SUPPLEMENT TO DECEMBER 22, 2022 RACT III SIGNIFICANT OPERATING PERMIT MODIFICATION APPLICATION – SOURCE ID 106

MONROE ENERGY LLC

MAY 2025

SUBMITTED BY:

SUBMITTED TO:

Monroe Energy LLC
4101 Post Road
Trainer, PA 19061-5052

Pennsylvania Department of Environmental Protection – Southeast Regional Office
2 E. Main Street
Norristown, PA 19401-4915

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1. INTRODUCTION

Monroe Energy LLC (Monroe) owns and operates a petroleum refinery located in the Borough of Trainer, Delaware County, Pennsylvania (Refinery). Monroe operates the Refinery under Title V Operating Permit (TVOP) No. 23-00003. Monroe submitted a timely and complete alternative Reasonably Available Control Technology (RACT) determination and a significant operating permit modification application to the Pennsylvania Department of Environmental Protection (PADEP) on December 22, 2022 in accordance with 25 Pa Code §129.114(d)(1)(i) for the Fluid Catalytic Cracking (FCC) Unit (Source ID 101), Peabody Heater (Source ID 130), and the Ultra-Low Sulfur Gasoline (ULSG) Cooling Tower (Source ID 702). The Refinery's Process Drains and Water (H_2O) Separator (Source ID 106), which is generally subject to 25 Pa Code §129.55, was originally determined to be exempt from RACT requirements in accordance with 25 Pa Code §129.96(a) and 25 Pa. Code §129.111(a). Based on comments received from United States Environmental Protection Agency (U.S. EPA) during a review of PADEP's draft Monroe Operating Permit, PADEP determined that Source ID 106 is subject to RACT and must be addressed in accordance with 25 Pa Code §129.111 through §129.111 (RACT III).

Because the components of Source ID 106 are not subject to any presumptive RACT limits under 25 Pa Code §129.112 and the collective potential volatile organic compound (VOC) emissions from Source ID 106 are greater than 2.7 tons per year, the Refinery must prepare an alternative RACT proposal in accordance with 25 Pa Code §129.112(d), which was confirmed during an April 8, 2025 conference call between Monroe, PADEP Southeastern Regional Office, PADEP Central Office, and ALL4 LLC (ALL4). During the referenced call, PADEP instructed Monroe to submit an alternative RACT proposal, prepared in accordance with 25 Pa Code §129.112(d), as a supplement to the alternative RACT determination and significant operating permit modification application, which was originally submitted to PADEP on December 22, 2022. During the referenced conference call, PADEP agreed that only permit revisions related to Source ID 106 will be subject to public review because the contents of the original, complete alternative RACT determination and significant operating permit modification application already went through public review.

Monroe hereby provides this supplement to the December 22, 2022 alternative RACT determination and significant operating permit modification application. This supplement was prepared in accordance with 25 Pa Code § 129.114(d) for the collective VOC emissions from Source ID 106 at the Refinery.

2. PROCESS DESCRIPTION - SOURCE ID 106

Source ID 106 includes the Refinery's wastewater collection system and Advanced Wastewater Treatment Facility (AWWTP). The components of Source ID 106 collect and treat various wastewater streams from the refining processes to ensure that the Refinery's effluent discharge meets applicable environmental regulations. Source ID 106 encompasses multiple sources that include the facility-wide population of process drains and AWWTP. A simplified process flow diagram depicting Source ID 106 and its components is included in Figure 2-1. The collection system is comprised of a series of drains, manholes, junction boxes, sumps and lift stations that collect and direct the various wastewater streams to the AWWTP. The AWWTP includes an American Petroleum Institute (API) separator, which uses gravity separation to remove contaminants. The wastewater is processed by the AWWTP unit and discharged in accordance with the Refinery's National Pollutant Discharge Elimination System (NPDES) permit.

Sources of wastewater that are treated through the AWWTP include aboveground bulk storage tank water draining, boiler blowdown, bundle cleaning pad effluent, cooling tower blowdown, infiltration water, laboratory wastes, pump cooling water, service water, steam trap condensate, stormwater, and surface skimmings from Marcus Hook and Stoney Creek Guard Basins. The AWWTP is divided into five treatment sections as described below:

- Primary Treatment includes the API Separator, Primary Filter Feed Sump, and five Primary Sand Filters. Together these provide physical and chemical processes for the removal of coarse solids, suspended solids, and oil and grease. In addition, the pH is adjusted in-line prior to wastewater entering the Primary Sand Filters.

- Secondary Treatment includes the Equalization Tank, Biological Aeration Tank, and three Secondary Clarifiers. Together these provide equalization of flow and pollutant loading, biological treatment, pollutant degradation, solids thickening, and water clarification.

- Tertiary Treatment includes six Tertiary Sand Filters that remove any suspended solids carried over from the Secondary Treatment section.

- Oily Sludge Treatment and Disposal includes a dissolved air floatation (DAF) Thickening System and a Filter Press. Together these systems thicken and dewater sludge and solids removed from the API Separator and Primary Sand Filters.

- Biological Sludge Treatment and Disposal includes a DAF Thickening System, Biological Sludge Conditioning System, and a Filter Press. Together these thicken and dewater biological sludge that is wasted from the biological process in the Secondary Treatment section.

The system is designed to handle up to 4.3 million gallons of refinery wastewater (WW) per day. Several components under Source ID 106 are subject to Federal requirements under 40 CFR Part 60, Subpart QQQ (Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems), 40 CFR Part 61, Subpart FF (National Emission Standard for Benzene Waste Operations) requirements, and State requirements under 25 Pa Code §129.55 (Petroleum refineries – specific processes).

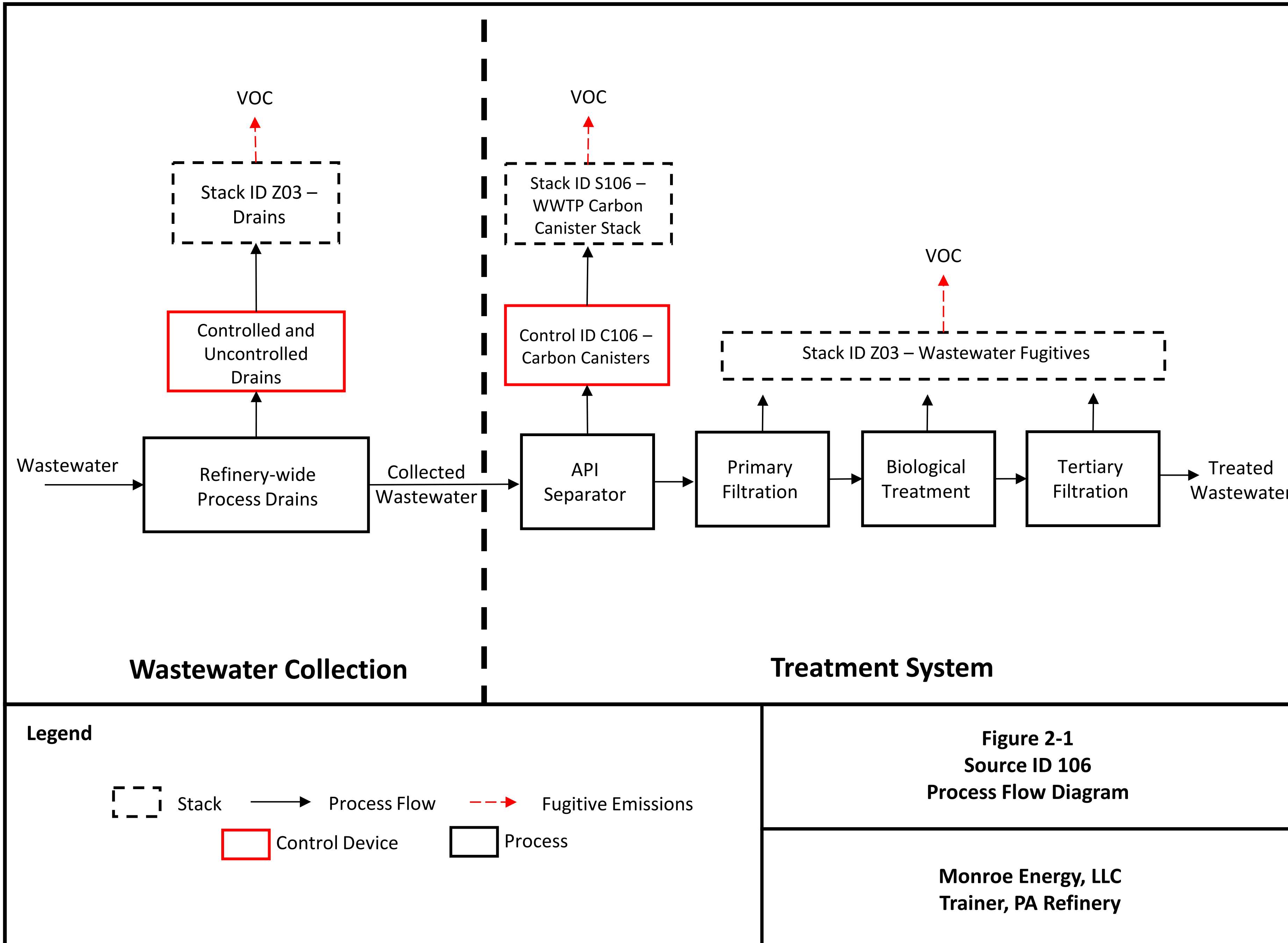

Figure 2-1
Source ID 106
Process Flow Diagram

Monroe Energy, LLC
Trainer, PA Refinery

3. ALTERNATIVE RACT ANALYSIS

This section provides an alternative RACT analysis and proposed compliance strategy for the sources comprising Source ID 106 at the Refinery in accordance with 25 Pa. Code §129.114(d). The components of Source ID 106 do not fit under any of the presumptive categories under 25 Pa. Code §129.112. Therefore, Monroe is required to evaluate RACT on a case-by-case basis in accordance with 25 Pa. Code §129.114(d). The regulatory bases for the analyses provided herein are described below.

The alternative RACT analyses for Source ID 106 included herein were completed in accordance with 25 Pa. Code §129.92(b) by conducting "top-down" analyses as outlined in the U.S. EPA Draft "New Source Review Workshop Manual."[1] An overview of the case-by-case RACT process used by Monroe is provided in the original application, titled *RACT III COMPLIANCE PROPOSAL AND SIGNIFICANT OPERATING PERMIT MODIFICATION APPLICATION*, dated December 22, 2022. As part of the supplemental RACT analyses, searches were performed using the U.S. EPA RACT/Best Available Control Technology (BACT)/Lowest Achievable Emissions Rate (LAER) Clearinghouse (RBLC) to identify potential air pollution control strategies for Source ID 106. Monroe has supplemented the RBLC searches with additional research, such as U.S. EPA reference documents (e.g., Report Number EPA-340/1-91-013) and information gathered during discussions with control device vendors and Refinery personnel.

The alternative RACT analyses provided herein were prepared in accordance with 25 Pa Code §129.114(d). Because the proposed alternative RACT determinations for Source ID 106 are consistent with and reflect compliance with existing permit conditions under TVOP No. 23-00003, Monroe has complied with those requirements on and after January 1, 2023. Based on PADEP's concurrence with the proposed alternative RACT determination for Source ID 106, Monroe is not requesting an alternative schedule for compliance under 25 Pa Code §129.114(d)(4) and is not identifying interim dates in the schedule under 25 Pa Code §129.114(d)(5) at this time. In accordance with 25 Pa Code §129.114(d)(6), compliance with the proposed alternative RACT determinations are demonstrated in accordance with existing methods identified under TVOP No. 23-00003 for Source ID 106 and which are summarized in Section 4.

[1] U.S. EPA, Draft New Source Review Workshop Manual, Prevention of Significant Deterioration and Nonattainment Area Permitting, October 1990 (1990 Workshop Manual).

3.1 ALTERNATIVE VOC RACT ANALYSIS – SOURCE ID 106

The VOC emissions from Source ID 106 are fugitive in nature and reflect the emissions from two separate source components: fugitive VOC emissions from the population of controlled and uncontrolled process drains (i.e., wastewater collection) and other fugitive VOC emissions from the wastewater treatment process which begins with the API separator (i.e., wastewater treatment system). Monroe uses water seal controls[2] on a portion of process drains and uses a combination of floating roof sections and carbon canisters on the API wastewater/oil separator to reduce fugitive VOC emissions from wastewater treatment. Figure 2-1 depicts the general process flow of Source ID 106 and its source components.

The majority (i.e., approximately 85%) of Source ID 106 VOC emissions are associated with the Refinery's collection of controlled and uncontrolled process drains. The VOC emissions associated with the process drains are calculated using hydrocarbon speciation data, wastewater flowrates, gas solubility, and the total number of controlled and uncontrolled drain components. The remaining portion (i.e., approximately 15%) of Source ID 106 VOC emissions are fugitive VOC emissions associated with wastewater treatment and are calculated using a site-specific Toxchem VOC emissions modeling software of the Refinery's AWWTP. The modeled Toxchem VOC emissions calculations are based on mass transfer equations and mass balances related to hydrocarbon volatilization, biodegradation and sorption. Actual and potential emissions for Source ID 106 are provided in Appendix C. Separate case-by-case RACT analyses are provided for fugitive VOC emissions associated with the wastewater collection system (drains) and the AWWTP.

[2] Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water that has a design capability to create a water barrier between the sewer and the atmosphere (as defined in 40 CFR §60.691).

3.1.1 Wastewater Collection System (Drains)

Fugitive VOC emissions from the wastewater collection system are associated with uncontrolled and controlled process drains. Process drains constructed, modified, or reconstructed after May 4, 1987 are subject to 40 CFR Part 60, Subpart QQQ and are required to be equipped with water seal controls. The wastewater collection system includes drains equipped with water seal controls that are inspected and maintained in accordance with Subpart QQQ requirements. Based on the age of the Refinery, the wastewater collection system also includes drains that are not subject to Subpart QQQ because they have not been constructed, modified, or reconstructed after May 4, 1987 and are therefore not equipped with water seal controls. Manhole covers are utilized throughout the collection system and are only removed if needed for temporary access in accordance with standard operating procedures.

3.1.1.1 Step 1 – Identify Available Control Technologies

The following control technologies were identified through a search of the RBLC database as potentially available options for reducing fugitive VOC emissions from the Refinery's process drains:

- Good Operating Practices
- Retrofitting Uncontrolled Drains with Water Seal Controls
- Use of Closed Drain System
- Capture and Control of Fugitive VOC Emissions

A more detailed description of each control technology is provided below.

Good Operating Practices

Good operating practices include but are not limited to operating equipment in accordance with manufacturer-related specifications. Good operating practices are technically feasible and this approach is considered further in this RACT analysis. Examples of good operating practices as related to refinery wastewater drains include:

- Strict adherence to good management procedures and standard operating procedures (SOP);
- Employee training detailing good work practices for minimizing emissions;

- Periodic inspection of components; and
- Monitoring, recordkeeping, and reporting of wastewater throughput rates and activities.

Retrofitting Uncontrolled Drains with Water Seal Controls

Installing or retrofitting water seals on existing components is a proven method to reduce VOC emissions from existing process drains at a Refinery. Water seals reduce emissions by limiting the effects of heat transfer and diffusion on VOC in wastewater streams. Specifically, water seals installed on process drains have been found to result in up to a 50 percent reduction in VOC emissions[3]. While water seals act to control VOC emissions, the seals must be properly maintained and coupled with work practices to achieve optimal emissions control. This control technique is considered technically feasible and Monroe has included the retrofit of uncontrolled drains in this analysis.

Use of Closed Drain System

The use of an closed drain system can reduce fugitive VOC emissions from process drains. Complete drainage system enclosures can include "hard-piping" process units, removal or capping all existing drains, hard-piping process units to a drain box enclosure, and completely covering and sealing junction boxes and process drains to ensure no openings[4]. Closed drain systems have historically been associated with drains handling extremely volatile compounds such as benzene, toluene, and xylene. While these strategies can effectively reduce emissions, the use of a closed system (i.e., hard-piping) at the Refinery is not technically feasible due to the age of the Refinery and associated safety challenges and complexity of converting and/or reconstructing the entire existing collection system. Because these approaches would likely require the reconstruction of the entire wastewater collection system at the Refinery, they are not considered technically feasible and are not considered further in this analysis.

Capture and Control of Fugitive VOC Emissions

In order use an add-on VOC control device to abate fugitive emissions from process drains, the emissions must first be captured by local ventilation at many drains and manholes throughout the Refinery. This

[3]EPA Office of Air Quality Planning and Standards: EPA-340/1-91-013 Regulatory and Inspection Manual for Petroleum Refinery Wastewater Systems. (September 1991).

[4] K Balakrishnan. *Staff Report Proposed Amendments To Regulation 8: Organic Compounds, Rule 8: Wastewater Collection And Separation Systems.* Bay Area Air Quality Management District. October 2023

approach would require the retrofitting of the entire wastewater collection system to accommodate the addition of exhaust collection points for the ventilation system and route them to either a oxidizer or absorber, both of which are described below:

- Adsorption is preferential partitioning of substances from the gaseous or liquid phase onto the surface of a solid substrate and is add-on control technology to abate VOC. Physical adsorption is caused mainly by van der Waals forces and electrostatic forces between the adsorbate (i.e., VOC) molecules and the atoms which compose the adsorbent surface.[5] Regenerative adsorption systems are used to control VOC emissions from industrial processes and are typically a batch operation involving the use of two or more fixed adsorption beds. One or more of the beds is operated in adsorption mode, while the remaining bed(s) are operated in regeneration mode. Different adsorbent materials have historically been used in adsorbers, including but not limited to activated carbon, organic resin polymers, and inorganic materials such as zeolite.

- Thermal or catalytic oxidation is a commonly used control technology to abate VOC emissions. Gases are captured by local ventilation and routed to control devices to be destroyed by oxidative chemical reactions at high temperatures (thermal oxidation [e.g., flaring]) or at a lower temperature (and higher cost) using a chemical catalyst. Thermal or catalytic oxidation is estimated to achieve 98% control efficiency for VOC and HAPs.[6]

To evaluate this control option, Monroe reviewed U.S. EPA's Permanent Total Enclosures[7] technical document, which describe permanently installed structures that completely surround one or more sources of emissions. A permanently installed structure around the collection of drains to capture VOC emissions and route them to a VOC control device would add complexities along with other occupational hazards (e.g., potential health hazards and fire and explosive conditions). The fact that numerous drains and manholes are scattered throughout the Refinery would make it very challenging to capture emissions with a centralized capture system. Due to space constraints and the layout/configuration of the Refinery significant excavation and structural changes to Refinery process equipment are anticipated would be required in order for a capture system to be installed. Capturing fugitive drain system VOC emissions and routing to a VOC control device is not a feasible control technology and Monroe has not considered it further in this RACT analysis.

[5] What is adsorption? International Adsorption Society, (https://www.int-ads-soc.org/what-is-adsorption/)
[6] U.S. EPA Air Pollution Control Technology Fact Sheet, EPA-452/F-03-022.
[7] EPA Office of Air Quality Planning and Standards: Control Techniques Guidelines for Permanent Total Enclosures (EPA/452/B-02-001), September 2002.

3.1.1.2 Step 2 – Eliminate Technically Infeasible Options

Two control technology options were considered to be technically infeasible as indicated below:

- Good Operating Practices
- Retrofitting Existing, Uncontrolled Drains with Water Seal Controls
- ~~Use of Closed Drain System~~
- ~~Capture and Control of Fugitive VOC Emissions~~

3.1.1.3 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Those control technology options are technically feasible have been ranked by control effectiveness in Table 3-1.

Table 3-1
Control Technology Ranking for Process Drains

Rank	Control Technology	Control Efficiency
1	Water Seal Controls	50%[8]
2	Good Operating Practices	Variable – Vendor and process dependent

3.1.1.4 Step 4 – Evaluate Economic, Environmental and Energy Impacts of Technically Feasible Control Technologies

This section addresses the energy, economic, and environmental impact of each of the remaining ranked technologies.

Good Operating Practices

Monroe currently uses good operating practices for its process drains. Monroe does not anticipate any additional economic, environmental, and energy impacts associated with this control technique.

[8] EPA Office of Air Quality Planning and Standards: EPA-340/1-91-013 Regulatory and Inspection Manual for Petroleum Refinery Wastewater Systems. (September 1991).

Retrofitting Existing, Uncontrolled Drains with Water Seal Controls

The Refinery wastewater collection system consists of hundreds of individual drains. This includes drains that were constructed, modified, or reconstructed after May 4, 1987 that are equipped with water seals and are inspected and maintained in accordance with 40 CFR Part 60, Subpart QQQ. Due to age of the Refinery, there are also drains at the Refinery that are not subject to Subpart QQQ. Monroe has evaluated the economic impact of a retrofitting each single uncontrolled drain with water seal controls to reduce fugitive VOC emissions associated with the wastewater collection system based on guidance provided in the U.S. EPA Air Pollution Control Cost Manual. An economic analysis for the installation and annual cost of maintenance/operation of a single controlled drain equipped with water seal controls, along with references and assumptions, is provided in Table B-1 of Appendix B. The cost effectiveness of controlling VOC emissions for each single drain is approximately $31,140 per ton of VOC removed and is therefore economically infeasible.

3.1.1.5 Step 5 – Proposed RACT

Monroe proposes VOC RACT for the collection of process drains to be the use of good operating practices and adherence to 40 CFR Part 60, Subpart QQQ for affected process drains. Monroe uses management of change procedures to ensure process drains comply with the provisions of 40 CFR Part 60, Subpart QQQ when sewer modifications occur or when the applicability of 40 CFR Part 60, Subpart QQQ is triggered. Monroe will demonstrate compliance with the proposed RACT, as described in Section 4.1, and by keeping the records described in Section 4.3.

3.1.2 Wastewater Treatment System (WW Fugitives)

Fugitive VOC emissions are generated by hydrocarbon volatilization across the AWWTP. The AWWTP is divided into five treatment sections. Primary Treatment includes the API Separator, Primary Filter Feed Sump, and five Primary Sand Filters. Together these provide physical and chemical processes for the removal of coarse solids, suspended solids, and oil and grease. In addition, the pH is adjusted in-line prior to wastewater entering the Primary Sand Filters. Secondary Treatment includes the Equalization Tank, Biological Aeration Tank, and three Secondary Clarifiers. Together these provide equalization of flow and pollutant loading, biological treatment, pollutant degradation, solids thickening, and water clarification.

Tertiary Treatment includes six Tertiary Sand Filters that remove any suspended solids carried over from the Secondary Treatment section. Oily Sludge Treatment and Disposal includes a DAF Thickening System and a Filter Press. Together these systems thicken and dewater sludge and solids removed from the API Separator and Primary Sand Filters. Biological Sludge Treatment and Disposal includes a DAF Thickening System, Biological Sludge Conditioning System, and a Filter Press. Together these thicken and dewater biological sludge that is wasted from the biological process in the Secondary Treatment section.

The API separator is a component of the AWWTP and is subject to Subpart QQQ. The API separator removes the bulk oil from the wastewater stream and has controls in place to minimize fugitive VOC emissions by a combination of floating roof and fixed roof sections, with the fixed roof sections operated as a closed system venting to a control device (carbon canisters).

3.1.2.1 Step 1 – Identify Available Control Technologies

As determined through a search of the RBLC database, the following control technologies were identified as potentially available options for reducing fugitive emissions of VOC from wastewater treatment:

- Good operating practices
- Capture and Control of Fugitive VOC Emissions

A more detailed description of each control technology is provided below.

Good Operating Practices

Good operating practices include but are not limited to operating equipment in accordance with manufacturer-related specifications. This control technique is considered technically feasible and is considered further in this RACT analysis. Other examples of good operating practices include:

- Tanks being equipped with submerged fill pipes;
- Strict adherence to good management procedures and standard operating procedures;
- Employee training detailing good work practices for minimizing emissions;
- Good housekeeping procedures for the storage, use, and disposal of product;

- Periodic inspection of wastewater activities;
- Monitoring, recordkeeping, and reporting of wastewater throughput rates and activities.

Capture and Control of Fugitive VOC Emissions

While it is technically feasible to abate VOC emissions using common VOC control systems (i.e., sorbent capture, oxidation, etc.), capturing VOC emissions associated with wastewater handling across the AWWTP is technically challenging based on its "footprint" and the diffuse nature of fugitive wastewater VOC emissions after the API separator. While several types of VOC control devices are available, the use of a regenerative thermal oxidizer (RTO) is the control choice typically selected based on its simplicity and economics. Therefore, the evaluation included herein reflects the use of an RTO. A description of thermal oxidation is provided below.

- Thermal oxidation is a commonly used control technology to abate VOC emissions. Gases are captured by local ventilation and routed to control devices to be destroyed by oxidative chemical reactions at high temperatures. Thermal or catalytic oxidation is estimated to achieve 98% control efficiency for VOC and HAPs.[9]

While permanently installing structures that surround one or more sources of emissions would pose technical challenges and add complexities along with other occupational hazards (e.g., potential health hazards and fire and explosive conditions) to the existing wastewater system, Monroe considered the capture and control of VOC emissions technically feasible and has considered this technology further in this RACT analysis.

3.1.2.2 Step 2 – Eliminate Technically Infeasible Options

The two options were considered to be technically infeasible as indicated below:

- Good operating practices
- Capture and Control of Fugitive VOC Emissions

[9] U.S. EPA Air Pollution Control Technology Fact Sheet, EPA-452/F-03-022.

3.1.2.3 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Those control technology options are technically feasible have been ranked by control effectiveness in Table 3-2

Table 3-2
Control Technology Ranking for Wastewater Fugitives

Rank	Control Technology	Control Efficiency
1	Capture and Control to Thermal Oxidation	95-99%[10]
2	Good Operating Practices	Variable – Vendor and process dependent

3.1.2.4 Step 4 – Evaluate Economic, Environmental and Energy Impacts of Technically Feasible Control Technologies

This section addresses the energy, economic, and environmental impact of each of the remaining ranked technologies.

Good Operating Practices

Monroe currently uses good operating practices for wastewater treatment activities. Monroe does not anticipate any additional economic, environmental, and energy impacts associated with this control technique.

Capture and Control to Oxidation

Monroe has evaluated the installation of a capture and control system that routes collected VOC emissions to a VOC control device. While several types of VOC control devices are available, the use of a regenerative thermal oxidizer (RTO) is the control choice typically selected based on its simplicity and economics. Therefore, the evaluation included herein reflects the use of an RTO. Although Monroe did not quantitatively determine adverse environmental impacts, thermal incineration requires supplemental combustion to achieve the temperatures required for VOC emissions control. Natural gas is typically

[10] U.S. EPA Air Pollution Control Technology Fact Sheet, EPA-452/F-03-021

combusted in a thermal oxidizer for this purpose, which results in additional emissions including greenhouse gases, other products of combustion, which contribute to secondary formation of ozone and fine particulate matter. The economic impact of capturing and controlling VOC emissions using a thermal oxidizer system is presented below.

Due to the complexity of capturing fugitive VOC emissions associated with the AWWTP, Monroe conservatively estimated that post API Separator fugitive AWWTP VOC emissions could be adequately captured with a 10,000 CFM VOC capture and collection system. Monroe also conservatively assumed that 100% of the post API separator fugitive VOC emissions would be captured. Cost analysis for the installation and operation of a standalone RTO is provided in Table B-2 of Appendix B along with references and assumptions. The calculated cost of controlling VOC emissions by a standalone RTO is approximately $31,209 per ton of VOC removed and is therefore economically infeasible.

3.1.2.5 Step 5 – Proposed RACT

Monroe proposes VOC RACT for wastewater fugitives to be the use of good operating practices and adherence to 40 CFR Part 60, Subpart QQQ for the API Separator. This includes the current restrictions, testing requirements, monitoring requirements, and work practice requirements currently specified in the permit. Monroe will demonstrate compliance with the proposed RACT on Source ID 106, as described in Section 4.2, and by keeping the records described in Section 4.3.

4. COMPLIANCE DEMONSTRATION AND RECORDKEEPING REQUIREMENTS

The following subsections present Monroe's proposed compliance demonstration activities and recordkeeping procedures to ensure compliance with the applicable alternative RACT requirements identified in Section 3. The proposed conditions to demonstrate compliance with the applicable RACT requirements are included with the Significant Operating Permit Modification Application Forms included in Appendix A.

4.1 WASTEWATER COLLECTION SYSTEM (DRAINS)

Monroe is proposing VOC RACT for the collection of drains portion of Source ID 106 to be the use of good operating practices, as well as the continued compliance with 40 CFR Part 60, Subpart QQQ for affected drains at the Refinery. Monroe will demonstrate compliance as required in the following condition of TVOP No. 23-00003:

- Section D, Source ID 106, Condition 008(a) - Work Practice Standards

4.2 WASTEWATER TREATMENT SYSTEM (WW FUGITIVES)

Monroe proposes VOC RACT for the wastewater fugitives portion of Source ID 106 to be good operating practices and adherence to 40 CFR Part 60, Subpart QQQ for the API Separator as well as the continued compliance with applicable requirements of 40 CFR Part 61, Subpart FFF and 40 CFR Part 63, Subpart CC. Monroe will demonstrate compliance as required in the following conditions of TVOP No. 23-00003:

- Section D, Source ID 106, Condition 001 - Restrictions
- Section D, Source ID 106, Condition 002 – Testing Requirements
- Section D, Source ID 106, Condition 003 – Monitoring Requirements
- Section D, Source ID 106, Condition 008(b)-(c) – Work Practice Standards
- Section D, Source ID 106, Condition 009 – Work Practice Standards
- Section D, Source ID 106, Condition 010 – Work Practice Standards
- Section D, Source ID 106, Condition 011 – Work Practice Standards
- Section D, Source ID 106, Condition 013 – Work Practice Standards
- Section D, Source ID 106, Condition 014 – Work Practice Standards

4.3 RECORDKEEPING REQUIREMENTS

In accordance with 25 Pa. Code §129.115(f), Monroe will keep sufficient records to demonstrate compliance with the RACT III Rule. Sufficient records include, but are not limited to:

- The records shall include sufficient data and calculations to demonstrate that the requirements of 25 Pa. Code §§129.112 through 129.114 are met.
- Data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement.
- The records necessary to determine compliance shall be reported to PADEP or appropriate approved local air pollution control agency on a schedule specified in the applicable regulation or as otherwise specified in the operating permit or Plan Approval for the air contamination source.

All data used to comply with the proposed RACT requirements will be recorded and maintained in a timeframe that is consistent with the averaging period of the limitation (i.e., on a monthly basis). Monroe will also maintain documentation of good operating practices for the process drains and wastewater fugitives. Pursuant to 25 Pa. Code §129.115(k), all records will be maintained for at least five years and will be made available to PADEP upon receipt of a written request.

APPENDIX A -
SIGNIFICANT OPERATING PERMIT MODIFICATION APPLICATION FORMS

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

FOR OFFICIAL USE ONLY

OP #: ____________________

Date: ____________________

OPERATING PERMIT MODIFICATION APPLICATION

Section 1 – General Information

1.1 Application Type

Type of permit for which application is made:

- ☐ Minor Modification
- ☒ Significant Modification
- ☐ State-Only Operating Permit
- ☐ Title V Operating Permit

Existing Operating Permit No: ***23-00003***

1.2 Facility Information

Firm Name:	***Monroe Energy LLC***	Federal Tax ID:	***45-5201144***
Facility Name:	***Trainer Refinery***	Plant Code:	***01***
NAICS Code:	***324110***	SIC Code:	***2911***
Description of NAICS Code:	***Petroleum Refining***		
Description of SIC Code:	***Manufacturing – Petroleum Refining***		
County:	***Delaware County***	Municipality:	***Trainer Borough***
Latitude:	***39.82158***	Longitude:	***-75.40241***

Horizontal Reference Datum:	***North American Datum of 1983***	Horizontal Collection Method:	***Geographic coordinate determination method based on address matching***	Reference Point:	***Plant entrance (general) – The general entrance to the plant***

1.3 Permit Contact Information

Name:	***Elizabeth Clapp, P.E.***	Title:	***Environmental Leader***		
Address:	***4101 Post Road***				
City:	***Trainer***	State:	***PA***	ZIP:	***19061***
Telephone:	***610-364-8395***				
Email:	***Elizabeth.Clapp@monroe-energy.com***				

1.4 Small Business Question		
Are you a small business as defined by the Pennsylvania Air Pollution Control Act?	☐ Yes	☒ No
Are you a small business as defined by the U.S. Small Business Administration?	☐ Yes	☒ No

1.5 Request for Confidentiality

Do you request any information on this application to be treated as "Confidential"? ☐ Yes ☒ No

Place confidential information on separate page(s) marked "Confidential".

In order to request confidential treatment for information in any document, you must submit a redacted version of the relevant document with the confidential information blacked out (and thus suitable for public disclosure), along with a letter of request containing a table identifying the page and line number of each redaction, along with a justification for each redacted item as to why it should be deemed confidential under the specific criteria allowed under 25 Pa. Code §127.12(d) and Section 13.2 of the APCA.

1.6 Certification of Truth, Accuracy and Completeness by a Responsible Official

I certify that, subject to the penalties of Title 18 Pa. C.S.A. Section 4904 and 35 P.S. Section 4009(b)(2), I am the responsible official having primary responsibility for the design and operation of the facilities to which this application applies and that the information provided in this application is true, accurate, and complete to the best of my knowledge, information, and belief formed after reasonable inquiry.

(Signed) Mark Schuck   Date: *5/29/2025*

Name (Typed): ***Mark Schuck***   Title: ***SVP Trainer Complex***

Telephone: ***610-364-8082***

Email: ***Mark.schuck@monroe-energy.com***

Section 2 – Inventory of Units Being Modified		
Unit ID No.	Unit Name	Unit Type
106	*PROCESS DRAINS & H2O SEP.*	*Process*

Section 3 – Facility Changes – *Not Applicable (N/A) Refer to Section 4*
Complete this section ONLY if the changes are for the entire facility. If changes are for a source or sources, skip this Section and complete Section 4 for each Source in which a change is proposed.
3.1 Describe all proposed changes to this facility: ***Monroe proposes to incorporate the RACT III requirements for Source ID 106 into TVOP No. 23-00003.***
3.2 If the proposed facility changes involve any changes in actual emissions, please complete the following table. Attach another table if needed.

Pollutant Name	CAS Number	Change in Actual Emissions (+ or -)
N/A – The proposed permit changes will not impact emissions.		

3.3 Anticipated date on which proposed change is scheduled to occur: ***Upon approval by PADEP.***
3.4 List the proposed revision language for the operating permit conditions. This includes all changes to the emissions, monitoring, testing, record-keeping, reporting requirements and work practice standard requirements. Write in the type of applicable requirements in the column provided. Attach another table if needed.

Citation Number	Type of Applicable Requirement	Existing Operating Permit Condition or Condition Number	Proposed Language for Permit Condition
N/A			

3.5 Provide a listing of all changes in chronological order (additions and subtractions) made at a facility since the last submittal and attach it to this application. For example:

- March 2016 - Added shot blast booth 5, exempted by the attached Request for Determination.
- Dec 2017 - Installed new paint line in accordance with Plan Approval XX-XXXXX

N/A

3.6 For renewals, please review the current operating permit. If you are proposing any changes to the conditions of the permit, please provide the condition number, the requested change, and justification for the requested change.

N/A

Section 4 – Unit Information (duplicate this section for each unit as needed)

4.1 Unit Type: ☐ Combustion ☐ Incinerator ☒ Process ☐ Control Device

4.2 General Source Information (Combustion/Incinerator/Process)

a. Source ID: ***106*** b. Source Name: ***PROCESS DRAINS & H2O SEP.***

c. Manufacturer: ***N/A*** d. Model No.: ***N/A***

e. Source Description: ***Process***

f. Rated Capacity (for engines use BHP): ***N/A*** g. Installation Date: ***Various***

h. Rated Power/Electric Output: ***N/A***

i. Exhaust Temperature: ***N/A*** Units: ***Deg F*** j. Exhaust % Moisture: ***N/A*** k. Exhaust Flow Volume: ***N/A*** SCFM

4.3 General Control Device Information

a. Unit ID: ***C04*** b. Unit Name: ***WASTEWATER WATER OIL SEPARATOR. (1)***

c Used by Sources: ***106***

d. Type: ***API Separator***

e. Pressure Drop (in. H_2O): ***N/A*** f. Capture Efficiency: ***N/A***

g. Flow Rate (specify unit): ***N/A***

h. Manufacturer: ***Petrex*** i. Model No.: ***N/A***

j. Installation Date: ***1981 (Panel installation)***

4.3 General Control Device Information

a. Unit ID: ***C106*** b. Unit Name: ***CARBON CANISTERS***

c Used by Sources: ***106***

d. Type: ***Cabon Absorption***

e. Pressure Drop (in. H_2O): ***N/A*** f. Capture Efficiency: ***N/A***

g. Flow Rate (specify unit): ***N/A***

h. Manufacturer: ***US Filter/Siemens*** i. Model No.: ***VA 1000/Scrub 1000***

j. Installation Date: ***2003/2008***

4.4 Proposed Changes to Unit

a. Describe all proposed changes to this unit: ***N/A – No changes are proposed.***

b. If the proposed unit changes involve any changes in actual emissions, please complete the following table. Attach another table if needed.

Pollutant Name	CAS Number	Change in Actual Emissions (+ or -)
N/A – The proposed permit changes will not impact emissions.		

c. Anticipated date on which proposed change is scheduled to occur:
Upon approval by PADEP

d. List the proposed revision language for the operating permit condition. This includes all changes to the emission, monitoring, testing, record-keeping, reporting requirements and work practice standard requirement. Write in the type of applicable requirements in the column provided. Attach another table if needed.

Citation Number	Type of Applicable Requirement	Existing Operating Permit Condition or Condition Number	Proposed Language for Permit Condition
25 Pa. Code §§129.111-129.115	***Additional Citation***	***Section D. Source ID 106 Condition #001***	***No proposed change to existing TVOP No. 23-00003 language.***
25 Pa. Code §§129.111-129.115	***Additional Citation***	***Section D. Source ID 106 Condition #002***	***No proposed change to existing TVOP No. 23-00003 language.***
25 Pa. Code §§129.111-129.115	***Additional Citation***	***Section D. Source ID 106 Condition #003***	***No proposed change to existing TVOP No. 23-00003 language.***
25 Pa. Code §§129.111-129.115	***Additional Citation***	***Section D. Source ID 106 Condition #008***	***No proposed change to existing TVOP No. 23-00003 language.***
25 Pa. Code §§129.111-129.115	***Additional Citation***	***Section D. Source ID 106 Condition #009***	***No proposed change to existing TVOP No. 23-00003 language.***
25 Pa. Code §§129.111-129.115	***Additional Citation***	***Section D. Source ID 106 Condition #010***	***No proposed change to existing TVOP No. 23-00003 language.***
25 Pa. Code §§129.111-129.115	***Additional Citation***	***Section D. Source ID 106 Condition #011***	***No proposed change to existing TVOP No. 23-00003 language.***
25 Pa. Code §§129.111-129.115	***Additional Citation***	***Section D. Source ID 106 Condition #013***	***No proposed change to existing TVOP No. 23-00003 language.***
25 Pa. Code §§129.111-129.115	***Additional Citation***	***Section D. Source ID 106 Condition #014***	***No proposed change to existing TVOP No. 23-00003 language.***

Section 5 – Compliance Plan for the Facility			
		Yes	No
5.1	Will your facility be in compliance with all applicable requirements at the time of permit issuance and continue to comply with these requirements during the permit duration?	☒	☐
5.2	Will your facility be in compliance with all applicable requirements presently scheduled to take effect during the term of the permit?	☒	☐

APPENDIX B -
CONTROL COST ANALYSIS

Table B-1
Capital and Annualized Costs to Equip Drains with Water Seal Controls
Monroe Energy LLC - Trainer, PA

Capital Costs			
Cost Item	**Factor**		**Cost ($)**
Direct Capital Costs [a]			
Total Capital Investment (TCI)			
Capital Cost for Drain Upgrade			$17,800
Instrumentation			$0
Freight			$0
Total Purchased Equipment			**$17,800**
Indirect Capital Costs [a]			
Indirect Installation Cost			
Engineering and Design			$3,300
Field Tagging			$200
Contractor fees			$1,600
Total Indirect Capital Cost		***ICC***	***$5,100***
Contingency Costs [a]	0.10 (DCC + ICC)	C	$510
Total Capital Investment [a]		***TCI***	***$23,410***

Annualized Costs				
Cost Item	**Factor**		**Unit Cost**	**Annual Cost ($)**
Direct Annual Costs				
Operating Labor [b]				
Operator	0.25	hours/year	$66.01 per hour[c]	$17
Maintenance Labor [b]				
Labor	12	hours/year	$66.01 per hour[c]	$792
Maintenance materials [b]	10%	of labor		$79
Total Direct Annual Costs				**$888**
Indirect Annual Costs [a]				
Overhead (Payroll, Plant)	60%	of Total Labor Costs		$485
Administrative charges	2%	of TCI		$468
Insurance	1%	of TCI		$234
Capital recovery	0.10	CRF x TCI		$2,296
Expected lifetime of equipment[c]:	20	years		
at	7.5%	interest [d]		
Total Indirect Annual Costs				**$3,484**
Total Annual Costs				**$4,372**
Cost Effectiveness ($/ton)				
Control efficiency[e]:	50%			
Uncontrolled VOC emissions[f]:	0.28	tpy		
Potential controlled VOC:	0.14	tpy		
			Annual Cost/Ton VOC removed:	***$ 31,140***

Notes:

[a] Direct and indirect capital costs were quantified using Monroe Energy LLC-provided costs associated with upgrading each drain by replacing old covers and installing new sealed drain covers for a drain to comply with 40 CFR Part 60, Subpart QQQ. Indirect annualized costs were calculated using the U.S. EPA Office of Air Quality Planning and Standards (OAQPS) Control Cost Manual, Sixth Edition (January 2002) (EPA-452-02-001) as guidance.

[b] Monroe has assumed that operating and maintenance labor will be required annually on each drain for a drain to comply with 40 CFR Part 60, Subpart QQQ. Operating labor includes 40 CFR Part 60, Subpart QQQ inspection programs for operators, technicians and supervisors. Maintenance labor will be minimal and is estimated as 0.25 hours/year based on engineering judgement and site-specific knowledge. Annual costs for maintenance materials is estimated to be equal to 100% of the maintenance labor costs. Wage information for operator rates is specific to Monroe Energy LLC.

[c] Equipment life of upgraded drains are 20 years, based upon engineering judgement and site-wide historical data.

[d] Interest rate is equal to the U.S. bank prime rate, as of May 14, 2025.

[e] Control efficiency based upon total VOC reduction estimated using EPA Office of Air Quality Planning and Standards: EPA-340/1-91-013 Regulatory and Inspection Manual for Petroleum Refinery Wastewater Systems. (September 1991) guidance which suggests 50% control efficiency for controlled drains.

[f] Uncontrolled VOC emissions are calculated using hydrocarbon speciation data, wastewater flowrates, and gas solubility.

Table B-2

Capital and Annualized Costs for a 10,000 ACFM Regenerative Thermal Oxidizer (RTO) for Wastewater Fugitives

Monroe Energy LLC - Trainer, PA

CAPITAL COSTS

COST ITEM	FACTOR		COST ($)
Direct Capital Costs [a]			
Purchased Equipment Costs			
RTO System [b]		A	$708,192
Instrumentation[b]	0.10 A		
Freight	0.05 A		$35,410
Total Purchased Equipment Cost		**B**	**$743,602**
Direct Installation Costs			
Foundations and supports	0.08 B		$59,488
Installation, Start-up, and Operator Training [c]			$68,294
Electrical	0.04 B		$29,744
Piping	0.02 B		$14,872
Insulation for ductwork	0.01 B		$7,436
Painting	0.01 B		$7,436
Direct Installation Cost			**$187,270**
Total Direct Capital Cost		***DCC***	***$930,872***
Indirect Capital Costs [a]			
Indirect Installation Cost			
Engineering	0.10 B		$74,360
Construction and field expenses	0.05 B		$37,180
Contractor fees	0.10 B		$74,360
Startup	0.02 B		$14,872
Performance test	0.01 B		$7,436
Total Indirect Capital Cost		***ICC***	***$208,208***
Contingency Costs [a]	0.10 (DCC + ICC)	C	$113,908
Total Capital Investment [a]		***TCI***	***$1,252,988***

ANNUALIZED COSTS

COST ITEM	FACTOR		UNIT COST		ANNUAL COST ($)
Direct Annual Costs [a]					
Operating and Maintenance [d, e]					
Operating labor	0.5	hr/shift	$66.01 per hour		$36,140
Supervisory labor	15%	of operating labor			$5,421
Maintenance labor	0.5	hr/shift	$66.01 per hour		$36,140
Maintenance materials [f]	100%	of maintenance labor			$36,140
Utilities					
Electricity [g]	36.0	kWh	$0.120 per kWh		$37,843
Natural Gas [g]	7.8	MMscf/hr	$10.04 per 1000 ft^3		$78,212
Total Direct Annual Costs				***DAC***	***$229,897***
Indirect Annual Costs [a]					
Overhead	60%	of sum of operating, supervisor, and maintenance labor and maintenance materials			$68,305
Administrative charges	2%	of TCI			$25,060
Property taxes	1%	of TCI			$12,530
Insurance	1%	of TCI			$12,530
Capital recovery	0.098	CRF x TCI			$122,908
Expected lifetime of equipment:	*20*	*years*			
at	7.5%	*interest* [h]			
Total Indirect Annual Costs				***IAC***	***$241,333***
Total Annualized Costs				***TAC***	***$471,000***
Cost Effectiveness ($/ton)					
Control Efficiency[i]:	98%				
Capture Efficiency of System[j]:	100%				
Uncontrolled Emissions Rate[k]:	15.4	tons VOC/yr	***Annual Cost/Ton VOC Removed:***		***$31,209***
Potential Removed/Destroyed Emissions:	15.1	tons VOC/yr			

Table B-2

Capital and Annualized Costs for a 10,000 ACFM Regenerative Thermal Oxidizer (RTO) for Wastewater Fugitives

Monroe Energy LLC - Trainer, PA

(a) Direct and indirect capital and annual costs were estimated based on default factors from the U.S. EPA Office of Air Quality Planning and Standards (OAQPS) Control Cost Manual, Seventh Edition, Section 3.2, Chapter 2. Contingency costs account for retrofitting costs and expected unknowns that may arise during project execution, such as equipment failure. Monroe used the default value for the contingency factor of 0.10.

(b) Cost of the 10,000 scfm RETOX Dual Chamber RTO system is based on a historic CECO Adwest Proposal. The proposal includes direct capital and annual costs associated with operating the RTO.

(c) The CECO Adwest proposal specifically breaks out Installation and Start-up, and operator training.

(d) Operating and maintenance labor costs assume the following.

Operating schedule	8,760 hrs/yr
Hours per shift	8 hr/shift

(e) Wage information is based on Facility-specific costs for Monroe.

(f) Direct annual costs for maintenance materials is estimated to be equal to 100% of the maintenance labor costs.

(g) Electricity and natural gas unit costs obtained from publicly-available data for industrial sources: Natural gas price https://www.eia.gov/dnav/ng/NG_PRI_SUM_DCU_SPA_M.htm and electricity price: https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a
Electrical requirement was calculated based on the fan energy usage provided by CECO Adwest. Natural gas requirement was calculated based on the natural gas usage provided by CECO Adwest

(h) Interest rate is equal to the U.S. bank prime rate, as of May 14, 2025.

(i) Post-control VOC emissions are based on a vendor guarantee by CECO Adwest.

Total efficiency of TO system	98%

(j) The capture efficiency of the system is assumed to be 100%.

(k) PTE for the entire system are estimated through Toxchem modeling including 19 different air emissions points (e.g., sump, blending, EQ).

APPENDIX C -
ACTUAL AND POTENTIAL EMISSIONS

Table C-1
Monroe Energy, LLC - Trainer, PA
Summary of Actual and Potential VOC Emissions from Source ID 106

Source ID	Source Description	Source Component	Actual Emissions[a] (tons/yr)	Potential Emissions (tons/yr)	Potential Emissions Reference
106	Process Drains and H_2O Sep.	Wastewater Treatment Collection (Drains)	61.96	88.90	Hydrocarbon speciation data, wastewater flowrates, gas solubility, and the total number of controlled and uncontrolled drain components.
		Wastewater Treatment System (WW Fugitives)	13.00	15.40	Toxchem modeling and component counts.
		Total	**74.95**	**104.30**	

[a] Actual emissions as reported in Monroe Energy's Trainer Refinery 2021 AIMS reports. The two components (i.e., AWWTP Collection System (Drains) and WW Fugitives) are calculated individually and summed to obtain the total Source ID 106 emissions.

APPENDIX D -
RBLC TABLES

Table D-1
Monroe Energy, LLC - Trainer, PA

Summary of RBLC Search Results - Control of Wastewater Fugitive VOC Emissions | RACT 3 Case-by-Case Analysis - Source ID 106

RBLC ID	Company and Facility Name	Pollutant	Permit Issuance Date	Process Description	Control Method[(a)]	Control Method Description
IN-0345	Evonik Corporation Evonik Corporation Tippecanoe Laboratories	VOC	12/17/2021	Bulk Chemical Manuf. Support Ops. - Indiv. Drain Systems	A	**RTO** or direct incineration
IL-0103	ConocoPhillips ConocoPhillips Wood River Refinery	VOC	8/5/2008	WWTP	P	**Good air pollution control practices**
LA-0211	Marathon Petroleum Co LLC Garyville Refinery	VOC	12/27/2006	Wastewater Collection/Treatment	N	Comply with 40 CFR 63 Subpart CC, 40 CFR 61 Subpart FF, & 40 CFR 60 Subpart QQQ
LA-0211	Marathon Petroleum Co LLC Garyville Refinery	VOC	12/27/2006	Thermal Drying Unit-Wastewater Sump & Feed Tanks	P	**Submerged fill pipe**
LA-0213	Valero Refining - New Orleans, LLC St. Charles Refinery	VOC	11/17/2009	Wastewater Collection & Treatment: Refinery	P	WW (EQT0255): Comply with LA Refinery MACT□ WWTU (EQT0359): Comply with 40 CFR 61 Subpart FF□ CRUIDS (EQT369): Comply with 40 CFR 63 Subparts F & G
LA-0213	Valero Refining - New Orleans, LLC St. Charles Refinery	VOC	11/17/2009	Wastewater Collection & Treatment: Aru	P	Comply with 40 CFR 63 Subparts F & G
OH-0308	Sunoco, Inc. Sun Company, Inc., Toledo Refinery	VOC	5/1/2007	Wastewater Streams	N	No controls feasible
TX-0657	Natgasoline LLC Beaumont Gas To Gasoline Plant	VOC	05/16/2014	Wastewater Processing And Handling	B	Use of **enclosed** sewers, water seals on drains, seal **covers**, **enclosed** oil-water separator and routing emissions to a **Carbon Adsorption** system. Use of **enclosed** pretreatment. 90% control is estimated to be achieved.
TX-0731	Magellan Processing LP Corpus Christi Terminal Condensate Splitter	VOC	04/10/2015	Petroleum Refining Wastewater And Wastewater Treatment	B	Process wastewater shall be immediately directed to a **covered system**. All lift stations, manholes, junction boxes, conveyances, and any other wastewater facilities shall be covered and all emissions routed to a **vapor combustor** with a guaranteed DRE of 99% for control.
TX-0872	Magellan Processing, L.P. Condensate Splitter Facility	VOC	10/16/2019	Wastewater Treatment	B	Covered. Route to **flare or MSSVCU**. Maximum of 500 ppmv of oil inlet concentration. 6,000 gal/hr exiting flow.
TX-0914	Phillips 66 Borger Refinery	VOC	12/7/2020	Wastewater Collection Sump	A	The wastewater collection sump is vented to a carbon adsorption system (CAS). The CAS is a non-regenerative system with **two carbon canisters** in series. The breakthrough concentration is 100 ppm based on vendor representations.
TX-0936	Valero Refining-Texas LP Bill Greehey Refinery East Plant	VOC	2/22/2022	Wastewater Treatment Plant	B	Stripped gases from pretreatment routed to a **control device, collection system hard piped/covered conveyance** to biological treatment unit vented to a control device, wastewater treatment system must be at least 90 percent efficient. Benzene wastewater stripper emissions routed to a flare which removes H2S via amine treatment and recovers gas to the fuel gas system
TX-0938	Valero Refining-Texas, L.P. Valero Corpus Christi Refinery West Plant	VOC	6/6/2022	Wastewater Lift Station	A	VOC controlled by CAS consisting of **two adsorbers**, connected in series and operating in standard lead/lag configuration. The outlet of the first adsorber is the breakthrough monitoring point.

Table D-1
Monroe Energy, LLC - Trainer, PA

Summary of RBLC Search Results - Control of Wastewater Fugitive VOC Emissions | RACT 3 Case-by-Case Analysis - Source ID 106

RBLC ID	Company and Facility Name	Pollutant	Permit Issuance Date	Process Description	Control Method[(a)]	Control Method Description
TX-0756	Castleton Commodities International (CCI) Corpus Christi Condensate Splitter Facility	VOC	7/20/2015	Wastewater Tank	P	Tank is required to be painted white and be equipped with **submerged fill pipes**
TX-0756	Castleton Commodities International (CCI) Corpus Christi Condensate Splitter Facility	VOC	7/20/2015	WWTP	B	Overall system to achieve 90% of VOC from treated wastewater. Oil/water separator is **enclosed** and routed to a **carbon adsorption system** (CAS). Process drains to be equipped with a water seal. Wastewater sewers will be **enclosed**. Aerobic digesters will be **enclosed** and directed to a **CAS**.

[(a)] Control methods are abbreviated as defined below:

Abbreviation	Control Method
P	Pollution Prevention
A	Add-on Control Equipment
B	Both (Pollution Prevention & Add-on Control Equipment)
N	No Controls Feasible