

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

B426069041

FACILITY: L'ANSE WARDEN ELECTRIC COMPANY LLC		SRN / ID: B4260
LOCATION: 157 S MAIN STREET, LANSE		DISTRICT: Marquette
CITY: LANSE		COUNTY: BARAGA
CONTACT: Chad Cichosz , Plant Manager		ACTIVITY DATE: 06/08/2023
STAFF: Joe Scanlan	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Inspection to determine compliance with MI-ROP-B4260-2021a		
RESOLVED COMPLAINTS:		

REGULATORY AUTHORITY

Under the Authority of Section 5526 of Part 55 of NREPA, the Department of Environment, Great Lakes, and Energy may upon the presentation of their card, and stating the authority and purpose of the investigation, enter and inspect any property at reasonable times for the purpose of investigating either an actual or suspected source of air pollution or ascertaining compliance or noncompliance with NREPA, Rules promulgated thereunder, and the federal Clean Air Act.

FACILITY DESCRIPTION

L'Anse Warden Electric Company, LLC (LWEC) is a 22 MW power plant located at 157 South Main Street, in the Village of L'Anse, Baraga County. LWEC is owned and operated by Greenwood Sustainable Infrastructure (GSI) and supplies electric power to DTE Energy under a power purchase agreement for renewable energy. The plant operates a single 324 MMBtu boiler (EUBOILER#1) which powers a steam turbine electrical generator.

LWEC is sited in a mixed-use area, with a city park and Lake Superior to the northwest; commercial and residential structures to the northeast; the Falls River, a childcare facility, school, and church to the southeast; to the southwest is the Falls River and beyond that an industrial zone where the Fuel Aggregation Facility (FAF) and CertainTeed Ceilings Corporation are located.

LWEC began operating in 1959 as a pulverized coal-fired steam/electrical generating unit and the boiler was started using an oil torch firing No. 2 fuel oil. Natural gas firing capabilities were added in the 1960's and in 1975 a multicyclone and a three-series stage electrostatic precipitator were added. The facility ceased operation in 1994.

The facility returned to energy production in 2007 when LWEC was issued PTI No. 168-07, to convert the coal/natural gas fired boiler to a biomass fired unit and to increase the boiler heat input to 324 million BTU per hour (MMBTU/hr) for steam production. The facility now operates under MI-ROP-B4260-2021a and is currently permitted to burn tire-derived fuel (TDF), engineered fuel pellets, creosote-treated railroad ties, wood chips, wood fines and bark, and natural gas. The facility installed a dry sorbent injection (DSI) system permitted in 2018 to control HCl emissions while burning the engineered fuel pellets.

PROCESS DESCRIPTION**Solid Fuel Management**

LWEC has a Fuel Procurement & Management Plan (FPMP) per the requirements of the ROP. The FPMP was most recently updated 9/02/2020. The boiler is designed and permitted to burn a variety of fuels, including raw wood chips, fines, and bark, tire derived fuel (TDF), cross-tie derived fuel (CDF), engineered fuel pellets, and natural gas. CDF is made of processed creosote-treated railroad ties (CTRT), including bridge timbers and cross braces, that has been ground on site at the Fuel Aggregation Facility (FAF) to a uniform consistency. Engineered fuel pellets are an aggregate of pre-consumer manufactured materials supplied by contract from an independent production facility. Engineered fuel pellets and TDF are delivered directly to LWEC from suppliers.

The FAF is owned and operated by the aggregation contractor, Koppers Recovery Resources (Koppers) and is located approximately a third of a mile west of the power plant. The FAF receives CTRT sourced from subdivisions in Canadian National's (CN) Midwest USA rail network; no CTRT is accepted from CN's Canadian subdivisions due to the use of Pentachlorophenol. CTRT is received and processed into CDF on site at the FAF. The FAF also receives wood chips, fines, and bark from various wood processing facilities. CDF and wood fuel is hauled by truck from the FAF to the LWEC biomass fuel storage building.

Cross-tie Derived Fuel (CDF)

Creosote-treated railroad ties (CTRT) are received at the FAF via rail; approximately 10 cars per day (70 cars per week) are received. The contractor unloads the whole railroad ties into an uncovered stock yard adjacent to US-41. The contractor processes the wood chips and CTRT, which are sorted, screened, and ground to a uniform size prior to delivering the material to LWEC. The contractor has an uncovered railroad tie chipper/grinder. CTRT is fed into the grinder and the ground material (CDF) is screened and transported via a front loader to either a waiting truck or a storage pile. The trucks are self-unloading and deliver the CDF to an enclosed biomass fuel storage building in the LWEC yard. CDF may also be received via truck and railroad car. The amount of CDF is monitored by weight at LWEC and recorded in a spreadsheet to track usage and to demonstrate compliance with the permit limitations.

Wood Chips

Wood chips include primarily hardwood species that are received or processed into uniform chips at the FAF. Some softwoods are included under the wood chip classification. Softwood and hardwood used as dimensional lumber that is free from bark and has not been painted or treated in any manner is included in this category but is not currently received. Wood chips also include residuals from the sawmill industry. Wood chips will be supplied to the aggregation contractor from several sources. Processed wood chips are ground to a uniform size of 1-2" and delivered by a self-unloading truck to an enclosed, on-site fuel storage building in the LWEC yard. The amount of wood chips burned are recorded by weight as required by the permit, however there is no material limit. Weights are recorded "as received".

Fines/Bark

Fines/bark are waste products from the lumber and paper mill industries. Fines/bark normally consist of sawdust fines collected during the production process, and tree bark removed during the production process. Fines/bark will be supplied to the aggregation contractor from several sources. The fines must be of a uniform consistency with no large slab waste included, the fines

may be from various species of tree. The bark must be of a uniform consistency with no large slab waste included. Large pieces of bark are unacceptable and must be processed by the aggregation contractor to achieve the proper size and consistency. The amount of fines/bark burned is recorded by weight as required by the permit. Weights are recorded "as received".

Tire-Derived Fuel (TDF)

TDF used as fuel by the power plant is supplied to the aggregation contractor from several sources and delivered directly to the power plant. The tires have already been processed and chipped. Shredded TDF only with an average size of 1-2 inches may be used and must only consist of small individual pieces. Whole tires or large pieces of rubber are unacceptable, and no foreign materials may be present within the TDF. TDF is delivered via truck and stored in an outdoor bunker adjacent to the fuel storage building. Four times per day, the LWEC adds tires to a hopper with a front loader to maintain a constant supply of TDF. The amount of TDF burned is recorded by weight, as required by the permit. Weights are recorded "as received".

Engineered Fuel Pellets

The engineered fuel pellets are manufactured from pre-consumer material and are designated as a non-waste fuel. Pellets will be delivered directly to the power plant. The fuel pellets contain a mixture of 60 to 85% paper and cardboard and 15 to 40% plastics including polyethylene, polypropylene, polyester, nylon, and trace amounts of other plastics. The pellets shall comply with the criteria established for non-hazardous secondary materials that are not solid wastes and used as fuel as outlined in 40 CFR Part 241. Fuel pellets shall be ½-inch to ¾-inch diameter and up to 3-inches in length and shall have less than 20% fines under ¼-inch in size. Engineered fuel pellets will be delivered to an outdoor bunker adjacent to the fuel storage building. The amount of engineered fuel pellets burned is recorded by weight as required by the permit. Weights are recorded "as received".

FUEL DELIVERY & ASH HANDLING

From the receiving hopper, wood chips and CDF are conveyed into the fuel storage building, referred to by the LWEC as the "reclaimers." Fuel is deposited into one of three bins in the reclaimer building. Metal drag bars (rakers) are constantly rotating across the top of each reclaimer pile to move fuel towards the boiler conveyer. Only wood chips and railroad ties are stored in the reclaimer building. The building can store enough fuel to run the power plant for a day to a day and a half. As the fuel leaves the reclaimer building, tires are added onto the conveyor belt prior to being directed into the boiler. The fuel is fed into the boiler through a screw conveyor.

After the fuel has been burned, the remaining ash is moved along a shaker grate, and it is deposited into a wet ash conveying system. The system is water sealed within the boiler. The ash is pulled through on a chain and drained slightly before being deposited into the wet ash storage building. The dust from the ESP is handled in a similar manner. The ash is sent to a landfill via truck.

EMISSION CONTROLS

Multicyclones

As a pre-control for PM prior to the ESP, the boiler exhaust stream passes through two multicyclones in a series.

Electrostatic Precipitator (ESP)

An ESP was installed to control particulate matter in the spring of 1975. The ESP was designed for a boiler operating at 250,000 pounds of steam an hour, while the LWEC achieves 210,000 pounds of steam an hour. The system is a Wheelabrator Frye unit. The ESP unit is made up of a series of wire plates that are rapped clean every four minutes. All material that is collected by the ESP unit is conveyed to the wet ash conveyor system.

Dry Sorbent Injection (DSI) System

Permitted in PTI# 128-18, a DSI system will be operated in conjunction with pellet usage for HCl emission control. The sorbent used during the trial burn is a sodium-based sorbent manufactured by Trona. The temporary DSI system used during the trial pellet burn period in 2018 was designed by Nol-Tec Systems and consists of a supersack feeder, gravimetric weigh feeder, rotary air lock, blower, piping, an 8-way spiltter, and eight injection lances that penetrate the ductwork at a point between the high temperature and low temperature air heaters, just past the multi-cyclone and before the ESP. The DSI flow rate is adjusted using a gravimetric weigh feeder that is programmed to provide a specific reagent flow rate for a specific pellet burn rate.

CONTINUOUS OPACITY MONITOR (COM)

LWEC operates a COM, a Monitoring Solutions model D-R 290 opacity monitoring system on the exit stack, after the ESP. The D-R 290 utilizes an optical transmitter/receiver. The COM is monitored in real time and records 1 and 6-minute averages, 1-hour average, and 24-hour rolling average opacity emissions.

LWEC conducts soot blowing three times a day for 25-30 minutes. Soot blowing is done to clean the boiler system of any material build-up. The plant attempts to soot blow on a set schedule: 8:00am, 2:00pm, and 11:00 pm daily. The ESP is operated during soot blowing.

CONTINUOUS EMISSIONS MONITOR (CEM)

LWEC operates a California Analytical Instruments (CAI) Model 601 gas analyzer CEM, located on the exit stack after the ESP. The CEM monitors CO and O2 in real time, and records 1-minute and 1-hour block averages. The CEM unit undergoes a performance audit (RATA) once every quarter. The most recent RATA was completed June 20, 2023, with acceptable results.

EMISSIONS REPORTING

LWEC is required to report its annual emissions through the Michigan Air Emissions Reporting System (MAERS). The following table lists stationary source emission information as reported to MAERS for the year 2022.

POLLUTANT	QUANTITY (Ton)
Ammonia	1.76

CO	62.74
Lead	0.001
NOx	161.66
PM10, FLTRBLE	14.75
PM10, Primary	1.01
PM2.5, FLTRBLE	13.05
PM2.5, Primary	0.89
SO2	36.36
VOC	0.38

COMPLIANCE HISTORY

There have been no violations at the facility since the previous inspection in 2021.

REGULATORY ANALYSIS

LWEC is a major stationary source as defined by the federal operating permit program (40 CFR Part 70) and the federal new source review (NSR) program (40 CFR Part 52). In addition, LWEC is also subject to the Michigan Title V Renewable Operating Permit (ROP) regulations, Permit-to-Install/New Source Review (PTI/NSR) regulations, and Prevention of Significant Deterioration (PSD) Michigan Air Pollution Control Rules. LWEC currently operates under Renewable Operating Permit (ROP) No. MI-ROP-B4260-2021a. LWEC is also subject to NSPS and MACT federal regulations.

INSPECTION

AQD staff (Joe Scanlan) arrived at the facility on June 21, 2023, for scheduled emissions testing and a compliance inspection. My initial contact at the facility upon arrival was John Polkky. After a brief discussion with Polkky and EGLE TPU staff Lindsay Wells to discuss the status of the ongoing emissions testing, I went inside to the offices and met with boiler operator Chad Cichosz. We then proceeded to the control room to observe operating conditions of the boiler, fuel feed rates, and control equipment. The plant was burning TDF, CDF, and wood as fuel during the test and inspection; the facility has not burned engineered fuel pellets since March 2022 due to supply issues. The boiler, multicyclone, and ESP were operating in a satisfactory manner.

PARAMETER	RATE
Boiler steam output	202 klbs/hr @ 865 PSI drum pressure
Turbine/generator output	17.52 MW @ 3745 RPM
Fuel reclaimer speed	Reclaimer #1 @ 13%, #2 @ 14%, #3 @ 13%
TDF bin output	17%
ESP outlet pressure	12" WC
CO lbs/MMBTU	0.130 (24 hr avg)
CO ppm	108.2 ppm
Opacity	1.4% (6-min avg) and 1.3% (instantaneous)

Michigan Renewable Operating Permit (ROP) No. MI-ROP-B4260-2021a and PTI No. 128-18a:

SOURCE-WIDE CONDITIONS

Emission Limits

SC I.1-2, V.1 HCl and other HAPs emission data, except metals from the engineered fuel pellets, are based on a fuel blend. Total monthly heat input of each fuel is used to calculate all HAP emissions. The company provided an unlocked spreadsheet with calculations for the monthly and 12-month rolling source-wide HAP emissions.

Because HCl, Pb, Arsenic, Manganese, Nickel are calculated using stack test emission factors to determine compliance with the individual and aggregate HAP limits, every five years the facility is required to verify these emissions from EUBOILER#1. The most recent testing for HCl, HAPs, and VOCs was completed in May and June of 2021. The facility does not burn any single fuel by itself.

During the May 2021 HCl testing, fuel blend during testing consisted of wood (69%), CDF (29.2%), and TDF (2.7%). Per EUBOILER#1 SC III.3, engineered fuel pellets were not used while firing TDF, and per EUBOILER#1 SC IV.2 the DSI system was not utilized during testing. Fuel samples were collected for moisture and chlorine analysis during the test for each run and collected from a point where each fuel drops onto the conveyor belt feeding the boiler (40 CFR 63 Subpart 7521(c & d)). Emissions testing and fuel sampling results can be found in the test report on file titled BOILER NUMBER ONE HYDROGEN CHLORIDE EMISSIONS TEST REPORT dated May 26, 2001..

During the June 2021 testing, emission rates of metals (As, Pb, Mn, Ni), hydrogen chloride (HCl), cresol isomers and volatile organic compounds (VOC) were determined while the boiler was

operating on a fuel blend of wood (53.9%), CDF (23.1%), and engineered fuel pellets (23%). Per EUBOILER#1 SC III.3, TDF was not being burned while burning engineered fuel pellets, and per EUBOILER#1 SC IV.2 the DSI system was operating while burning the engineered fuel pellets. Consistent with the HCl testing in May of 2021, fuel samples were collected for moisture and chlorine analysis during the test for each run and collected from a point where each fuel drops onto the conveyor belt feeding the boiler (40 CFR 63 Subpart 7521(c & d)). Emissions testing and fuel sampling results can be found in the test report on file titled BOILER NUMBER ONE RENEWABLE OPERATING PERMIT COMPLIANCE TEST PROGRAM EMISSIONS TEST REPORT, dated June 8 & 9, 2021.

During permitting, non-stack tested HAPs were calculated using emission factors from WEBFIRE/MAERS or from emission tests of other wood-fired boilers, except for metals in engineered fuel pellets which are based on analytical information. Many of the HAPs are also identified as VOCs, and stack testing from EUBOILER#1 indicates that VOC emissions from the emission unit remain consistently low. VOC emissions are less than 1 lb/hr, meaning volatile organic HAPs are much less than 1 lb/hr. Where emission factors are higher than the VOC stack test emissions, the facility uses stack test emission data for VOC calculations.

It should be noted that the facility has not burned engineered fuel pellets since March of 2022.

Pollutant	Limit	Time Period/Operating Scenario	12-Month Rolling as of August 2023
Each Individual HAP	9.5 tpy	12-month rolling time period as determined at the end of each calendar month	4.92 tpy
Aggregate HAPs	Less than 20.0 tpy	12-month rolling time period as determined at the end of each calendar month	10.54 tpy

Summary of Compliance Test Results for HAPs					
Emission Unit	Pollutant	Units	Test Results	PTI/ROP Emission Limits	Test Date
Boiler No. 1 EUBOILER#1	Arsenic	lb/hr	1.23E-01	--	6/21
	Manganese	lb/hr	1.60E-02	--	6/21

	Nickel	lb/hr	5.94E-04	--	6/21
	Creosol Isomers	lb/hr	<3.35E-03	--	6/21
	HCl	lb/hr	0.48 & 1.11	2.17	5/21 & 6/21
	Lead	lb/hr	9.90E-03	0.02	6/21
	VOC	lb/hr	0.05	9.1	6/21
	VOC	(ppmvd@7%O2)	0.30	50	6/23

SC III.1 The facility has had a fugitive emissions control plan (FECP) implemented and maintained since September 2020.

SC III.2-3 The facility is in compliance with test dates and stack test plan submissions deadlines.

Testing/Sampling

SC V.2 Emissions testing showing compliance for HAPs, VOCs, and HCl was last completed June of 2021 and must be conducted again no later than 6/09/2024 (every 3 years).

Monitoring/Recordkeeping

SC VI.1-3 Required calculations and records are readily available and were provided upon request by the facility and the fuel supply contractor Koppers (records attached).

12-month rolling total data for fuel use was provided for August 2022, through August 2023. For this same time period, HAP emissions data on a 12-month rolling basis for both individual and aggregate HAPs were provided by the facility to show compliance with the synthetic minor emission limits in SC1.1 and 1.2, including a limit of 9.5 tpy of any individual HAP and 20 tpy for all HAPs combined. Emission factors used for most HAPs calculations are based on emissions information collected during the June 2021 stack test. See discussion under Emission Limits above.

EUBOILER#1

EUBOILER#1 is a boiler with capability of burning tire derived fuel (TDF), creosote treated railroad ties (CTRT), wood chips, wood fines and bark, engineered fuel pellets and natural gas. The boiler has a maximum heat input rating of 324 million BTU per hour and will produce steam and electricity. The existing electrical generator is rated at 22.0 megawatts. The boiler is controlled by a multicyclone followed by a three (series) section electrostatic precipitator. While burning engineered fuel pellets, dry sorbent injection (DSI) will be utilized.

Emission Limits

EUBOILER#1 contains emission limits for Visible Emissions, PM10 & 2.5, SO2, NOx, CO, VOC, Lead, and HCl. Compliance with these emission limits is demonstrated through performance testing,

continuous emission monitoring (CEMS), continuous opacity monitoring system (COMS), recordkeeping, and reporting.

As shown above, emissions testing showing compliance for lead, VOCs, and HCl was last completed 6/08 and 6/09 of 2021 and must be conducted again no later than 6/09/2024 (every 3 years). Emissions testing showing compliance for PM, NO_x, and SO₂ was last completed 6/21/2023 and must be conducted again no later than 6/21/2028.

Summary of Recent Performance Tests Results					
Emission Unit	Pollutant	Units	Test Results	PTI/ROP Emission Limits	Test Date
Boiler No. 1 EUBOILER#1	PM	lb/hr	0.64	19.2 lb/hr	6/21/23
		lb/MMBtu	0.002	0.06 lb/MMBtu	
	PM10	lb/hr	3.2	15.4 lb/hr	6/21/23
	NO _x	lb/hr	60.4	145 lb/hr	6/21/23
	SO ₂	lb/hr	69.5	290 lb/hr	6/21/23
	HCl	lb/hr	1.11	2.17 lb/hr	6/09/21
	Lead	lb/hr	9.90E-03	0.02 lb/hr	6/09/21
VOC	lb/hr	0.05	9.1 lb/hr	6/09/21	
	ppmvd@7%O ₂	0.30	50 ppmvd@7%O ₂	6/09/21	

Material Limits

EUBOILER#1 has material limits for Natural Gas, TDF, Creosote-treated railroad ties (CTRT), Fines & Bark, Engineered Fuel Pellets, and Chlorine content for railroad ties.

In 2022 LWEC reported the following annual throughput for fuels and DSI (SC II.1-9):

FUEL	THROUGHPUT	LIMIT
Natural Gas	1231 MMCF	Less than 25% of annual heat input (1,046 MMBTU)

		of 2,084,658 MMBTU = <1%)
Tire Derived Fuel (TDF)	5,072 tons	24,000 tons per year
Creosote-treated railroad ties (CTRT)	38,471 tons	72,078 tons per year
Wood fines & bark	0 tons	44,280 tons per year
Wood chips	77,341 tons	NA
Engineered fuel pellets	3,719 tons	50,000 tons per year
Dry Sorbent Injection	91.57 tons	NA

For the months of June and July of 2023, daily throughput for TDF, CTRT, wood fines & bark, and engineered fuel pellets were provided upon request to verify compliance with daily limits:

FUEL	DAILY LIMIT	COMPLIANCE
Tire Derived Fuel (TDF)	70.0 tons	Yes – throughput never exceeded 29 tons in the data range
Creosote-treated railroad ties (CTRT)	408.0 tons	Yes – throughput never exceeded 219 tons in the data range
Wood fines & bark	129.6 tons	Yes – zero throughput
Engineered fuel pellets	144 tons	Yes – zero throughput

SC II.10 & SC III.5-7 Chlorine content for railroad ties is addressed in the FPMP under 2.3.3 Quality Control Procedures. Railroad ties are screened for elevated levels of chlorine upon arrival to the FAF and samples are taken weekly to be composited into a monthly sample for laboratory analysis. The FAF was inspected 8/15/2023. Sampling and sample analyses records from 1/01/2016 to present were provided for CDF, TDF, and wood chips. It was noted that the emission factors for lead in the spreadsheet provided were based on 2016 stack test results—the

facility should be using the stack test results from 2021 for their emission factors (see attached records).

No ties treated with pentachlorophenol are accepted at the FAF. These ties are found in the Canadian subdivisions of CN's North American rail network; Canadian shipments are not accepted at the FAF and will be rejected upon delivery or disposed of at a local landfill. Ties treated with pentachlorophenol are easily identifiable by their green color but are also tested with a handheld XRF unit. XRF fuel sampling results were provided from January 2016 through June 2023. Landfill waste records from Waste Management K&W Landfill (Ontonagon County) showing disposal of rejected fuel materials were provided for June, July, and August of 2023.

Process/Operational Restrictions

SC III.1 Based on BTU values for each fuel, supplied by the company, the total heat input for 2022 was 1,515,153 MMBTU, below the limit of 2,656,800 in SC III.1.

SC III.2 The facility only burns the fuels described in SC II.1-9.

SC III.3 TDF is not burned in conjunction with engineered fuel pellets. The facility has not burned engineered fuel pellets since March of 2022 due to supply issues.

SC III.4 & 6 The facility has an approved Preventive Maintenance and Malfunction Abatement Plan (PMMAP) which was updated in September 2020. An addendum to the PM/MAP addresses emissions minimization during startup and shutdown.

SC III.5 The facility has an approved Fuel Procurement and Monitoring Plan (FPMP) which was updated in September 2020. The FPMP is adequate and specifies the minimum required protocol and procedures per SC III.5, however the emission factors in Section 6 need updated to reflect data from the most recent stack test.

SC III.7 No ties treated with pentachlorophenol are accepted at the FAF. These ties are found in the Canadian subdivisions of CN's North American rail network; Canadian shipments are not accepted at the FAF and will be rejected upon delivery or disposed of at a local landfill. Ties treated with pentachlorophenol are easily identifiable by their green color but are also tested with a handheld XRF unit. XRF sampling results and landfill waste records were provided through 2016.

Design/Equipment Parameters

SC IV.1 At the time of the inspection, the boiler, multicyclone, and ESP appeared to be operating properly.

SC IV.2 & 3 The DSI system is installed and has operated in a satisfactory manner in the past per SC IV.2 When operating, the DSI rate of injection is recorded and monitored via a loss & weight system per SC IV.3. The DSI system has not been used since the facility stopped burning engineered pellets in March of 2022 due to supply issues.

Testing/Sampling

SC V.1 The facility completed satisfactory testing for HCl, Lead, HAP Metals and VOC emissions as required in SC V.1 on 6/08 and 6/09/2021. Stack emissions for PM, SO₂, and NO_x levels were most recently tested 6/21/2023 (last tested 7/06/2016; next test deadline 6/21/2028).

SC V.3-4 Emissions testing for HCl must be completed by 6/19/2021; testing was satisfactorily completed on 6/09/21. HCl testing must be completed every 3 years from the date of the last test; the next HCl emissions testing must be completed by 6/09/2024.

SC V.5 Sampling and analysis of each solid fuel to demonstrate compliance with SO₂ and HCl emission limits. Monthly and daily sampling results for the wood chips, creosote-treated railroad ties, and TDF have been conducted and records were provided from 1/01/2016 to present (records attached). Sampling results reviewed showed compliance with this condition.

Monitoring/Recordkeeping

SC VI.1, 3, 4, 5, 8, 9 The company monitors and records the parameters required and has completed all required calculations and made them available upon request (see attached).

SC VI.2 an approved CMS is in place and was last updated 10/29/2020. The CMS addresses the DSI system used to control HCl emissions. The DSI system has not been in use since March of 2022.

SC VI.6-7 CEMS and COMs are calibrated, maintained, and operated correctly. CEMS RATA was completed satisfactorily on 6/20/2023.

SC VI.8 The DSI system has not been in use since March of 2022.

SC VI.10 COMS data is provided in the Excess Emissions quarterly reports. No major deviations reported that weren't startup/shutdown related.

Reporting

SC VII.1-3 A review of the 1st and 2nd semiannual Excess Emission Reports for 2023 show 18 minutes of excess opacity emissions due to Process Problems, approximately 0.015% of total operating time during the 1st and 2nd quarter of 2023. No excess CO emissions were reported during the 1st or 2nd quarter of 2023.

SC VII.4 All performance test reports have been submitted to TPU and the Marquette District office in an acceptable format.

SC VII.5 Review of the most recent quarterly Excursion Reporting show no CAM excursions or exceedances were reported for opacity. There was 0 monitor downtime, no excursions exceeding 10% opacity, and no downtime or excursions for DSI throughput reported for EUBOILER#1.

Stack/Vent Restrictions

SC VIII.1 Stack height was confirmed during the inspection using a Range Finder with a 3-point measurement, from grade to the top of the stack measured 145'. This is within the margin of error for the range finder unit. Stack diameter was not confirmed; however, no modifications have been made.

EUSORBENT

Section I Emission Limits

SC I.1 Visible Emissions are limited to less than 10% opacity. The facility has not operated the DSI system since March of 2022.

Section II Material Limits

NA

Section III Process/Operational Restrictions

SC III.1 An approved PM/MAP is in place and was last updated 9/2020.

Section IV Design/Equipment Parameters

SC IV.1 The bin vent for the DSI system is installed, maintained, and operated correctly.

Section V Testing/Sampling

NA

Section VI Monitoring/Recordkeeping

SC VI.1 Records associated with the PM/MAP are on file and were made available to staff when requested (see attached)

SC VI.2 The facility maintains non-certified VE observances daily while operating the DSI system. No excursions have been reported for 2022 or 2023.

Section VII Reporting

All annual and semiannual reporting is being submitted and satisfactorily.

FGBOILERMACT-6J

No special conditions associated with emission limits; material limits; design/equipment parameters; testing/sampling; nor State of Michigan EGLE reporting are required for this emission unit.

On March 9, 2023, AQD district staff received notification that LWEC had submitted to EPA Compliance and Emissions Data Reporting Interface (CEDRI) a report notifying of their compliance status with the NESHAP for Area Source Boilers, Subpart JJJJJ (Boiler MACT), in compliance with Special Conditions in Sections III, VI, and IX. LWEC most recently completed a boiler tune-up during a shutdown in June 2023, per requirements of the Boiler MACT.

FGFUEL (EUFUEL & EUFAF)

Fuel handling, processing and storage equipment, road(s), and storage pile(s) located at the L'Anse Warden Electric Company, LLC (LWEC) Generating Station and the Fuel Aggregation Facility (FAF). The solid fuels handled include tire derived fuel (TDF), creosote treated railroad ties (CTRT) (whole and processed), wood chips, engineered fuel pellets, and wood fines and bark. TDF is delivered directly to the LWEC. CTRT (whole and processed), wood chips, wood fines and bark are

delivered to the FAF for temporary storage prior to transfer to the facility. Whole CTRT is processed into CDF at the FAF using a horizontal grinder that controls fugitive emissions using a water spray bar.

Emission Limit

SC I.1 AQD staff inspected the FAF on 8/15/2023 accompanied by Keweenaw Bay Indian Community (KBIC) Air Quality Specialist, Teal Sackett, and a KBIC Air Quality Technician. Our contact on site was Mindy Raymond, Plant Manager. Prior to the inspection, staff observed the FAF and monitored visible emissions from the wood processing and handling. No fugitive emissions were observed from shredding processes or material handling with the loader during the observation, however there was excessive fugitive dust from haul traffic through the fuel yard at the FAF. The fugitive dust from the haul traffic was intermittent and not of a duration (6-minute average) that would constitute a violation of SC I.1, however the fugitive emissions were brought to the attention of the Plant Manager. A water truck was sent out as soon as a driver was available. Water trucks are used to control road dust and are typically dispatched twice a day in the yard, or as necessary.

The Fuel Storage Building for CDF at LWECC is fully enclosed, and the unloading area was well-kept, and no fugitive emissions were noted. During the inspection a load of ground CDF was delivered to the plant from the FAF by a truck with a self-unloading semi-trailer. No fugitive emissions were observed during the unloading.

TDF is stored at LWECC in an uncovered pile outside the unloading area and appeared well-maintained; the material is heavy enough that it is not susceptible to being blown around. TDF was being burned at the time of inspection and staff observed a loader dump a load of TDF into the receiving hopper without any sign of fugitive emissions.

The facility has not burned engineered fuel pellets since March of 2022 due to supply issues, so no pellets were being stored at the time of inspection (see SC III.3 of EUBOILER#1). The engineered fuel pellets are typically stored outside in an open top 3-sided bunker made of concrete barriers. Ideally a fully enclosed bunker should be constructed.

SC III.1 A Preventative Maintenance and Malfunction Abatement Plan (PM/MAP) has been implemented and maintained since September 2020. The facility maintains electronic and hard copies of maintenance activities using the Advanced Maintenance Management System (AMMS) software.

Monitoring/Recordkeeping


SC VI.1-3 All calculations and records are kept on file and are available upon request.

Fuel delivery quantities are accurately recorded and monthly/daily sampling results for the wood chips, creosote-treated railroad ties, and TDF have been conducted. Records were provided from 1/01/2016 to present (records attached).

VE observations are conducted daily; no Method 9 observations or corrective actions have been necessary or are on file, as any visible emission sources are typically identified immediately and corrected immediately.

COMPLIANCE

Based on the inspection performed and records reviewed, LWEC appears to follow MI-ROP-B4260 -2021a.

NAME 

DATE 10-16-2023

SUPERVISOR 