DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B730251496

FACILITY: WEYERHAEUSER NR COMPANY		**SRN / ID:** B7302
LOCATION: 4111 W FOUR MILE RD, GRAYLING		**DISTRICT:** Gaylord
CITY: GRAYLING		**COUNTY:** CRAWFORD
CONTACT: Kathi Moss , Environmental Health and Safety Coordinator		**ACTIVITY DATE:** 11/12/2019
STAFF: Sharon LeBlanc	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled site inspection for fiscal year 2020. Site inspection conducted in conjunction with annual RATA testing. sgl		
RESOLVED COMPLAINTS:		

On November 12, 2019 , 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 annual RATA testing for VOC CERMS associated with the biofilter.**
- **Full Compliance Evaluation (FCE) for 2020 fiscal year.**

Information obtained during the referenced visits are incorporated into the compliance determination summarized in this report. The most recent scheduled site inspection report was dated February, 22, 2018, 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 initial ROP was renewed on March 8, 2016, and was amended most recently on April 5, 2019. This most recent revision was made to incorporate Permit to Install (PTI) No. 535-94F.

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.

FACILITY CHANGES - Information provided by WNR Staff indicated the following facility upgrades or changes have been completed since 2014:

- **New "Generac" generator for gate and scales (propane fueled) (2014).**
- **Replacement of the wet ESP and two RTOs that serve the dryers (2015- 2016).**
- **Hardwiring of a portable diesel air compressor (to be added to ROP in 2021 renewal).**
- **Upgrade to the Strander Air Quality (SAQ) baghouse and addition of storage bin/conveyors under exemptions 285(2)(d) and (b) (2016-2017).**

- Biofilter media replacement (August 2017.)
- Construction of supplemental storage area for equipment on the northwest corner of the facility (2017-2018).
- Installation of four new pulp dryers (60 MMBtu/hr burners) to replace existing dryers (40 MBTU/hr), as well as installation of new primary classifiers, ductwork, foundations, fans, motors burners and auxillary equipment. (2018).
- Replacement/upgrade of pressline (2018).
- Replacement of debarker infeed conveyors and the debarker drum (October 14-23, 2019).

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, determined that the CO CEMs could be modified to include dual calibration ranges to allow for the spikes. Electronic correspondence dated January 18, 2019, indicated that the first modified unit had been returned, and that the second unit (Facility spare) had been sent out for modification. The second unit returned to the site prior to testing conducted on February 28 and March 1, 2019. The referenced testing activities included both the CAI Model 601 CEM in use, as well as the spare maintained by WNR onsite. WNR submitted the required documentation, and on June 3, 2018 received unit Certification Approval from TPU. 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 tweeks 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.

EQUIPMENT

The Manufacture of OSB is completed in stages. A shutdown of one stage in the process depending on the nature and duration of the shutdown, may result in a shutdown of the entire process. Storage bins for dried wood strands allow continued but limited operation for process activities both before and after the bins. A brief description of each stage/activity is provided and permitted equipment is identified in *Italics.*

Pre-Chipping – Initial steps in the manufacturing process include transfer and debarking of logs delivered to the wood yard onsite. This is completed using flumes and a de-barker. The waste material generated from the de-barker (aka residuals) as previously noted are sold to the neighboring cogeneration plant. Prepped logs are sent down the line for chipping (aka stranding).

Chipping – De-barked the logs are transferred to a chipper more appropriately referred to as a "strander" that generates the wood strands used in the manufacturing process.

Drying & Screening – Following the creation of the "strands" from the wood logs, the material is transported to the dryer room. In the dryer room, 4 rotating dryers (*EUDRYER1, EUDRYER2, EUDRYER3* and *EUDRYER4*) are used to dry the wood strands which then are put into storage prior to being sent to form into mats. Pollution control devices associated with the rotary dryers includes cyclones, Wet Electro Static Precipitator (WESP) and Regenerative Thermal Oxidizer (RTO).

It should be noted that when fired by wood and/or wood dust *EUCOEN*'s exhaust is directed through the dryers and the associated pollution control devices. The facility reports that *EUCOEN* has been fueled

predominantly of wood/wood dust and minor quantities of NG (to keep the pilots lit), operation solely or NG is normally limited to upset conditions. *FGDRYERS* includes all 4 dryers as well as *EUCOEN.*

Waste wood materials collected during the various screening, trimming, finishing and cleanup processes of *FGWOODHANDLING* are delivered as dry fuel (*EUDRYFUEL*) to the wood burners in *FGDRYERS.* This system is controlled by a cyclone and baghouse.

Mat Forming – Equipment associated with these activities includes those associated with the transfer and screening of wood strands to the press line. The activities, includes *EUBLENDENT,* EUFLAQ, *and EUMATTRIM. EUBLENDENT,* is the resin storage and blending; and core transfer area installed in July 14, 2012, is reported to have be controlled by a baghouse. *EUFLAQ,* the Form Line Air Quality cleanup system with baghouse (previously EUSANDER) was reported to have been installed on June 17, 2010. EUMATTRIM cleanup system with baghouse was installed in August 1980. *EUBLENDVENT, EUFLAQ and EUMATTRIM* are included in *FGWOODHANDLING.*

Pressing – *EUPRESSLINE* covers the OSB press as well as any associated board conveying equipment. The building housing *EUPRESSLINE* is kept under negative pressure and meets the wood products enclosure in 40 CFR 63.2292. At the time of report preparation, WNR staff have indicated that construction of a new press line is scheduled for 2018, at which time the facility will be down for approximately 3 months.

Pollution controls for emissions associated with EUPRESSLINE includes a biofilter and total enclosure controls. The facility reports that WNR has not bypassed the biofilter since 2007. WNR also reports that they have over the years changed the process by which they conduct media changeouts in the biofilter, completing the job within the 5-day window allowed under Federal Regulations.

Two Thermal Oil Heaters (TOH) are used to generate the heat required for the press line include:

- *EUIBW* (AKA TOH #2) is a 1980 International Boiler Works (IBW), 40 MMBTU/hr NG-fueled burner which heats oil for use in the presses and the plant building heaters. This EU exhausts directly to the atmosphere through it's stack.
- *EUCOEN* (AKA TOH#1) is a 1995 Coen Model 230-DAZ-22, 40 MMBTU/hr burner oil-heater when firing NG. MAERS records indicate that the unit was installed in November 1, 1995. This EU is also capable of firing on wood and wood dust (50 MMBTU/hr). When firing NG it may exhaust directly through it's stack. When firing wood, the exhaust is directed through the dyers and the Wet Electro Static Precipitator (WESP) and Regenerative Thermal Oxidizer (RTO). The heated oil generated enhances the heat in *EUPRESSLINE.*

Neither unit is reported to have oxygen trim systems.

Trimming & Cleanup – Following heat treating of the resin and wax impregnated mats, the pressed OSB mats are trimmed, finished off to the final product and packaged for shipping (*EUFINISHING*). Collection of waste materials (EUCLEANUP) generated during the flake screening process, and cleanup systems for screens, dry bins, sanding line, and wood handling systems. Pollution controls associated with the referenced equipment includes the following:

EMISSION UNIT	CONTROL DEVICE(S)	PARAMETERS MONITORED	FLEXIBLE GROUP
EUMATTRIM	Baghouse	PM, PM10 and PM 2.5	FGWOODHANDLING
EUFINISHING	Cyclone and Baghouse		FGWOODHANDLING
EUCLEANUP	Baghouse		FGWOODHANDLING
EUDRYFUEL	Cyclone and Baghouse		FGWOODHANDLING

Painting –Following trimming and cleanup, the stacks of OSB are painted along the trimmed edges and labeled prior to staging for shipping in *EUPAINTBOOTH* (installed in June 1987).

Backup Equipment – Three Reciprocating Internal Combustion Engines (RICE)which act as emergency generators and are associated with process equipment and include; *EUDIESELHOTOIL* (installed in July 2006), *EUEMERGENCYGEN* and *EUFIREPUMP*

Other – A number of exempt EUs are of record for the facility these include:

- Two 300K BTU/hr, NG fired service water heaters (EUHOTSYENERGY and EUHOTMAINT)
- One 300K BTU/hr, Propane fired service water heater (EUHOTSYPORTABLE)
- 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 diisocynate (MDI) Resin tanks used for resin storage (EUMDITANKS)

On June 6, 2017, WNR notified AQD District staff that due to weather events experienced in other parts of the country that had impacted their supply chain that they 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). District Staff were notified on July 20, 2017 that the facility was once again using MDI in the process.

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.

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.

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	Part 63, Subpart A	MACT for NESHAP, PCWP

(when firing wood)	and DDDD	
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
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) identified as still open during the previous site compliance evaluation (March 1, 2016) 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 20, 2019, for the 2018 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 February 22, 2018, 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	GC 21 & 22, VII.1	Prompt Reporting of Deviations	Based on event.

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

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). 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)	September 4, 2015 /July 26, 2016

		PLAN	
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

*Document under review. Hardcopy received by District at time of November 12, 2019, site visit.

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 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 work stations 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 in the next few years the Facility will be required to switch some or all of their software to standardized packages to be used at all plants nationwide.

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). For the 2018 calendar year, the facility reports total CO emissions for the site of 64.49 tons, the bulk of it generated by activities associated with FGDRYERS (56.55 tpy CO). CO emissions for 2018 and 2019 to date are presented below:

YEAR	CO Emissions 12-month Rolling Total (tpy)	Permit Limit (SC I.1)
2018	64.49	224.9 tpy
October 2019*	68.81	224.9 tpy

* Total emissions reflect the 12-month rolling total for the period ending October 31, 2019.

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.

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 the weeks of November 19-25, 2018, March 25-31, 2019, July 15 – 21, 2019 and October 7-13, 2019.

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.

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. Finished product reported for 2018 was reported to be 267,612.30 tons. Dried wood for 2018 was reported to be 301,701.30 tons. Monthly tonnages for the period of November 2018 through September 2019 indicated the following:

Wood Processed	Minimum Monthly Volume Processed (Tons)	Maximum Monthly Volume Processed (Tons)
Finished Product	27,105	32,716
Wood Dried	30,894	37,321

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. The Facility 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

Parameters documented at time of site visit are presented below and show compliance with respect to the SSMAP:

DATE	INSTANTANEOUS BED TEMP (degrees F)	BED AIR FLOW (SCFM)	INSTANTAEOUS VOCs (pph)
11/12/2019	80.275	97223	11.7
SSMAP Range	77.6-99.9	NA	<19.5

EUPRESSLINE data for select weeks in 2018-2019 are presented below:

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
Nov 2 – 29, 2018	1.618 – 11.025	73.369 - 86.132	100645.77 – 102281.98	0.027 – 119.985
March 2-29, 2019	8.358 – 9.254	75.243 – 86.628	33655.19 – 100566.58	0 – 124.009
July 2-29, 2019	9.613 – 10.838	88.188 – 98.613	94371.89 – 104294.25	004 – 125.008
Oct. 2 -29, 2019	5.415 -8.265	55.215 – 93.990	0 – 105153.87	0 – 124.988
SSMAP Range	<19.5 lb/hr VOC	77.6 - 99.9 degrees F (SC III.1)	NA	NA

* Review of data from the select time periods showed drops below 24-hour average minimum temperatures. Discussions with Facility staff as well as review of additional operational data 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.

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 8-16, 2016)	TEST RESULTS (November 26-29, 2012)
PM	Every 5 years (SC V.1)	10.5 pph* (SC I.1)	Not Tested	Not Tested
PM10	Every 5 years	10.5 pph*	4.9 pph	7.8 pph

	(SC V.1)	(SC I.2)		
PM2.5	Every 5 years (SC V.1)	10.5 pph* (SC I.3)	Not Tested	Not Tested
CO	Every 5 years (SC V.1)	11.4 pph (SC I.4)	2.0 pph	2.6 pph
Formaldehyde	Every 5 years (SC V.1)	1.0 pph* (SC I.6)	0.23 pph	0.1 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.

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 2017.

The destruction efficiencies for the biofilter determined by testing is summarized below:

DATE	PARAMETER	TESTING REQUIREMENT	TEST RESULTS
December 11-12, 2018	Formaldehyde	SC I.7 and SC V.2	97.6%
December 5-6, 2017	Formaldehyde	SC I.7 and SC V.2	97.7%
November 8-16, 2016	Formaldehyde	SC I.7 and SC V.2	92.2 %
November 26-29, 2012	Formaldehyde	SC I.7 and SC V.2	98%
PERMIT LIMIT	--	--	90% or greater (SC I.7)

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 confirms that the company is in compliance with the 50 tpy CO limits (SC I.5).

CO LIMIT (tpy) (SC1.5)	MAERS CALENDAR YEAR	REPORTED CO EMISSIONS (tpy)	EMISSION FACTOR SOURCE	EMISSION FACTOR (LB/ E3 FT2)
50	2015	10.5	Stack Testing	4 E-2
50	2016	10.83	Stack Testing	0.059
50	2017	8.23	Stack Testing	0.0461
50	2018	6.15	Stack Testing	0.046

EUPAINTBOOTH – This EU is used to paint the edges of the finished OSB wood product and has a dry fabric filters 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). Select data was reviewed the weeks of November 19-25, 2018, March 25-31, 2019, July 15 – 21, 2019 and October 7-

13, 2019. Information indicated that the pressures reported were within the SSMAP operating range of 0.3-3.0 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). 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)	12-Month Rolling Total PM Emissions (TPY)
2018	NR	1.24
2019*	0.43	1.65*
PM LIMIT	0.94 (SC I.1)	4.1 (SC I.2)

*reflects the 12-month rolling total for the period of November 2018-October 2019.

SC VI.4 requires records verifying the use of only non-HAP coatings as defined in SC.IX.1. The 2017 second 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. Coating usages reported are as followed:

DATE	Total Gallons Used (SC VI.2)*
2017 Calendar Year	83,963.98
2018 Calendar Year	63,223.88
January thru October 2019	69,665.19

* Monthly records are maintained, 12-month rolling total values are presented for comparison.

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. Monthly total hours of operation for EUIBW for November 2018 – October 2019 were reported to range from zero (June thru September 2018) to 732 hours/month (January 2019).

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 2018 on January 22, 2019 (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) conducted since the February 22, 2018, scheduled inspection were conducted on May 15-17, 2019. The required annual tune up was conducted within 13 months of the previous annual tune-up in compliance with SC III.4) 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).

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)
11/26-29/2012	1.9	1.6	2.3	0.001
11/8-16/2016	1.9	0.87	2.3	0.20

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). A review of log sheets for November 19-25, 2018, March 25-31, 2019, July 15 – 21, 2019 and October 7-13, 2019, verified that the required NG usage documentation is recorded and readily accessible upon request. Hours of operation for the EU is recorded in the Facility operations database in compliance with permit conditions.

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 limited to upset periods. A review of monthly totals for the 12-month rolling time period of November 2018 to October 2019 indicated EUCOEN venting ranged from 5 – 56 hours per month. (SC VI.2) 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 on October 22, 2019, and are believed to be in general compliance with requirements of SC IX.1.

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 2018 was submitted on January 22, 2019 (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
2017	189.1
2018	130.4
November 2018 – October 2019	212.8

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. A review of log sheets for November 19-25, 2018, March 25-31, 2019, July 15 – 21, 2019 and October 7-13, 2019, confirmed the recordkeeping practices at the Facility. NG consumption for the November 2018 – October 2019 rolling time period totaled 19470.74 MCF.

Time Period	Total NG Usage (MMcf)
2018	8871.54*
November 2018 – October 2019	19470.74

* Decreased NG usage reflects the July through October 2018 equipment upgrades.

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)
2018	5916.67	93.18	1.61	0.93
2019 thru November 30, 2019	7137.37	68.23	0.18	0

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 2018, and January through November of 2019, and except for the less than one-hour period identified in 2018, 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
2017	8027	0.69%	0.0062%	<0.012%
2018	5916.67	1.57%	0.027%	0.015%
Jan. thru Nov. 2019	7137.37	0.54%	0.003%	0%
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. A review of the records clearly show fluctuations in the volume of pine processed on a monthly basis over the course of the year. The average percent pine was reported to be 15% for 2017. The average percent pine used for the period ranging from November 2018 through October 2019 ranged from 14.10% to 17.50% pine.

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 can not 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.

A review of CEMS emissions reported for FGDRYERS by the Facility included the following data:

DATE	VOC (AS CARBON) 30-DAY ROLLING TIME PERIOD LIMIT (SC I.15)	REPORTED VOC 30-DAY ROLLING AVERAGE (pph)
11/22/2019	18.6 pph	2.054
7/10/2019	18.6 pph	2.598
3/30/2019	18.6 pph	4.059

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 include the following verification tests:

PARAMETER and EU	TESTING REQUIREMENT	PERMIT LIMIT	TEST RESULTS (November 8-16, 2016)	TEST RESULTS (November 26-29, 2012)
PM10 FGDRYERS (during 2-unit RTO operation)	Every 5 years (SC V.1)	0.030 gr per dscf	0.0043 gr per dscf	0.0065 gr per dscf
PM10 FGDRYERS (during 2-unit RTO operation)	Every 5 years (SC V.1)	29.8 pph	4.0 pph	6.5pph
PM10 FGDRYERS (during 1-unit RTO operation)	Every 5 years (SC V.1)	0.057 gr per dscf	0.0053 gr per dscf	0.016 gr per dscf
PM10 FGDRYERS (during 1-unit RTO operation)	Every 5 years (SC V.1)	56.6 pph	5.3 pph	19 pph
SO2 FGDRYERS	Every 5 years (SC V.1)	5 pph	0.16 pph	0.7pph
NOx FGDRYERS	Every 5 years (SC V.1)	23.15 pph	21.07 pph	23.40 pph (production issues noted)
Formaldehyde FGDRYERS	Every 5 years (SC V.1)	2.4 pph	0.53 pph	1.2 pph
Total HAP measured as THC (as carbon) FGDRYERS	Every 2 years (SC V.2)	90% reduction of total HAP entering RTO	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 Limit (tpy) (SC I.8)	SO2 Emissions (tpy)	NOx Limit (tpy) (SC I.10)	NOx Emissions (tpy)	PM10 * Limit (tpy) (SC I.3)	PM10* Emissions (tpy)
2019 thru Oct. 2019	21.9	0.84	173.4	68.18	136.4	29.60
2018	21.9	1.5	173.4	61.70	136.4	14.24

* PM10 and PM2.5 emission limits are the same 136.4 tpy. Emissions for PM10 and PM2.5 are reported to be the same quantities. PM2.5 emission limits did not exist in the previous version of the ROP (MI-ROP-B7302-2016b)

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 year totals reported in MAERS are presented below:

DATE	CO Limit (tpy) (SC I.13)	CO Emissions (tpy)	VOC Limit (tpy) (SC I..17)	VOC Emissions (tpy)
2019 thru October 2019	149.8	62.03	81.5	10.28
2018	149.8	56.55	81.5	12.41

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). As part of the November 12, 2019, site visit a 30-day rolling average of 2.275 pph VOC was reported. Note that the daily average VOC concentrations for FGDRYERs was 2.736 pph.

CO emission limits also include 24-hour rolling limits of 147.3 pph (SC I.11.). As part of the November 12, 2019 site visit a 24-hour rolling average CO value of 45.996 pph was reported. 24-hour rolling CO emission values for select dates are summarized below:

DATE	CO Emissions 30-day Rolling Average (PPH)	CO Emissions 24-Hour Average (PPH)
11/6/2018	51.797	38.352
11/21/2018	57.802	85.579
3/13/2019	46.002	57.595
7/10/2019	57.563	68.515
7/24/2019	52.013	59.655
10/6/2019	NR	73.467
10/28/2019	NR	40.041
LIMIT	NA	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). Instantaneous opacity reading noted at the time of the November 12, 2019, site visit was 1.219% 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. Weekly averages for the months of November 2018, March 2019, July 2019 and October 2019 are presented below:

Month	Lowest Average RTO Flowrate (scfm)	Highest Average RTO Flowrate (scfm)
November 2018	43,343.921	103,810.859
March 2019	78,014.945	120,449.124
July 2019	68,007.620	98,162.479
October 2019*	64,565.351*	112,811.504

* Data for time period included extended downtime period for recent debarker project. Downtime data was not included.

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 on November 8, 2016.

To determine compliance District Staff requested three-hour block average operating temperatures for three different time periods. 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 performance testing (1424 degrees F). The data provided by WNR is summarized below:

WEEK OF	RTO#1 AVERAGE 3-HOUR BLOCK TEMPERATURE RANGE (degrees F)	RTO#2 AVERAGE 3-HOUR BLOCK TEMPERATURE RANGE (degrees F)	COMBINED RTO AVERAGE 3-HOUR BLOCK TEMPERATURE RANGE (degrees F)
Oct. 13, 2019	1550 - 1625	84-1619*	817 – 1622*
July 12, 2019	1548 - 1684	1537 - 1696	1543 - 1690
March 21, 2019	1306 – 1681*	80 -1684*	674-1683*

* Data reflects RTO put into bypass and/or cool down for maintenance work.

The RTO 3-hour block temperature reported at the time of the November 12, 2019, site visit was 1602.074 degrees.

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 the below referenced sources and is delivered as dry fuel to the wood burners in FGDRYERS:

- 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:

- EUFLAQ,
- EUFINISHING,

- EUMATTRIM,
- EUCLEANUP,
- EUDRYFUEL, and
- EUBLENDVENT

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) A review of staff logs for November 19-25, 2018, March 25-31, 2019, July 15 – 21, 2019 and October 7-13, 2019 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 select weeks in 2018 and 2019 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). Total emissions for 2018 were reported to be 4.575 tons. No emission limits are associated with this flexible group.

FGDIESEL-ENGINES – The FG 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 reports the purchase of a portable generator, exempt under Rule 285 (2)(g) has been hardwired in, and have indicated that they intend to add the EU at the next ROP renewal. This EU is referred to as the "Sullivan Portable Diesel".

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
(standby generator at gatehouse	Generac Emergency Install: 2017	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) oil sampling and analysis are being scheduled for completion in the near future.

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). The Facility reports using super low diesel fuel. Verification records provided by the Facility included a sales slip from Fick & Sons for No. 2 Diesel dated November 6, 2019. The Marathon SDS sheet identified the fuel as a 500 ppm max content or less than 0.05% 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)
- 100-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 manually on a log sheet by Facility Staff (SC VI.2). Operation data for the EUS in FGDIESEL-ENGINES provided by the facility indicated total hours of 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:

DIESEL ENGINE	HRS of EMERGENCY OPERATION 2018	HRS of NON-EMERGENCY OPERATION 2018	HRS of EMERGENCY OPERATION 2019*	HRS of NON-EMERGENCY OPERATION 2019*
EUDIESELHOTOIL	None	13	None	12
EUEMERGENCYGEN	None	9.8	None	11
EUFIREPUMP	None	37.31	11.9	21.57
Sullivan Portable Diesel	10.8	0.5	None	None

*2019 Hours reflect total to September 30, 2019.

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 done 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
EUHOTDIESELHOTOIL	Battery Replacement (2 yr)	5/11/2018
EUEMERGENCYGEN	Annual Maintenance	4/11/2018 3/17/2019
EUEMERGENCYGEN	Battery Replacement (3 yr)	7/10/2017
EUFIREPUMP	Annual Maintenance	10/25/2018 11/3/2019
EUFIREPUMP	Battery Replacement (2 yr)	7/21/2019

* 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 safe ty and good air pollution control practices to minimize emissions (SC III.10 & III.11)

SUMMARY

On November 12, 2019 , 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 annual RATA testing for VOC CERMS associated with the biofilter. (reported separately)
- Full Compliance Evaluation (FCE) for 2020 fiscal year.

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.

Information obtained during the referenced visits are incorporated into the compliance determination summarized in this report. The most recent scheduled site inspection report was dated February 22, 2018, 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 initial ROP was renewed on March 8, 2016, and was amended most recently on April 5, 2019. This most recent revision was made to incorporate Permit to Install (PTI) No. 535-94F.

At the time of the site inspection, Gaylord Field Office Staff met with Ms. Kathi Moss, Environmental Manager. Based on information obtained as part of the November site inspection, as well as supplemental information provided for purposes of compliance evaluation, the Facility was found to be operating in general compliance with their ROP.

NAME Shawn LeBlanc DATE 12/9/2019 SUPERVISOR SN