Compliance Assurance Monitoring Plan

Louisiana-Pacific Corporation
Sagola, Michigan

Updated

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List of Acronyms

CAM	Compliance Assurance Monitoring
CD	Control Device
CFR	Code of Federal Regulations
CMS	Continuous Monitoring System
CO	Carbon Monoxide
DRE	Destruction efficiency
EFB	Electrified Filtered Bed
EU	Emission Unit
FR	Federal Register
HAP	Hazardous Air Pollutant
Inches w. g.	Inches of Water, Gauge Pressure
LP	Louisiana-Pacific Corporation
MACT	Maximum Achievable Control Technology
MPAP	Malfunction, Prevention and Abatement Plan
NSPS	New Source Performance Standards
PM	Particulate Matter
PPH	Pounds per Hour
PS	Performance Specification
PSEU	Pollutant-Specific Emission Unit
QA/QC	Quality Assurance/Quality Control
QIP	Quality Improvement Plan
RCO	Regenerative Catalytic Oxidizer
RTO	Regenerative Thermal Oxidizer
SCFM	Standard Cubic Feet per Minute
SOP	Standard Operating Procedure
SV	Stack / Vent
TFP	Tons of Finished Product
TPY	Tons per Year
TSP	Total Suspended Particulate
USEPA	United States Environmental Protection Agency
VE	Visible Emissions
VOC	Volatile Organic Compound
WESP	Wet Electrostatic Precipitator

Section 1
Introduction

This Compliance Assurance Monitoring (CAM) Plan addresses the requirements of 40 CFR Part 64 and satisfies the CAM requirements for the Louisiana–Pacific Corporation (LP) facility located in Sagola, Michigan. The monitoring, documenting and maintenance information found in this plan was obtained from the facilities Standard Operating Procedures (SOPs) for the emission control devices. This plan was created to demonstrate the facility's SOPs provide all of the information required in the CAM plans. The facility's SOPs contain the most up to date information; the CAM plans may not always be updated.

LP manufactures oriented strand board (OSB) in Sagola, Michigan, under Permit Number MI-ROP-N1315-2013. Equipment within the facility is grouped by process operations into emission units for permitting purposes. The emission units identified by the existing permit for LP include:

- EUFORMING – A forming line system including the blenders, formers, flying cutoff saw, and forming line.
- FGSANDER1 – A baghouse controlling particulate emissions from EUSAWLINE, EUTGPATTERN, and EUSANDER
- FGSANDER2 – A baghouse controlling particulate emissions from EUTGPATTERN and EUSANDER
- FGMAIN1 – A baghouse controlling particulate emissions from EUSAWLINE, EUTGPATTERN, and EUSANDER
- FGMAIN3 – A baghouse controlling particulate emissions from EUSAWLINE, EUFORMING, EUFINISHING1, EUFINISHING2, EUSANDER, EUTGPATTERN, EUHAMMERMILL1, and EUFUELBIN
- FGFACILIY – All process equipment at the facility including equipment covered by other permits, grand-fathered equipment and exempt equipment.

Section 2
CAM Requirement Applicability

Per 40 CFR 64.2(a), the CAM requirement applies to each pollutant-specific emission unit (PSEU) at a major source that is required to obtain a part 70 permit if the unit satisfies all of the following criteria:

1. The unit is subject to an emissions limitation or standard for the applicable regulated air pollutant.
2. The unit uses a control device to achieve compliance with any such emission limitation or standard; and
3. The unit has "potential pre-control device emissions" of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.
4. The unit is not exempted by the rule, or has emission limitations or standards not exempted by the rule.

LP is a major source and is required to obtain a Part 70 permit. Permit number MI-ROP-N1315-2013, issued by the Michigan Department of Environmental Quality, identifies emission units based on process groupings. For example, Unit/Group ID EUFORMING consists of several individual emissions units that are grouped together based on being part of the forming line. In many cases, there are several process units in an individual grouping that are controlled with one control device. In these cases, pre-control potential emissions are based on the entire collection of process units controlled by a common control device. This approach is conservative and consistent with the emission limits specified in permit number MI-ROP-N1315-2013.

FGFACILITY do not use control devices to meet an emission limitation and are therefore exempt from CAM requirements.

The remaining emission units identified in the operating permit were evaluated to determine if they have maximum potential pre-control device emissions greater than the major source threshold for at least one pollutant. In general, the potential uncontrolled emissions were conservatively estimated by dividing the ROP emission limits by one minus the typical control device efficiency. The results of the analysis were clear as the potential pre-control emissions were well above the major source threshold or well below the major sources threshold for units in question. Table 1 contains the results of this evaluation.

FGLAIDIG (including EUSAWLINE, EUFORMING, EUSANDER, EUTGPATTERN, EUHAMMERMILL1 and EUFUELBIN) have potential pre-control device emissions that are well below the major source threshold and are therefore exempt from CAM requirements.

As a result of the CAM applicability review, the emission units that require CAM plans include the following:

- EUFORMING: CAM plan required for PM and PM-10 emission limits utilizing a baghouse as the control device.
- FGSANDER1: CAM plan required for PM and PM-10 emission limits utilizing a baghouse as the control device.
- FGSANDER2: CAM plan required for PM and PM-10 emission limits utilizing a baghouse as the control device.
- FGMAIN1: CAM plan required for PM and PM-10 emission limits utilizing a baghouse as the control device.
- FGMAIN3: CAM plan required for PM and PM-10 emission limits utilizing a baghouse as the control device.

Section 3
CAM Plans by Type of Emission Control Device

3.1 Wet Electrostatic Precipitators for Particulate Control

FGDRYERS utilizes a wet electrostatic precipitator (WESP) to the control particulate emissions as required under the permit. Transformer voltage, quench outlet temperature, and quench inlet temperature will be used as the compliance indicators. The details of the CAM Plan for this PSEU are in Section 6.

3.2 Baghouse for Particulate Control

EUFORMING, FGSANDER1, FGSANDER2, FGMAIN1, and FGMAIN3 utilize baghouses to control particulate matter emissions as required under the permit. Baghouse differential pressure and visible emission observations for the baghouses will be used as the compliance indicators. The details of the CAM Plans for these PSEUs are included in Sections 8 through 12.

Table 1
Potential Emissions Summary

Emission Unit or Flexible Group*	Control	Pollutant	Permit Limits	Estimated Control Efficiency	Estimated Pre-Control Emission (Ton/Year)**	Potential Major Source? (Y or N)
FGDRYERS	Wet Electrostatic Precipitator	PM	10.0 pph	99%	4380.0	**Y**
		PM-10	10.0 pph	99%	4380.0	**Y**
EUFORMING	Baghouse	PM	0.9 pph	99%	394.2	**Y**
		PM-10	0.9 pph	99%	394.2	**Y**
FGSANDER1	Baghouse	PM	0.68 pph	99%	297.8	**Y**
		PM-10	0.68 pph	99%	297.8	**Y**
FGSANDER2	Baghouse	PM	1.24 pph	99%	543.1	**Y**
		PM-10	1.24 pph	99%	543.1	**Y**
FGMAIN1	Baghouse	PM	1.6 pph	99%	700.8	**Y**
		PM-10	1.6 pph	99%	700.8	**Y**
FGMAIN3	Baghouse	PM	1.1 pph	99%	481.8	**Y**
		PM-10	1.1 pph	99%	481.8	**Y**

* Only process unit/pollutant combinations with applicable emission limits and control devices listed.

** Assume units operate 8,760 hours per year.

Section 4
CAM Plan for FGDRYERS, Wet Electrostatic Precipitator

4.1 Background

4.1.1 Emission Unit

Description: Three single pass wood flake dryers, each with a process cyclone.

Identification: FGDRYERS

Facility: Louisiana-Pacific Corporation
N8504 Highway M-95
Sagola, Michigan

4.1.2 Applicable Regulation, Emission Limit, Monitoring Requirements

Permit No: MI-ROP-N1315-2013

Emission Limits

Particulate Matter:	PM: 0.007 gr/dscf, R336.1331 PM: 10.0 pph, R336.1301 PM-10: 0.007 gr/dscf, 40 CFR 52.21(c), (d) and (j) PM-10: 10.0 pph, 40 CFR 52.21(c), (d) and (j)
Opacity:	5%, R336.1225, R336.1702(a), R336.1901, 40 CFR 52.21(c), (d) and (j)
Monitoring Requirements:	Transformer voltage, Quench outlet temperature, Quench inlet temperature

4.1.3 Control Technology

4.2 Monitoring Approach

	Transformer Voltage	Quench Inlet Temperature	Quench Outlet Temperature
A. Indicator	Record the transformer voltage for both transformers on each WESP twice per shift. [SOP 410]	Quench inlet temperature will be recorded once per 12-hour shift. [SOP 410]	Quench outlet temperature will be recorded once per 12-hour shift. [SOP 410]
B. Indicator Range	Target voltage range is 40-70 kV. It is normal for the voltage to drop below 40kV during flushes, startup, and troubleshooting, but for no longer than one hour while the corresponding dryer is operational. The dryer is considered operational when the wet bin live bottom is feeding flake to the dryer. The operator must shut down the corresponding wet bin live bottom if the upset condition is not corrected. Excursions trigger the Shift Supervisor to be notified and a reportable events form must be filled out and turned into the plant Environmental Manager. [SOP 410]	Record the inlet temperature of the quench duct. The inlet temperature range is 200-310 ^{o}F. Excursions trigger the Shift Supervisor to be notified and a reportable events form must be filled out and turned into the plant Environmental Manager. [SOP 410]	Record the outlet temperature of the quench duct. The outlet temperature range is 130-190 ^{o}F. Excursions trigger the Shift Supervisor to be notified and a reportable events form must be filled out and turned into the plant Environmental Manager. [SOP 410]
C. QIP Threshold	Optional, not included at this time.	Optional, not included at this time.	Optional, not included at this time.

4.3 Performance Criteria

	Transformer Voltage	Quench Inlet Temperature	Quench Outlet Temperature
A. Data Representativeness	The voltage is recorded from the digital readout on the wheel chart recorder. [SOP 410]	Measurements are made through digital read-outs located in the Dryer Control Room. [SOP 410]	Measurements are made through digital read-outs located in the Dryer Control Room. [SOP 410]
B. Verification of Operational Status	NA	NA	NA
C. QA/QC Practices and Criteria	The transformer oil is tested for dielectric strength yearly. [SOP 426]	The thermocouple gauges are calibrated yearly. [SOP 426]	The thermocouple gauges are calibrated yearly. [SOP 426]

	Transformer Voltage	Quench Inlet Temperature	Quench Outlet Temperature
D. Monitoring Frequency	Transformer voltage is monitored continuously.	Quench inlet temperature is monitored continuously.	Quench outlet temperature is monitored continuously.
E. Data Collection Procedure	Transformer voltage is manually recorded twice per shift for both transformers. [SOP 410] Monitoring data is also recorded in Active Factory.	Quench inlet temperature is manually recorded twice per shift. [SOP 410] Monitoring data is also recorded in Active Factory.	Quench outlet temperature is manually recorded twice per shift. [SOP 410] Monitoring data is also recorded in Active Factory.
Averaging Period	NA	NA	NA

4.4 Justification

4.4.1 Rational for Selection of Performance Indicators

A WESP is designed to operate at a relatively constant voltage. A significant decrease in voltage is indicative of a change in operating conditions that could lead to an increase in emissions. Low voltage can indicate electrical shorts or poor contacts that require maintenance or repair of electrical components. However, the regular flush cycles the WESPs undergo to remove the particulate from the collection surfaces may also cause drops in voltage of short duration. These brief voltage drops are part of the normal operation of the WESP.

Monitoring gas stream temperature can provide useful information about the performance of a WESP. Quench inlet temperature primarily is an indication that the inlet gas stream is not so hot that a fire may develop in the duct work or WESP. In addition, the gas stream needs to be cooled in order for some of the pollutants to condense. The WESP outlet temperature indicates that the gas stream has been sufficiently saturated to provide for efficient particle removal and that the water sprays prior to the WESP inlet is functioning. High outlet temperatures could be the result of plugged nozzles, malfunctioning pumps, or broken or plugged piping.

4.4.2 Rational for Selection of Indicator Ranges

The indicator level for the WESP voltage was selected based upon the level maintained during normal operation. Typical operating voltages range from 40 to 70 kV. During a malfunction (such as an electrical short), the WESP voltage levels are appreciably lower than normal operational levels. The voltage also drops for a short period during the

normal flush cycles that are performed every few hours to clean the tube surface where particulate is collected.

The indicator levels for the quench inlet and outlet gas temperatures also were selected based on levels maintained during normal operation. High temperatures may indicate a fire in the dryer or ductwork or a lack of water flow to the WESP. Temperature action levels were selected that are slightly higher than normal operating temperatures. If the water flow to the WESP is lost, the WESP outlet temperature will begin to approach the inlet temperature, which is much higher than 190°F.

4.4.3 Performance Test

Performance testing is not required in the ROP for this unit.

Section 5
CAM Plan for EUFORMING, Baghouse

5.1 Background

5.1.1 Emission Unit

Description: A forming line system including the blenders, formers, flying cutoff saw, and forming line.

Identification: EUFORMING

Facility: Louisiana-Pacific Corporation
N8504 Highway M-95
Sagola, Michigan

5.1.2 Applicable Regulation, Emission Limit, Monitoring Requirements

Permit No: MI-ROP-N1315-2013

Emission Limits

Particulate Matter:	PM: 0.01 lb/1000 pounds exhaust gas calculated on a dry gas basis, R336.1331 PM: 0.9 pph, R336.1301 PM-10: 0.01 lb/1000 pounds exhaust gas calculated on a dry gas basis, 40 CFR 52.21(c), (d) and (j) PM-10: 0.9 pph, 40 CFR 52.21(c), (d) and (j)
Opacity:	5%, R336.1301, R336.1331
Monitoring Requirements:	Visible emissions, Differential pressure

5.1.3 Control Technology

5.2

5.3 Monitoring Approach

	Visible Emissions	Differential Pressure
A. Indicator	Visible emission (VE) will be monitored daily using a 1 minute VE or no-VE check. [SOP 404]	Differential pressure will be recorded once per 12-hour shift. [SOP 411]
B. Indicator Range	An excursion is defied as the presence of visible emissions. Excursions trigger the equipment to be shutdown, an inspection, corrective action, and a reporting requirement. [SOP 404]	An excursion is defined as a reading outside of the operating range of 0.1 to 5.0 inch H_2O. A recordable events form is to be completed and the shift supervisor is to be notified if the differential parameter is outside the operating range. Excursions trigger the Shift Supervisor to be notified and a reportable events form must be filled out and turned into the plant Environmental Manager. [SOP 411]
C. QIP Threshold	Optional, not included at this time.	Optional, not included at this time.

5.4 Performance Criteria

	Visible Emissions	Differential Pressure
A. Data Representativeness	Measurements are made at the baghouse exhaust. [SOP 404]	Measurements are made at the digital read-out located in the Dryer control room. [SOP 411]
B. Verification of Operational Status	NA	NA
C. QA/QC Practices and Criteria	The observer will be familiar with baghouse operations and visible emissions.	Yearly, the proper operation of the magnehelic is verified with a second gauge. [SOP 434]
D. Monitoring Frequency	VE (Yes or No) observation is performed daily. [SOP 404]	Pressure drop is monitored continuously.
E. Data Collection Procedure	The VE observation is documented by the observer and recorded daily. [SOP 404]	Pressure drop is manually recorded once per 12-hour shift. [SOP 411] Monitoring data is also recorded in Active Factory.
Averaging Period	NA	NA

5.5 Justification

5.5.1 Rational for Selection of Performance Indicators

Visible emissions and pressure drop were selected as performance indicators because they are indicative of good operation and maintenance of the baghouse. When the baghouse is operating properly, there will not be any visible emissions from the exhaust. Any increase in visible emissions indicates reduced performance of a particulate control device, therefore, the presence of visible emissions is used as a performance indicator.

In general, baghouses are designed to operate at a relatively constant pressure drop. Monitoring pressure drop provides a means of detecting a change in operation that could lead to an increase in emissions. An increase in pressure drop can indicate that the cleaning cycle is not frequent enough, cleaning equipment is damaged, the bags are becoming inefficient, or the air flow has increased. A decrease in pressure drop may indicate broken or loose bags, but this is also indicated by the presence of visible emissions. A pressure drop across the baghouse also serves to indicate that there is airflow through the control device.

5.5.2 Rational for Selection of Indicator Ranges

The selected indicator range is the presence of no visible emissions. An indicator range of no visible emissions was selected because an increase in visible emissions is indicative of an increase in particulate emissions and a monitoring technique which does not require a Method 9 certified observer is desired. If visible emissions increase to the point of being abnormal, then baghouse performance is deteriorating and corrective action will be initiated to return the baghouse performance to normal.

The indicator range chosen for the baghouse pressure drop is between 0.1 and 5.0 inches H_2O. As the pressure drop approaches 5.0 inches H_2O the bags need to be replaced. If the pressure drop falls below 0.1 inches H_2O during normal process operation, the bags may have fallen off their cages.

5.5.3 Performance Test

Performance testing is not required in the ROP for this unit.

Section 6
CAM Plan for FGSANDER1, Baghouse

6.1 Background

6.1.1 Emission Unit

Description: A baghouse controlling particulate emissions from EUSAWLINE, EUTGPATTERN, and EUSANDER.

Identification: FGSANDER1

Facility: Louisiana-Pacific Corporation
N8504 Highway M-95
Sagola, Michigan

6.1.2 Applicable Regulation, Emission Limit, Monitoring Requirements

Permit No: MI-ROP-N1315-2013

Emission Limits

Particulate Matter:	PM: 0.01 lb/1000 pounds exhaust gas calculated on a dry gas basis, R336.1331 PM: 0.68 pph, R336.1301 PM-10: 0.01 lb/1000 pounds exhaust gas calculated on a dry gas basis, 40 CFR 52.21(c), (d) and (j) PM-10: 0.68 pph, 40 CFR 52.21(c), (d) and (j)
Opacity:	5%, R336.1301, R336.1331
Monitoring Requirements:	Visible emissions, Differential pressure

6.1.3 Control Technology

6.2 Monitoring Approach

	Visible Emissions	Differential Pressure
A. Indicator	Visible emission (VE) will be monitored daily using a 1 minute VE or no-VE check. [SOP 404]	Differential pressure will be recorded once per 12-hour shift. [SOP 411]
B. Indicator Range	An excursion is defied as the presence of visible emissions. Excursions trigger the equipment to be shutdown, an inspection, corrective action, and a reporting requirement. [SOP 404]	An excursion is defined as a reading outside of the operating range of 0.1 to 5.0 inch H_2O. A recordable events form is to be completed and the shift supervisor is to be notified if the differential parameter is outside the operating range. Excursions trigger the Shift Supervisor to be notified and a reportable events form must be filled out and turned into the plant Environmental Manager. [SOP 411]
C. QIP Threshold	Optional, not included at this time.	Optional, not included at this time.

6.3 Performance Criteria

	Visible Emissions	Differential Pressure
A. Data Representativeness	Measurements are made at the baghouse exhaust. [SOP 404]	Measurements are made at the magnehelic gauge on the south side of the baghouse at ground level. [SOP 411]
B. Verification of Operational Status	NA	NA
C. QA/QC Practices and Criteria	The observer will be familiar with baghouse operations and visible emissions.	Yearly, the proper operation of the magnehelic is verified with a second gauge. [SOP 437]
D. Monitoring Frequency	VE (Yes or No) observation is performed daily. [SOP 404]	Pressure drop is monitored continuously.
E. Data Collection Procedure	The VE observation is documented by the observer and recorded daily. [SOP 404]	Pressure drop is manually recorded once per 12-hour shift. [SOP 411] Monitoring data is also recorded in Active Factory.
Averaging Period	NA	NA

6.4 Justification

6.4.1 Rational for Selection of Performance Indicators

Visible emissions and pressure drop were selected as performance indicators because they are indicative of good operation and maintenance of the baghouse. When the baghouse is operating properly, there will not be any visible emissions from the exhaust. Any increase in visible emissions indicates reduced performance of a particulate control device, therefore, the presence of visible emissions is used as a performance indicator.

In general, baghouses are designed to operate at a relatively constant pressure drop. Monitoring pressure drop provides a means of detecting a change in operation that could lead to an increase in emissions. An increase in pressure drop can indicate that the cleaning cycle is not frequent enough, cleaning equipment is damaged, the bags are becoming inefficient, or the air flow has increased. A decrease in pressure drop may indicate broken or loose bags, but this is also indicated by the presence of visible emissions. A pressure drop across the baghouse also serves to indicate that there is airflow through the control device.

6.4.2 Rational for Selection of Indicator Ranges

The selected indicator range is the presence of no visible emissions. An indicator range of no visible emissions was selected because an increase in visible emissions is indicative of an increase in particulate emissions and a monitoring technique which does not require a Method 9 certified observer is desired. If visible emissions increase to the point of being abnormal, then baghouse performance is deteriorating and corrective action will be initiated to return the baghouse performance to normal.

The indicator range chosen for the baghouse pressure drop is between 0.1 and 5.0 inches H_2O. As the pressure drop approaches 5.0 inches H_2O the bags need to be replaced. If the pressure drop falls below 0.1 inches H_2O during normal process operation, the bags may have fallen off their cages.

6.4.3 Performance Test

Performance testing is not required in the ROP for this unit.

Section 7
CAM Plan for FGSANDER2, Baghouse

7.1 Background

7.1.1 Emission Unit

Description: A baghouse controlling particulate emissions from EUTGPATTERN and EUSANDER.

Identification: FGSANDER2

Facility: Louisiana-Pacific Corporation
N8504 Highway M-95
Sagola, Michigan

7.1.2 Applicable Regulation, Emission Limit, Monitoring Requirements

Permit No: MI-ROP-N1315-2013

Emission Limits

Particulate Matter:	PM: 0.01 lb/1000 pounds exhaust gas calculated on a dry gas basis, R336.1331 PM: 1.24 pph, R336.1301 PM-10: 0.01 lb/1000 pounds exhaust gas calculated on a dry gas basis, 40 CFR 52.21(c), (d) and (j) PM-10: 1.24 pph, 40 CFR 52.21(c), (d) and (j)
Opacity:	5%, R336.1301, R336.1331
Monitoring Requirements:	Visible emissions, Differential pressure

7.1.3 Control Technology

7.2 Monitoring Approach

	Visible Emissions	Differential Pressure
A. Indicator	Visible emission (VE) will be monitored daily using a 1 minute VE or no-VE check. [SOP 404]	Differential pressure will be recorded once per 12-hour shift. [SOP 411]
B. Indicator Range	An excursion is defied as the presence of visible emissions. Excursions trigger the equipment to be shutdown, an inspection, corrective action, and a reporting requirement. [SOP 404]	An excursion is defined as a reading outside of the operating range of 0.1 to 5.0 inch H_2O. A recordable events form is to be completed and the shift supervisor is to be notified if the differential parameter is outside the operating range. Excursions trigger the Shift Supervisor to be notified and a reportable events form must be filled out and turned into the plant Environmental Manager. [SOP 411]
C. QIP Threshold	Optional, not included at this time.	Optional, not included at this time.

7.3 Performance Criteria

	Visible Emissions	Differential Pressure
A. Data Representativeness	Measurements are made at the baghouse exhaust. [SOP 404]	Measurements are made at the magnehelic gauge on the south side of the baghouse at ground level. [SOP 411]
B. Verification of Operational Status	NA	NA
C. QA/QC Practices and Criteria	The observer will be familiar with baghouse operations and visible emissions.	Yearly the proper operation of the magnehelic is verified with a second gauge. [SOP 437]
D. Monitoring Frequency	VE (Yes or No) observation is performed daily. [SOP 404]	Pressure drop is monitored continuously.
E. Data Collection Procedure	The VE observation is documented by the observer and recorded daily. [SOP 404]	Pressure drop is manually recorded once per 12-hour shift. [SOP 411] Monitoring data is also recorded in Active Factory.
Averaging Period	NA	NA

7.4 Justification

7.4.1 Rational for Selection of Performance Indicators

Visible emissions and pressure drop were selected as performance indicators because they are indicative of good operation and maintenance of the baghouse. When the baghouse is operating properly, there will not be any visible emissions from the exhaust. Any increase in visible emissions indicates reduced performance of a particulate control device, therefore, the presence of visible emissions is used as a performance indicator.

In general, baghouses are designed to operate at a relatively constant pressure drop. Monitoring pressure drop provides a means of detecting a change in operation that could lead to an increase in emissions. An increase in pressure drop can indicate that the cleaning cycle is not frequent enough, cleaning equipment is damaged, the bags are becoming inefficient, or the air flow has increased. A decrease in pressure drop may indicate broken or loose bags, but this is also indicated by the presence of visible emissions. A pressure drop across the baghouse also serves to indicate that there is airflow through the control device.

7.4.2 Rational for Selection of Indicator Ranges

The selected indicator range is the presence of no visible emissions. An indicator range of no visible emissions was selected because an increase in visible emissions is indicative of an increase in particulate emissions and a monitoring technique which does not require a Method 9 certified observer is desired. If visible emissions increase to the point of being abnormal, then baghouse performance is deteriorating and corrective action will be initiated to return the baghouse performance to normal.

The indicator range chosen for the baghouse pressure drop is between 0.1 and 5.0 inches H_2O. As the pressure drop approaches 5.0 inches H_2O the bags need to be replaced. If the pressure drop falls below 0.1 inches H_2O during normal process operation, the bags may have fallen off their cages.

7.4.3 Performance Test

Performance testing is not required in the ROP for this unit.

Section 8
CAM Plan for FGMAIN1, Baghouse

8.1 Background

8.1.1 Emission Unit

Description: A baghouse controlling particulate emissions from EUSAWLINE, EUTGPATTERN, and EUSANDER.

Identification: FGMAIN1

Facility: Louisiana-Pacific Corporation
N8504 Highway M-95
Sagola, Michigan

8.1.2 Applicable Regulation, Emission Limit, Monitoring Requirements

Permit No: MI-ROP-N1315-2013

Emission Limits

Particulate Matter:	PM: 0.01 lb/1000 pounds exhaust gas calculated on a dry gas basis, R336.1331 PM: 1.6 pph, R336.1301 PM-10: 0.01 lb/1000 pounds exhaust gas calculated on a dry gas basis, 40 CFR 52.21(c), (d) and (j) PM-10: 1.6 pph, 40 CFR 52.21(c), (d) and (j)
Opacity:	5%, R336.1301, R336.1301, R336.1331
Monitoring Requirements:	Visible emissions, Differential pressure

8.1.3 Control Technology

8.2 Monitoring Approach

	Visible Emissions	Differential Pressure
A. Indicator	Visible emission (VE) will be monitored daily using a 1 minute VE or no-VE check. [SOP 404]	Differential pressure will be recorded once per 12-hour shift. [SOP 411]
B. Indicator Range	An excursion is defied as the presence of visible emissions. Excursions trigger the equipment to be shutdown, an inspection, corrective action, and a reporting requirement. [SOP 404]	An excursion is defined as a reading outside of the operating range of 0.1 to 5.0 inch H_2O. A recordable events form is to be completed and the shift supervisor is to be notified if the differential parameter is outside the operating range. Excursions trigger the Shift Supervisor to be notified and a reportable events form must be filled out and turned into the plant Environmental Manager. [SOP 411]
C. QIP Threshold	Optional, not included at this time.	Optional, not included at this time.

8.3 Performance Criteria

	Visible Emissions	Differential Pressure
A. Data Representativeness	Measurements are made at the baghouse exhaust. [SOP 404]	Measurements are made at the digital read-out located in the Dryer control room. [SOP 411]
B. Verification of Operational Status	NA	NA
C. QA/QC Practices and Criteria	The observer will be familiar with baghouse operations and visible emissions.	Yearly the proper operation of the magnehelic is verified with a second gauge. [SOP 434]
D. Monitoring Frequency	VE (Yes or No) observation is performed daily. [SOP 404]	Pressure drop is monitored continuously.
E. Data Collection Procedure	The VE observation is documented by the observer and recorded daily. [SOP 404]	Pressure drop is manually recorded once per 12-hour shift. [SOP 411] Monitoring data is also recorded in Active Factory.
Averaging Period	NA	NA

8.4 Justification

8.4.1 Rational for Selection of Performance Indicators

Visible emissions and pressure drop were selected as performance indicators because they are indicative of good operation and maintenance of the baghouse. When the baghouse is operating properly, there will not be any visible emissions from the exhaust. Any increase in visible emissions indicates reduced performance of a particulate control device, therefore, the presence of visible emissions is used as a performance indicator.

In general, baghouses are designed to operate at a relatively constant pressure drop. Monitoring pressure drop provides a means of detecting a change in operation that could lead to an increase in emissions. An increase in pressure drop can indicate that the cleaning cycle is not frequent enough, cleaning equipment is damaged, the bags are becoming inefficient, or the air flow has increased. A decrease in pressure drop may indicate broken or loose bags, but this is also indicated by the presence of visible emissions. A pressure drop across the baghouse also serves to indicate that there is airflow through the control device.

8.4.2 Rational for Selection of Indicator Ranges

The selected indicator range is the presence of no visible emissions. An indicator range of no visible emissions was selected because an increase in visible emissions is indicative of an increase in particulate emissions and a monitoring technique which does not require a Method 9 certified observer is desired. If visible emissions increase to the point of being abnormal, then baghouse performance is deteriorating and corrective action will be initiated to return the baghouse performance to normal.

The indicator range chosen for the baghouse pressure drop is between 0.1 and 5.0 inches H_2O. As the pressure drop approaches 5.0 inches H_2O the bags need to be replaced. If the pressure drop falls below 0.1 inches H_2O during normal process operation, the bags may have fallen off their cages.

8.4.3 Performance Test

Performance testing is not required in the ROP for this unit.

Section 9
CAM Plan for FGMAIN3, Baghouse

9.1 Background

9.1.1 Emission Unit

Description: A baghouse controlling particulate emissions from EUSAWLINE, EUFORMING, EUFINISHING1, EUFINISHING2, EUSANDER, EUTGPATTERN, EUHAMMERMILL1, and EUFUELBIN.

Identification: FGMAIN3

Facility: Louisiana-Pacific Corporation
N8504 Highway M-95
Sagola, Michigan

9.1.2 Applicable Regulation, Emission Limit, Monitoring Requirements

Permit No: MI-ROP-N1315-2013

Emission Limits

Particulate Matter:	PM: 0.01 lb/1000 pounds exhaust gas calculated on a dry gas basis, R336.1331 PM: 1.1 pph, R336.1301 PM-10: 0.01 lb/1000 pounds exhaust gas calculated on a dry gas basis, 40 CFR 52.21(c), (d) and (j) PM-10: 1.1 pph, 40 CFR 52.21(c), (d) and (j)
Opacity:	5%, R336.1301, R336.1331
Monitoring Requirements:	Visible emissions, Differential pressure

9.1.3 Control Technology

9.2 Monitoring Approach

	Visible Emissions	Differential Pressure
A. Indicator	Visible emission (VE) will be monitored daily using a 1 minute VE or no-VE check. [SOP 404]	Differential pressure will be recorded once per 12-hour shift. [SOP 411]
B. Indicator Range	An excursion is defied as the presence of visible emissions. Excursions trigger the equipment to be shutdown, an inspection, corrective action, and a reporting requirement. [SOP 404]	An excursion is defined as a reading outside of the operating range of 0.1 to 5.0 inch H_2O. A recordable events form is to be completed and the shift supervisor is to be notified if the differential parameter is outside the operating range. Excursions trigger the Shift Supervisor to be notified and a reportable events form must be filled out and turned into the plant Environmental Manager. [SOP 411]
C. QIP Threshold	Optional, not included at this time.	Optional, not included at this time.

9.3 Performance Criteria

	Visible Emissions	Differential Pressure
A. Data Representativeness	Measurements are made at the baghouse exhaust. [SOP 404]	Measurements are made at the magnehelic gauge by the pulverizer. [SOP 411]
B. Verification of Operational Status	NA	NA
C. QA/QC Practices and Criteria	The observer will be familiar with baghouse operations and visible emissions.	Yearly the proper operation of the magnehelic is verified with a second gauge. [SOP 434]
D. Monitoring Frequency	VE (Yes or No) observation is performed daily. [SOP 404]	Pressure drop is monitored continuously.
E. Data Collection Procedure	The VE observation is documented by the observer and recorded daily. [SOP 404]	Pressure drop is manually recorded once per 12-hour shift. [SOP 411] Monitoring data is also recorded in Active Factory.
Averaging Period	NA	NA

9.4 Justification

9.4.1 Rational for Selection of Performance Indicators

Visible emissions and pressure drop were selected as performance indicators because they are indicative of good operation and maintenance of the baghouse. When the baghouse is operating properly, there will not be any visible emissions from the exhaust. Any increase in visible emissions indicates reduced performance of a particulate control device, therefore, the presence of visible emissions is used as a performance indicator.

In general, baghouses are designed to operate at a relatively constant pressure drop. Monitoring pressure drop provides a means of detecting a change in operation that could lead to an increase in emissions. An increase in pressure drop can indicate that the cleaning cycle is not frequent enough, cleaning equipment is damaged, the bags are becoming inefficient, or the air flow has increased. A decrease in pressure drop may indicate broken or loose bags, but this is also indicated by the presence of visible emissions. A pressure drop across the baghouse also serves to indicate that there is airflow through the control device.

9.4.2 Rational for Selection of Indicator Ranges

The selected indicator range is the presence of no visible emissions. An indicator range of no visible emissions was selected because an increase in visible emissions is indicative of an increase in particulate emissions and a monitoring technique which does not require a Method 9 certified observer is desired. If visible emissions increase to the point of being abnormal, then baghouse performance is deteriorating and corrective action will be initiated to return the baghouse performance to normal.

The indicator range chosen for the baghouse pressure drop is between 0.1 and 5.0 inches H_2O. As the pressure drop approaches 5.0 inches H_2O the bags need to be replaced. If the pressure drop falls below 0.1 inches H_2O during normal process operation, the bags may have fallen off their cages.

9.4.3 Performance Test

Performance testing is not required in the ROP for this unit.

Location/Department:	Sagola/Environmental
SOP#:	450
Revision:	6
Effective Date:	3/6/98
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1. Title

Fugitive Dust Program

2. Scope

To provide an environmentally sound method of suppressing fugitive or airborne dust and particulate according to the requirements set forth in the MDEQ Renewable Operating Permit 199600018 and LP Sagola Fugitive dust program.

3. Objective

To ensure the Fugitive Dust Program is implemented and maintained to limit fugitive dust from roadways, the material storage piles, stockpile areas, and other operations throughout the plant with good house keeping practices.

4. Definitions

5. Safety

Employees must wear standard PPE:

- Hard hat
- Safety glasses
- Steel toed boots
- Hearing protection
- Orange vest

Ask your supervisor for assistance in choosing PPE if you are not familiar with the procedure.

6. Lead Responsibility

Mobile Shop Personnel, Maintenance Personnel, Dayshift Personnel, Dryer Area Personnel, Supervisors

7. General Requirements

8. Procedure

To reduce fugitive dust the following procedures must be followed.

8.1. A representative of the Sagola environmental department will conduct daily inspection of the grounds; this will be documented with a checklist. The checklist is located in the Sagola OSB “Air Pollution Control Equipment Inspection and Maintenance Document” found in the plant

	Prepared By	Checked By:	Authorized By:	Revisions
Signed:	EMS Team	Brett Niemi	Todd Maki	9-19-99, 9-29-99, 5-4-00, 9-14-4, 12-19-05, 3-18-10
Position:	Environmental Technician	Plant Environmental Manger	Plant Manager	
Date:	3-6-98			

Environmental Managers Office.

8.2. The doors on the fire and ash dumps must be kept closed whenever they are not being emptied. Also, the adjacent area must be kept relatively clean and free of flake, fines and ash. It is the responsibility of the Front-end Loader Operator to scrape the roadway clean after hauling flake.

8.3. All ash and fines shall be stored, removed and handled in a manner that minimizes the introduction of it to the ambient air. Fines will be mixed and stored with wet bark if it is necessary to remove from the fire dump. Ash will not be transported to the storage area during high wind conditions and will be wetted before transport.

8.4. The pavement will be swept routinely to reduce fugitive dust. This will be documented in the log yard logbook.

8.5. The bark hog area needs to be cleaned routinely to reduce fugitive dust. The covers must be closed on all conveyors. Catwalks must be kept clean and bark socks must be intact.

8.6. All material spills must be cleaned up to prevent its release into the ambient air.

8.7. To reduce fugitive dust during excessively dry weather conditions, the traffic area of the log yard will be watered as needed. This will be documented in the log yard logbook. Personnel working outside will assess the need and initiate watering as needed.

8.8 No open burning shall be allowed on Plant property except as allowed in Rule 310.

9. Attachments

10. Change Summary

11. Office of Record Environmental Office

	Prepared By	Checked By:	Authorized By:	Revisions
Signed:	EMS Team	Brett Niemi	Todd Maki	9-19-99, 9-29-99, 5-4-00, 9-14-4, 12-19-05, 3-18-10
Position:	Environmental Technician	Plant Environmental Manger	Plant Manager	
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