

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
OPERATING PERMIT TECHNICAL REVIEW DOCUMENT**

**Air, Energy & Mining Division
1520 E. Sixth Avenue
P.O. Box 200901
Helena, Montana 59620-0901**

Montana Renewables LLC (MRL)
NE Quarter of Section 1, Township 20 North, Range 3 East
1900 10th Street Northeast
Great Falls, MT 59404

The following table summarizes the air quality programs testing, monitoring, and reporting requirements applicable to this facility.

Facility Compliance Requirements	Yes	No	Comments
Source Tests Required	X		
Ambient Monitoring Required		X	
COMS Required		X	
CEMS Required	X		
Schedule of Compliance Required	X		
Annual Compliance Certification and Semiannual Reporting Required	X		
Monthly Reporting Required		X	
Quarterly Reporting Required		X	
Applicable Air Quality Programs			
ARM Subchapter 7 – Montana Air Quality Permit (MAQP)	X		MAQP #5263
New Source Performance Standards (NSPS) (For purposes of this table some subparts are listed as elements of the subparts are being used to demonstrate compliance but functionally by definition the subparts may not specifically identify MRL as a facility subject to the subpart).	X		40 CFR 60 Subpart A, 40 CFR 60 Subpart Dc, 40 CFR 60 Subpart Kb, 40 CFR 60 Subpart III, 40 CFR 60 Subpart VVa, 40 CFR 60 Subpart QQQ
National Emission Standards for Hazardous Air Pollutants (NESHAPS)	X		40 CFR 61, Subparts A, 40 CFR 61 Subpart FF

Maximum Achievable Control Technology (MACT)	X		40 CFR 63 Subpart A, 40 CFR 63 Subpart FFFF (Compliance with FFFF via 40 CFR 63 Subpart CC), 40 CFR 63 Subpart DDDDD, 40 CFR 63 Subpart ZZZZ
Major New Source Review (NSR) – includes Prevention of Significant Deterioration (PSD) and/or Non-attainment Area (NAA) NSR		X	
Risk Management Plan Required (RMP)		X	
Acid Rain Title IV		X	
Compliance Assurance Monitoring (CAM)		X	
State Implementation Plan (SIP)	X		General Montana SIP

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SECTION I. GENERAL INFORMATION

A. Purpose

This document establishes the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emissions units affected by the operating permit proposed for this facility. The document is intended for reference during review of the proposed permit by the Environmental Protection Agency (EPA) and the public. It is also intended to provide background information not included in the operating permit and to document issues that may become important during modifications or renewals of the permit. Conclusions in this document are based on information provided in the original Title V application submitted by MRL on November 2, 2023. Additional information also was also received from the Montana Air Quality Permit (MAQP) applications, and the related MAQPs issued for the facility. The MAQP history is shown in Section C below.

B. Facility Location

The legal description of the site is the Northeast (NE) quarter of Section 1, Township 20 North, Range 3 East in Cascade County, Montana. The renewable fuels plant sits on the site previously occupied by the Montana Calumet Refinery. The physical address for MRL is 1900 10th Street Northeast, Great Falls, MT 59404.

C. Facility Background Information

MAQP Permit History

MAQP #5263-00 was issued on October 26, 2021. The proposed project allowed MRL to construct and operate a renewable diesel plant with a projected capacity of 15,000 barrels per day (bpd). Most of the equipment used for the renewable diesel plant was transferred from the existing Calumet Montana Refining (CMR) petroleum refinery assets with additional equipment also permitted for the new facility.

On April 26, 2022, DEQ received an application to modify MAQP #5263-00. Since the initial MAQP was issued on October 26, 2021, construction has begun for the new facility, but the original design details have evolved to accommodate the latest project plan. The application was submitted under the name Renewable Feed Flexibility Project. The primary change in the plant design entailed installing a pretreatment unit (PTU) to allow the facility to treat raw renewable materials such as fats and oils which will result in the need to handle and transfer additional wastewater from the facility. The additional wastewater generation also required an additional storage tank as well as load-out facilities that use trucks, existing rail load-out infrastructure, or the installation of new rail load-out facilities. Finally, kerosene and a sustainable aviation fuel were added as products produced from the renewable fuels unit. These two new planned products also required new tanks as well as changes in the planned use of other tanks. MRL also proposed to permit the MHC Fractionator Feed Heater (H-4102) which had earlier been planned for shutdown and will now be called the RDU Fractionator Feed Heater (H-4102). Additional process equipment is also being permitted and is described in the MAQP analysis. MAQP #5263-01 was issued on July 7, 2022. **MAQP #5263-01** replaced MAQP #5263-00.

On August 31, 2023, DEQ received an application to modify MAQP #5263-01. Since the last MAQP was issued on July 7, 2022; the overall facility design has evolved. MRL operates one existing Renewable Diesel Unit (RDU) Combined Feed Heater and one existing RDU Fractionator Feed Heater, identified as H-4101 and H-4102 respectively, in MAQP #5263-01. The annual average firing rates of H-4101 and H-4102 are permitted not to exceed 25 one million British thermal units (MMBtu)/hour (hr) and 30 MMBtu/hr, respectively. MRL proposes to return the two heaters to the firing rates that were permitted when the heaters were part of CMR. No physical changes have been made to either heater, and H-4101 and H-4102 would be returned to their original firing rates of 54 MMBtu/hr, and 38 MMBtu/hr, respectively.

MRL also proposed to add two diesel-fired LP boilers, identified as, LPB-1 and LPB-2, which will be used for steam generation to heat rail cars that supply materials to the RDU. Each LP boiler will have a maximum heat input capacity of 2.2 MMBtu/hr. The two LP boilers will be trailer-mounted, and each trailer will be equipped with one diesel-fired non-emergency generator (Gen-1 and Gen-2). Each generator will be powered by an EPA Tier 4 certified engine with a maximum rated power capacity of 12.3 horsepower (hp).

MRL also proposed to add four small diesel fuel storage tanks to fire the two low pressure boilers and two non-emergency generators. **MAQP #5263-02** was issued on November 9, 2023. MAQP #5263-02 replaced MAQP #5263-01.

Title V Permit History

On the original Title V Operating Permit for MRL, the MRL equipment remained on the Calumet Title V Operating Permit #OP2161. With this initial standalone MRL Title V Operating Permit, all MRL emitting units are now represented on the new MRL **Operating Permit #OP5263-00**.

D. Current Permit Action

DEQ has prepared this initial Title V Operating Permit based on the application received on November 2, 2023. Within this permit the following changes are also being made to standard DEQ language regarding emergency affirmative defense provisions included in all Title V Operating Permits.

The Environmental Protection Agency (EPA) has removed the “emergency” affirmative defense provisions from the Clean Air Act’s (CAA) title V operating permit program regulations. These provisions established an affirmative defense that sources could have asserted in enforcement cases brought for noncompliance with technology-based emission limitations in operating permits, provided that the exceedances occurred due to qualifying emergency circumstances. These provisions, which have never been required elements of state operating permit programs, are being removed because they are inconsistent with the EPA's interpretation of the enforcement structure of the CAA. Each state which has emergency provisions within their title V operating permit programs will need to remove the language and provisions in title V operating permits at their next renewal or during normal permit revisions. The emergency provisions formerly included in Title V permits are no longer applicable to this Title V operating permit.

E. Taking and Damaging Analysis

Title 2, Chapter 10, Part 1, Montana Code Annotated (MCA), the Montana Private Property Assessment Act, requires analysis of every proposed state agency administrative rule, policy, permit condition or permit denial, pertaining to an environmental matter, to determine whether the state action constitutes a taking or damaging of private, real property that requires compensation under the Montana or U.S. Constitution. As part of issuing an operating permit, DEQ is required to complete the following Taking and Damaging Checklist. As required by 2-10-101 through 2-10-105, MCA, DEQ conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, DEQ determined there are no taking or damaging implications associated with this permit action.

F. Compliance Designation

DEQ issued a violation letter to MRL on September 20, 2024. The violation letter alleged violations for NOx related to Hydrogen Plant #3 and Hydrogen Plant #4. Follow-up will continue with the facility to reach a determination on final violation status, and whether any enforcement action will be required. MRL had initiated implementing solutions for the alleged violations including the implementation of new equipment to eliminate the process variations in the NOx emissions levels. MRL will be scheduling future source tests to demonstrate limits with the associated NOx limits which will establish whether the changes which have been implemented were successful.

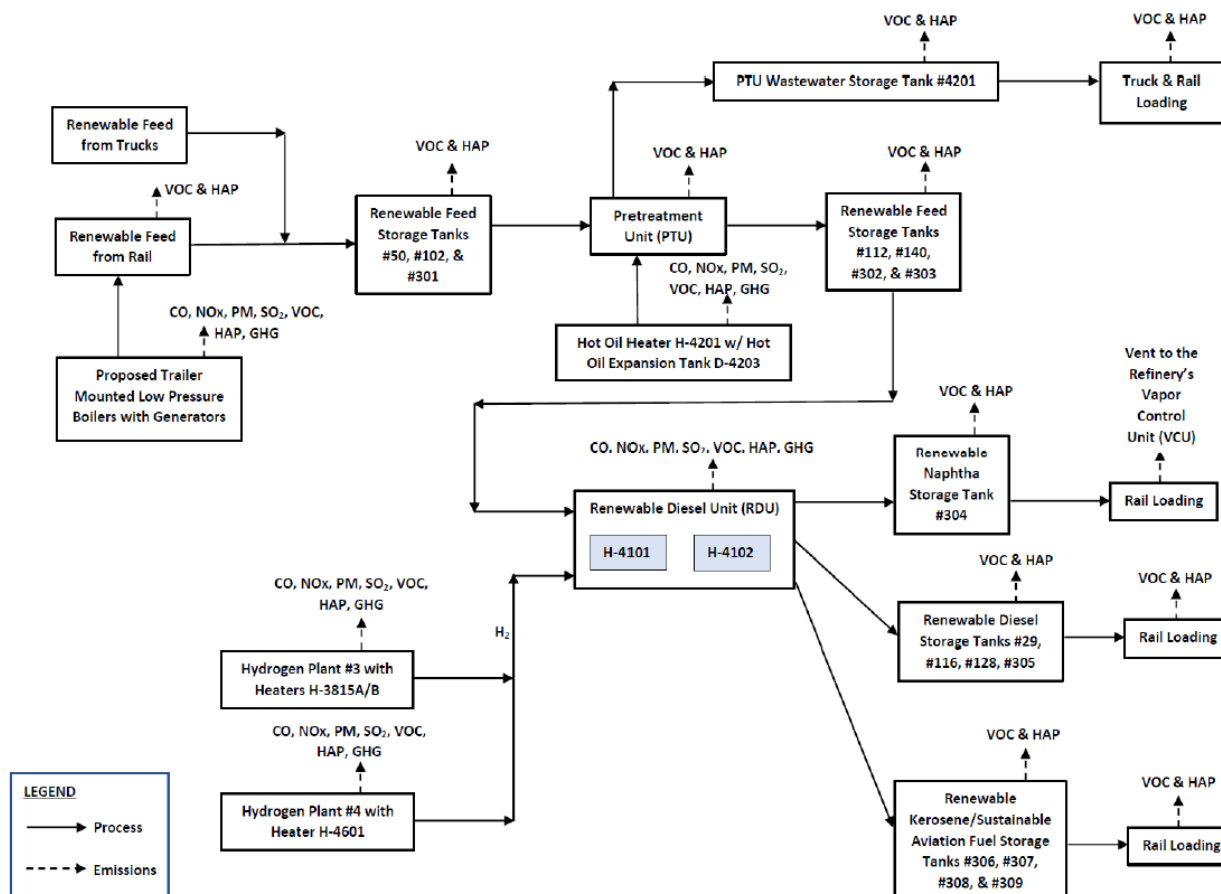
MRL had also included in the Title V application information related to non-compliance with the MAQP for the PTU Wastewater Tank #4201 and the PTU Wastewater Rail and Truck Loading. Each of these units had requirements to include carbon adsorption for VOC control. At the time of submittal of the Title V application, both of these were not yet completed but anticipated to be completed shortly. Since the application submittal, both locations now include carbon adsorption for VOC control, and these items are no longer out of compliance with the MAQP conditions which are now incorporated into the Title V. MRL provided a verification statement to DEQ indicating, that the final process safety inspection and subsequent release for operation of the carbon adsorption device was conducted on March 12, 2024.

SECTION II. SUMMARY OF EMISSIONS UNITS

A. Facility Process Description

The equipment described above operates at the MRL Great Falls Renewable Fuels Plant, which is adjacent to the CMR Great Falls Refinery. MRL operates as a subsidiary to Calumet Specialty Products Partners, L.P., as does CMR. The renewable equipment operating at the site is not a petroleum refinery and the numerous regulatory requirements for petroleum refineries do not apply to any of the new or transferred equipment operating under MRL permits.

Facility Block Flow Diagram



Renewable Diesel Unit (RDU) and Heaters

The RDU Combined Feed Heater (H-4101) is used to heat the RDU feed oil and hydrogen mixture to promote a hydroprocessing chemical reaction in the RDU reactor. The RDU Fractionator Feed Heater (H-4102) is used to provide heat to the RDU's fractionation process. The two RDU heaters combust a blended fuel comprised of natural gas and RDU off-gas. The RDU off-gas is generated by the hydroprocessing reaction in the RDU, and its primary constituents are typically methane (CH₄), ethane, propane, butanes, pentanes, and hydrogen. To minimize nitrogen oxide (NOx) emissions, the RDU heaters are equipped with ultra-low NOx burners (ULNBs).

H-4101 and H-4102 are currently permitted at annual average firing rates of 25 MMBtu/hr and 30 MMBtu/hr, respectively. MRL submitted a permit modification application to MT DEQ in September 2023 (referred to as “the 2023 Permit Modification Application”) requesting to increase the annual average firing rates of H-4101 and H-4102 to 54 MMBtu/hr and 38 MMBtu/hr, respectively. The 2023 Permit Modification Application is being processed by MT DEQ and a revised MAQP that reflects the requested changes was issued on November 9, 2023.

Hydrogen Plant #3

Hydrogen Plant #3 is used to supply hydrogen feedstock to the RDU. Hydrogen Plant #3 has two Reformer Heaters, identified as H-3815A and H-3815B, which exhaust through a common stack. The annual average firing rate of each reformer heater is 67 MMBtu/hr.

Hydrogen Plant #4

Hydrogen Plant #4 is used to produce additional hydrogen to support the hydroprocessing requirements of the RDU. Hydrogen Plant #4 includes the following emission sources:

- Hydrogen Plant #4 Reformer Heater H-4601 (formerly identified as H-4801);
- Piping fugitive components; and
- Wastewater components.

Additionally, Hydrogen Plant #4 has a stack that provides the capability to vent purified hydrogen from the following hydrogen plants to the atmosphere during hydrogen system imbalance events that can periodically occur when hydrogen consuming process equipment experiences an abrupt change in the need for hydrogen:

- CMR Great Falls Refinery’s Hydrogen Plant #2;
- MRL Great Falls Renewable Diesel Plant’s Hydrogen Plant #3; and
- MRL Great Falls Renewable Diesel Plant’s Hydrogen Plant #4.

Note that hydrogen is not a regulated air pollutant.

The feedstock for Hydrogen Plant #4 is RDU off-gas and natural gas. Hydrogen Plant #4 Reformer Heater H-4601 combusts pressure swing adsorption (PSA) off-gas generated in Hydrogen Plant #4 and RDU off-gas. The PSA off-gas is generated when the PSA beds in Hydrogen Plant #4 are regenerated in a cyclic manner, and it is generally comprised of methane (CH₄), hydrogen, carbon monoxide (CO), carbon dioxide (CO₂), water, and nitrogen. The PSA off-gas and RDU off-gas are not blended or combined prior to combustion in the Hydrogen Plant #4 Reformer Heater H-4601. Instead, they are combusted separately at fuel-specific burner tips in the heater’s combustion chamber.

Pretreatment Unit (PTU)

The PTU is used to convert raw renewable feeds to a treated renewable feed for processing in the RDU. The PTU is a continuous process and includes the following major equipment:

- Deaerator, liquid-liquid separator, and blowdown process vessels;

- Liquid reactors;
- Heat exchangers;
- Filters and static mixers; and
- Piping and piping components (pumps, valves, flanges, connectors, etc.).

Additionally, a hot oil system is used to provide heat to the PTU. This hot oil system contains a 38 MMBtu/hr natural gas-fired hot oil heater, identified as H-4201, which is equipped with ULNBs to minimize NOx emissions, an enclosed heat transfer circuit, and a hot oil expansion tank (D-4203).

Lastly, Tank #4201 is used to store PTU wastewater. MRL transfers PTU wastewater from the storage tank to tank trucks or railcars, which then transports the wastewater to an offsite facility for treatment or disposal. MRL uses a tank truck loading facility and a railcar loading facility to transfer the PTU wastewater to its respective transport vehicles.

Storage Tanks

The storage tanks used at MRL, stored materials, operating conditions, and anticipated maximum annual throughputs are summarized in Table 1.1 below.

Table: MRL Storage Tanks

Tank ID	Stored Material	Tank Type	Volume Capacity (Gallons)	Tank Heated (Yes/No)	Working Temp. (°F)	Anticipated Maximum Annual Throughput (Gallons/yr)
#50	Renewable Feed	VFRT	909,152	Yes	140	66,150,000
#102	Renewable Feed	VFRT	909,152	Yes	140	66,150,000
#112	Renewable Feed / RDU Slop Oil	VFRT	2,350,080	Yes	140	85,260,000
#140	Renewable Feed	VFRT	4,765,951	Yes	140	205,800,000
#301	Renewable Feed	VFRT	4,765,951	Yes	140	88,200,000
#302	Renewable Feed	VFRT	909,152	Yes	140	110,250,000
#303	Renewable Feed	VFRT	909,152	Yes	140	110,250,000
#304	Renewable Naphtha	VEFR T	988,207	No	Ambient	19,800,000
#29	Renewable Diesel	VFRT	869,625	No	Ambient	110,000,000
#116	Renewable Diesel	VFRT	1,896,229	No	Ambient	110,000,000
#128	Renewable Diesel	VFRT	909,482	No	Ambient	110,000,000
#305	Renewable Diesel	VFRT	4,765,951	No	Ambient	110,000,000
#306	Renewable Kerosene	VFRT	360,972	No	Ambient	26,460,000
#307	Renewable Kerosene	VFRT	360,972	No	Ambient	
#308	Renewable Kerosene / Sustainable Aviation Fuel	VFRT	812,190	No	Ambient	
#309	Renewable Kerosene / Sustainable Aviation Fuel (not yet installed)	VFRT	812,190	No	Ambient	52,920,000
#305	Renewable Diesel	VFRT	4,765,951	No	Ambient	110,000,000
#305	Renewable Diesel	VFRT	4,765,951	No	Ambient	110,000,000

#0801	Conventional Diesel	VFRT	8,176	No	Ambient	1,200,000
#4201	PTU Wastewater	VFRT	323,877	Yes	140	52,560,000
#4203	Hot Oil Expansion Tank D-4203	Hor.	2,207	Yes	250	Tanks have nitrogen sweep for emission calculations.
#4208	PTU Wastewater Blowdown Drum D-4208	Hor.	14,692	Yes	200	Tanks have nitrogen sweep for emission calculations.

Note:

VFRT is vertical fixed roof tank

VEFRT is vertical external floating roof tank

HOR is horizontal fixed roof tank

Trailer-Mounted LP Boilers with Generators

As a part of the 2023 MAQP application, MRL also requested to install two diesel-fired LP boilers, identified as, LPB-1 and LPB-2, used for steam generation to heat rail cars supplying materials to the RDU. Each LP boiler has a maximum heat input capacity of 2.2 MMBtu/hr. The two LP boilers are trailer mounted, and each trailer is equipped with one diesel-fired non-emergency generator (G-1 and G-2). Each generator is powered by an EPA Tier 4 certified engine with a maximum rated power capacity of 12.5 horsepower (hp).

B. Emissions Units and Pollution Control Device Identification

Title V Section	Description	Pollution Control Device/Practice
Hydrogen Plants		
Section III.C: Hydrogen Plant #3 (15 MMSCFD)		
Hydrogen Plant #3 Identified as EU002 for Emission Inventory Purposes		
	#3 H ₂ Plant Reformer Heaters (combined stack) – H-3815A&B, Annual firing rate 67 MMBtu/hr each (HHV).	Ultra-low NO _x Burners
Section III.D: Hydrogen Plant #4 (21MMSCFD)		
Hydrogen Plant #4 Identified as EU004 for Emission Inventory Purposes		
	#4 H ₂ Plant Reformer Heater H-4601, Annual firing rate of 213 MMBtu/hr (HHV)	Ultra-low NO _x Burners and Fuel Gas Treatment System
	#4 H ₂ Piping Plant Components	LDAR per State BACT GGGA/VVa
Renewable Diesel Unit (RDU)		
Section III.E: RDU Heaters		
RDU Combined Feed Heater H-4101 and Fractionator Feed Heater H-4102		
H-4101 is identified as EU001, and H-4102 as EU011 for Emission Inventory Purposes		
	RDU Combined Feed Heater, H-4101, Annual firing rate of 54 MMBtu/hr (HHV)	Ultra-low NO _x Burners and Fuel Gas Treatment System,

Title V Section	Description	Pollution Control Device/Practice
	RDU Fractionator Feed Heater, H-4102, Annual firing rate of 38 MMBtu/hr (HHV)	Ultra-low NOx Burners and Fuel Gas Treatment System,
Hot Oil System (Part of PTU)		
Section III.F: Hot Oil Heater H-4201		
	Hot Oil Heater H-4201 Annual firing rate of 38 MMBtu/hr (HHV)	Ultra-low NOx Burners
	Hot Oil Expansion Tank D-4203	Covered in Section III.H. Tanks
PTU and Wastewater Loading		
Section III.G: Wastewater Handling		
	Tank 4201 Wastewater Collection Tank (323,877 gallons)	Carbon Adsorption
	PTU Blowdown Drum D-4208 (14,692 gallons)	Carbon Adsorption
Tanks		
Section III.H: Tanks		
	Tank 50: 909,152 gallons in Renewable Feed Service	Vertical Fixed Roof Tank
	Tank 102: 909,152 gallons in Renewable Feed Service	Vertical Fixed Roof Tank
	Tank 112: 2,350,080 gallons in Renewable Feed/Slop Oil Service	Vertical Fixed Roof Tank
	Tank 140: 4,765,951 gallons in Renewable Feed Service	Vertical Fixed Roof Tank
	Tank 301: 4,765,951 gallons in Renewable Feed Service	Vertical Fixed Roof Tank and Submerged Fill
	Tank 302: 909,152 gallons in Renewable Feed Service	Vertical Fixed Roof Tank and Submerged Fill
	Tank 303: 909,152 gallons in Renewable Feed Service	Vertical Fixed Roof Tank and Submerged Fill
	Tank 304: 988,207 gallons in Renewable Naphtha Service	Vertical External Floating Roof Tank, 40 CFR 60 Subpart Kb
	Tank 29: 869,625 gallons in Renewable Diesel Service	Vertical Fixed Roof Tank
	Tank 116: 1,896,229 gallons in Renewable Diesel Service	Vertical Fixed Roof Tank
	Tank 128: 909,482 gallons in Renewable Diesel Service	Vertical Fixed Roof and Submerged Fill
	Tank 305: 4,765,951 gallons in Renewable Diesel Service	Vertical Fixed Roof and Submerged Fill
	Tank 306: 360,972 gallons in Renewable Kerosene Service	Vertical Fixed Roof and Submerged Fill
	Tank 307: 360,972 gallons in Renewable Kerosene Service	Vertical Fixed Roof and Submerged Fill
	Tank 308: 812,190 gallons in Renewable Kerosene/Sustainable Aviation Fuel Service	Vertical Fixed Roof and Submerged Fill
	Tank 309: 812,190 gallons in Renewable Kerosene/Sustainable Aviation Fuel Service	Vertical Fixed Roof and Submerged Fill

Title V Section	Description	Pollution Control Device/Practice
	Tank 0801: 8,176 gallons in Conventional Diesel Service	Vertical Fixed Roof and Submerged Fill
LP Boilers and Generators		
Section III.I: LP Boilers and Generators		
	LP Boiler #1, Annual firing of 2 MMBtu/hr (HHV)	Ultra-low sulfur Diesel fuel of maximum 15 ppm sulfur, 40 CFR 63 Subpart DDDDD
	LP Boiler #2, Annual firing of 2 MMBtu/hr (HHV)	Ultra-low sulfur Diesel fuel of maximum 15 ppm sulfur, 40 CFR 63 Subpart DDDDD
	Generator #1 (Maximum 12.5 horsepower)	Ultra-low sulfur Diesel of maximum 15 ppm sulfur, Tier IV Engines, 40 CFR 63 Subpart ZZZZ by meeting the requirement of 40 CFR 60 Subpart IIII (40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart IIII.
	Generator #2 (Maximum 12.5 horsepower)	Ultra-low sulfur Diesel of maximum 15 ppm sulfur, Tier IV Engines, 40 CFR 63 Subpart ZZZZ by meeting the requirement of 40 CFR 60 Subpart IIII (40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart IIII
Section III.J: Truck and Railcar Loading		
Truck and Rail Loading		
	Railcar Loading Rack – Diesel, Kerosene and Sustainable Aviation Fuel	Submerged Fill
	Railcar Loading Rack –Naphtha	Vapor Combustor
	Wastewater Loading via Railcar and/or Truck	Carbon Adsorption Device
Section III.K: Fugitives		
	Fugitives and RDU Continuous Process Vents	Various Subpart Best Practices

Pretreatment Unit (PTU) including

- Deaerator, liquid-liquid separator, and blowdown process vessels

- Liquid reactors
- Heat exchangers
- Filters and static mixers; and
- Piping and piping components (pumps, valves, flanges, connectors, etc.).

Hot Oil System including:

- Hot Oil Heater (H-4201)
- Hot Oil Expansion Tank (D-4203)

PTU Wastewater Handling including:

- Tank #4201
- Truck loading facility and
- Railcar loading facility (or use of existing railcar loading infrastructure transferred from Calumet Montana Refining, LLC (CMR) to Montana Renewables, LLC (MRL)).

Railcar Unloading of Renewable Feedstock

Railcar Loading of Renewable Diesel, Renewable Kerosene, and Sustainable Aviation Fuel

Equipment previously permitted under MAQP #5263-00 and changes to the original project design including other new equipment is noted below:

Hydrogen Plant #4 will be installed at the MRL plant to supply hydrogen feedstock to the Renewable Diesel Unit (RDU)

- Hydrogen Plant #4 Reformer Heater (H-4801)
- Piping fugitive components and
- Wastewater components

New Tanks storing either renewable feed or renewable fuels

- Tank #301
- Tank #302
- Tank #303
- Tank #304
- Tank #305

MRL also proposes to receive, refurbish as necessary, and operate the following existing equipment transferred from CMR

RDU Combined Feed Heater (H-4101)

Hydrogen Plant #3: (including Hydrogen Plant #3 Reformer Heaters H-3815A and H-3815B given new emitting unit numbers).

MHC Fractionator Feed Heater (H-4102) (Now RDU Fractionator Feed Heater H-4102)

Tanks

- Tank #29
- Tank #50
- Tank #102
- Tank #112
- Tank #116
- Tank #128 and
- Tank #140

Associated piping, valves, pumps and supporting equipment.

The plant will also share some connectivity with flaring devices, material unloading and loading facilities, utility systems (e.g., steam and cooling water), and wastewater treatment systems owned and operated by CMR. These are further described in the permit analysis.

Existing and new equipment related to Renewable Kerosene and Sustainable Aviation Fuel Production and other Design Changes.

Existing RDU side stripper for renewable kerosene production.

New piping (pumps, valves, flanges, connectors) and heat exchanger to handle and cool renewable kerosene.

New process vessels in the RDU to perform filtration, coalescence and drying of renewable kerosene.

Four new tanks to store renewable kerosene and sustainable aviation fuel (SAF)

- Tank #306 for storing renewable kerosene
- Tank #307 for storing renewable kerosene
- Tank #308 for storing renewable kerosene or sustainable aviation fuel
- Tank #309 for storing renewable kerosene or sustainable aviation fuel

Tank #0801 for storing conventional diesel which will be blended with renewable diesel during railcar loading operations.

- Low Pressure Boilers
- LPB-1
- LPB-2

Non-emergency Generators

- Gen-1
- Gen-2

Small Diesel Storage Tanks (4)

C. Categorically Insignificant Sources/Activities

The application identified the following sources/activities as insignificant.

Insignificant Tanks/Totes/ISO Tank Containers (generally $\leq 10,000$ -gallon capacity vessels used to store additives, treatment chemicals, etc.)

Maintenance Activities (cleaning and filter handling)

SECTION III. PERMIT CONDITIONS

A. Emission Limits and Standards

MRL is a separate “stationary source” from the CMR Great Falls Refinery for PSD permitting purposes as MRL and CMR do not belong to the same industrial grouping (i.e., different two-digit SIC codes) and neither functions as a support facility to the other.

As a chemical manufacturing plant (SIC Code 2869 – Industrial Organic Chemicals, Not Elsewhere Classified), the major PSD emission threshold for MRL is 100 tons per year for any criteria pollutants (PM, SO₂, NO_x, CO, VOC). MRL is a minor PSD source as its potential emissions are below 100 tons per year for criteria pollutants.

B. Monitoring Requirements

ARM 17.8.1212(1) requires that all monitoring and analysis procedures or test methods required under applicable requirements are contained in operating permits. In addition, when the applicable requirement does not require periodic testing or monitoring, periodic monitoring must be prescribed that is sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit.

The requirements for testing, monitoring, recordkeeping, reporting, and compliance certification sufficient to assure compliance do not require the permit to impose the same level of rigor for all emissions units. Furthermore, they do not require extensive testing or monitoring to assure compliance with the applicable requirements for emissions units that do not have significant potential to violate emission limitations or other requirements under normal operating conditions. When compliance with the underlying applicable requirement for a insignificant emissions unit is not threatened by lack of regular monitoring and when periodic testing or monitoring is not otherwise required by the applicable requirement, the status quo (**i.e., no monitoring**) will meet the requirements of ARM 17.8.1212(1). Therefore, the permit does not include monitoring for insignificant emissions units.

The permit includes periodic monitoring or recordkeeping for each applicable requirement. The information obtained from the monitoring and recordkeeping will be used by the permittee to periodically certify compliance with the emission limits and standards. However, DEQ may request additional testing to determine compliance with the emission limits and standards.

C. Test Methods and Procedures

The operating permit may not require testing for all sources if routine monitoring is used to determine compliance, but DEQ has the authority to require testing if deemed necessary to determine compliance with an emission limit or standard. In addition, the permittee may elect to voluntarily conduct compliance testing to confirm its compliance status.

D. Recordkeeping Requirements

The permittee is required to keep all records listed in the operating permit as a permanent business record for at least five years following the date of the generation of the record.

E. Reporting Requirements

Reporting requirements are included in the permit for each emissions unit and Section V of the operating permit "General Conditions" explains the reporting requirements. However, the permittee is required to submit semi-annual and annual monitoring reports to DEQ and to annually certify compliance with the applicable requirements contained in the permit. The reports must include a list of all emission limit and monitoring deviations, the reason for any deviation, and the corrective action taken as a result of any deviation.

F. Public Notice

In accordance with ARM 17.8.1232, a public notice was published in the Great Falls Tribune newspaper on or before December 12, 2024. DEQ provided a 30-day public comment period from December 19, 2024, through January 20, 2025, on the Draft Permit (ARM 17.8.1232). ARM 17.8.1232 requires DEQ to keep a record of both comments and issues raised during the public participation process. The comments and issues received by January 20, 2025, are summarized, along with DEQ's responses, in the following table. All comments received during the public comment period will be promptly forwarded to MRL so they may have an opportunity to respond to these comments as well.

Summary of Public Comments (None received)

Person/Group Commenting	Comment	DEQ Response

G. Draft Permit Comments

Draft Permit Reference	Summary of Permit Requirement	Comment	DEQ Response
A.20	Comply with all applicable requirements of the Consent Decree "for the life of the Consent Decree"	Remove: Not emissions limits established under Section V of the CD. Terminates when the CD terminates.	DEQ is awaiting comment from EPA before attempting any CD related changes.

A.23	General prohibition and exception with respect to using CD emissions reductions	<p><u>Revise:</u> The General Prohibition is overbroad because it applies generally to any projects conducted by MRL, not just CD required emissions reductions, and should apply only to the Heaters subject to the CD. It also contains language inconsistent with the CD, and is overbroad, referring to units and limits that do not exist at MRL.</p> <p>The provision needs to be modified to match the CD and tailored to apply only to the Heaters and MRL.</p>	DEQ is awaiting comment from EPA before attempting any CD related changes
B.3.	Heaters and Boilers >40MMBtu/hr must be equipped with Next Generation Ultra Low NOx burners and Paragraph 16 of the CD.	<u>Remove:</u> Not emissions limits established under Section V of the CD. Terminates when the CD terminates.	DEQ is awaiting comment from EPA before attempting any CD related changes
B.8.	Heaters and Boilers: NOx emissions monitoring and testing	<u>Remove:</u> This provision refers to one-time monitoring required under the CD, which has been completed.	DEQ is awaiting comment from EPA before attempting any CD related changes
B.14.	Records of NOx controls installed on CD Heaters	<u>Remove:</u> Not emissions limits established under Section V of the CD. Terminates when the CD terminates.	DEQ is awaiting comment from EPA before attempting any CD related changes
B.18.	Quarterly CD compliance reports	<u>Remove:</u> Not emissions limits established under Section V of the CD. Terminates when the CD terminates.	DEQ is awaiting comment from EPA before attempting any CD related changes
C.3.	NOx emissions from H-3815 and H- 3815B	<u>Revise:</u> The requirement for -3815 A & B to be “controlled by an ULNB” is not an emission limit established under Section V of the CD. Only the NOx emission limit survives and is incorporated into the CD.	DEQ is awaiting comment from EPA before attempting any CD related changes. Further, ULNB could be a surrogate for an emission limit.
E.2.	NOx emissions from H4101	<u>Revise:</u> The requirement for H4101 be “controlled by an ULNB” is not an emission limit established under Section V of the CD. Only the NOx emission limit survives and is incorporated into the CD.	DEQ is awaiting comment from EPA before attempting any CD related changes. Further, ULNB could be a surrogate for an emission limit.
CD General	Fuel Oil	Paragraph 17 of the CD prohibits the combustion of Fuel Oil in combustion units at CMR. Since the Heaters are subject to the final emissions limits in	DEQ has incorporated fuel oil restrictions into the Proposed Permit at

		the CD, the prohibition on burning Fuel Oil (liquid fossil fuel with sulfur content of greater than 0.05% by weight) should be included in the MRL permit for the Heaters (H-4101 and 3815 A&B) covered by the CD.	C.7 and E.11 with a corresponding ARM 17.8.1211 reference.
CD General	The Permit Contains references to the CD that need to be removed.	They appear in Section III. Permit Conditions., A. Facility-Wide, A.20, referencing ARM.17.8.1211, and A.23, referencing ARM 17.8.1211, and Permit Conditions: A.20., B.3., B.8., B.14, and B.18.	DEQ is awaiting comment from EPA before attempting any CD related changes
General	MRL provided some suggested edits to the format of the permit in the form of a marked-up permit. Those are summarized below:		
General	Block Flow Diagram	MRL prefers the block flow diagram be removed from the process description	Removed from OP
General	Fugitives Section G	MRL requests that fugitives be moved to a new Section K	Relocated Section G conditions into new Section K
A.12	Vapor Pressure ARM 17.8.324(1)	MRL stores only renewable naphtha with a VP greater than 2.5, but seems it would not be subject as its not a crude oil, gasoline, or petroleum distillate.- suggesting this be deleted.	Deleted as not applicable
A.14	NSPS Reference	Reference should be changed to 40 CFR Part 60. Please list the standards from the permit BACT and applicability	Corrected to 40 CFR 60. All BACT conditions were previously incorporated into the permit conditions under their respective emitting unit, referencing ARM 17.8.752. No other additions included.
A.23	CD	Not applicable to MRL- suggesting this be deleted all conditions under A.23	DEQ is awaiting comment from EPA before attempting any CD related changes
Section B	Emission Limitations	MRL requests removal of all conditions that it believes do not transfer from the CD to MRL. It appears this would leave only B.3 and the related compliance, recordkeeping, and reporting conditions.	DEQ is awaiting comment from EPA before attempting any CD related changes

Section C	Hydrogen Plant #3	See above comment in Section III.B. Calumet requests to remove the umbrella limits of NOx and CO for CMR and MRL heaters combined. And in all sections below which reference these same NOx and CO umbrella limits.	DEQ believes some of the umbrella limits remain applicable to MRL.
Section D	Draft permit D.3	Update 1 hour to 3 hour averaging period	The MAQP has a 1-hour average. This will need a modification in the underlying MAQP.
Section E	Draft permit E.2	Add averaging period to summary table	Updated in table
Section E	Draft permit E.3	Add 1-hr rolling average to summary table	Updated in table
Section E	Draft permit E.4	Add 1-hr rolling average to summary table and to permit condition	Updated in both
Section E	Draft permit E.6	Add word filterable to summary table	Updated in table
Section E	Draft permit E.5	Add word phrase “plus condensable” to E.5.a. to match MAQP	Updated
Section E	Draft permit E.12	Add H-4102 to this condition to match MAQP	Updated
Section F	Draft permit E.3	Update 1-hour to 3-hour average period in summary table and permit condition.	The MAQP has a 1-hour average. This will need a modification in the underlying MAQP.
Section F	Draft permit F.10 and F.11	MRL requests to use fuel gas oxygen monitoring system in lieu of testing for NOx and CO compliance. This unit burns pipe-line natural gas only.	DEQ has reviewed the initial source test results, the margin for compliance, the heater size, and fuel usage and determined it will modify the language to require an air fuel ratio controller – not fuel gas monitoring as noted in the MRL comment. And kept source testing as

			required by DEQ
Section G	Entire Section	MRL requests wastewater tanks be listed here but reference any requirements are already covered in the Tanks section, and Truck and Railcar Loading section. MRL requests all fugitive conditions in this section be duplicated in a new section K	Updated and created new section K
Section G	G.13	MRL is not subject to QQQ directly, But does comply with the requirements as the bulk of PTE and emissions equipment was transferred from the refinery.	Clarified in reference
Section H	Tank #4203 and #4208	These two tanks have nitrogen sweep. Tank emissions are calculated based on the sweep gas flow rate, tank pressure, and vapor pressure and molecular weight of the stored material. Their tank emissions are not related to the annual throughputs. Update table with these two tanks.	Updated
Section K (New)	Establishes all fugitive requirements in one section	Request duplicates most of the conditions previously in Section G into this new Fugitive section	Created new Section K for fugitives
	New K.1 (previously G.1)	Add word fugitive to condition	<u>Updated</u>
	New K.13 (previously G.13)	Suggesting to insert 40 CFR 60.692-1 through 60.692-7 in place of 40 FR 60 Subpart QQQ	<u>Updated</u>
	New K.22 (previously G.22)	Requesting deletion for not being applicable to 40 CFR 63 Subpart CC	<u>Deleted</u>
	New K.23 (previously G.23)	Correct 40 CFR 63 Subpart CC to FFFF	<u>Updated</u>
	New K.27 (previously G.27)	Delete, Related to change to K.22 deletion	<u>Deleted</u>
	New K.31 (previously G.31)	Delete part b related to K.22 deletion	<u>Deleted</u>

Summary of Permittee Comments

Summary of EPA Comments

Permit Reference	EPA Comment	DEQ Response

SECTION IV. NON-APPLICABLE REQUIREMENT ANALYSIS

Section IV of the operating permit discussing “Non-applicable Requirements” contains the requirements that MRL identified as non-applicable and for which DEQ concurred. The following table summarizes the requirements that MRL identified as non-applicable but for which DEQ did not agree with the applicability determination.

The application did not contain a list of non-applicable requirements. DEQ expects future versions of applications will provide additional information on non-applicable requirements.

SECTION V. FUTURE PERMIT CONSIDERATIONS

A. MACT Standards

DEQ is not aware of any proposed or pending MACT standards that may be applicable. MRL could become subject to additional standards as EPA develops standards that may apply to renewable fuels and sustainable fuels.

B. NESHAP Standards

DEQ is not aware of any proposed or pending NESHAP standards, in addition to those already referenced within the permit, that may be applicable. MRL could become subject to additional standards as EPA develops standards that may apply to renewable fuels and sustainable fuels.

C. NSPS Standards

DEQ is not aware of any proposed or pending NSPS standards, in addition to those already referenced within the permit that may be applicable at this time. MRL could become subject to additional standards as EPA develops standards that may apply to renewable fuels and sustainable fuels.

D. Risk Management Plan

As of the date of this proposed permit, this facility does not exceed the minimum threshold quantities for any regulated substance listed in 40 CFR 68.115 for any facility process. Consequently, this facility is not required to submit a Risk Management Plan.

If a facility has more than a threshold quantity of a regulated substance in a process, the facility must comply with 40 CFR 68 requirements no later than June 21, 1999; three years after the date on which a regulated substance is first listed under 40 CFR 68.130; or the date on which a regulated substance is first present in more than a threshold quantity in a process, whichever is later.

E. CAM Applicability

An emitting unit located at a Title V facility that meets the following criteria listed in ARM 17.8.1503 is subject to Subchapter 15 and must develop a CAM Plan for that unit:

- The emitting unit is subject to an emission limitation or standard for the applicable regulated air pollutant (unless the limitation or standard that is exempt under ARM 17.8.1503(2));
- The emitting unit uses a control device to achieve compliance with such limit; and
- The emitting unit has potential pre-control device emission of the applicable regulated air pollutant that is greater than major source thresholds.

No units have been determined to be subject to the CAM rules.

F. PSD and Title V Greenhouse Gas Tailoring Rule

On May 7, 2010, EPA published the “light duty vehicle rule” (Docket # EPA-HQ-OAR- 2009-0472, 75 FR 25324) controlling greenhouse gas (GHG) emissions from mobile sources, whereby GHG became a pollutant subject to regulation under the Federal and Montana Clean Air Act(s). On June 3, 2010, EPA promulgated the GHG “Tailoring Rule” (Docket # EPA-HQ-OAR-2009-0517, 75 FR 31514) which modified 40 CFR Parts 51, 52, 70, and 71 to specify which facilities are subject to GHG permitting requirements and when such facilities become subject to regulation for GHG under the PSD and Title V programs.

Under the Tailoring Rule, any PSD action (either a new major stationary source or a major modification at a major stationary source) taken for a pollutant or pollutants other than GHG that would become final on or after January 2, 2011 would be subject to PSD permitting requirements for GHG if the GHG increases associated with that action were at or above 75,000 TPY of carbon dioxide equivalent (CO₂e) and greater than 0 TPY on a mass basis. Similarly, if such action were taken, any resulting requirements would be subject to inclusion in the Title V Operating Permit. Facilities which hold Title V permits due to criteria pollutant emissions over 100 TPY would need to incorporate any GHG applicable requirements into their operating permits for any Title V action that would have a final decision occurring on or after January 2, 2011.

Starting on July 1, 2011, PSD permitting requirements would be triggered for modifications that were determined to be major under PSD based on GHG emissions alone, even if no other pollutant triggered a major modification. In addition, sources that are not considered PSD major sources based on criteria pollutant emissions would become subject to PSD review if their facility-wide potential emissions equaled or exceeded 100,000 TPY of CO₂e and 100 or 250 TPY of GHG on a mass basis depending on their listed status in ARM 17.8.801(22) and they undertook a permitting action with increases of 75,000 TPY or more of CO₂e and greater than 0 TPY of GHG on a mass basis. With respect to Title V, sources not currently holding a Title V permit that have potential facility-wide emissions equal to or exceeding 100,000 TPY of CO₂e and 100 TPY of GHG on a mass basis would be required to obtain a Title V Operating Permit.

The Supreme Court of the United States (SCOTUS), in its *Utility Air Regulatory Group v. EPA* decision on June 23, 2014, ruled that the Clean Air Act neither compels nor permits EPA to require a source to obtain a PSD or Title V permit on the sole basis of its potential emissions of GHG. SCOTUS also ruled that EPA lacked the authority to tailor the Clean Air Act’s unambiguous numerical thresholds of 100 or 250 TPY to accommodate a CO₂e threshold of 100,000 TPY. SCOTUS upheld that EPA reasonably interpreted the Clean Air Act to require sources that would need PSD permits based on their emission of conventional pollutants to comply with BACT for GHG. As such, the Tailoring Rule has been rendered invalid and sources cannot become subject to PSD or Title V regulations based on GHG emissions alone. Sources that must undergo PSD permitting due to pollutant emissions other than GHG may still be required to comply with BACT for GHG emissions.