

Fact Sheet



For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-02900008-2021**
Application Received: **February 14, 2020**
Plant Identification Number: **03-54-029-00008**
Permittee: **Ergon - West Virginia, Inc.**
Mailing Address: **P.O. Box 356, Newell, WV 26050**

Physical Location: Newell, Hancock County, West Virginia
UTM Coordinates: 531.25 km Easting • 4495.35 km Northing • Zone 17
Directions: Two miles south of Newell on State Route 2

Facility Description

Ergon - West Virginia, Inc. (EWVI) owns and operates a petroleum refinery (SIC 2911 and NAICS 324110) in Newell, West Virginia. The refinery processes crude oil and produces several petroleum products such as diesel, gasoline, kerosene, and crude oils. The facility has the potential to operate twenty-four (24) hours a day for seven (7) days per week.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2019 Actual Emissions
Carbon Monoxide (CO)	230	144.91
Nitrogen Oxides (NO _x)	206	118.36
Particulate Matter (PM _{2.5})	24.2	3.59
Particulate Matter (PM ₁₀)	24.2	3.59
Total Particulate Matter (TSP)	24.2	14.35

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2019 Actual Emissions
Sulfur Dioxide (SO ₂)	43	3.90
Volatile Organic Compounds (VOC)	195	99.90
<i>PM₁₀ is a component of TSP.</i>		
Hazardous Air Pollutants	Potential Emissions	2019 Actual Emissions
Benzene	1.74	0.24
Hexane	3.86	0.77
Iso-Octane	0.27	<0.01
Toluene	8.30	5.11
Ethylbenzene	0.62	0.24
Xylene	2.94	1.26
Isopropyl Benzene	0.15	<0.01
Other HAPs	1.80	0.71
Total HAPs	19.68	8.33

Some of the above HAPs may be counted as PM or VOCs.

Title V Program Applicability Basis

This facility has the potential to emit 230 tons per year of Carbon Monoxide, 206 tons per year of Nitrogen Oxides, and 195 tons per year of Volatile Organic Compounds. Due to this facility's potential to emit over 100 tons per year of criteria pollutants, Ergon - West Virginia, Inc. is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	Opacity and PM limits for boilers and heaters
	45CSR6	Open burning prohibited.
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Construction Permits
	45CSR16	40 CFR Part 60 Performance Standards
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	45CSR34	Hazardous Air Pollutants emission standards
	40 C.F.R. Part 61	Asbestos inspection and removal

40 CFR Part 60 Subpart Dc	NSPS for Small Industrial-Commercial-Institutional Steam Generating Units
40 CFR Part 60 Subpart J and Ja	NSPS for Petroleum Refineries
40 CFR Part 60 Subparts K, Ka, Kb	NSPS for Storage Tanks
40 CFR Part 60 Subpart GGa	NSPS for VOC equipment leaks in Petroleum Refineries
40 CFR Part 60 Subpart VVa	NSPS for VOC equipment leaks in Synthetic Organic Chemicals Manufacturing Industry
40 CFR Part 60 Subpart XX	Standards of Performance for Bulk Gasoline Terminals
40 CFR Part 60 Subpart QQQ	NSPS for VOC emissions from Petroleum Refinery Wastewater Systems
40 CFR Part 61 Subpart FF	National Emission Standard for Benzene Waste Operations
40 CFR Part 61 Subpart M	Asbestos inspection and removal
40 CFR Part 63 Subpart Y	National Emission Standards for Marine Tank Vessel Loading Operations
40 CFR Part 63 Subpart ZZZZ	National Emission Standards for Stationary Reciprocating Internal Combustion Engines
40 CFR Part 63 Subpart BBBBb	National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities
40 CFR 64	Compliance Assurance Monitoring
40 CFR 65 Subpart C	Consolidated Federal Air Rule – Storage Vessels
40 CFR 65 Subpart G	Consolidated Federal Air Rule – Closed Vent Systems, Control Devices, and Routing to a Fuel Gas System on a Process
40 C.F.R. Part 82, Subpart F	Ozone depleting substances
State Only: 45CSR4	No objectionable odors.

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (if any)
CO-SIP-95-1	January 9, 1995	
R13-2334AF	May 27, 2020	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's

operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

Determinations and Justifications

This is the third Title V permit renewal for this facility. This permit also includes minor modification R30-02900008-2015(MM08) which incorporates the changes made with the issuance of R13-2334AF for the installation of a portable boiler.

Minor Modification R30-02900008-2015(MM08)

Minor Modification R30-02900008-2015(MM08) is for the operation a portable boiler. The boiler is a rental unit operated intermittently to provide steam to support refinery operations while individual existing boilers are taken off-line for annual preventive maintenance. The boiler can be operated for up to 16 weeks annually but is expected to only operate intermittently during that time. It cannot be attached to a foundation and shall not be onsite for more than 180 consecutive days.

Changes made as a result of the addition of the portable boiler are:

- Table 1.0 was updated to add the portable boiler.
- Condition 4.0 was changed to add the portable boiler.
- Condition 4.1.7 was updated to add the portable boiler and its associated PM limit under 45CSR2.
- The new portable boiler was added to the header before condition 4.1.13.
- New conditions 4.1.28 through 4.1.32 were added.
- New condition 4.2.15 was added.
- New conditions 4.4.19 and 4.4.20 were added.

Title V Renewal R30-02900008-2020

The changes made to the previous Title V permit during this renewal are discussed below:

- Updated the language of condition 4.4.8. This change was missed during a previous modification where the underlying R13 emission limits in condition 4.1.14 were changed. Since there was no method of showing compliance with the SO₂ emission limits of 4.1.14 in the recordkeeping condition, gap filling language was added which specifies the emission factor to estimate the monthly SO₂ emissions. The emission factor was calculated as shown below.

a) Calculated PTE emissions (ton/yr) = emission factor (lb/MMBtu) x rated capacity (MMBtu/hr) x 8760 (hr/yr) x 1 ton/2000 lb	
Boiler "A" Rated Capacity (MMBtu/hr):	159.50
Boiler "B" Rated Capacity (MMBtu/hr):	159.50
b) For Refinery Fuel Gas, SO ₂ emission factor conservatively based on average annual sulfur content of 160 vppm and heating value (HHV) of 1019 Btu/scf	
Emission Factor (lb SO ₂ /MMBtu = (160 mol H ₂ S/10E ⁶ mol Refy Gas)x (1 mol SO ₂ /1 mol H ₂ S)x(64 lb SO ₂ /mol SO ₂)x(mol Refy Gas/379 SCF)x(SCF Refy Gas/1019 Btu)x(10 ⁶ Btu/MMBtu) = 0.0265 lb SO ₂ /MMBtu	
c) Calculation of SO ₂ emission factor uses assumption of 20% fuel gas and 80% natural gas.	
Emission Factor (lb SO ₂ /MMBtu) = (0.00059*0.80)+(0.0265*0.20) = 0.00577 lbs SO ₂ /MMBtu	

40 C.F.R. 60 Subpart Dc

As a 95 MMBtu/hr steam generating unit built after June 9, 1989 Boiler C is subject to 40 C.F.R. 60 Subpart Dc. Boiler C only fires refinery gas/ natural gas blend. The applicable requirements of 40 C.F.R 60 Subpart Dc are the recordkeeping requirements 40 C.F.R. §§60.48c(g)(1)-(3), and (i) and the reporting requirements 40 C.F.R. §§60.48c(a) and (j).

40 C.F.R. §§60.48c(g)(1)-(3) – record and maintain records of the amount of each fuel combusted. Added as condition 4.4.10.

40 C.F.R. §60.48c(i) – Records shall be maintained for 2 years. Added has condition 4.4.11.

40 C.F.R. §60.48c(a) – Initial Notification. This notification has already been submitted so was not included in the permit.

40 C.F.R. §60.48c(j) – Specifies the reporting period. Added as condition 4.5.6.

40 CFR 63 Subpart Y

EPA revised 40 CFR 63 Subpart Y to delete the exclusion for marine vessel loading at petroleum refineries. Removing the exclusion requires small marine vessel loading operations (i.e., operations with HAP emissions less than 10/25 tpy) to use submerged filling per Coast Guard regulations. Therefore, the applicable requirement 40 C.F.R. §63.560(a)(4) was added as condition 5.1.16.

40 C.F.R. 63 Subpart Y also includes RACT standards that apply to sources loading more than 10 million barrels of gasoline or 200 million barrels of crude annually. The throughput limitations for loading gasoline and crude at the Newell Refinery are well below these thresholds; therefore, the 40 C.F.R. 63 Subpart Y RACT standards do not apply.

Bulk Gasoline Terminal Determination

In the previous Title V permit 40 CFR 60 Subpart XX and 40 CFR 63 Subpart BBBBBB were listed non-applicable based on the facility not meeting the definition of a 'bulk gasoline terminal'. However, EPA guidance has clarified that a piping system connecting a refinery with an on-site bulk gasoline terminal is considered a "pipeline". As such, Ergon – West Virginia, Inc. requested that the 40 C.F.R 60 Subpart XX and 40 C.F.R. 63 Subpart BBBBBB applicable requirements be added.

40 C.F.R. 60 Subpart XX

40 CFR 60 Subpart XX applies to affected facility loading racks at a bulk gasoline terminal which deliver liquid product into gasoline tank trucks and were constructed or modified after December 17, 1980. The gasoline truck loading rack (T Load) at the Newell Refinery commenced construction prior to December 17, 1980. The gasoline truck loading rack was modified after the applicability date. As such, the key requirements of 40 C.F.R. 60 Subpart XX applicable to the loading rack are as follows:

- o The applicable requirements of §60.502 standard for volatile organic compound (VOC) emissions from bulk gasoline terminals were included as 5.1.17 – 5.1.23. Summaries of the included requirements are as follows:
 - Gasoline loading rack must be equipped with a vapor collection system designed to collect the total organic compounds vapors displaced from tank trucks during product loading. [§60.502(a)].
 - Emissions from the vapor collection system due to the loading of liquid product into gasoline tank trucks are not to exceed 35 mg of total organic compound per liter of gasoline loaded. [§60.502(b)]
 - Loading of liquid products is limited to vapor tight gasoline tank trucks (tested according to §63.425(e)) and a record of the truck vapor tightness documentation must be maintained. [§60.502(e)]
 - The loadings of gasoline tank trucks at the affected facility are made only into tanks equipped with vapor collection equipment that is compatible with the terminal's vapor collection system. [§60.502(f)]
 - Assure that the terminal's and the tank truck's vapor collection systems are connected during each loading of a gasoline tank truck at the affected facility. [§60.502(g)]

- The vapor collection and liquid loading equipment must be designed and operated to prevent gauge pressure in the delivery tank from exceeding 450 mm of water during product loading. [§60.502(h)]
- Monthly visual inspection of the vapor collection system, the vapor processing system, and gasoline loading rack during the loading of gasoline tank trucks for liquid or vapor leaks. [§60.502(j)]
- o The applicable requirements of §60.503 test methods and procedures were included as conditions 5.3.5, 5.3.6, and 5.3.7.
- o The applicable recordkeeping requirements of §60.505 were included as conditions 5.4.6 – 5.4.11.

40 C.F.R. 63 Subpart BBBBBB

40 CFR 63, Subpart BBBBBB applies to source pipeline pumping stations, bulk gasoline plants, pipeline breakout stations, and bulk gasoline terminals that are not subject to the control requirements of 40 CFR part 63, subpart R or 40 CFR part 63, subpart CC. The key requirements of the rule are listed below. 40 C.F.R. 63 subpart BBBBBB incorporates by reference provisions from 40 C.F.R 60 subpart XX for loading racks and 40 C.F.R 60 subpart Kb for storage tanks.

- o *40 CFR §63.11085 - General duties to minimize emissions. Added as 5.1.24.*
- o *40 CFR §63.11088 - Gasoline Loading Rack emission limit: 80 mg/l of gasoline loaded. Added as condition 5.1.25.*

Per §63.11092(a)(2), a more stringent limit in an enforceable air permit demonstrates compliance with this 40 C.F.R 63 subpart BBBBBB limit. As the T Load source is limited to loading 134,904,000 gallons of gasoline with a total VOC emissions rate from the oxidizer of 18.17 TPY; the equivalent limit of 35 mg/l from 40 C.F.R §60.502(b) is well below the 40 C.F.R. 63 Subpart BBBBBB limit of 80 mg/l. Ergon performed a 40 C.F.R. 60 Subpart XX compliant stack test on the gasoline truck loading oxidizer in November 2000 demonstrating emissions less than 10 mg/L and an oxidizer control efficiency of more than 99%.

As with 40 C.F.R 60 Subpart XX, 40 C.F.R 63 Subpart BBBBBB requires Ergon to load only vapor tight gasoline cargo trucks. Ergon operates an electronic fuel loading management system with interlocks that prevent loading to any truck without a valid leak test.

- o *40 C.F.R. §63.11089 - Equipment in Gasoline Service: fugitive emissions inspections. Added as condition 5.1.26.*

40 C.F.R. 63 Subpart BBBBBB requires monthly sight, sound, and smell leak detection inspections. A repair program is required with the first attempt in 5 calendar days and final repair within 15 calendar days (unless component is on delay of repair).

- o *40 CFR §63.11092(b)(5) - Gasoline Loading Rack Monitoring: parametric monitoring to ensure control device operation. Added as condition 5.2.7.*

In accordance with §63.11092(b)(1)(iii), for thermal oxidizers, a continuous parametric monitoring system shall be installed in the firebox or in the ductwork immediately downstream from the firebox in a position before any substantial heat exchange occurs. A temperature monitoring system is installed and operated continuously in compliance with this requirement.

- o *40 CFR §63.11087 - Gasoline Storage Tanks: External floating roof control with periodic seal gap inspections. Added as conditions 7.1.10, 7.3.1, 7.4.9, and 7.5.1. The tanks subject to 40 CFR 63 Subpart BBBBBB are the gasoline storage tanks 4004, 4005, 4006, 4012, 4013, 4014, 4015, 4016, 4050 and 4071.*

For a gasoline storage tank equipped with an external floating roof, compliance is demonstrated through the design and periodic inspections of the floating roof. Secondary seal gap measurements are required annually with primary seal gap measurements every 5 years. Ergon performs annual inspections of the floating roof and seal gaps as a best practice. Documentation of the inspections and reporting of inspections will be evaluated to determine if any gaps exist.

40 C.F.R. 64 – CAM

At the Ergon – West Virginia, Inc. refinery, the emission units potentially subject to CAM are:

- o Truck loading rack (TLOAD) controlled by the thermal oxidizer (OXIDIZER);
- o Marine loading dock (MLD) controlled by the marine thermal oxidizer (MLDOX); and
- o Ammonia Destruction Unit (ADU) controlled by a thermal oxidizer (NH3OX).

Loading of gasoline at the TLOAD is subject to a VOC emissions limitation met by use of the OXIDIZER. WVDEP exempted the OXIDIZER from CAM based on monitoring conducted consistent with section 111/112 standards. Further, since the TLOAD loading rack is subject to 40 CFR 63, Subpart BBBBBB and 40 CFR Part 60 Subpart XX, the monitoring included for these standards (i.e., NESHAP/MACT/NSPS promulgated after November 15, 1990) is presumptively acceptable as CAM and the unit is exempt per 40 CFR§64.2(b)(1)(i). Ergon – West Virginia, Inc. continuously monitors and records the OXIDIZER temperature as well as reports deviations from the minimum temperature established during the performance test.

Loading of gasoline or crude at the MLD is subject to a VOC emissions limitation met by use of the MLDOX. Uncontrolled VOC emissions are greater than the major source threshold; therefore, CAM is applicable. The MLDOX is equipped with a thermocouple for continuous temperature monitoring of the control device. Ergon conducted performance testing at the MLDOX to establish a minimum temperature during gasoline and crude loading. Ergon continuously monitors and records the MLDOX temperature as well as reports deviations from the minimum temperature established during the performance test.

The ADU is subject to a VOC emissions limitation met by use of the NH3OX. Uncontrolled VOC emissions are greater than the major source threshold; therefore, CAM is applicable. The NH3OX is equipped with a thermocouple for continuous temperature monitoring of the control device. Ergon conducted performance testing at the NH3OX to establish a minimum temperature during ADU operation. Ergon continuously monitors and records the NH3OX temperature as well as reports deviations from the minimum temperature established during the performance test.

As the MLDOX and NH3OX are subject to 40 CFR 64, CAM was addressed in this Title V renewal.

CAM was added as conditions: 5.2.9 – 5.2.16, 5.3.8, 5.4.18, 5.4.19, and 5.5.8.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

40 CFR Part 60, Subpart D - The boilers at the Newell Refinery do not have rated capacities greater than 250 MMBTU/hr.

40 CFR Part 60, Subpart Da - The boilers at the Newell Refinery are not in electric utility service and do not have rated capacities greater than 250 MMBTU/hr.

40 CFR Part 60, Subpart Db - The Newell Refinery does not have steam generating units that commenced construction, modification or reconstruction after June 19, 1984 with a rated capacity greater than 100 MMBTU/hr.

40 CFR Part 60 Subpart Dc - National Standards of Performance for Small Industrial, Commercial, and Institutional Steam Generating Units does not apply to process heaters H-101R, H-102R, and H-501R because although they have maximum design heat inputs between 10 and 100 MMBtu/hr, they do not meet the definition of a “steam generating unit.” The Portable Boiler is also not subject to this subpart since it is defined as a temporary boiler and per 40 C.F.R. §60.40c(i), “temporary boilers” are not subject to the subpart.

40 CFR Part 60 Subpart RRR - National Standards of Performance for Volatile Organic Compounds (VOC) Emissions from Synthetic Organic Chemicals Manufacturing Industry (SOCMI) Reactor Processes does not apply to EWVI since it does not produce any of the chemicals listed in 40 CFR § 60.707 as a product, co-product, by-product, or intermediate.

40 CFR Part 61 Subpart J - National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene. The provisions of this subpart apply to each of the following sources that are intended to operate in benzene service: pumps, compressors, pressure relief devices, sampling connections, systems, open-ended valves or lines, valves, flanges, and other connectors, product accumulator vessels, and control devices or systems required by this subpart. To be covered by this Subpart, the equipment must be in benzene service. In benzene service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent benzene by weight. The Newell Refinery does not have any equipment that is in benzene service.

40 CFR Part 61 Subpart V - National Emission Standard for Equipment Leaks (Fugitive Emission Sources). The provisions of this subpart apply to each of the following sources that are intended to operate in volatile hazardous air pollutant service: pumps, compressors, pressure relief devices, sampling connections, systems, open-ended valves or lines, valves, flanges, and other connectors, product accumulator vessels, and control devices or systems required by this subpart.

The provisions of this subpart apply after the promulgation of a specific subpart in Part 61. For example, If the refinery was subject to 40 CFR Part 61, Subpart J (which it is not), then the refinery would have to comply with the equipment leak provisions of 40 CFR Part 61, Subpart V. The actual equipment leak standards are contained in Subpart V. If one is subject to Subpart J, then Subpart J refers one to Subpart V for the actual compliance standards. In summary, the Newell Refinery would have to be subject to some other subpart in Part 61 that referred to Subpart V before Subpart V would be applicable.

40 CFR Part 63 - EWVI has demonstrated that the facility is not a major source of HAPs and never has been. MEK is a major constituent of the EWVI HAP emissions and has now been delisted. [70 Fed. Reg. 75047 (December 19, 2005)] Further, EPA has made the determination that the delisting of MEK may be applied retroactively. Therefore, the “once in, always in” policy would not apply. In addition, more accurate emissions calculation methodologies have been developed for estimating fugitive emissions. Applying the more accurate emissions methodologies demonstrates that emissions from the MEK-TOL unit never exceeded the major threshold, even when combined with other sources of HAP emissions at the refinery. Retroactively applying the more accurate calculation methods for determining fugitive emissions from the MEK-TOL unit, added to the rest of the facility's HAP emissions, determined that facility-wide HAP PTEs have always been less than 10 tons per year of a single HAP and 25 tons per year of aggregate HAPs. Therefore, 40 CFR Part 63, Subparts H, R, Y, CC, OO, PP, QQ, RR, VV, UUU, EEEE, GGGG, and DDDDD do not apply to this source.

40 CFR Part 63 Subpart JJJJJ - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers, which is an area source MACT rule, does not apply to EWVI's boilers and process heaters per 40 CFR § 63.11195 (e), since they are gas fired.

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date:	December 24, 2020
Ending Date:	January 25, 2021

Point of Contact

All written comments should be addressed to the following individual and office:

Robert Mullins
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 41298
Robert.A.Mullins@wv.gov

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

Not applicable.