative samples of a waste will vary with the type and form of the waste.* **Definitions, WAC 173-303-040 [40 CFR § 260.10]** *When used in this chapter, the following terms have the meanings given below.* *"Representative sample" means a sample which can be expected to exhibit the average properties of the sample source.*
Evidence: **Appendix D** – Field Photographs Interviews
Description of Observation: During the inspection, the NEIC inspectors observed activated carbon drums (**Appendix D**, photo 90) used to control benzene emission in the OWS. Marathon stated that it had tested the contents of the drums for benzene and found that it was not a dangerous waste. The

Observation 7
Marathon representative stated that to collect a sample, the top of the drum was removed, and a sample was collected from the material on top. The air emissions flow from bottom to top of the drum. As the emissions pass through the drum, benzene is captured by the activated carbon. The concentration of benzene in the activated carbon is the greatest at the bottom where the emissions enter the drum and decrease as the emissions flow up through the drum and are captured in the activated carbon. A sample collected from the top of the drum would be biased to represent the activated carbon with the lowest total concentration of benzene because the carbon at the top of the drum would be exposed to emissions with the lowest total concentrations of benzene. A sample collected for the purpose of dangerous waste designation must be representative of the average properties of the sample source. In this case, a grab sample is collected where the benzene concentrations are expected to be the lowest which is not representative of the average properties of the activated carbon in the drum.

Observation 8
Observation Summary: Two 55-gallon drum SAAs equipped with aerosol can puncturing devices were labelled as containing flammable paint and paint thinner waste but also receive pesticide and adhesives waste. The facility could not provide information about systems or protocols they have in place to track or manage the multiple waste streams in these SAAs. The facility may exceed accumulation limits at these SAAs if P-listed pesticide wastes are mixed with paint waste. Additionally, the facility may not be appropriately labeling the SAAs with information about additional risk(s) associated with the mixed waste stream (i.e., toxicity).
Citation: **Satellite accumulation, WAC 173-303-200(2) [40 CFR §262.15]** *(a) A generator may accumulate as much as fifty-five gallons of dangerous waste or one quart of acutely hazardous waste (as defined in WAC 173-303-040) in containers at or near any point of generation where waste initially accumulates (defined as a satellite accumulation area in WAC 173-303-040). The satellite accumulation area must be under the control of the operator of the process generating the waste or secured at all times to prevent improper additions of wastes to a satellite container. Satellite accumulation is allowed without a permit provided the generator:* *(ii) Complies with subsection (1)(d) of this section.* **Accumulating dangerous waste on-site, WAC 173-303-200 [40 CFR § 262.15(a)(5)]** *(1) A generator, not to include transporters as referenced in WAC 173-303-240(3), may accumulate dangerous waste on-site without a permit for ninety days or less after the date of generation, provided that:*

Observation 8
(d) While being accumulated on site, each container and tank is labeled or marked clearly with the words "dangerous waste" or "hazardous waste." Each container or tank must also be marked with a label or sign which identifies the major risk(s) associated with the waste in the container or tank for employees, emergency response personnel and the public (note: If there is already a system in use that performs this function in accordance with local, state, or federal regulations, then such system will be adequate).
Evidence: **Appendix D** – Field Photographs **Appendix NN** – Marathon Response to Concerns Identified at Closeout Interviews
Description of Observation: A 55-gallon drum equipped with an aerosol can puncturing device is present on the south side of Shop 2 and acts as an SAA (**Appendix D**, photo 96). A flammable liquid label was observed on the drum during the NEIC inspection, along with a hazardous waste label indicating that the contents of the drum were "waste paint and thinner" with a D001 waste code. During the NEIC inspection, facility representatives stated that in addition to waste paint and thinner, aerosol cans containing pesticides and adhesives are punctured at this location and their contents disposed in the SAA drum. Another 55-gallon drum equipped with an aerosol can puncturing device was present at the facility paint shop and acts as an SAA (**Appendix D**, photo 98). During the NEIC inspection, the labels on this SAA consisted of a "flammable liquid" label and a hazardous waste label indicating that the contents of the drum were "waste paint and thinner" with a D001 waste code. Adjacent to this SAA was a tote where empty aerosol cans are placed after draining. A punctured pesticide aerosol container was present in this tote (**Appendix D**, photos 99 and 100). The facility could not provide additional information on the pesticide or adhesive wastes that were being drained into the aerosol puncturing SAA drums, nor could they provide any information about protocols or systems in place at the facility to manage multiple waste streams in these SAA drums. The punctured pesticide aerosol can observed in the tote adjoining the paint shop SAA had two active ingredients (prallethrin and cypermethrin) and is not a P- or U-listed waste, but with a total concentration of 0.07% halogenated organics, is a persistent dangerous waste with dangerous waste code WP02. If a P-listed waste were mixed with the paint/paint thinner waste stream, the permissible quantity to be stored at the SAA would be 1 quart instead of 55 gallons (WAC 173-200(2)(a)). Additionally, the facility must mark or label each SAA container with an indication of the major risk(s) associated with the waste. The Shop 2 and paint shop aerosol puncturing SAA drums had labeling indicating flammable paint and paint thinner waste, but the facility could not provide information indicating that they had evaluated the risk(s) of the pesticide or adhesive waste (e.g., toxicity) being mixed with the paint waste at these SAAs. The paint shop SAA drum with the associated punctured pesticide can did not have a toxic label which would be the major risk label required for the WP02 dangerous waste.

Observation 8
After the inspection, Marathon provided a follow-up response (**Appendix NN**) indicating that facility personnel were sent information instructing them that pesticides and adhesives should not be emptied into the SAAs. The follow-up response also indicated that three aerosol puncturing SAAs were re-labeled with waste codes D001, D005, D035, F003, F005, and WT02 "to cover all materials that could potentially be emptied in the puncture device container." The photographs in Marathon's response indicate that the aerosol puncturing SAAs that were re-labeled included the Shop 2 and paint shop SAAs described in this observation. However, the facility response described what appeared to be the Shop 2 SAA as the Shop 1 SAA. A third relabeled SAA drum located in the facility garage was also included in the response.

Observation 9

Observation Summary: A 55-gallon drum SAA in the facility paint shop's paint booth receives waste that meets the criteria for the toxicity characteristic and contains spent solvent that is listed for toxicity. However, the SAA was not labeled with an indication of the toxicity risk of this waste. Additionally, the facility did not provide a designation record for the waste that meets the requirements of WAC 173-303-070(3)(c).

Citation:

Satellite accumulation, WAC 173-303-200(2) [40 CFR §262.15]

(a) A generator may accumulate as much as fifty-five gallons of dangerous waste or one quart of acutely hazardous waste (as defined in WAC 173-303-040) in containers at or near any point of generation where waste initially accumulates (defined as a satellite accumulation area in WAC 173-303-040). The satellite accumulation area must be under the control of the operator of the process generating the waste or secured at all times to prevent improper additions of wastes to a satellite container. Satellite accumulation is allowed without a permit provided the generator:

> *(ii) Complies with subsection (1)(d) of this section.*

Accumulating dangerous waste on-site, WAC 173-303-200 [40 CFR § 262.15(a)(5)]

(1) A generator, not to include transporters as referenced in WAC 173-303-240(3), may accumulate dangerous waste on-site without a permit for ninety days or less after the date of generation, provided that:

> *(d) While being accumulated on site, each container and tank is labeled or marked clearly with the words "dangerous waste" or "hazardous waste." Each container or tank must also be marked with a label or sign which identifies the major risk(s) associated with the waste in the container or tank for employees, emergency response personnel and the public (note: If there is already a system in use that performs this function in accordance with local, state, or federal regulations, then such system will be adequate).*

Designation of dangerous waste, WAC 173-303-070

Observation 9
(3) Designation procedures. *(c) For the purpose of determining if a solid waste is a dangerous waste as identified in WAC 173-303-80 through 173-303-100, a person must either:* *(i) Test the waste according to the methods, or an approved equivalent method, set forth in WAC 173-303-110; or* *(ii) Apply knowledge of the waste in light of the materials or the process used, when:* *(A) Such knowledge can be demonstrated to be sufficient for determining whether or not it designated and/or designated properly; and* *(B) All data and records supporting this determination in accordance with WAC 173-303-210(3) are retained on-site.*
Evidence: **Appendix D** – Field Photographs **Appendix OO** – Waste Paint Profile **Appendix NN** – Marathon Response to Concerns Identified at Closeout Interviews
Description of Observation: The facility paint shop houses a paint booth. A 55-gallon drum SAA is present in the paint booth (**Appendix D**, photo 101). The SAA is labeled with a “flammable liquid” sticker and a hazardous waste label indicating that it contains “waste paint & thinner” and D001 ignitable dangerous waste. A 5-gallon bucket is also present in the paint booth and is labeled “Paint Thinner – In Use” and “Vanblend 910” (**Appendix D**, photo 102). According to facility representatives, paint booth operators use the paint thinner from this bucket to clean their paint guns; waste paint and thinner from the paint guns are sprayed into the 55-gallon drum SAA. Facility representatives also stated that the paint thinner bucket is filled from a 55-gallon drum of Vanblend 910 located in a shed outside the paint shop (**Appendix D**, photo 103). The Department of Transportation label on the Vanblend 910 drum indicates that it contains UN1993 flammable liquids, not otherwise specified (toluene, acetone). NEIC requested the facility’s dangerous waste designation record for the waste stored in the paint shop SAA. The facility did not provide a designation record with sufficient documentation of testing or generator knowledge to meet the requirements of WAC 173-303-070(3)(c). However, Marathon provided a Clean Harbors profile for the waste paint (**Appendix OO**) that applied D001, D005, D035, F003, and F005 waste codes to the waste, indicating the dangerous waste characteristic of ignitability, characteristic toxicity for barium and methyl ethyl ketone, and listings as both a F003 and F005 spent solvent. WAC 173-303-200(1)(d) requires that an SAA container be marked with a label that identifies the major risk(s) associated with the waste it contains. The Vanblend 910 paint thinner being placed in this SAA contains toluene. The facility did not provide a designation record for the

Observation 9
waste that included information about the percentage of toluene in this paint thinner; if the toluene percentage is greater than 10%, the waste is a F005 spent solvent that is listed for toxicity. Additionally, the Clean Harbors profile for the waste provided by the facility includes an F005 waste code and indicates it is characteristically toxic for barium and methyl ethyl ketone. If the Clean Harbors profile for this waste stream is accurate and/or the Vanblend 910 paint thinner contains > 10% toluene, the facility must label this paint shop SAA with an indication of the toxicity risk for the paint thinner waste being placed in it. After the inspection, the facility provided a follow-up response (**Appendix NN**) indicating that the SAA container inside the paint booth was re-labeled with waste codes D001, D005, D035, F003, F005, and WT02. However, the follow-up response did not address the requirement to label the SAA container with an indication of the toxicity risk for the paint thinner waste being placed in it.

Observation 10
Observation Summary: Unpunctured aerosol cans that had not undergone the dangerous waste designation process were observed to be abandoned or disposed of at several locations throughout the facility.
Citation: **Identifying solid waste, WAC 173-303-016 [40 CFR § 261.2]** *(3) Definition of solid waste.* *(a) A solid waste is any discarded material that is not excluded by WAC 173-303-017(2) or that is not excluded by variance granted under WAC 173-303-017(5).* *(b) A discarded material is any material that is:* *(i) Abandoned, as explained in subsection (4) of this section* *(4) Materials are solid waste if they are abandoned by being:* *(a) Disposed of; or* *(b) Burned or incinerated; or* *(c) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated.* **Designation of dangerous waste, designation procedures, WAC 173-303-070(3) [40 CFR §261.3]** *(a) To determine whether or not a solid waste is designated as a dangerous waste a person must:*

Observation 10
(i) First, determine if the waste is a listed discarded chemical product, WAC 173-303-081; *(ii) Second, determine if the waste is a listed dangerous waste source, WAC 173-303-082;* *(iii) Third, if the waste is not listed in WAC 173-303-081 or 173-303-082, or for the purposes of compliance with the federal land disposal restrictions as adopted by reference in WAC 173-303-140, determine if the waste exhibits any dangerous waste characteristics, WAC 173-303-090; and* *(iv) Fourth, if the waste is not listed in WAC 173-303-081 or 173-303-082, and does not exhibit a characteristic in WAC 173-303-090, determine if the waste meets any dangerous waste criteria, WAC 173-303-100.*
Evidence: **Appendix D** – Field Photographs **Appendix NN** – Marathon Response to Concerns Identified at Closeout Interviews
Description of Observation: At several locations during the inspection, NEIC inspectors observed waste aerosol cans that appeared to have been abandoned before, or in lieu of, disposal. NEIC also observed aerosol cans that may have contained dangerous waste disposed of in non-dangerous waste dumpsters or trash cans at multiple locations. Specifically, NEIC inspectors observed an unpunctured aerosol can labeled "T-Force® PowerJet® Degreaser" that appeared to be mostly empty on a shelf in the bottle washing room in the laboratory building (**Appendix D**, photo 54). Facility representatives stated that the can was waste, but they had not made a dangerous waste designation for it. Additionally, NEIC observed a box of unpunctured aerosol cans of striping paint at the facility truck unloading area (**Appendix D**, photo 91). These cans appeared to be mostly empty, and according to a facility representative, the cans were considered waste. However, the facility had not made a dangerous waste designation for them. Wastes that are accumulated or stored before, or in lieu of, being abandoned by being disposed of are solid wastes under WAC 173-303-016(4)(c). The facility must make a dangerous waste designation for these solid wastes and manage them accordingly. Additionally, NEIC inspectors observed an unpunctured aerosol can containing enamel paint in a non-dangerous waste scrap metal tote intended for punctured and drained aerosol cans (**Appendix D**, photo 99). An unpunctured aerosol can containing spray adhesive was also observed in a non-dangerous waste trash can at the paint laydown yard (**Appendix D**, photo 114). These cans were abandoned through disposal and are solid waste according to WAC 173-303-016(4)(c). The facility must make a dangerous waste designation for these solid wastes and manage them accordingly.

Observation 10
After the inspection, the facility provided a follow-up response (**Appendix NN**) indicating that refresher training was provided to facility personnel regarding proper aerosol can waste management.

Observation 11

Observation Summary: At the time of the NEIC inspection, dangerous waste samples collected from the EP centrifuge were not being managed according to SAA requirements.

This observation was not discussed at the closing conference.

Citation:

Satellite accumulation, WAC 173-303-200(2) [40 CFR §262.15]

(a) A generator may accumulate as much as fifty-five gallons of dangerous waste or one quart of acutely hazardous waste (as defined in WAC 173-303-040) in containers at or near any point of generation where waste initially accumulates (defined as a satellite accumulation area in WAC 173-303-040). The satellite accumulation area must be under the control of the operator of the process generating the waste or secured at all times to prevent improper additions of wastes to a satellite container. Satellite accumulation is allowed without a permit provided the generator:

> *(ii) Complies with subsection (1)(d) of this section.*

Accumulating dangerous waste on-site, WAC 173-303-200 [40 CFR § 262.15(a)(5)]

(1) A generator, not to include transporters as referenced in WAC 173-303-240(3), may accumulate dangerous waste on-site without a permit for ninety days or less after the date of generation, provided that:

> *(d) While being accumulated on site, each container and tank is labeled or marked clearly with the words "dangerous waste" or "hazardous waste." Each container or tank must also be marked with a label or sign which identifies the major risk(s) associated with the waste in the container or tank for employees, emergency response personnel and the public (note: If there is already a system in use that performs this function in accordance with local, state, or federal regulations, then such system will be adequate).*

Evidence:
Appendix D – Field Photographs
Interviews

Description of Observation:

At the time of the NEIC inspection, a centrifuge was staged inside a trailer at the EP for dewatering of EP sludge. The centrifuge had recently completed dewatering operations for sludge accumulated in the EP sludge thickener. Facility representatives stated that this centrifuge would be used in the future to accept sludge from Tank 44, which was being decommissioned. NEIC observed a sample port on one side of the centrifuge and 5-gallon buckets staged beneath the port (**Appendix D**, photo 10). Additionally, jars containing dark

Observation 11
material were staged on a table adjacent to the centrifuge sample port (**Appendix D**, photos 10 and 11). According to facility representatives, during centrifuging operations, samples are collected from the sample port to evaluate the moisture content of the material in the centrifuge. The buckets beneath the sample port are used to collect spills during sampling. Facility representatives stated that after moisture content has been determined from the collected sample(s), the contents of the buckets beneath the sample port and the sample jars are dumped into the roll-off container staged next to the centrifuge trailer that is used for collection of K051 dangerous waste. The sample jars observed during the NEIC inspection were waste, because the centrifuging operation for EP sludges was complete and moisture content for the dewatered sludge no longer needed to be determined. Additionally, facility representatives had previously determined that the sample jars containing EP sludge were K051 dangerous waste. Dangerous waste may be accumulated at or near their point of generation in an SAA if the conditions of WAC 173-303-200(2) are met. However, the sample jars observed by NEIC in the EP centrifuge trailer did not contain markings indicating that they contained hazardous waste or an indication of the risk(s) associated with this waste as required for an SAA by WAC 173-303-200(1)(d).

Observation 12
Observation Summary: The facility failed to make an accurate dangerous waste designation for spent CHEMets® vials used in ammonia testing and currently disposes of these vials as non-dangerous waste. The SDS for the CHEMets® vial reagents and calculations performed by NEIC indicate that the spent vials are D009 dangerous waste. This observation was not discussed at the closing conference.
Citation: **Identifying solid waste, WAC 173-303-016 [40 CFR § 261.2]** *(3) Definition of solid waste.* *(a) A solid waste is any discarded material that is not excluded by WAC 173-303-017(2) or that is not excluded by variance granted under WAC 173-303-017(5).* *(b) A discarded material is any material that is:* *(i) Abandoned, as explained in subsection (4) of this section* *(4) Materials are solid waste if they are abandoned by being:* *(a) Disposed of; or* *(b) Burned or incinerated; or*

Observation 12

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

Designation of dangerous waste, designation procedures, WAC 173-303-070(3) [40 CFR §261.3]

(a) To determine whether or not a solid waste is designated as a dangerous waste a person must:

(i) First, determine if the waste is a listed discarded chemical product, WAC 173-303-081;

(ii) Second, determine if the waste is a listed dangerous waste source, WAC 173-303-081 or 173-303-082;

(iii) Third, if the waste is not listed in WAC 173-303-081 or 173-303-082, or for the purposes of compliance with the federal land disposal restrictions as adopted by reference in WAC 173-303-140, determine if the waste exhibits any dangerous waste characteristics, WAC 173-303-090; and

(iv) Fourth, if the waste is not listed in WAC 173-303-081 or 173-303-082, and does not exhibit a characteristic in WAC 173-303-090, determine if the waste meets any dangerous waste criteria, WAC 173-303-100.

Evidence:

Appendix D – Field Photographs
Appendix PP – CHEMets® Ammonia K-1510 Kit Instructions and R-1501 Reagent SDS
Interviews

Description of Observation:

The facility regularly tests the ammonia concentration from EP effluent to meet the requirements of their NPDES permit. This test takes place in the water lab using ammonia CHEMets® K-1510 kits which employ R-1501 CHEMets® vials (**Appendix D**, photo 61). During the inspection, spent ammonia CHEMets® vials were observed to be collected in a metal container in a hood in the water lab. Facility representatives stated that a waste designation had not been made for the spent ammonia CHEMets® vials and that they were disposed of in a non-hazardous dumpster at the end of each shift.

Instructions for the ammonia CHEMets® K-1510 kit are available online at https://chemetrics.com (**Appendix PP**, Page 1) and indicate that the kit method employs direct nesslerization, which relies on Nessler's reagent (NR), a basic (high pH) reagent containing mercuric iodide. An SDS for the R-1501 CHEMets® vials available from the same website indicates that the reagent contains mercury (II) iodide at a concentration of 1-2% by weight (**Appendix PP**, Page 4). The SDS also indicates that the CHEMets® vial is a 7-millimeter (mm) glass ampoule that contains 0.2-1.2 milliliters (mL) of liquid NR sealed under vacuum; the specific gravity is 1.1, which can be converted to a density of 1.1 g/mL (**Appendix PP**, Pages 9-10). The CHEMets® vials function by pulling a specific volume of sample into the ampoule after the tip is broken off and the vacuum seal is broken. The volume of sample

Observation 12

pulled into the CHEMets® R-1501 vial is not specified in the SDS or instructions for the K-1510 kit. However, the K-1510 kit instructions indicate that the CHEMets® R-1501 vial pulls from a cup containing 25 mL of sample (**Appendix PP**, Page 1).

Conservatively assuming a total sample volume in the CHEMets® vial of 25.2 mL (25 mL of sample + 0.2 mL NR), and using the values from the SDS along with molar masses of 200.59 grams per mol (g/mol) and 454.4 g/mol for mercury and mercuric iodide, respectively, it is possible to calculate the concentration of mercury in the spent CHEMets® vials as follows:

Milligrams (mg) mercuric iodide per milliliter (mL) of NR:

$$\frac{0.01\ g\ HgI_2}{1\ g\ NR} * \frac{1.1\ g\ NR}{mL\ NR} * \frac{1000\ mg}{g} = \frac{11\ mg\ HgI_2}{mL\ NR}$$

Mg of mercury per mL of NR:

$$\frac{11\ mg\ HgI_2}{mL\ NR} * \frac{200.59\ mg\ Hg}{454.4\ mg\ HgI_2} = \frac{4.86\ mg\ Hg}{mL\ NR}$$

Mg of mercury per L of sample in CHEMets® vial:

$$\frac{\frac{4.86\ mg\ Hg}{mL\ NR} * 0.2\ mL\ NR}{25.2\ mL\ sample} * \frac{1000\ mL}{L} = \frac{38.6\ mg\ Hg}{L\ sample}$$

The minimum concentration of mercury in a spent CHEMets® vial would be 38.6 mg/L, which exceeds the regulatory limit for the dangerous waste toxicity characteristic for mercury (D009 dangerous waste) of 0.2 mg/L using the Toxicity Characteristic Leaching Procedure (TCLP). For liquid wastes containing less than 0.5% filterable solids, the liquid waste itself is considered the TCLP extract, and the total concentration of mercury calculated above may be used as the TCLP concentration.

Based on the information above, the ammonia CHEMets® kit K-1510/R-1501 spent vials generated at the facility are D009 dangerous waste. The facility failed to make an accurate dangerous waste designation for these spent vials.

Observation 13
Observation Summary: Marathon operates a drum washing station outside of the blasting building. Drums from across the facility are brought to this location for cleaning. Marathon does not have measures in place to control the drum washing station to ensure that the drums are empty and listed dangerous waste is not disposed of in the OWS.
Citation:

Observation 13
Designation of dangerous waste, designation procedures, WAC 173-303-070(3) [40 CFR §261.3] *(a) To determine whether or not a solid waste is designated as a dangerous waste a person must:* *(i) First, determine if the waste is a listed discarded chemical product, WAC 173-303-081;* *(ii) Second, determine if the waste is a listed dangerous waste source, WAC 173-303-082;* *(iii) Third, if the waste is not listed in WAC 173-303-081 or 173-303-082, or for the purposes of compliance with the federal land disposal restrictions as adopted by reference in WAC 173-303-140, determine if the waste exhibits any dangerous waste characteristics, WAC 173-303-090; and* *(iv) Fourth, if the waste is not listed in WAC 173-303-081 or 173-303-082, and does not exhibit a characteristic in WAC 173-303-090, determine if the waste meets any dangerous waste criteria, WAC 173-303-100.* **Containers. WAC 173-303-160 [40 CFR § 261.7]** *(2) A container or inner liner is "empty" when:* *(a) All wastes in it have been taken out that can be removed using practices commonly employed to remove materials from that type of container or inner liner (for example, pouring, pumping, aspirating, etc.) and:* *(i) No more than one inch of waste remains at the bottom of the container or inner liner; or* *(ii) No more than one inch of waste remains at the bottom of the container or inner liner; or* *(iii) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 119 gallons in size.*
Evidence: **Appendix D** – Field Photographs **Appendix NN** – Marathon Response to Concerns Identified at Closeout Interviews
Description of Observation: Marathon operates a drum washing station outside of the blasting building (**Appendix D**, photo 105). Containers from around the facility site are brought to the station for cleaning. The containers are placed upside down on top of the grate and cleaned out with pressurized water. The wash water generated during cleaning is discharged into the OWS.

Observation 13
Marathon does not have controls over the containers that are washed at the station to determine if the containers are empty in accordance with WAC 173-303-160(2). Remaining material in containers that previously held substances meeting the criteria for listed dangerous waste are considered listed dangerous waste until the containers are empty, as defined in WAC 173-303-160(2)(a). Marathon maintains no records of the drum washing that would demonstrate all the drums are empty prior to washing. Because the drum washing station drains to the OWS, containers of material that are listed dangerous waste could result in the sludges from the wastewater treatment units being designated as that same listed dangerous waste. In the facility's response to concerns discussed during the inspection close out meeting (**Appendix NN**), Marathon stated that "All operators complete annual RCRA awareness training, which specifies the site requirement is to ensure containers are RCRA empty prior to rinsing and disposal and provides instruction on the RCRA empty definition. This drum washing pad is not used to dispose of liquids, only to rinse empty drums and containers that are RCRA empty."

Observation 14
Observation Summary: Satellite accumulation containers used in the laboratory may not be at or near the point of generation.
Citation: **Accumulating dangerous waste on-site, WAC 173-303-200 [40 CFR § 262.15(a)]** *(2) Satellite accumulation.* *(a) A generator may accumulate as much as fifty-five gallons of dangerous waste or one quart of acutely hazardous waste (as defined in WAC 173-303-040) in containers at or near any point of generation where waste initially accumulates (defined as a satellite accumulation area in WAC 173-303-040). The satellite area must be under the control of the operator of the process generating the waste or secured at all times to prevent improper additions of wastes to a satellite container.*
Evidence: **Appendix J** – Lab Layout **Appendix D** – Field Photographs **Appendix QQ** – Marathon Response to Lab SAA Observations Interviews with facility personnel
Description of Observation: Marathon accumulates laboratory dangerous wastes in SAAs within the laboratory building. A map labeling the individual labs is included as **Appendix J**. A satellite accumulation container located within a hood inside Lab #1 is used for accumulation of waste vials containing flammable liquids (**Appendix D**, photos 43 and 44). According to Marathon personnel, these vials are generated in both Labs #1 and #5. The

Observation 14
practice of transporting this waste from Lab #5 into Lab #1 may not meet the intent of the regulations for the satellite accumulation to occur at or near the point of generation. Two additional satellite accumulation containers are located in a roofed exterior area of the laboratory building in an approximately central location to each of the six labs (**Appendix D**, photos 56 and 57). A 55-gallon drum is used for satellite accumulation of used COD vials. A 5-gallon container is used for the accumulation of mercury (thermometer) waste; this container was empty at the time of the NEIC inspection. Marathon representatives described that these containers receive waste from the different labs and serve as centrally-located SAAs. This practice also may not meet the intent of the regulations for satellite accumulation to occur at or near the point of generation. After the inspection, Marathon provided a follow-up response on October 25, 2024, attached as **Appendix QQ**.