

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

B730260796

FACILITY: WEYERHAEUSER NR COMPANY		SRN / ID: B7302
LOCATION: 4111 W FOUR MILE RD, GRAYLING		DISTRICT: Gaylord
CITY: GRAYLING		COUNTY: CRAWFORD
CONTACT: Kathi Moss , Environmental Manager		ACTIVITY DATE: 11/09/2021
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY 2022 FCE inspection and records review in conjunction with stack test and RATA observations. sgl		
RESOLVED COMPLAINTS:		

On November 9 and 10, 2021, AQD district Staff visited the Weyerhaeuser NR Company Facility (B7302) located at 4111 West Four Mile Road, Grayling, Crawford County, Michigan. The visits during the referenced time period were for the following purposes:

- Observation of verification testing and annual RATA testing,
- Full Compliance Evaluation (FCE) for 2022 fiscal year.

Information obtained during the referenced visits are incorporated into the compliance determination summarized in this report. The most recent scheduled site inspection reports were dated February 22, 2018, and November 12, 2019, and the facility was found to be in compliance with permit conditions.

Do to instrumentation problems experienced during testing of destruction efficiency of formaldehyde by the biofilter on November 9, 2021, supplemental testing activities were scheduled for December 1, 2021.

The referenced facility is a Major Source and is permitted under Renewable Operating Permit (ROP) Number MI-ROP-B7302-2016c. The document is presently under renewal, with the company operating under a permit shield. The ROP renewal package was received on August 27, 2020.

Gaylord Field Office Staff met with Ms. Kathi Moss, Environmental Manager.

FACILITY

The Weyerhaeuser NR Company Facility (AKA WNR) was opened in 1982 as Weyerhaeuser's first oriented strand board (OSB) mills. The product contains layers of dry wood flakes (referred to as strands), resin and wax pressed under high temperature and pressure to form a panel. OSB panels are commonly used as construction materials. Note that the various products manufactured at WNR are defined in part by a "Species Mix" or recipe as well as by the OSB thickness.

The process begins with whole logs which are debarked and chipped into strands at the southern end of the facility. The strands are then dried using four rotary dryers that utilize waste wood and/or natural gas for fuel. Strands are then sorted by size and stored in silos until needed.

At the press line, the strands are conveyed on to mats/screens, oriented to increase the strength of the finished product, and mixed with wax and resins. These mats are then fed to the press which applies temperature and pressure. Heat to the press line is from hot oil supplied by two thermal oil heaters. The result is a structure panel. The panels are cut to size and prepared for

shipping. The plant has regularly scheduled plantwide shutdowns for maintenance activities. This normally equates to a 10-hour down period every 2 weeks.

Fuel source for the facility include Natural Gas (NG) and waste wood. The wood fuel used by the facility is generated/collected from various wood handling components in the OSB board production. WNR staff indicated that the wood bark and coarse wood fragments are sold to the neighboring cogeneration plant and other Facilities.

Note- at the time of the site inspection, verification testing and RATAs, the Facility was operating with minimum staffing due to covid, and what appeared to be logistics issues one of the stranders that has resulted in maintenance issues and line shut-downs since the October 4-14, 2021 scheduled maintenance shut-down. The combination of the two resulted in start-stop operations when maintaining maximum operating conditions. It also has resulted in reduced production.

FACILITY CHANGES - Information provided by WNR Staff indicated the following facility upgrades or changes have been completed since November 2019:

- Installing a Generac NG Emergency Generator (EUGENERACNG) (in progress)
- Installed a new DEF Dispenser at the main diesel fuel tanks (11/2021)
- Installed new weigh scales in the blending area (10/2021)
- Like kind replacement of Strander #1 and #2 (10/2021)
- Biofilter media replacement (7/2020)

CO SPIKING ISSUES - It should be noted that following the Facility dryer upgrades conducted from July 16 – October 17, 2018, the Facility experienced CO concentration spikes that exceeded calibration ranges for the CO CEMS. These were reported as monitor malfunctions.

WNR discussions with AQD TPU and District Staff, at that time determined that the CO CEMs could be modified to include dual calibration ranges to allow for the spikes. Changing to a dual range monitor with an upper range calibration of 1000 ppm CO, allowed the CEMs to capture 98.7% of the CO spikes. CO spikes above the calibration range continued to be reported as monitor downtime.

The Facility reported that CO spikes above 1000 ppm (high end of calibration range) had continued following the reconfiguration of the CO CEMS. Initially the problem was believed to be either in the dryers or the fuel combinations, continued evaluation and minor tweaks to the equipment and process did not resolve the issue. The Facility continued to evaluate the process and emissions in an attempt to identify the issue and resolve the problem. During evaluation of the RTO, the Facility increased the RTO set point to 1650 degrees to address the spikes.

Discussions with MegTech the RTO incinerator manufacturer indicated that MegTech was aware of emission spiking issues with their RTOs but were unaware that it was an issue with the wood fuel facilities. Emission spiking was determined to occur when the valves for both units in the RTO open and close at the same time allowing exhaust to flow through the first chamber into the second chamber rather than spending time in both chambers of the control device. The manufacturer provided logic changes to resolve the issue on May 23, 2019. The logic changes have eliminated most of the spiking issues. However, the Facility still reports that there is spiking when the process has a quick start-up. The facility has found that spiking can be reduced by

raising the RTO temperature set points, when the outside temperatures drop. The Facility reports that they have experienced a lot of down time since the August 2020 maintenance shutdown. Quarterly CO spiking data is presented below:

Report Date	Hrs of CO Spiking	Total Operating Hrs	% Operating Time
4/1/2020	8.81	2045	0.43%
7/23/2020	1.41	1886	0.07%
11/2/2020	0.07	1945	0.0004%
1/26/2021	5.34	2038	0.3%
4/7/2021	12.3	2041	0.6%
7/6/2021	10.54	2036	0.52%

EXEMPT EUs – A number of exempt EUs are of record for the facility, historically these have been identified as:

- Two 300K BTU/hr, NG fired service water heaters (EUHOTS ENERGY and EUHOTMAINT)
- One 300K BTU/hr, Propane fired service water heater (EUHOTS PORTABLE)
- Two NG-fired, 30K BTU/hr furnaces (EUTDCFURNACE1 and EUTDCFURNACE2)
- One NG-fired, 400K BTU/hr water heater for office area (EUWATERHEATER)
- Two 80K BTU/hr, NG-fired furnace for space heater (EUFURNACE1 and EUFURNACE2)
- Two 1K gallon capacity LP storage tanks (EULPTANK01 and EULPTANK02)
- Two NG-fired, 1 million BTU/hr boilers used to heat vats (EUPONDBOILER1 and EUPONDBOILER2)
- Two parts washers in maintenance shop (EUPARTSWASHER1 and EUPARTSWASHER2), and
- Methylene diphenyl diisocyanate (MDI) Resin tanks used for resin storage (EUMDITANKS)

As part of the ROP Renewal Process Technical review, the majority of the following EUs appeared to historically been identified/treated as part of FGWOODHANDLING, though they have been reported to be exempt from permitting. These include:

- EUCLEANUP
 - Baghouse for screens (2)
 - Dry bin cleanup baghouse,
- EUDRYFUEL
 - Dry fuel surge bin,
 - Dry fuel silo baghouse
- EUMDI (formerly EUBLENDVENT)
- EUFLAQ (form line baghouse)

- EUSAQ (strandlers)

MDI Supply Chain- Shortages and MDI short-term substitutions

In June 2017, WNR notified AQD District staff that due to weather events experienced in other parts of the country that had impacted the supply chain that the Facility anticipated having to resort to using the 100% Phenol-Formaldehyde (PF) Resin used in their process prior to MDI. The PF Resin use was anticipated to last for approximately two months and the Facility indicated that it would be exempt under Rule 285(b).

March 25, 2021, District Staff were notified of the Facilities intent to conduct maintenance on the existing MDI tanks, and that during that time they anticipated continued operations using the 100% PF Resin in the process under Rule 285(b). The Facility was notified that in the future supplemental information would be required to show that no significant change would occur with respect to TACS. Information provided by A. Drury of AQD Permits dated 8/13/2021 indicated that as part of permit evaluation of 535-94F (2017) an evaluation of MDI and PF resin TACS were completed. He further indicated that should the formaldehyde emissions from the resins remain under permit limits, and there was no change in resin formulation, then no permit modification would be required and that short term change outs of PF for MDI resins could occur.

REGULATORY

As previously indicated WNR operates under MI-ROP-B7302-2016c. The referenced document was initially issued on March 8, 2016. The referenced document has undergone three modifications since that date, the latest being April 5, 2019. The referenced ROP is presently under renewal, with the Renewal Package having been received on August 27, 2020.

WNR has been determined to have the potential to emit over 100 tons per year of the following criteria pollutants and is a major source of:

- Particulate Matter (PM), Nitrogen Oxides (NOx), Carbon Monoxide (CO) and Volatile Organic Compounds (VOCs).

In addition, the facility has the potential to emit 10 tons per year or more of any single Hazardous Air Pollutant (HAP) or the potential to emit any combination of HAPS emissions greater than or equal to 25 tons per year.

The facility was subject to review under the Prevention of Significant Deterioration (PSD) regulations of 40 CFR 52.21, because at the time of New Source Review (NSR) permitting the potential to emit of CO was greater than 250 tons per year. The Facility accepted a sourcewide limit under PTI 13-15, to a not to exceed 224.9 tons CO per year.

EUs subject to Compliance Assurance Monitoring under 40 CFR Part 64 (AKA CAM) are those with control devices and potential pre-control emissions of PM greater than 100 tons. These CAM subject EUs are all part of Flexible Group FGDRYERS:

- EUDRYER1,
- EUDRYER2,
- EUDRYER3,
- EUDRYER4 and
- EUCOEN (when firing wood)

The following EUs are subject to Federal Standards:

EMISSION UNIT	40 CFR SUBPART	TITLE
EUPRESSLINE	Part 63, Subpart A and DDDD	Maximum Achievable Control Technology (MACT) Standards for National Emission Standards for HAPs (NESHAP), Plywood and Composite Wood Products (PCWP)
EUCOEN (when firing wood)	Part 63, Subpart A and DDDD	MACT for NESHAP, PCWP
FGDRYERS	Part 63, Subpart A and DDDD	MACT for NESHAP, PCWP
EUIBW	Part 63, Subpart A and DDDDD	MACT for NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (BOILER MACT)
EUCOEN (when firing NG and exhausting through SVCOEN)	Part 63, Subpart A and DDDDD	BOILER MACT
EUDIESELHOTOIL	Part 63, Subpart A and ZZZZ	NESHAP for RICE (AKA RICE MACT)
EUEMERGENCYGEN	Part 63, Subpart A and ZZZZ	RICE MACT
EUFIREPUMP	Part 63, Subpart A and ZZZZ	RICE MACT

Initial notifications and compliance status reports on file with the AQD District Office include the following:

EMISSION UNIT	40 CFR SUBPART - DOCUMENT	SUBMITTAL DATE
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EUIBW EUCOEN	Initial Boiler MACT Compliance Status Report	February 10, 2016
EUPRESSLINE EUCOEN FGDRYERS	Initial Notification for the Plywood and Composite Wood Products MACT	December 1, 2004

ROP conditions containing high level citations are included for the respective EU/FG. Compliance with permit conditions appear to indicate general compliance under the appropriate high-level citations.

COMPLIANCE EVALUATION

District Files have no records of complaints received or Violation Notices (VNs) issued to the Facility since the March 1, 2016, site inspection. In addition, all previous consent orders (Numbers 17-991 and 14-1984) have been terminated.

Annual Emissions Reporting (MAERS) are of record as being submitted in a timely manner in compliance with general permit requirements. At the time of report preparation, the most recent submittal was on February 16, 2021 for the 2020 calendar year.

Required Quarterly, Semi-annual, Annual and other reporting requirements are of record as having been complete and submitted in a timely manner, in compliance with the ROP. Documents reviewed since the November 12, 2019, compliance inspection/evaluation indicated general compliance with permit conditions. These and other reporting requirements are summarized below:

EMISSION UNIT	PERMIT CONDITION	REPORT TYPE	FEQUENCY OF SUBMITTAL
SOURCE WIDE EUPRESSLINE EUPAINTBOOTH EUIBW EUCOEN FGDRYERS FGWOODHANDLING FGDIESEL-ENGINES	GC 21 & 22, VII.1	Prompt Reporting of Deviations	Based on event.

<p>SOURCE WIDE EUPAINTBOOTH EUIBW EUCOEN FGWOODHANDLING FGDIESEL-ENGINES</p>	<p>VII.2</p>	<p>Semi-Annual Compliance</p>	<p>Semi Annual (6 months)</p>
<p>SOURCE WIDE EUPRESSLINE EUPAINTBOOTH EUIBW EUCOEN FGDRYERS FGWOODHANDLING FGDIESEL-ENGINES</p>	<p>VII.3</p>	<p>Annual Compliance</p>	<p>Annual (12 months)</p>
<p>EUPRESSLINE FGDRYERS</p>	<p>VII.2 VII.4 VII.5 VII.10</p>	<p>Semi-Annual Compliance</p>	<p>Semi Annual (6 months)</p>
<p>EUPRESSLINE FGDRYERS</p>	<p>VII.12</p>	<p>EER and Monitor Downtime</p>	<p>Quarterly (3 months)</p>
<p>EUIBW</p>	<p>VII.8 & 9</p>	<p>Subpart DDDDD Annual Compliance Report</p>	<p>Annual (12-months)</p>
<p>EUCOEN</p>	<p>VII.5 & 6</p>	<p>Subpart DDDDD Annual Compliance Report</p>	<p>Annual (12-months)</p>

EUPRESSLINE	VII.5	Subpart DDDD Annual Compliance Report to USEPA	Annual (12-months)
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Malfunction Abatement Plan (MAP) or Startup, Shutdown, or Malfunction Plans (SSMP) are required under the ROP or under Federal regulations. Documentation in the March 1, 2016, AQD compliance evaluation report indicated that the referenced documents were merged into a single document, a SSMAP dated June 3, 2015. The document was updated (revision 17) and received by the District Office on July 20, 2016, to include the Boiler MACT requirements. WNR reports the latest revisions were completed on August 28, 2017 (revision 18) and March 6, 2019 (revision 19). The document is presently under revision to address requirements identified during the ROP Renewal process. Emission units and associated permit conditions include the following:

EMISSION UNIT	PERMIT CONDITION	MAP or SSMP	MOST RECENT PLAN DATE
EUPRESSLINE	IX.1	SSMP	March 6, 2019 (revision 19)
EUPAINTBOOTH	III.2	MAP	March 6, 2019 (revision 19)
EUIBW	III.1	MAP	March 6, 2019 (revision 19)
EUCOEN	III.2	MAP	March 6, 2019 (revision 19)
FGDRYERS	IX.1	SSMP	March 6, 2019 (revision 19)

Additional Plans on file with the District Office include the following documents:

EMISSION UNIT	PERMIT CONDITION	ADDITIONAL PLANS on File with AQD	MOST RECENT PLAN DATE/ APPROVAL DATE
FGDRYERS	SC IX.6	QA/QC Continuous Opacity Monitor System (COMS) PLAN	September 4, 2015 /July 26, 2016
FGDRYERS	SC IX.6	QA/QC CEMS PLAN	January 6, 2015 /July 26, 2016 September 9, 2019

FGDRYERS	SC IX.5	CAM	February 26,2019/ March 5/2019
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The referenced plans have been previously approved by AQD staff indicating that the plans meet any appropriate quality assurance/quality control activities required by permit.

With regards to monitoring and recordkeeping requirements, the facility has used multiple software programs, data acquisition software and databases that monitor and record the various operational data required under the ROP as well as for their own business purposes. In addition to monitoring and record keeping, the system(s) in place send out real-time electronic alarms to appropriate WNR Staff and workstations so corrective actions may be made. Information obtained during site visits and record reviews has indicated that overall, the data required by the ROP to be monitored and recorded is being maintained by the facility in compliance with the ROP conditions, and that corrective actions when necessary are conducted in a timely manner in compliance with operating requirements.

Discussions with Facility Staff indicated that the Facility has switched some or all of their software to standardized packages to be used at all Weyerhaeuser plants nationwide. The new reporting system "WEIS" has been used for reporting since summer 2021. WEIS stands for Weyerhaeuser Environmental Information System. The Facility is currently waiting for all the logic to be ironed out before their operators have access. They also report getting false events and still working on the shutdown and startup events. "Proficy", the previous environmental reporting system stopped working in early September 2021 and has not been repaired.

Source Wide - Conditions associated with the Source include emission limits, calculation of monthly and 12-month rolling total emissions of CO (SC VI.1 & 2) and both annual and semi-annual reporting (SC VII.2 & 3). Emission limits in the ROP are limited to CO emission limits of 224.9 tpy, based on 12-month rolling total (SC I.1). The greater percent of the CO emissions are generated by activities associated with FGDRYERS. CO emissions for 2019, 2020 and 2021 to date are presented below:

YEAR	CO Emissions Monthly Total (tons)	CO Emissions 12-month Rolling Total (tpy)
October 2021	3.32	76.62*
December 2020	7.49	87.37
December 2019	6.85	85.83
Permit Limit (SC I.1)	NA	224.9

* Total emissions reflect the 12-month rolling total for the period ending October 31, 2021. The month of October 2021 experienced a

EUPRESSLINE –As previously indicated this EU includes the OSB press and associated board conveying equipment. Pollution control devices associated with the EU include the biofilter and the total enclosure controls. The ROP requires that the whole press line is housed inside an enclosure that meets the definition of a wood products enclosure in 40 CFR 63.2292 (SC IV.4). SC VII.11 requires that the WNR submits documentation that the enclosure meets the press enclosure design, this was reported completed with submittal of the notification of compliance status by WNR on February 11, 2007. Following the replacement/upgrade of the Siempelkamp press line in 2018, WNR Staff conducted a NDO airflow verification inspection at the time of the December 11, 2018, destruction efficiency testing.

The facility reports having applied for approval of a Control Device Routine Maintenance Device exemption for EUPRESSLINE on August 30, 2007 (SC IX.2) Confirmation that the press enclosure is operating properly can be seen by closed doors and negative pressure within the enclosure. Daily inspection/evaluation of the enclosure is conducted by WNR and documented. The daily reports were reviewed for months of October and November 2020, as well as October 2021 and appeared to appropriately document the status of the enclosure.

The biofilter controls VOC and HAP emissions generated during press heating of waxes and resins. The biofilter is constructed of two chambers of douglas fir mulch and lime (pH balance) that provides an environment for microbial growth. Temperature, moisture content and air flow thru the media is reported by the facility to be key in proper operation of the control.

The facility reports that the biofilter has not been bypassed since 2007, and therefore the following conditions are not applicable at this time: III.2, VI.2 - VI.5. Biofilter media change-out activities by WNR are reported to be completed within a 5-day shutdown and that a premature bed failure has not occurred for over 5 years. The last media change outs occurred in August 2020.

No material limits are associated with EUPRESSLINE. However, tons of finished product and hours of operation for EUPRESSLINE are monitored and recorded daily in compliance with SC VI.6.

Operational data for the one-week period prior to RATA testing for 2020 and 2021 is presented below.

Date Range	November 30 to December 6, 2020	November 1 to 11, 2021
Biofilter Air Flow (scfm) (SC VI.2)	77.9 – 83.2	80.1 -87.1
Daily Hours of Press Operation (SC VI.6)*	9.3-23.1	11.1 – 23.5

Total Finished Product (Ton/day) (SCVI.6)	73,749 – 105,677	1,742 – 91,509
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*Daily hours of press operation included one “mill-down day” which is reflected in lower hours of operation and production.

Total annual product for the years 2020 and 2021 to date totaled 358,862.79 ton and 296,453.94 ton, respectively. The data is used to calculate CO emissions for EUPRESSLINE (Appendix 7). Continuous monitoring associated with the biofilter includes:

MONITOR	EMISSION UNIT	PARAMETER MONITORED	ROP CONDITION
Continuous Emissions Monitor (CEMS)	EUPRESSLINE	Volatile Organic Carbon (VOC)	IV.1, VI.3 VII.7
Thermocouples	EUPRESSLINE	Biofilter Bed Temperature	IV.2, IV.3, VI.8, VI.9
Air Flow Monitors	EUPRESSLINE	Volumetric Flow thru the Biofilter	VI.2

To meet the requirements of SC IV.1 and SC VI.3, the facility has installed a VOC CEMS (AKA CERMS). The referenced unit is a Flame Ionization Detector (FID) and both EUPRESSLINE and FGDRYERS use the same make and model FID to monitor VOC emissions (total carbon). Housed adjacent to the biofilter, the unit is calibrated daily, and the required cylinder gas and relative accuracy audits required under 40 CFR Part 60 Appendices B and F are conducted and reported as required (SC V.3, VII.7 through VII.9 and Appendix 3).

Not only does WNR have trained staff to conduct CEMS maintenance activities, but the VOC CEMS for both EUPRESSLINE and FGDRYERS are the same make and model FID. WNR keeps a spare VOC CEMS onsite incase operational issues occur with one in operation.

Operational parameters for the biofilter are monitored continuously and recorded as required by permit. During compliance testing data recorded by the Facility is used to establish the operational ranges for the biofilter (SC III.1, SC III.3). The Facility reports that proper biofilter operation is determined by monitoring of multiple parameters, including but not limited to bed temperature, water application rate, humidifier pressure drop. Continuous monitoring of the biofilter bed temperature is conducted in 15-minute cycles as required under SC IV.3 and 24-hour block temperatures (SC III.1, VI.9). In compliance with SC IV.3 the facility maintains the necessary parts for routine repairs and checks as well as record the results of inspections calibrations and validation checks. WNR reports having extra thermocouples onsite to replace or validate

thermocouples in use and records reviewed as part of the compliance evaluation indicate compliance with permit requirements.

WNR reports the biofilter and its monitors are maintained (SC IV.1 & IV.2) using a standardized maintenance work order process, as well as immediate response to alarms built into the software when parameters are out of range, or when scheduled events such as daily calibrations fail to occur. In compliance with permit conditions, 24-hour block averages of biofilter temperatures are determined from the data collected (VI.8). Operational temperature ranges set for the biofilter are kept within the 24-hour block averages ranges recorded during performance testing and identified in the MAP (SC VI.8 & VI.9).

Biofilter operational parameter 24-hour average bed temperature ranges determined as a result of testing (SC VI.9) are summarized below:

TEST DATE	AVERAGE MIN TEMP	AVERAGE MAX TEMP
2/10/2009	77.6 degrees F	--
08/04/2009	--	99.9 degrees F

Note however, that the PWCP MACT as of August 2021 allows for an expanded range of 69.9 degrees F to 107.7 degrees F. This will be reflected in the post renewal revision of the SSMAP or it's equivalent document. The bed temperature during the most recent testing was reported to average 83.06 degrees F.

Parameters documented for the months of October 2020 and 2021 are presented below and show compliance with respect to the SSMAP:

DATE	30-day block Average VOC Concentrations	24-hour Average Biofilter Media Temperatures* (SC VI.8)	Biofilter Air Flow through Media (scfm) (SC VI.2)	Form Line Speeds (Linear board feet per minute)
October 2020	5.1 – 6.2	77.2 – 87.8	101856	73-128
October 2021	5.2-11.3	71 - 99	106923***	97 – 127.48
SSMAP Range	<19.5 lb/hr VOC		NA	NA

		77.6 - 99.9 degrees ** (SC III.1)		
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* Review of data from the select time periods showed drops below 24-hour average minimum temperatures. Discussions with Facility staff indicates that these drops are associated with the press line being down. No airflow from the press line reduces the introduction of heated press gas into the biofilter, resulting in reduction in the average temperature in the biofilter.

**Note that as of August 2021 the PWCP MACT allows for an expanded temperature range of 69.84 dF to 107.9 dF.

*** Average for days operating. October 2021 had an extended maintenance shutdown period. Air Flow Monitors (SC VI.2) associated with the biofilter are tested in conjunction with RATAs (SC V.3). Testing requirements for EUPRESSLINE include the following verification tests:

PARAMETER	TESTING REQUIREMENT	PERMIT LIMIT*	TEST RESULTS (November 26-29, 2012)	TEST RESULTS (November 8-16, 2016)	TEST RESULTS (November 9- 12**, 2021)
PM	Every 5 years (SC V.1)	10.5 pph* (SC I.1)	Not Tested	Not Tested	Not Tested
PM10	Every 5 years (SC V.1)	10.5 pph* (SC I.2)	7.8 pph	4.9 pph	3.6 pph
PM2.5	Every 5 years (SC V.1)	10.5 pph* (SC I.3)	Not Tested	Not Tested	Not Tested
CO	Every 5 years (SC V.1)	11.4 pph (SC I.4)	2.6 pph	2.0 pph	1.8 pph
		19.5 pph, based on	NR	NR	13.2 pph

VOC (expressed as carbon)	Not required under present ROP	30-day rolling time period (SC I.8)			
Formaldehyde	Every 5 years (SC V.1)	1.0 pph* (SC I.6)	0.1 pph	0.23 pph	0.11 pph

*-Note the emission limit for PM was changed from 8.4 pph to 10.5 pph (SC I.1 – I.3) and Formaldehyde was changed from 2.3 pph to 1.0 pph with issuance of PTI 535-94F on August 24, 2017.

** -Note that in addition to the dates provided, some additional test activities were conducted on December 1, 2021, to complete required testing.

In addition to the above referenced testing requirements, the ROP requires confirmation of the formaldehyde destruction efficiency of the biofilter. A 90% efficiency is required over the course of a three-hour test period (SC I.7 and V.2) The formaldehyde destruction efficiency testing is required to be completed within 2 years following the previous performance test and within 180 days after replacement of any portion of the biofilter bed media with a different type of media, or with each replacement of more than 50% by volume of the biofilter bed media with the same type of media (SC V.2). WNR records indicated that the last change out of biofilter bed media was in August 2020.

The destruction efficiencies for the biofilter for formaldehyde is determined by testing in compliance with SC I.7 and V.2 and is summarized below:

DATE	TEST RESULTS
December 1, 2021*	97.6 %
December 9-10, 2020	98.9%
December 11-12, 2018	97.6%
December 5-6, 2017	97.7%
November 8-16, 2016	92.2 %

November 26-29, 2012	98%
PERMIT LIMIT	90% or greater (SC I.7)

*Note that testing conducted November 9-10, 2021, for formaldehyde destruction efficiency had to be repeated on December 1, 2021, due to instrumentation problems with a piece of rental equipment, and failure to retrieve sufficient data from the unit. Retesting notification was received electronically on November 23, 2021. Acknowledgement by AQD TPU and District Staff was provided on November 24 and 23, 2021, respectively.

In compliance with SC V.1, SC V.2 and SC VII.7 through 10, test protocols, notifications and test results have been submitted in a timely manner. CO test results are utilized by the facility to determine total emissions (SC VI.7). A review of annual emissions data indicates that the Facility is using emission factors based on stack test data. The totals reported indicate that the company is in compliance with the 50 tpy CO limits (SC I.5).

MAERS CALENDAR YEAR	REPORTED CO EMISSIONS (tpy)	EMISSION FACTOR (LB/ E3 FT2)
2019	7.95	0.0461
2020	8.27	0.0461
12-month rolling ending Oct, 2021	6.83	0.0461
Limit	50 (SC 1.5)	NA

EUPAINTBOOTH – This EU is used to paint the edges of the finished OSB wood product and has a dry fabric filter to control emissions and reflects one of the final stages in production. WNR reports that the differential pressure across the dry filters are monitored by differential pressure gauges (or equivalent) (SC III.1, III.2 and IV.1) and are recorded once per shift on log sheets (SC VI.1). Data was reviewed the Month of October 2021, and included the S&GSO (sander, saw line and paint booth) logsheets Information indicated that the pressures reported were within the SSMAP operating range of 0.3-1.0 inch wg.

In addition, the Facility has standard practices for maintenance associated with the unit as well as with other control devices at the facility.

In compliance with permit conditions, WNR maintains monthly records of the amount of paint used in gallons (SC VI.2). The Facility reports that the monthly totals reflect estimates and are reconciled at the end of the year with purchase records. (SC VI.3). Paint usage for 2020 and 2021 (to date) is presented below:

Calendar Year	Monthly Paint Usage (gallon/month)	12-Month Rolling Total Paint Usage (gallons)*
2020	5,802 - 7,535	84,230.43
2021 (to date)**	7,035 – 7,433	87,571

* Monthly records are maintained, 12-month rolling total usage was noted to be incorrectly reported in MAERS as tons of coating used, but in fact is gallons of coating used. Emissions were reported accurately.

** 12-month rolling time period ending October 2021.

Particulate (PM) emissions for EUPAINTBOOTH are to be calculated pursuant to Appendix 7 of the ROP (SC VI.3). PM emissions reported by the Facility include the following:

CALENDAR YEAR	Monthly Average Hourly PM Emissions (PPH)	Monthly Total PM Emissions (tons)	12-Month Rolling Total PM Emissions (TPY)
2020	0.43	0.11 – 0.15	1.65
2021*	0.43	0.14 – 0.15	1.72
PM LIMIT	0.94 (SC I.1)	--	4.1 (SC I.2)

*reflects the 12-month rolling total for the period ending September 2021.

SC VI.4 requires records verifying the use of only non-HAP coatings as defined in SC.IX.1. Semi-annual Part 63 Subpart DDDD report (January 8, 2018) for the Facility indicated that no HAP containing coatings were used for the second half of the calendar year and is consistent with records reviewed as part of this compliance evaluation.

EUIBW – This NG-fired EU (SC IX.1) is referred to as the "Number 2 TOH" and supplies heat to EUPRESSLINE and the plant building heaters. In the winter, it also supplies heat to the water vat used to thaw and clean logs entering the flume and debarker. No control device is associated with EUIBW, the emissions from the NG-burner exhausts directly to the atmosphere through it's independent stack. Hours of operation are summarized below:

DATE	Hours of Operation	Months reported no operation
2020	120 - 734	June, July, September
2021 (to date)	126-718	July thru September

Notifications required for EUIBW under the Boiler MACT (SC IX.2) include the initial notification (February 10, 2016) (SC VII.7) as well as annual notifications required by the 15th of March for the previous calendar year (SC VII.8). WNR submitted the required annual compliance report for 2019 and 2020 on February 5, 2020 and February 23, 2021, respectively. (SC VII.8). Submitted reports were reviewed and determined complete with respect to information required under conditions VII. 7 and VII. 9. Copies of this and all other notifications and reports submitted to comply with the Boiler MACT are maintained onsite and are readily available for review (SC VI.4 and VI.5).

As previously noted, the EU is subject to the Boiler MACT, initial notification was submitted on February 10, 2016. The initial tune-up (SC VII.8) and one-time energy assessment (SC III.3) were reported to have been completed prior to the January 31, 2016, compliance date. Annual tune-ups (SC III.4 and VIII.8) are to be conducted within 13 months of the previous annual tune-up in compliance with SC III.4) A review of file records indicated that following activities:

Calendar Year	Total Operating Hours	Annual Inspection & Tune Up*
2018	4931	February 22, 2018
2019	4865	May 15-17, 2019
2020	4577	July 19, 2020
2021 to date**	3778.7	May 18, 2021

*In compliance with SC III.1 the Facility conducts regular maintenance activities for EUIBW apx. every 10-days in accordance with the approved MAP (SC III.1 and III.2).

**To date is through October 2021.

Emission limits associated with EUIBW includes NOx (SCI.1) and CO (SCI.2) in pounds per hour (pph). Verification testing for the referenced parameters are required once every five years (SC V.1). A review of district records indicates that submittal of test protocols (SC VII.4), 7-day notification of anticipated tests dates (SC VII.4 and VII.5) and test reports (SC VII.6) have been in compliance with conditions. The next required testing would be 2021. The last two test results are summarized below:

TEST DATE	EMISSION LIMIT NOX (pph) (SCI.1)	NOX TESTING RESULT (pph)	EMISSION LIMIT CO (pph)(SCI.2)	CO TESTING RESULT (pph)
November 26-29 2012	1.9	1.6	2.3	0.001
November 8-16 2016	1.9	0.87	2.3	0.20
November 9 - 12, 2021*	1.9	1.1	2.3	<0.050

*Supplemental testing activities were conducted on December 1, 2021, but did not involve the referenced emission unit.

Annual NOx and CO emissions are calculated using the EF based on test results and hours of operation (SC VI.3). No annual emission limit for the two pollutants/parameters are identified for the EU.

Monitoring/recordkeeping requirements for EUIBW include monitoring and daily recording of the amount of NG used (SC VI.1). A NG meter is located onsite, and is recorded on a daily log sheet, in compliance with permit conditions (SC VI.1). In addition, the Facility is required to monitor and record the hours of operation of EUIBW on a continuous basis (SC VI.2). Information provided by the Facility for 2020 and 2021 to date verified that the required NG usage documentation is recorded and readily accessible upon request.

Date	Natural gas usage (MCF/day)
October 2020	0.8 – 69.8
October 2021	0.4 – 169.7
LIMIT	NA

EUCOEN – The “Number 1 TOH” is permitted to operate fired by NG (40 MMBTU/hr) or wood/wood dust (50 MMBTU/hr). The heat/hot oil generated from this thermal oil heater is used to enhance the heat in the press plates of EUPRESSLINE. Facility staff report that EUCOEN, with the exception of maintenance shutdowns, runs 24/7 (two 12-hour shifts). Normal operation is with wood/wood dust as fuel, and a minor quantity of NG to keep the pilots lit.

The EU conditions contain high level citations to both 40 CFR Part 63 Subparts DDDD (Plywood and Composite Wood Products NESHAP) (SC IX.3) and DDDDD (Boiler MACT) (SC IX.2).

Compliance with conditions for EUCOEN and FGDRYERS appear to indicate general compliance with the Federal Subparts.

When firing NG the emissions may be by-passed to it's own stack rather than going through the WESP and RTO pollution control devices associated with FGDRYERS (SC III.1). Operation solely on NG is reported to be limited to upset periods. A review of data provided indicated the following:

Date	NG Usage (MCF/Month)	Daily NG usage Rate (MCF)	Hours Vented to SVCOEN
2020	332.69 – 3702.47	NA	1 – 14.0
2021 to date	1891.04 – 5145.43	NA	0.8 – 15.9
October 2020	732.57	7.0 – 92.4	12
October 2021	1891.04	38.8 – 176.7	14

The ROP does not contain any operational limits with respect to time, or fuel.

A review of data provided, and discussions with NWR Staff indicates that WNR operates and maintains EUCOEN as recommended by the manufacturer and contained in the approved MAP (SC III.2) and by work practice standards outlined in SC III.6. The initial (2016) tune-up (January 5, 2016) and one-time energy assessment (SC III.4) were completed prior to the January 31, 2016, compliance date. The most recent annual tune-ups (SC III.5 and VIII.5) were conducted as presented below and are believed to be in general compliance with requirements of SC IX.1.

Calendar Year	Total Operating Hours	Annual Inspection & Tune-Up
2018	130.04	October 17, 2018
2019	153.2	October 22, 2019
2020	92	August 25, 2020
2021 to date	117.9	October 26, 2021

Initial notification for the Boiler MACT (SC VII.4) for this unit was dated February 10, 2016. Annual compliance notifications are required by the 15th of March for the previous calendar year (SC VII.5). The required annual compliance report for 2019 and 2020 were submitted on

February 5, 2020 and February 15, 2021, respectively. (SC VII.5 and VI.6). Submitted reports were reviewed and determined complete with respect to information specified under SC VI.5 and SC VII.6. Copies of this and all other notifications and reports submitted to comply with the Boiler MACT are maintained onsite and are readily available for review (SC VI.4 and VI.5).

Emission limits associated with this EU includes NOx and CO but are limited to operation fueled by NG. (SC I.1 and I.2) Verification testing for the referenced parameters is not required under the ROP. Due to the limited operation using NG, the EU In lieu of testing, bases emissions on stack testing results from EUIBW and hours of operation for EUCOEN (VI.3). The hours of operation of EUCOEN are monitored and recorded in compliance with SC VI.2. Total hours of operation firing NG (and subject to the Boiler MACT) are summarized below:

Time Period	Total Hours firing NG
2020	91.6
2021 to date*	119.6

*To date is until October 31, 2021.

Monitoring/recordkeeping requirements for EUCOEN include monitoring and recording of the amount of NG used (SC VI.1). A NG meter is located onsite, and use is recorded and tracked in the data acquisition system, and on a shift log sheet, in compliance with permit conditions (SC VI.1). NG usage records are maintained by the Facility in compliance with the permit conditions. NG consumption was reported earlier in this report.

FGDRYERS – This flexible group contains the four, triple pass, direct heat, wood flake dryers (EUDRYER1 through EUDRYER4) and EUCOEN when it is fired on wood and wood dust. The emissions from these units pass through their respective cyclones and feed into a single duct that passes to the WESP further removing particulate prior to reaching the RTOs (SC III.1 and III.4). Emissions from the RTOs are monitored by VOC and CO CEMS (SC IV.2 and VI.6) as well as a COMs for opacity (SC IV.1, IV.4 and VI.7).

Continuous monitoring units associated with the FG are operated under AQD approved monitoring plans (IX.6). Routine maintenance activities, repairs, and required reporting are conducted in general compliance with permit conditions for the monitoring equipment. (SC VI.13, VII.9 and IX.6)

The RTO is referred to as a single device in the ROP, however, the control device consists of two Megtec RTO units. The Facility reports both must be operated to meet the destruction efficiency requirements, and that when a bypass occurs it is either a malfunction or routine maintenance activities conducted under the PWCP MACT. The permittee monitors and records the operating time of FGDRYERS, as well as any time in which one or both of the RTO units are bypassed (SC VI.4 and VI.5) and are provided below.

Date	Total Hours of Operation	Total Hours (WESP & 1 RTO)	Total Hours (WESP only)	Total Hours (No Controls)
2020	7943.1	137.13 (14 hrs for routine maintenance)	0.07	0
2021 to date*	6123.72	31.67	0	0.25

*To date means through October 31, 2021.

Records provided indicated that EUCOEN had operated burning not only NG, but wood and wood dust for the period. Operational conditions for EUCOEN when firing wood are found in FGDRYERS and include the following:

- When burning wood in EUCOEN the exhaust gases from the EU are required to be discharged through the WESP and RTO following safe operating procedures (SC III.4)

Based on the reported control operating times for 2020, and January through October of 2021, and except for the 0.25-hour period identified in 2021, the FG had not operated without the WESP and RTO controls. Furthermore, WNR has a well-developed safety plan and operating procedures for their equipment and carefully monitor operational parameters to insure safe operation.

- The permittee shall not bypass one or both RTO units for more than 3% of the annual operating uptime for the FG. (SC III.2)

Information provided by the Facility, indicates that with respect to RTO bypass, the Facility is in compliance with permit limits. The referenced data is summarized below:

Time Period	Total Hours of Operation	Percent one of RTOs by-passed	Percent both RTOs by-passed	Percent both WESP and RTOs bypassed
2020	7943.1	1.7	0.0009	0
2021 to date	6123.72	0.52	0	4.8 E-3
Limit	NA	3% (SC III.2)	3% (SC III.2)	NA

Operation of FGDRYERS with a properly operating WESP and RTO (SC III.1) except under necessary maintenance, repair or parts replacement of the RTO, at which time 1) only the WESP or the WESP and partially bypassed RTO may be used, 2) the production rates and/or amount of pine being processed will be adjusted to a level necessary to achieve compliance with the limits for PM10, VOC and CO emissions, and 3) continuous monitoring of VOC and CO emissions by the CEMS. (SC III.3)

As previously indicated the Facility has regularly scheduled downtime for maintenance activities which includes FGDRYERS and their associated pollution control devices. In addition, production rates and the amount of pine processed are monitored and recorded. Percent volume of pine processed on a monthly basis in 2020 averaged 14.2%, and in 2021 averaged 18.4%.

CEMs downtime and total emissions for the referenced parameters of VOC and CO are carefully monitored by the facility and reported in compliance with the permit conditions. Review of the quarterly, semi-annual and annual reporting indicates that the monitors are carefully monitored and that corrective actions are conducted in a timely manner.

If hourly and/or yearly PM10, VOC and CO emission limitations for FGDRYERS cannot be achieved, or if the COMs, CEMS or CPMS systems are inoperable then material feed to the dryers will cease and input feed to FGDRYERS shall not be restarted until the dryers emission control system and/or the continuous system monitors are back online and operating properly. (SC III.3) Records provided by the facility indicated the emissions reported by the CEMS are well below the permit limits for FGDRYERS. In addition, based on quarterly monitor downtime reports submitted any continuous monitoring device downtime have been reported to be isolated, and promptly corrected. Continuous monitoring device downtime is reported by the Facility as a deviation.

Emission limits for FGDRYERS include PM10, SO2, NOx, CO, Formaldehyde, VOC and Total HAP (measured as THC). Except for VOC and CO, emissions which are determined by CEMS, emissions are verified by stack testing activities. Testing requirements for FGDRYERS (SC V.1) include the following verification tests to be conducted every 5 years:

PARAMETER and EU	PERMIT LIMIT	TEST RESULTS (November 9-12, 2021)	TEST RESULTS (November 8-16, 2016)	TEST RESULTS (November 26-29, 2012)
PM10 FGDRYERS (during 2-unit RTO operation)	0.030 gr per dscf	0.0056 gr per dscf	0.0043 gr per dscf	0.0065 gr per dscf
PM10 FGDRYERS (during 2-unit RTO operation)	29.8 pph	3.4 pph	4.0 pph	6.5pph

PM10 FGDRYERS (during 1-unit RTO operation)	0.057 gr per dscf	0.0072 gr per dscf	0.0053 gr per dscf	0.016 gr per dscf
PM10 FGDRYERS (during 1-unit RTO operation)	56.6 pph	4.5 pph	5.3 pph	19 pph
SO2 FGDRYERS	5 pph	<0.14 pph	0.16 pph	0.7pph
NOx FGDRYERS	23.15 pph	18.9 pph	21.07 pph	23.40 pph (production issues noted)
Formaldehyde FGDRYERS	2.4 pph	0.53 pph	0.53 pph	1.2 pph
Total HAP measured as THC (as carbon) FGDRYERS	90% reduction of total HAP entering RTO	96.0%	92.5%	92%

Test protocols, 7-day notifications and test reports (SC V.1 & V.2), for the most recent sampling events were submitted per permit requirements.

Annual emission limits for the above referenced pollutants/parameters are calculated using based on the emission factors derived from the most recent stack test data (SC VI.15, SC VI.16 and Appendix 7). Annual emissions for FGDRYERS are summarized below:

Date	SO2 (TPY)	NOX (TPY)	PM10/PM2.5 (TPY)
October 2020	0.72	84.78	36.81
October 2021	0.02	81.72	32.85

LIMIT	21.9	173.4	136.4
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VOC and CO are monitored using a CEMS at the RTO exhaust. (SC IV.2, VI.6 and VI.11) Opacity for FGDRYERS is monitored using a COMS, when the EUs in FGDRYERS are firing wood (SC IV.1, VI.6 and VI.10). Both are installed to read emission from the RTO exhaust stack (SC IV.2)

Available records indicate that the CEMS and COMS units are calibrated, operated and maintained in accordance with the procedures set forth in 40 CFR 60.13, 40 CFR Part 60, Appendix B (SC IV.4) and Appendix F (SC V.3) as well as per the AQD approved Monitoring Plan (SC IX.1. IX.6 and SC VII.7). The Facility reports maintaining the necessary parts for routine repairs (SC VI.13). CEMS and COMS test protocols are submitted per permit requirements (SC VII.8).

Annual CO and VOC emission limits and reported emissions (both in tons per year) for FGDRYERS are determined using CEMS data. Ton per 12-month rolling for October 2020 and October 2021 are presented below:

Date	CO Emissions (tpy)	VOC Emissions (tpy)
October 2020	78.0	12.8
October 2021	76.12	15.3
Limit	149.8 (SC I.13)	81.5 (SC I.17)

In addition to tons per year emission limits, VOCs (as carbon) are limited to 18.6 pph, based on a 30-day rolling average (SC I.16) and CO has 24-hour rolling limits of 147.3 pph (SC I.11.). Emissions for the months of October 2020 and October 2021 are summarized below:

DATE	VOC -DAY ROLLING AVERAGE	30 CO (pph)	24- hr average on 30-day basis (pph)
October 2020	1.8 – 2.1		29.1 – 87.4
October 2021	1.7 – 3.0		3.5 - 50.1
Limit	18.6 (SC I.16)		147.3 (SC I.11)

VEs are monitored and recorded on a continuous basis by the COMS (SC IV.1, IV.4 VI.6). No opacity limits exist for FGDRYERS. A review of permit conditions for opacity are limited to 6-minute average of 20%, with an allowed single 6-minute average per hours of 27% or less. (GC 11). A review of data provided for the months of October 2020 and October 2021 indicated that with respect to the earlier data that no hourly averages exceeded the 6-minute average, and that the highest reported hourly average for the month was 13.4% (October 8, 2020).

A review of the hourly averages reported for the month of October 2021, indicated that an exceedance of the 27% 6-minute average may have occurred on October 12, 2021, when hourly averages of 32.7% and 19.6% were reported. This later date occurred toward the end of a scheduled maintenance shutdown at the Facility. It is important to note with in general hourly average opacities for the RTO for the months identified were <2.0% opacity.

In addition to temperature monitoring which will be addressed below, the Facility is required to monitor the volumetric flow at the RTO stack (SC VI.2). No limit was noted in the permit, and no operational range was identified in the SSMAP. RTO air flow data is readily available as an instantaneous reading or average over a time period. Daily averages are presented below:

Month	Lowest Average RTO Flowrate (scfm)	Highest Average RTO Flowrate (scfm)
October 2020	69,480	115,265
October 2021	8,311	114,673

Temperature for both of the RTOs is monitored by a Continuous Parameter Monitoring System (CPMS) capable of meeting the minimum of 1 reading every 15-minutes (SC III.6 and VI.2). The temperature monitoring device is located where it will provide a representative temperature in the area of the RTO firebox that achieved by the RTO (SC IV.3). The Facility reports that both RTOS have 2 temperature probes, one to confirm the temperature of the other, and that the temperatures are monitored continuously. The RTO firebox temperature is reported to be used as an indicator of proper functioning for the WESP (SC VI.8) and compliance with PM10 limits (SC VI.10).

Temperature monitoring data collected for the RTOs is per permit compiled into 3-hour block averages. (SC III.5, VI.9) The averages do not include data recorded during monitoring malfunctions, associated repairs, out of control periods or quality assurance activities (SC VI.3). The permit requires that when operating FGDRYERS the RTO 3-hour block average fire box temperature is at or above the minimum temperature 1424 degrees F (SC III.5). The average minimum RTO operating temperatures was determined during performance testing conducted onsite every 2 years (SC V.3) the last testing was conducted the week of November 8, 2021.

It should be noted that prior to this most recent testing, that during testing the Facility was able to lower the firebox temperature to 1424 degrees F to meet the previously approved minimum temperature. Initial temperatures reported during the November 10, 2021 testing were 1500-plus degrees F. Temperatures reported for the additional runs conducted on November 11, 2021

indicated lower temperatures resulting in reported 15-minute block average temperatures ranging from 1466 – 1641 degrees F, with the minimum average temperature (1468 degree F) being determined as the lowest three 15-minute averages over the course of the 3 one-hour tests. (Note the average of all the 15-minute averages results in an average operating temp of 1526.58 degrees F) Based on the data being evaluated at the time of report prep being prior to the most recent testing, compliance is being based on the firebox temperature of 1424 degrees F.

To determine compliance District Staff requested three-hour block average operating temperatures for October 2020 and October 2021. Data provided indicated that the RTOs are operated at a consistent temperature range, and that the temperatures are above the average minimum operating temperatures determined during 2016 performance testing (1424 degrees F). The data provided by WNR is summarized below:

Date	COMBINED RTO AVERAGE 3-HOUR BLOCK TEMPERATURE RANGE (degrees F)
October 2020	1581 - 1739
October 2021	1521 - 1753

The Facility has trained staff that initiates corrective actions for the EUs of FGDRYERS, the associated pollution controls and monitoring devices in accordance with good air pollution practices for minimizing emissions. In compliance with permit conditions, appropriate CAM practices have been implemented, documented and reported in a timely manner. The practices are contained in the Facilities SSMAP, as well as in the equivalent in-house quality assurance plan (SC VI.11 & 13). Records of corrective actions, monitor and equipment performance and monitoring data are maintained as required by permit (SC VI.13).

FGWOODHANDLING – The system is a pneumatic system with dust pickups and associated controls (cyclones and baghouse) (SC IV.1) which collect waste wood material. The collected material is transferred from referenced sources and is delivered as dry fuel to the wood burners in FGDRYERS. These sources include: Flake screening areas, Screen and dry bin cleanup area, Sanding line, and Wood handling systems including press board trim line, press board finish area.

EUs included in FGWOODHANDLING includes:

- EUFINISHING,
- EUMATTRIM,

As part of the ROP Renewal Process Technical review, the majority of the following EUs appeared to historically been identified/treated as part of FGWOODHANDLING, though they have been reported to be exempt from permitting. These include:

- EUCLEANUP
 - Baghouse for screens (2)
 - Dry bin cleanup baghouse,

- EUDRYFUEL
 - Dry fuel surge bin,
 - Dry fuel silo baghouse
- EUMDI (formerly EUBLENDVENT)
- EUFLAQ (form line baghouse)
- EUSAQ (strandlers)

No material limits or verification testing is associated with the FG. Process/operational restrictions require that FGWOODHANDLING is not operated unless the associated cyclones and baghouses (SC IV.1) are maintained and operated in a satisfactory manner (SC III.1). Each baghouse is equipped with a gauge to continuously measure the pressure drop across the baghouse (SC III.2, IV.2 and VI.3) Monitoring and recordkeeping requirements associated with the FG include continuous monitoring and recording once daily the pressure drop across each of the baghouses. (SC VI.3) Copies of log sheets for the first Monday of each week for the months of October 2020 and October 2021 were reviewed. The documents verified the referenced compliance monitoring and record keeping requirements were being conducted. The log sheets also documented the appropriate differential pressure ranges for each control device, and actions taken when readings are reported out of range. The daily log sheets are also reviewed by environmental staff, to further ensure that appropriate actions are being taken.

Staff log sheets also included documentation of any Visible Emissions (VE) and are collected by WNR staff from each baghouse and associated ductwork, vents dampers or blowers to verify proper operation. Each VE is reported to be a 6-minute reading and is collected a minimum of once per day during routine operating conditions. (VI.4) Records provided included the date, time, name of reader, status of the VEs and whether the reader is certified (VI.5). In addition, the log sheets document leak check activities, proper operation of the cyclone or baghouse.

VE limits for FGWOODHANDLING (SC I.4) are limited to 5% opacity. Log sheets (SC VI.5) reviewed for each Monday in the months of October 2020 and October 2021 indicated that no VEs were reported and would indicate VEs below the 5% limit.

PM Emissions for this flexible group are calculated per the formula found in Appendix 7 (SC VI.2). PM10 emissions for FGWOODHANDLING for 2020 and 2021 to date are presented below. No emission limits are associated with this flexible group.

Date	PM10 Emissions (Tons/month)	PM10 Emissions (TPY)*
2020	0.40 – 0.53	6.04
2021 to Date	0.50 – 0.53	5.68

*Based on 12-month Rolling Time Period

FGDIESEL-ENGINES – The ROP identifies FGDIESEL-ENGINES, which consists of three emergency, diesel-fired engines for use during power outages for the following purposes:

- Circulate hot oil for the press and building heat at the facility (EUDIESELHOTOIL),
- Provide emergency electricity (EUEMERGENCYGEN), and
- Pump water during fires (EUFIREPUMP)

In addition to the three identified above, the Facility reported the purchase of a portable generator, exempt under Rule 285 (2)(g) has been hardwired in, and are in the process of adding the EU (aka the Sullivan Portable Diesel) as well a propane-fueled Generac and a NG-fired Generac into the ROP as part of the renewal process. This will result in multiple engine FGs based on fuel type, use and installation dates following renewal of the ROP.

The newer EUs will be required to meet compliance with the RICE MACT by compliance under the SI and CI NSPS standards applicable to each RICE. The Facility has reported general compliance with the requirements of the appropriate Federal Regulations. Compliance for purposes of this inspection is determined with respect to MI-ROP-B7302-2016c.

Emission Unit	Engine Type	Serial No.
EUDIESELHOTOIL	Cummins Diesel B3.3 85 Hp Mfg. 2/12/2002 Install: 7/6/2006	68009179
EUEMERGENCYGEN	CAT 3306B 250 Hp Install 1981	85Z03713 2W1742
EUFIREPUMP	Detroit Diesel 281 Hp Install: 2/1981	6A0414479
EUCOMPRESSOR (backup to mills compressed air system)	Sullivan Portable Install: 9/26/2014	73745288
EUGENERAC (standby generator at gatehouse)	Generac Emergency Install: 2017	NR
EUGENERACNG	Generac Emergency presently being installed onsite.	NR

No emission limits, minimum stack parameters or verification testing requirements exist for the FG. However, the Facility is required to maintain copies of analyticals for oil samples collected as part of an oil sampling plan (SC VI.2). The Facility reports that oil samples are collected for purposes of reliability, not as an option to maintenance activities (SC III.8).

Material limits for the FG are limited to No. 1 or 2 diesel fuels with no greater than 0.5% sulfur content. (SC II.1). SDS sheets identified the fuel as a 500 ppm max content or less than 0.05% sulfur content. The Vendor confirms that the fuel meets the sulfur content. No "verification testing" is required under the present version of the ROP.

Operational limits for each diesel engine are in a large part based on requirements of Federal Regulations and include:

- Installation of a non-resettable hour meter (SC IV.1)
- Minimization of idle times during startup, and the startup-time period needed for appropriate and safe loading to not to exceed 30 minutes (SC III.9)
- Unlimited emergency operation (SC III.3) 0-hours/year of non-emergency operation (SC III.2)

The 100 hours/year of non-emergency operation includes up to 50 hours of operating in non-emergency situations (SC III.5), maintenance checks and readiness testing (if recommended) (SC III.4) and diesel engine testing (SC III.2). In addition, the 100 hours/ year of non-emergency operation includes operation of EUDIESELHOTOIL and EUEMERGENCYGEN as needed when normal process equipment is not operating properly, and EUFIREPUMP at any time to help combat fires. (SC III.1)

Hours of operation from non-resettable hour meters on each engine are recorded by Facility Staff (SC VI.2). Operation data for the EUS in FG DIESEL-ENGINES provided by the facility indicated total hours of non-emergency operation well below the 50-hour and 100-hour operational limits (SC III.2, III.3, III.4 and III.5) and are summarized in the table below:

FGDIESEL ENGINE	DATE	Emergency Hours	Total Hours
EUDIESELHOTOIL	2020	4.9	17.4
	2021 to date	0.5	12
EUEMERGENCY GEN	2020	0.1	15.3
	2021 to date	0.4	11.2
EUFIREPUMP	2020	5.54	25.41
	2021 to date	5.2	16.82
EUCOMPRESSOR (Sullivan Portable Diesel)	2020	21.7	22.2

	2021 to date	134.1	134.8
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Work Practice Standards associated with FGDIESEL-ENGINES includes:

- Oil and oil filter changes every 500 hours of operation or annually, whichever is first. (SC III.7)
- Inspection of all hoses and belts every 500 hours of operation or annually, whichever is first, and replace as necessary. (SC III.7)
- Inspection of the engines air cleaner every 1,000 hours of operation or annually, whichever is first and replacement as necessary (SC III.7)

A review of records provided by the facility (SC VI.1), indicates that the annual hours of operation are well below the 500 hours of operation that would trigger the above referenced work practice standards more frequently than annual. The facility maintenance is conducted based on issuance of work orders for regularly scheduled maintenance activities as well as supplemental activities determined necessary. As previously indicated, the Facility conducts plantwide maintenance activities every 2 weeks which based on records provided appear to consist of at minimum consistent of fluid level and AutoStart checks for FGDIESEL-ENGINES.

Maintenance activities such as those required above (SC III.7) are reported to be conducted annually. Requested records provided by the Facility appear to be in order and consistent with the requirements of FGDIESEL-ENGINES condition VI.1. As the facility has conducted the above referenced work practice standards annually, records for oil sampling identified in condition VI.2 are not applicable at this time.

Emission Unit	Activity	Activity Dates*
EUHOTDIESELHOTOIL	Annual Maintenance	11/5/2018, 11/7/2019, 11/1/2020, and w/o 11/29/2021
EUHOTDIESELHOTOIL	Battery Replacement (2 yr)	5/11/2018 and 6/14/2020
EUEMERGENCYGEN	Annual Maintenance	4/11/2018, 3/17/2019, 2/13/2020 and 3/7/2021
EUEMERGENCYGEN	Battery Replacement (3 yr)	7/10/2017, 8/1/2021
EUFIREPUMP	Annual Maintenance	10/25/2018, 11/3/2019, 11/9/2020 and 8/1/2021
EUFIREPUMP	Battery Replacement (2 yr)	7/21/2019, 7/30/2021

*** Activity Dates for calendar years 2018 and 2019.**

Based on information provided, it appears that the permittee is in compliance with the operating limitations that apply to FGDIESEL-ENGINES, and conduct activities in a manner which is consistent with safety and good air pollution control practices to minimize emissions (SC III.10 & III.11)

SUMMARY

On November 9 and 10, 2021, AQD district Staff visited the Weyerhaeuser NR Company Facility (B7302) located at 4111 West Four Mile Road, Grayling, Crawford County, Michigan. The visits during the referenced time period were for the following purposes:

- Observation of verification testing and annual RATA testing,
- Full Compliance Evaluation (FCE) for 2022 fiscal year.

Information obtained during the referenced visits are incorporated into the compliance determination summarized in this report. The most recent scheduled site inspection reports were dated February 22, 2018, and November 12, 2019, and the facility was found to be in compliance with permit conditions.

The referenced facility is a Major Source and is permitted under Renewable Operating Permit (ROP) Number MI-ROP-B7302-2016c. The document is presently under renewal, with the company operating under a permit shield. The ROP renewal package was received on August 27, 2020.

The Weyerhaeuser NR Company Facility (AKA WNR) was opened in 1982 as Weyerhaeuser's first oriented strand board (OSB) mills. The product contains layers of dry wood flakes (referred to as strands), resin and wax pressed under high temperature and pressure to form a panel. OSB panels are commonly used as construction materials. Note that the various products manufactured at WNR are defined in part by a "Species Mix" or recipe as well as by the OSB thickness.

Fuel source for the facility include Natural Gas (NG) and waste wood. The wood fuel used by the facility is generated/collected from various wood handling components in the OSB board production. WNR staff indicated that the wood bark and coarse wood fragments are sold to the neighboring cogeneration plant and other Facilities.

Note- at the time of the site inspection, verification testing and RATAs, the Facility was operating with minimum staffing due to covid, and what appeared to be logistics issues one of the stranders that has resulted in maintenance issues and line shut-downs since the October 4-14, 2021 scheduled maintenance shut-down. The combination of the two resulted in start-stop operations when maintaining maximum operating conditions. It also has resulted in reduced production.

FACILITY CHANGES - Information provided by WNR Staff indicated the following facility upgrades or changes have been completed since November 2019:

- Installing a Generac NG Emergency Generator (EUGENERACNG) (in progress)

- Installed a new DEF Dispenser at the main diesel fuel tanks (11/2021)
- Installed new weigh scales in the blending area (10/2021)
- Like kind replacement of Strander #1 and #2 (10/2021)
- Biofilter media replacement (7/2020)

No compliance issues were noted as a result of the site inspection and subsequent data evaluation and it appears that the Facility is operating in general compliance with the ROP.

Sharon LeBlanc, Environmental Quality Analyst
 Digitally signed by Sharon LeBlanc, Environmental Quality Analyst
 Date: 2022.03.03 12:02:16 -05'00'

Shane Nixon, Cadillac/Gaylord District Supervisor
 Digitally signed by Shane Nixon, Cadillac/Gaylord District Supervisor
 Date: 2022.03.03 12:03:03 -05'00'

NAME _____

DATE _____

SUPERVISOR _____