



Maryland
Department of
the Environment

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*State of Maryland Regional Haze
State Implementation Plan Revision
Alternative BART for the
VERSO Luke Paper Mill*

**SIP # 16-14
September 26, 2016**

**Prepared for:
U.S. Environmental Protection Agency**

**Prepared by:
Maryland Department of the Environment**



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1.0 Introduction/Background

The purpose of this SIP Revision is to seek an alternative BART emission limit at the Verso Luke Paper Mill.

Maryland's Regional Haze SIP, was submitted to the U.S. Environmental Protection Agency (EPA) on February 13, 2012, and was approved on June 13, 2012 (effective July 6, 2012). In this SIP revision, the Maryland Department of the Environment (MDE) refers to the Regional Haze SIP as the February 13, 2012, Regional Haze SIP. This SIP revision is submitted in accordance with the visibility and regional haze provisions of Sections 169A and 169B of the federal Clean Air Act, 42 U.S.C. §§7491, 7492, and the federal regional haze rule codified at 40 CFR § 51.308.

This State Implementation Plan (SIP) revision seeks to revise the BART reduction strategy and BART limits at the Verso Luke Paper Mill previously approved by EPA for Power Boiler 25 as 0.44 pounds per million British thermal units (lb/MMBtu) for sulfur dioxide (SO₂), a 30-day rolling limit of 0.40 lb/MMBtu for nitrogen oxides (NO_x), and 0.07 for particulate matter (PM).

1.1 Regional Haze Requirements

Section 169A of the CAA, established in the 1977 Amendments, sets forth a national visibility goal that calls for "the prevention of any future, and the remedying of any existing, impairment of visibility in Class I areas which impairment results from manmade air pollution." The EPA's initial visibility regulations, developed in 1980, address visibility impairment that is "reasonably attributable" to a single source or small group of sources. Under the 1980 rules, the 35 States and 1 territory containing Class I areas are required to: (1) Revise their SIPs to assure reasonable progress toward the national visibility goal; (2) Determine which existing stationary facilities should install the best available retrofit technology (BART) for controlling pollutants which impair visibility; (3) Develop, adopt, implement, and evaluate long-term strategies for making reasonable progress toward remedying any existing and preventing any future impairment in the Class I areas; (4) Adopt certain measures to assess potential visibility impacts due to new or modified major stationary sources, including measures to notify Federal Land Managers (FLMs) of proposed new source permit applications, and to consider visibility analyses conducted by FLMs in their new source permitting decisions; and (5) Conduct visibility monitoring in Class I areas. The 1980 rules addressing "reasonably attributable" visibility impairment were designed to be the first phase in EPA's overall program to protect visibility.

1.2 BART Background

Under section 169A(b)(2)(A) of the Clean Air Act (CAA), States must require certain existing stationary sources to install BART (Best Available Retrofit Technology). The BART provision applies to "major stationary sources" from 26 identified source categories which have the potential to emit 250 tons per year or more of any air pollutant. The CAA requires only sources which were put in place during a specific 15-year time interval to be subject to BART. The BART provision applies to sources that existed as of the date of the 1977 CAA amendments (that is, August 7, 1977) but which had not been in operation for more than 15 years (that is, not in operation as of August 7, 1962). The CAA requires a BART review when any source meeting the above description "emits any air pollutant which may reasonably be anticipated to cause or

contribute to any impairment of visibility'' in any Class I area. In identifying a level of control as BART, States are required by section 169A(g) of the CAA to consider:

- a) The costs of compliance,
- b) The energy and non-air quality environmental impacts of compliance,
- c) Any existing pollution control technology in use at the source,
- d) The remaining useful life of the source, and
- e) The degree of visibility improvement which may reasonably be anticipated from the use of BART.

The CAA further requires States to make BART emission limitations part of their SIPs.

The Bart rule requires that sources that are subject to BART perform a site-specific BART analysis. The five steps for this analysis are as follows:

1. Identify all available control technologies for the affected units including improvements to existing control equipment or installation of new add-in control equipment.
2. Eliminate technically infeasible options considering the commercial availability of the technology, space constraints, operating problems and reliability, and adverse side effects on the rest of the facility.
3. Evaluate the control effectiveness of the remaining technologies based on current pollutant concentrations, flue gas properties and composition, control technology performance, and other factors.
4. Evaluate the annual and incremental costs of each feasible option in accordance with approved EPA methods, as well as the associated energy and non-air quality environmental impacts.
5. Determine the visibility impairment associated with baseline emissions and the visibility improvements provided by the control technologies considered in the engineering analysis.

1.3 Alternative BART

Rather than requiring source-specific BART controls, states also have the flexibility to adopt an emissions trading program or other alternative program as long as the alternative provides greater reasonable progress towards improving visibility than BART.¹

40 CFR Part 51.308(e)(2) provides that states "may opt to implement or require participation in an emissions trading program or other alternative measure rather than to require sources subject to BART to install, operate and maintain BART."

- This language reflects EPA's recognition that there may be alternatives to application of BART to every source that are more cost-effective and environmentally beneficial.

EPA made such a demonstration for the Clean Air Interstate Rule (CAIR).² EPA's regulations provided that states participating in the CAIR cap and trade program under 40 CFR part 96 pursuant to an EPA-approved CAIR SIP or which remain subject to the CAIR Federal Implementation Plan (FIP) in 40 CFR part 97, do not require affected BART eligible electric

¹ 40 CFR 51.308(e)(2)

² 70 FR 39104 (July 6, 2005)

generating units (EGUs) to install, operate, and maintain BART for emissions of SO₂ and NO_x.³ EPA subsequently determined that the trading programs in the CSAPR, which was promulgated to replace CAIR, would achieve greater reasonable progress towards the national goal than would BART and could also serve as an alternative to source-by-source BART.⁴

- Even if the relevant provisions are interpreted as only authorizing a State to develop a statewide alternative to application of source-by-source BART, the language clearly reflects EPA's recognition that States should have flexibility to design alternative programs that are more cost-effective and environmentally effective than application of BART to each affected source.

Additional references from a regulatory review supporting alternative programs to unit-specific BART controls include:

40 CFR Part 51, Appendix Y (BART Guidance)

- Section III(H), titled "Do EPA regulations require the use of these guidelines?" provides, in part: "For sources other than 750MW power plants, however, States retain the discretion to adopt approaches that differ from the guidelines."
- Sections III(H)(3) and IV(A) of Subpart Y include descriptions of how to group affected sources located at a plant. Section IV(D)(8) provides: "There may be situations where a specific set of units within a fence-line constitutes the logical set to which controls would apply and that set of units may or may not all be BART-eligible."
- Section V provides: "You should consider allowing sources to 'average' emissions across any set of BART-eligible emission units within a fence-line, so long as the emission reductions from each pollutant being controlled for BART would be equal to those reductions that would be obtained by simply controlling each of the BART eligible emission units that constitute BART-eligible sources."

EPA's Economic Incentive Program (EIP) at 40 CFR Part 51 Subpart U and its January 2001 EIP Guidance are intended to allow for alternatives to compliance with EPA regulations that achieve equal or greater environmental benefits at less cost.

In addition, EPA has established precedent by allowing companies to find alternative approaches to BART compliance. The State of Idaho granted Amalgamated Sugar Company LLC (TASCO) credit for shutting down several coal fired pulp dryers to act as an alternative to reductions required on a Riley boiler BART unit.

Therefore, EPA allows states the flexibility to adopt alternative programs to source-specific BART controls; provided that the alternative BART program provides greater progress towards improving visibility.

³ 40 CFR 51.308(e)(4).

⁴ 77 FR 33641 (June 7, 2012).

2.0 Verso Luke Paper

Verso Luke Paper in Luke, Maryland produces various grades of paper from wood fiber and other raw materials using the Kraft process. The facility is identified as New Page/Westvaco/Luke Paper in the February 13, 2012 Regional Haze SIP. The Verso Corporation acquired the plant on January 6, 2015. As such, MDE identifies it as Verso Luke Paper in this SIP revision submittal.

The facility has three boilers that use a common stack for their emissions. The installation of a control, like a scrubber, on one boiler would cause a temperature drop in the scrubbed source and create an acid dew point issue in the common emission stack. In addition, if a control device was to be installed, the older No. 24 cyclone boiler would provide greater SO₂ reduction than an equivalent expenditure on the No. 25 BART unit. Therefore, Maryland has considered an alternative BART compliance plan for the Luke Mill. Maryland's proposed alternative for the Luke Mill involves setting alternative BART emission rates for SO₂ and NO_x for the No.24 cyclone boiler that provide greater reasonable progress than the BART limits for SO₂ and NO_x for the No. 25 boiler which were established in the SIP.

2.1 Description of the Process that includes the BART Unit No. 25

A major area of the mill is the power and recovery area. In this area, the Nos. 2 and 3 recovery boilers are used to recover pulping chemicals and heat in the form of steam while the three power boilers generate steam and electricity from fuels for use in the mill. The three power boilers vent to a common 623 foot tall stack equipped with NO_x, SO_x, CO₂, a flow Continuous Emissions Monitoring System (CEMS), and a Continuous Opacity Monitor (COM). The recovery boilers vent to their own shorter stacks. A brief description of the three power boilers is presented below:

Power Boiler No. 24 (Registration ID: 001-0011-3-0018)

The No. 24 boiler is a Babcock & Wilcox coal-fired cyclone unit that is nominally rated at 590 mmBtu/hr heat capacity and was built in 1959. In 1998, a selective non-catalytic reduction system (SNCR) was installed on the boiler for control of nitrogen oxides, and in 2007 a baghouse was installed for control of particulate matter. A NO_x CEM is installed in the No. 24 boiler's duct work to monitor nitrogen oxide emissions.

No. 25 Power Boiler (Registration ID: 001-0011-3-0019)

The No. 25 boiler is a Combustion Engineering coal-fired unit that is nominally rated at 785 mmBtu/hr heat capacity and was built in 1965. In 2001, low NO_x burners were installed and in 2006, an over-fired air system and SNCR were installed on the boiler for the control of nitrogen oxides. In 2007, a baghouse was installed for the control of particulate matter. The boiler is used to incinerate emissions from the non-condensable gas (NCG) and the stripper off gas (SOG) systems.

No. 26 Power Boiler (Registration ID: 001-0011-4-0005)

The No. 26 boiler is a natural gas-fired unit, nominally rated at 338 mmBtu/hr heat capacity. This unit was installed in 1970 as an oil-fired unit and converted to burn natural gas in 1982. The

boiler is a backup for the Nos. 24 and 25 boilers and is also used as a backup system for the incineration of the emissions from the NCG and the SOG systems. Maryland is not seeking to alter the BART established for No. 26 Power Boiler.

2.2 Alternative BART Plan

The alternative BART plan provides greater reasonable progress for SO₂ and NO_x with new emissions limits for SO₂ and NO_x for the No. 24 Boiler instead of the No. 25 Boiler (BART unit). The BART requirements for PM remain on the No. 25 Boiler. Specifically, the company has the following federally enforceable conditions (see Appendices B1 and B2):

No. 24 Power Boiler

- Eliminate the use of coal as a fuel in the No.24 Boiler and replace it with natural gas; with fuel oil as an intermittent backup when the natural gas supply is constrained.
- Sulfur Oxides
 - Accept 0.28 lbs/mmBtu, measured as an hourly average, as the limit for SO₂ emissions from the No. 24 Boiler.
 - Utilize a SO₂ CEM or other approved monitoring method found in 40CFR75 Appendix D on the No. 24 Power Boiler duct and demonstrate compliance with the SO₂ rate limit on an hourly averaging period.
- Nitrogen Oxides
 - Accept 0.4 lbs/mmBtu, measured on a 30-day rolling average as the limit for NO_x emissions from the No. 24 Power Boiler.
 - Utilize the NO_x CEM on the No. 24 Power Boiler duct to demonstrate compliance with the NO_x rate limit.

No. 25 Power Boiler

- To ensure no backsliding occurs on the No. 25 Boiler
- Sulfur Oxides
 - Accept an annual SO₂ cap of 9,876 tons measured on a 12-month rolling average.
 - Utilize a SO₂ CEM to demonstrate compliance
- Nitrogen Oxides
 - Current conditions (COMAR 26.11.14.07) applicable to the unit include an ozone season tonnage cap, an ozone season rate limit and a non-ozone season rate limit. These restrictions ensure that no backsliding can occur (see Section 2.3.1 for more information).
 - Utilize a NO_x CEM to demonstrate compliance with the existing NO_x rate limits and tonnage cap.
- Particulate Matter
 - Comply with 0.07 lb/mmBtu PM limit.
 - Utilize a PM-CPMS in accordance with 40 CFR 63 Subpart DDDDD to demonstrate compliance with the PM rate limit.

These conditions are incorporated into two permit to construct permits (see Appendices B1 and B2), required for the fuel switching upgrade.

2.3 Demonstration of Greater Reasonable Progress Reductions

EPA final rulemaking on the Maryland Regional Haze SIP specified the acceptable BART level of control for the No. 25 Power Boiler. The following limits are used to demonstrate that the alternative BART plan, put forth in this document, provide a greater reasonable progress than the original EPA BART conditions and won't interfere with any applicable requirement or NAAQS.

SO ₂	0.44	lbs/mmBtu	
NO _x	0.40	lbs/mmBtu	30-day rolling average
PM	0.07	lbs/mmBtu	

The first criteria for an alternative program is: "a demonstration that the emissions trading program or other alternative measure will achieve greater reasonable progress than would have resulted from the installation and operation of BART at all sources subject to BART in the State and covered by the alternative program." This demonstration will be prepared on a pollutant basis and shown in the sections below.

2.3.1 Sulfur Oxides Greater Reasonable Progress Demonstration

2.3.1.1 Potential to Emit Basis

The maximum allowable SO_x emissions to the common stack is 66 tons per day. This emission limitation is enforced through a consent decree and is included in a Title V permit. The 66 tons per day cap translates to a 24,090 ton per year limit.

Since unit specific permit conditions were not needed to enforce the consent decree, none were developed. However, in order to show greater reasonable progress for the alternative BART strategy, unit specific SO_x rates as well as potential to emit annual emissions must be established.

Table 2.1: SO_x Percent Contribution to Common Stack

Year	No. 24 SO ₂ (tpy)	No. 24 Heat Input	No. 24 SO ₂ Rate	No. 25 SO ₂ (tpy)	No. 25 Heat Input	No. 25 SO ₂ Rate	No. 26 SO ₂ (tpy)	No. 26 Heat Input	No. 26 SO ₂ Rate	SO ₂ Total (tpy)	66 TPD Limit
2002	10,155	4,404,820	4.61	8,931	6,288,220	2.84	0.049	165,954	0.00	19,086	24,090
2003	10,169	4,056,610	5.01	9,308	6,296,980	2.96	0.017	57,630	0.00	19,477	24,090
2004	9,995	3,777,020	5.29	9,644	6,344,430	3.04	0.045	152,286	0.00	19,639	24,090
2005	9,423	4,220,209	4.47	8,760	6,511,810	2.69	0.012	42,228	0.00	18,183	24,090
2006	10,838	4,207,687	5.15	9,391	6,258,033	3.00	0.030	100,685	0.00	20,229	24,090
2007	10,624	4,207,687	5.05	9,605	5,907,057	3.25	0.029	97,991	0.00	20,229	24,090
2008	11,085	4,041,554	5.49	9,321	5,721,982	3.26	0.032	109,929	0.00	20,406	24,090
2009	9,555	3,347,019	5.71	9,319	5,822,358	3.20	0.022	75,053	0.00	18,874	24,090
2010	11,227	3,860,277	5.82	10,460	5,839,539	3.58	0.050	175,939.8	0.00	21,687	24,090
2011	11,083	3,584,376	6.18	10,921	5,870,139	3.72	0.036	121,125	0.00	22,004	24,090
2012	10,444	3,466,008	6.03	8,909	5,399,227	3.30	0.092	312,181	0.00	19,353	24,090
Average	10,418		5.30	9,506		3.13	0.038		0.00	19,924	

Year	No. 24 SO2 (tpy)	No. 24 Heat Input	No. 24 SO2 Rate	No. 25 SO2 (tpy)	No. 25 Heat Input	No. 25 SO2 Rate	No. 26 SO2 (tpy)	No. 26 Heat Input	No. 26 SO2 Rate	SO2 Total (tpy)	66 TPD Limit
Percent Contribution to Common Stack	52.29%			47.71%			0.00%				

MDE calculated the average SO_x emissions per unit over an eleven year span. The average emissions were then used to calculate each unit’s percent contribution to the common stack. The percent contribution to stack was then used to allocate the potential to emit annual tonnage to each unit.

Table 2.2: SO_x PTE Equivalency Analysis

A	B	C	D (B*365*C)	E	F	G	H (D*G/E) (D*F/E)	I (D – H)
BOILER	PTE Allowable Emissions to Common Stack (tpd)	Annual Average Percent Contribution to Common Stack	Allocation of PTE Annual Emissions to Units (tpy)	AVG SO2 Rate 2002-12 (Lb/mmBtu)	EPA Final BART Rate	PERMIT Condition Rate	Emissions at New Rate (tpy)	Emission Reductions (tpy)
PB #24	66	52.29%	12,596.2	5.30		0.28	665.6	11,931
PB #25		47.71%	11,493.8	3.13	0.44		1,617.8	9,876
			24,090					2,055

The potential to emit analysis of the alternative BART plan on the No. 24 Boiler shows a 2,055 ton per year SO_x benefit over the application of SO_x controls to the No. 25 Boiler (11,931 – 9,876). This is a 20 percent $\left[\frac{2,055}{9,876}\right]$ improvement over BART controls.

In reality the potential to emit analysis is a worst case scenario that shows the minimum amount of SO_x benefit. The permit condition rate of 0.28 lbs SO_x/mmBtu would only be reached when fuel oil is combusted in the No. 24 Boiler. Under permit conditions the No. 24 Boiler would burn natural gas as a primary fuel source with fuel oil as an intermittent backup when the natural gas supply is interrupted.

If the natural gas supply is never constrained, optimal conditions occur for SO_x emission reductions. Boiler No. 24 would be powered solely by natural gas combustion, which has a very low 0.6 lb SO_x/mScf emission rate. Under such conditions the SO_x benefit of the alternative BART compliance plan on a potential to emit basis would be over 2,700 tons of SO_x (2,055 + 665).

2.3.1 Nitrogen Oxides Greater Reasonable Progress Demonstration

2.3.1.1 Potential to Emit Basis

Non-Ozone Season NO_x Analysis

The maximum allowable NO_x emission rate to the common stack is 0.99 lbs/mmBtu. This emission limitation is enforced through a State of Maryland regulation, COMAR 26.11.14.07.

Since unit specific permit conditions were not needed to enforce the regulations, none were developed. However, in order to demonstrate greater reasonable progress for the alternative BART strategy, unit specific NO_x rates as well as potential to emit annual emissions must be established.

Table 2.3: NO_x Percent Contribution to Common Stack

Year	No. 24 NOX (tpy)	No. 24 Heat Input	No. 24 NOX Rate	No. 25 NOX (tpy)	No. 25 Heat Input	No. 25 NOX Rate	No. 26 NOX (tpy)	No. 26 Heat Input	No. 26 NOX Rate	NOX Total (tpy)
2002	2038.2	4,404,820	0.76	1718.8	6,288,220	0.55	37	165,954	0.45	3,794
2003	1,919	4,056,610	0.95	1,765	6,296,980	0.56	22	57,630	0.75	3,705
2004	2,028	3,777,020	1.07	1,606	6,344,430	0.51	34	152,286	0.45	3,669
2005	2,021	4,220,209	0.96	1,630	6,511,810	0.50	9	42,228	0.42	3,660
2006	2,111	4,207,687	1.00	1,365	6,258,033	0.44	19	100,685	0.38	3,496
2007	1,890	4,207,687	0.90	1,361	5,907,057	0.46	19	97,991	0.38	3,270
2008	2,329	4,041,554	1.15	1,101	5,721,982	0.38	4	109,929	0.08	3,434
2009	1,667	3,347,019	1.00	1,725	5,822,358	0.59	13	75,053	0.34	3,404
2010	1,741	3,860,277	0.90	1,351	5,839,539	0.46	5	175,940	0.06	3,098
2011	1,589	3,584,376	0.89	1,527	5,870,139	0.52	26	121,125	0.42	3,142
2012	1,421	3,466,008	0.82	1,170	5,399,227	0.43	65	312,181	0.42	2,657
Average	1,872		0.95	1,460		0.49	23		0.41	3,393
Percent Contribution to Common Stack	55.79%			43.52%					0.68%	

MDE calculated the average annual NO_x emissions per unit over an eleven year span. The average annual emissions were then used to calculate each unit's percent contribution to the common stack. The percent contribution to stack was then used to allocate the potential to emit annual tonnage to each unit.

Table 2.4: NO_x PTE Equivalency Analysis – Annual Basis

A	B	C	D	E	F	G (C*E/D)	H (C - G)
BOILER	PTE Allowable Emission Rate to Common Stack (lbs/mmBtu)	Average NO _x Annual Emissions (tpy)	AVG NO _x Rate 2002-12 (Lb/mmBtu)	EPA Final BART Rate	PERMIT Condition RATE	Average Emissions at New Rate (tpy)	Emission Reductions (tpy)
PB #24	0.99	1,871.7	0.95		0.4	788.8	1,083
PB #25	0.99	1,460.2	0.49	0.4		1,181.3	279
PB #26	0.99	23.0	0.49			23.0	0
							804

The potential to emit analysis of the alternative BART plan shows an 804 ton per year NO_x benefit over the application of NO_x controls to the No. 25 Boiler.

In reality the potential to emit analysis is a worst case scenario that shows the minimum amount of NO_x benefit. The permit condition rate of 0.40 lbs NO_x/mmBtu would only be reached when fuel oil is combusted in the No. 24 Boiler. Under permit conditions the No. 24 Boiler would burn natural gas as a primary fuel source with fuel oil as an intermittent backup when the natural gas supply is interrupted.

If the natural gas supply is never constrained, optimal conditions occur for NO_x emission reductions. Boiler No. 24 would be powered solely by natural gas combustion, which has a low 140 lb/mscf emission rate. The boiler would be constrained by the maximum combustible amount of natural gas (5,600mScf).

Under such conditions the maximum annual NO_x emissions from the No. 24 Boiler would be 392 tons (5,600*140/2000).

Overall the alternative BART plan would provide an addition NO_x benefit of 1,200 tons per year $\{[(804 + (788.8 - 392))] \approx 1,200\}$ when evaluated on a potential to emit basis.

Ozone Season NO_x Analysis

The maximum allowable NO_x Ozone Season total emissions to the common stack is 947 tons per ozone season. This emission limitation is enforced through a State of Maryland regulation, COMAR 26.11.14.07.

Since unit specific permit conditions were not needed to enforce the regulations, none were developed. However, in order to provide an equivalency demonstration for the alternative BART strategy, unit specific NO_x rates as well as potential to emit ozone season emissions must be established.

Table 2.5: NO_x PTE Equivalency Analysis – Ozone Season Basis

BOILER	PTE Allowable Emissions to Common Stack (Ozone Season)	Percent Contribution to Common Stack	Allocation of PTE O.S. Emissions to Units	AVG NO _x Rate 2002-12	EPA Final BART Rate	PERMIT Condition RATE	Emissions at New Rate (O.S. Total)	Emission Reductions (O.S. Total)
PB #24		55.79%	528.3	0.95		0.4	222.6	306
PB #25	947	43.52%	412.2	0.49	0.4		333.5	79
PB #26		0.68%	6.5	0.41				
			947					227

The potential to emit analysis of the alternative BART plan shows a 227 ton per ozone season NO_x benefit over the application of NO_x controls to the No. 25 Boiler.

2.3.2 Particulate Matter Greater Reasonable Progress Demonstration

2.3.2.1 Potential to Emit Basis

PM Analysis

Both units already meet the 0.07 lb/mmBtu BART limit for PM_{2.5}, therefore no greater reasonable progress demonstration is necessary. Fabric filter controls came online for both coal-fired boilers in 2007-2008. In addition, the No. 24 Power Boiler is converting to natural gas and the PM_{2.5} emission factors are lower for natural gas-fired units than coal-fired burning units.

3.0 Conclusions

Federal regulations allow for BART alternatives as outlined in Section 1.3. 40 CFR Part 51.308(e)(2) provides that states "may opt to implement or require participation in an emissions trading program or other alternative measure rather than to require sources subject to BART to install, operate and maintain BART." EPA made such a demonstration for the Clean Air Interstate Rule (CAIR)⁵. EPA's regulations provided that states participating in the CAIR cap and trade program under 40 CFR part 96 pursuant to an EPA-approved CAIR SIP or which remain subject to the CAIR Federal Implementation Plan (FIP) in 40 CFR part 97, do not require affected BART eligible electric generating units (EGUs) to install, operate, and maintain BART for emissions of SO₂ and NO_x.⁶ EPA subsequently determined that the trading programs in the CSAPR, which was promulgated to replace CAIR, would achieve greater reasonable progress towards the national goal than would BART and could also serve as an alternative to source-by-source BART⁷.

Additionally, EPA has established precedent to find alternative approaches to BART compliance. EPA and the State of Idaho granted Amalgamated Sugar Company LLC (TASCO) credit for shutting down several coal fired pulp dryers to act as an alternative to reductions required on a Riley boiler BART unit.

The alternative BART plan for the No. 25 Power Boiler at Verso Luke Paper mill provides greater SO₂ and NO_x tonnage reductions. Both units already meet the 0.07 lb/mmBtu BART limit for PM_{2.5}, therefore no greater reasonable progress demonstration is necessary. The company has also agreed to repower the No. 24 Power Boiler from coal to natural gas as a primary fuel, use fuel oil as a secondary power source only when the natural gas supply is constrained, and apply applicable or better BART emission rates to the No. 24 Power Boiler.

In reality, the conversion of the No. 24 Power Boiler to natural gas will allow the facility to surpass these goals as it provides 288% [$\frac{804}{279}$] more NO_x benefits and 20% [$\frac{2,055}{9,876}$] more SO_x benefits than what is required under BART. This plan is federally enforceable through permit condition.

Therefore, with this submission, the Maryland Department of the Environment regards the requirements of a "demonstration that the alternative BART measure will achieve greater reasonable progress than would have resulted from the installation and operation of BART at the source subject" to be met.

⁵ 70 FR 39104 (July 6, 2005)

⁶ 40 CFR 51.308(e)(4).

⁷ 77 FR 33641 (June 7, 2012).

APPENDICES

Appendix A – Original BART Certification Letter Luke/Westvaco



October 31, 2007



Mr. Brian Hug
Deputy Program Manager
Air Quality Planning Program
Air & Radiation Management Administration
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21232

Dear Mr. Hug:

In the September 20, 2007 meeting, you discussed the requirements through the Clean Air Act of 1999 that all States would be required to submit State Implementation Plans (SIP) to address Regional Haze in Class 1 areas throughout the country. Maryland has participated in ongoing regional planning and Maryland's SIP will address potential SO₂, NO_x, and PM emission sources in the State.

Maryland Department of the Environment (MDE) will address regional haze through the Best Available Retrofit Technology (BART) program finalized by EPA in June 2005. Major sources that were placed into operation in the years 1962 through 1977 with the potential to emit more than 250 tons per year of the above pollutants will have to be reviewed with respect to BART.

At the above referenced meeting, the impact of Regional Haze regulations upon NewPage was discussed. In that discussion, MDE stated that the facility would be subject to BART, and that the only emission source to be addressed was No. 25 Power Boiler. Through the work with MANE-VU, presumptive levels of control for industrial boilers have been established. These are 90% control for SO₂, NO_x emissions between 0.1 to 0.4 lb/mmbtu, depending upon boiler and fuel type, and PM emissions between 0.02 to 0.07 lb/mmbtu.

The Luke Paper Company has reviewed these presumptive levels of control for the specific pollutants and is proposing the following. The Luke Paper Company will reduce emissions to the equivalent levels of 90% control of SO₂ emissions, reduce NO_x emissions to the level of 0.4 lb/mmbtu, and control PM emissions level to 0.07 lb/mmbtu for No. 25 Power Boiler on a yearly basis. We understand that these emission reductions will be put in place within five years of EPA approval of Maryland's SIP.

If you have any questions regarding this proposal, please contact Kenneth Wendell at (301) 359-3311, Extension 3370.

Sincerely yours,

Gary M. Curtis
Vice President, Luke Operations


GMC:plt

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

NewPage Corporation, Coated Paper
300 Pratt Street, Luke MD 21540 T 301 359 3311

Appendix B1 – Federally Enforceable Permit Conditions Boiler No. 24

KEEP PERMIT AT SITE CONTROL NO. B- 0 5213



Lawrence J. Hogan, Jr. Ben Grumbles

DEPARTMENT OF THE ENVIRONMENT

Hoyt K. Rothford
Lt. Governor

Air and Radiation Management Administration
1800 Washington Boulevard, Suite 720
Baltimore, MD 21230

Construction Permit Operating Permit

TERMIT NO. 001-0011-3-0018 DATE ISSUED AUG 17 2016

PERMIT FEE \$500.00 (Paid) EXPIRATION DATE In accordance with COMAR 26.11.02.04B

LEGAL OWNER & ADDRESS	SITE
Verso Corporation Luke Paper Company 300 Pratt St Luke, Maryland 21540-1099 Attention: Mr. Ronald Paugh Environmental Manager	Luke Paper Company 300 Pratt St Luke, MD 21540 Premises #001-0011 AI #1873

SOURCE DESCRIPTION

Modification of No. 24 Boiler to include fuel switch from coal to natural gas with No. 2 fuel oil as interruptible fuel source to support the compliance with Regional Haze rules as it applies to No. 25 Boiler.

This permit supersedes permit to construct number 001-0011-3-0018 issued August 9, 2013.

This source is subject to the conditions described on the attached pages.

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[Signature] *[Signature]*

Program Manager Director, Air and Radiation Management Administration

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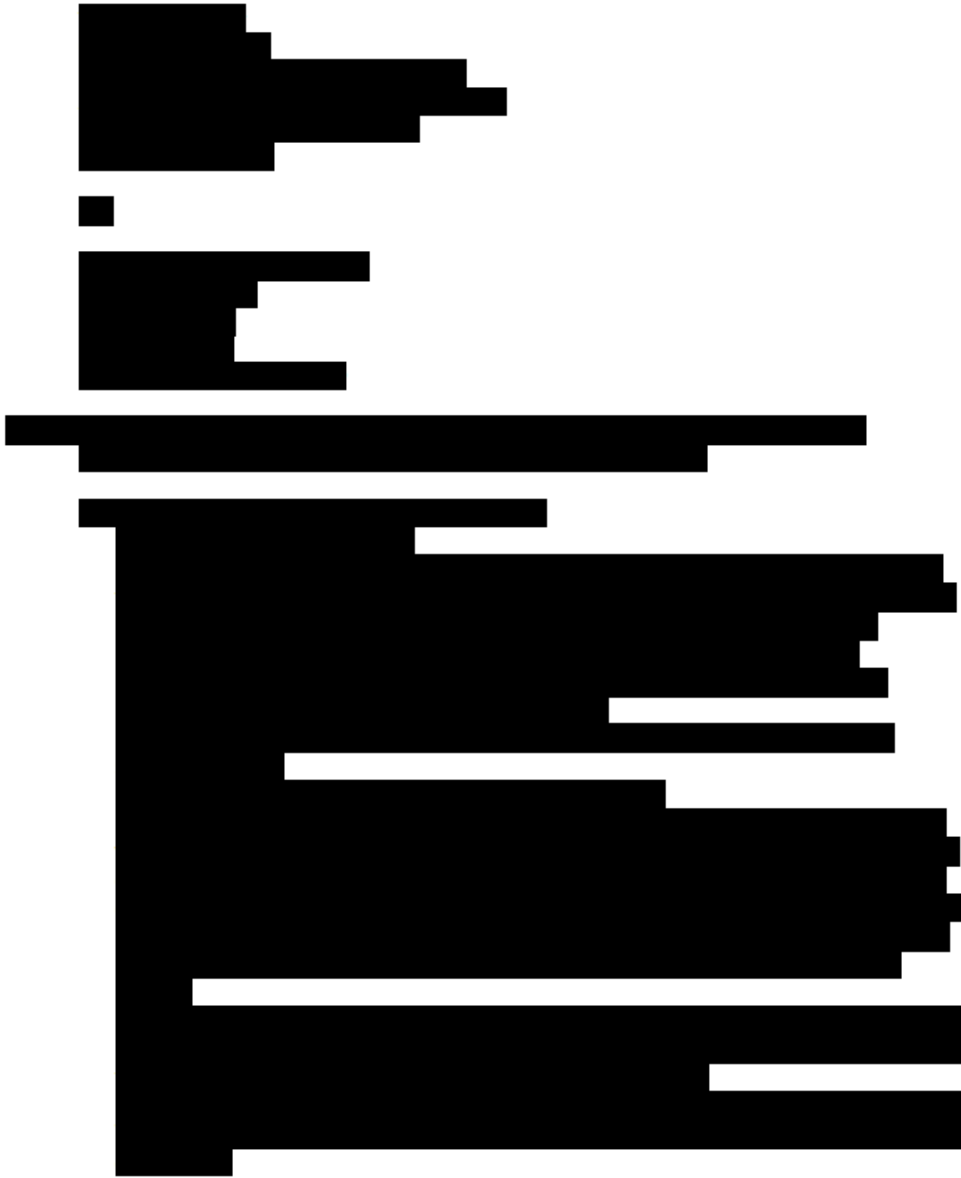
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Part D – Operating Conditions: Regional Haze BART

- (1) The Permittee shall eliminate the use of coal as a fuel in the No. 24 boiler and replace with natural gas, using fuel oil as an intermittent backup when natural gas supply is constrained.
- (2) Sulfur Oxides
 - (a) The Permittee shall limit the SO₂ emissions from the No. 24 boiler to 0.28 lbs/mm/Btu measured as an hourly average.
 - (b) The Permittee shall utilize a SO₂ CEM on the No. 24 boiler duct or other approved monitoring method found in 40 CFR Part 75, Appendix D to demonstrate compliance with the SO₂ rate limit on an hourly averaged period.
- (3) Nitrogen Oxides
 - (a) The Permittee shall limit the NO_x emissions from the No. 24 boiler to 0.4 lbs/mm/btu measured on a 30-day rolling average.
 - (b) The Permittee shall utilize a NO_x CEM on the No. 24 boiler duct to demonstrate compliance with the NO_x rate limit.

Part E – Monitoring

- (1) Sulfur Oxides

The Permittee shall continuously monitor SO₂ emissions using a CEM or other approved monitoring method found in 40 CFR Part 75, Appendix D.

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- (2) Nitrogen Oxides
The Permittee shall continuously monitor NO_x emissions using a NO_x CEM.

Part F – Record Keeping and Reporting

- (1) The Permittee shall maintain records of natural gas and No. 2 fuel oil usage on the No. 24 boiler for at least five (5) years, and shall make the data available to the Department upon request.
- (2) The Permittee shall submit a quarterly CEM summary report in accordance with COMAR 26.11.01.11E(2)(c) to the Department not later than 30 days following each calendar quarter.
- (3) The Permittee shall report all CEM system downtime that lasts or is expected to last more than 24 hours to the Department by telephone before 10 a.m. of the first regular business day following the breakdown. The system breakdown report shall include the reason, if known, for the breakdown and the estimated period of time that the CEM will be down. The owner or operator of the CEM shall notify the Department by telephone when an out-of-service CEM is back in operation and producing valid data.
- (4) The Permittee shall report the all information required in §63.7550 and Table 9 of 40 CFR 63 Subpart DDDDD.
- (5) The Permittee shall submit to the Department by April 1 of each year a certification of emissions for the previous calendar year. The certifications shall be prepared in accordance with requirements, as applicable, adopted under COMAR 26.11.01.05 – 1 and COMAR 26.11.02.19D.
- (a) Certifications of emissions shall be submitted on forms obtained from the Department.
- (b) A certification of emissions shall include mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each of the facility's registered sources of emissions.
- (c) The person responsible for a certification of emissions shall certify the submittal to the Department in the following manner:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with


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a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

- (6) The Permittee shall report, in accordance with requirements under COMAR 26.11.01.07, occurrences of excess emissions to the Compliance Program of the Air and Radiation Management Administration.

Appendix B2 – Federally Enforceable Permit Conditions Boiler No. 25

KEEP PERMIT AT SITE **CONTROL NO. B- 05212**



State of Maryland

Lawrence J. Hogan, Jr.
Governor

Ben Carradine
Secretary

DEPARTMENT OF THE ENVIRONMENT

Wayne K. Rutledge
Lt. Governor

Air and Radiation Management Administration
1800 Washington Boulevard, Suite 720
Baltimore, MD 21200

Construction Permit Operating Permit

PERMIT NO. 001-0011-3-0019 DATE ISSUED AUG 17 2016

PERMIT FEE \$500.00 (Paid) EXPIRATION DATE In accordance with COMAR 26.11.02.04B

LEGAL OWNER & ADDRESS	SITE
Verso Corporation Luke Paper Company 300 Pratt St Luke, Maryland 21540-1099 Attention: Mr. Ronald Paugh Environmental Manager	Luke Paper Company 300 Pratt St Luke, MD 21540 Premises # 001-0011 AI # 1873

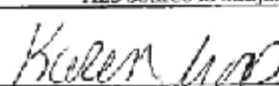
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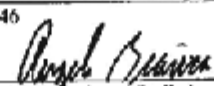
Modification of the No.25 Boiler to include the installation of a Dry Sorbent Injection (DSI) system to control HCl emissions and comply with 40 CFR Part 63 Subpart DDDDD and Regional Haze Rule.

This permit supersedes permit to construct number 001-0011-3-0018 & 0019 issued on April 22, 2008.

This source is subject to the conditions described on the attached pages.

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 Keelen
 Program Manager


 Angela
 Director, Air and Radiation Management Administration

MDE/ARMA/PER.009 (Rev. 10-08-03) (NOT TRANSFERABLE)

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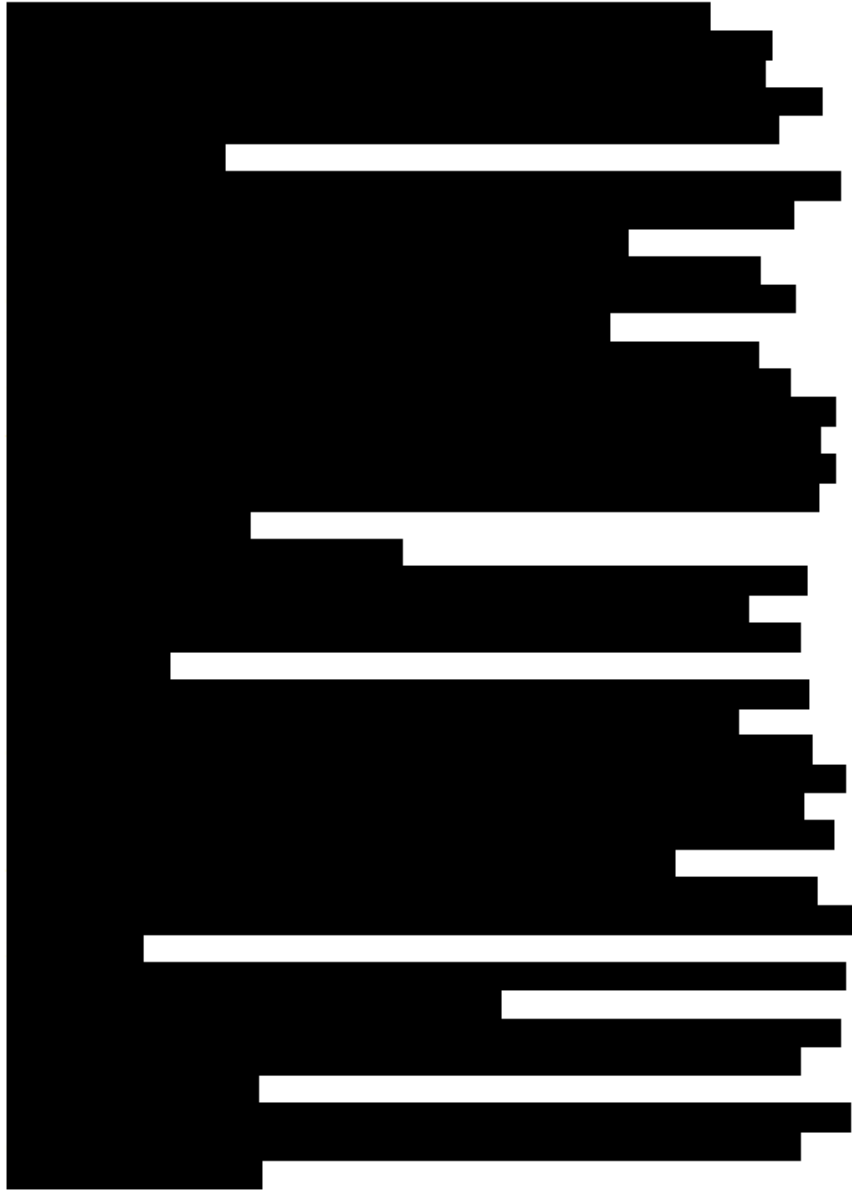
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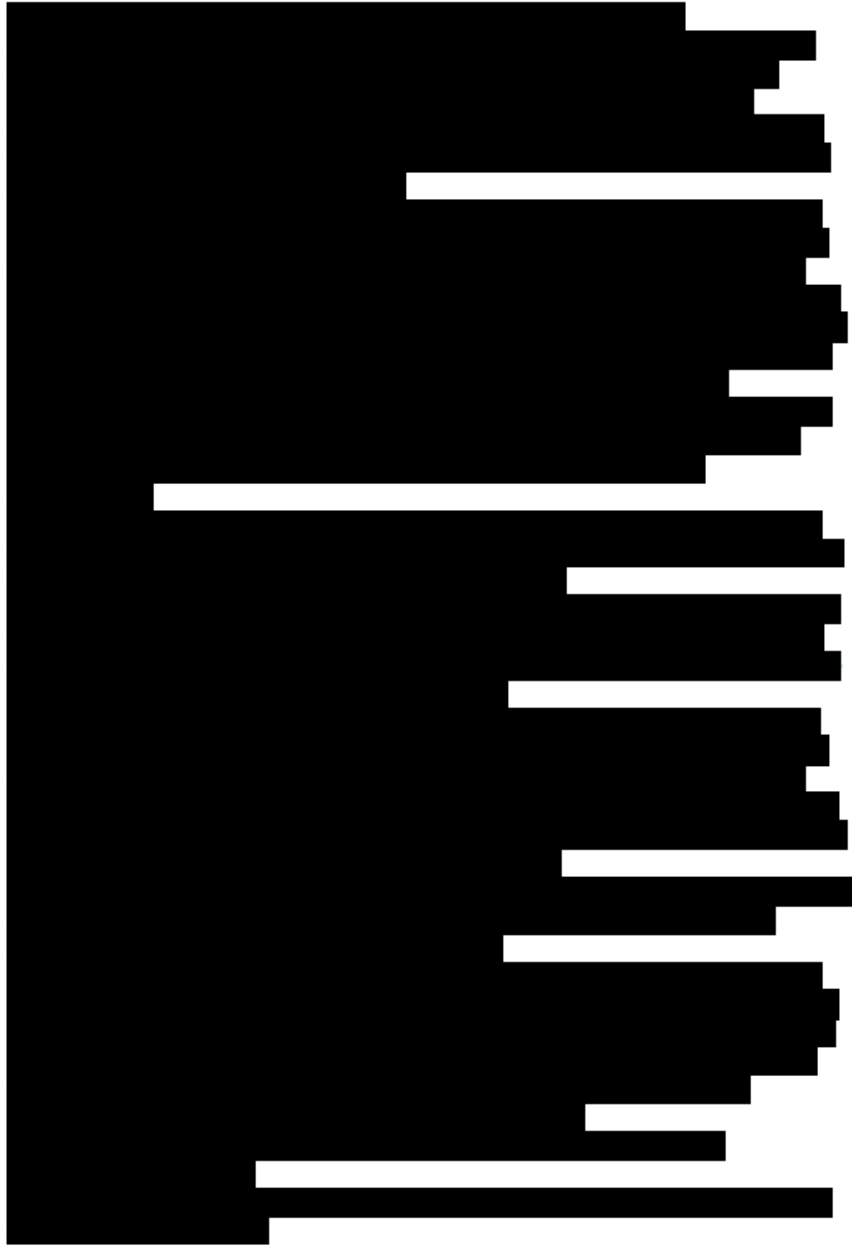
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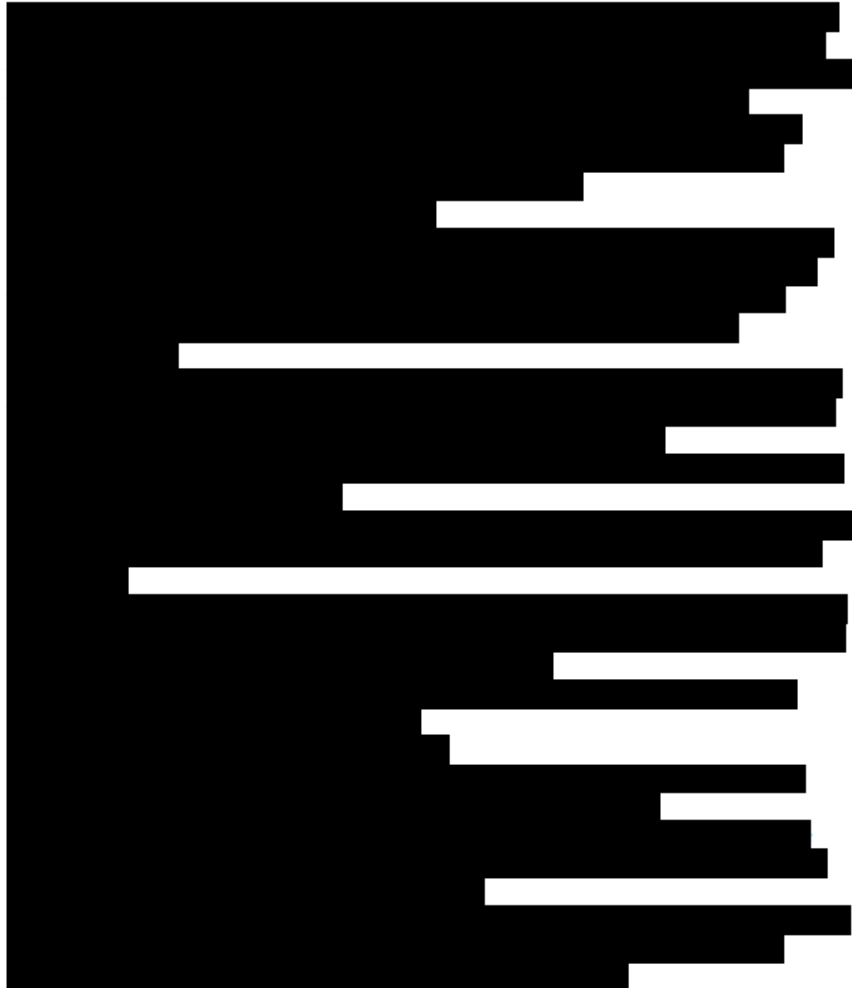
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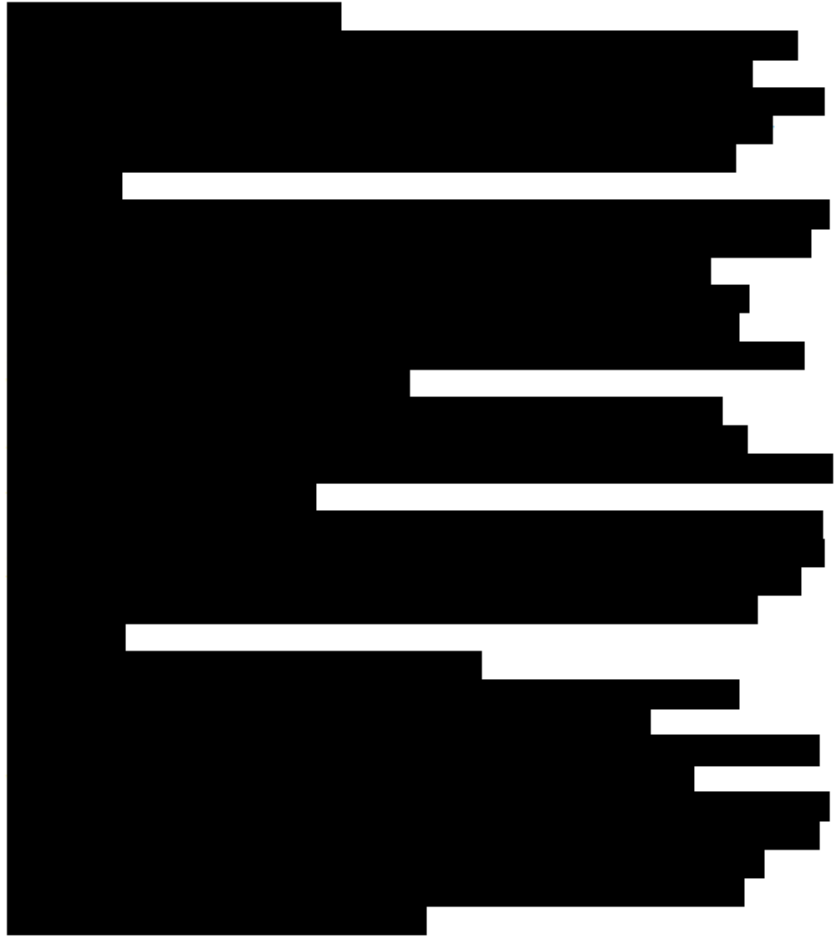
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Part D – Operating Conditions: Regional Haze BART

- (1) Sulfur Oxides
 - (a) The Permittee shall limit the SO₂ emissions from the No. 25 boiler to an annual cap of 9,876 tons measured on a 12-month rolling average. These restrictions ensure that no backsliding can occur.
 - (b) The Permittee shall utilize a SO₂ CEM to demonstrate compliance.

- (2) Nitrogen Oxides
 - (a) The Permittee shall comply with the current conditions (COMAR 26.11.14.07) applicable to the No. 25 boiler including an ozone season tonnage cap, an ozone season rate, and a non-ozone season rate limit. These restrictions ensure that no backsliding can occur.
 - (b) The Permittee shall utilize a NO_x CEM to demonstrate compliance with the NO_x rate limits and tonnage cap.

- (3) Particulate Matter
 - (a) The Permittee shall comply with the 0.07 lb/mmBtu PM limit.
 - (b) The Permittee shall utilize a PM-CPMS in accordance with 40 CFR 63 Subpart DDDDD to demonstrate compliance with the PM rate limit.

Part E – Notification, Testing and Monitoring

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- (1) Sulfur Oxides
The Permittee shall continuously monitor SO₂ emission using a SO₂ CEM.
- (2) Nitrogen Oxides
The Permittee shall continuously monitor NO_x emissions using a NO_x CEM.



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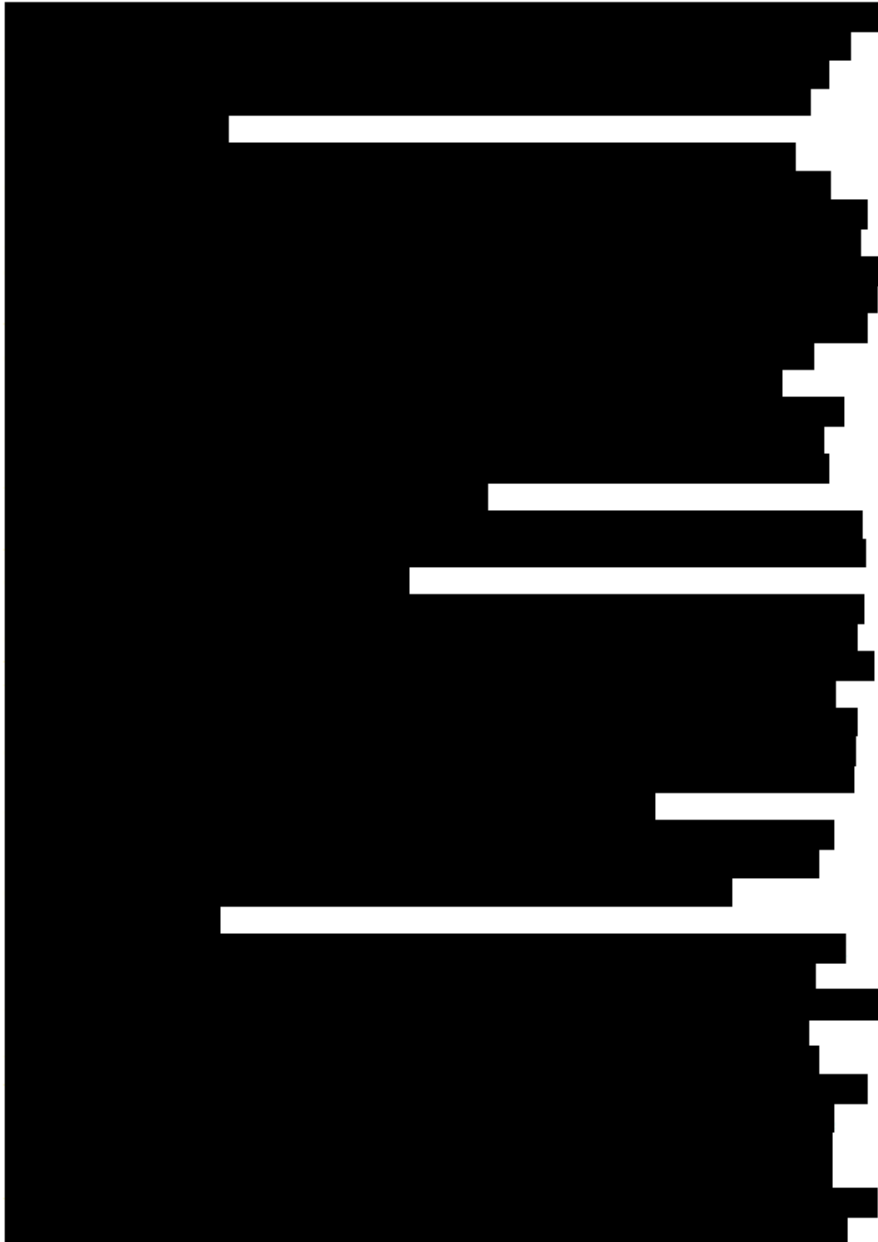
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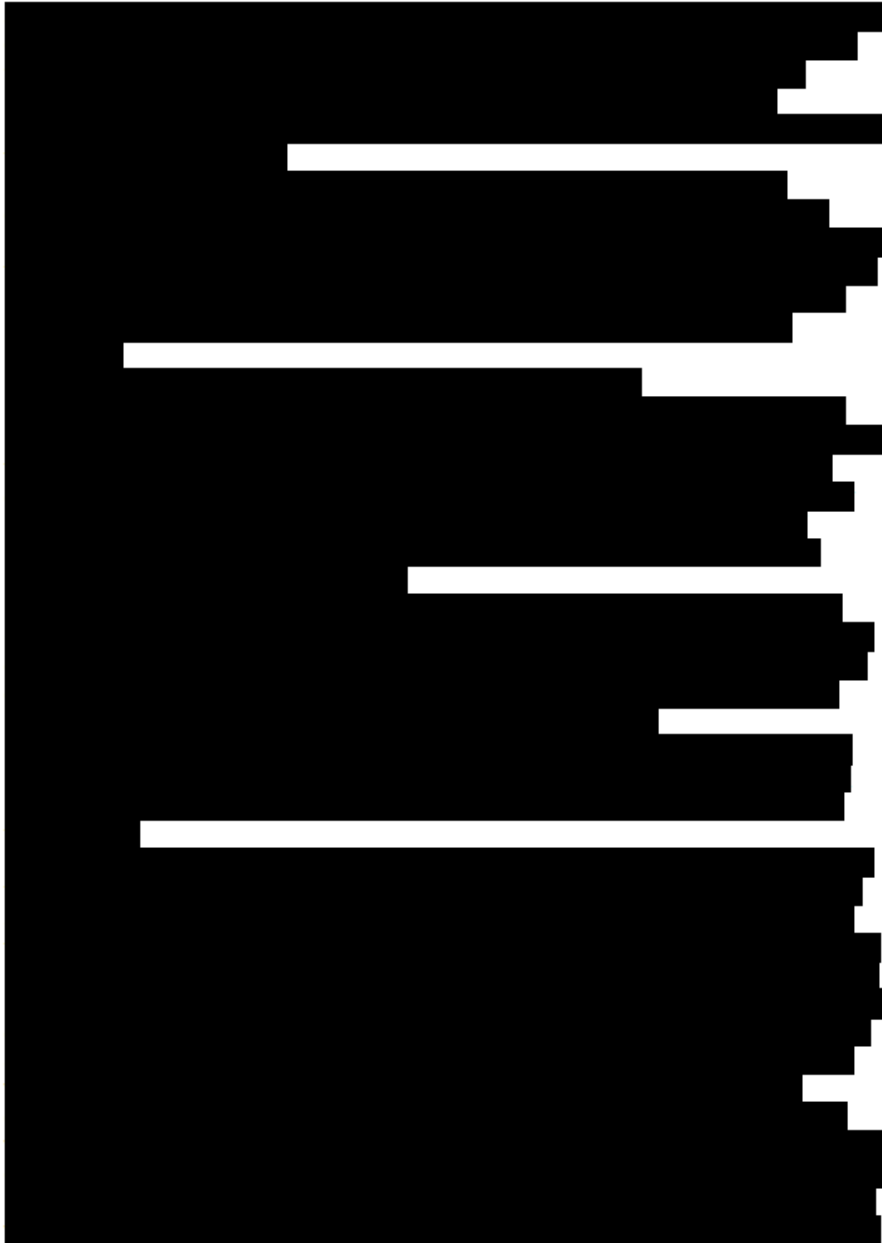
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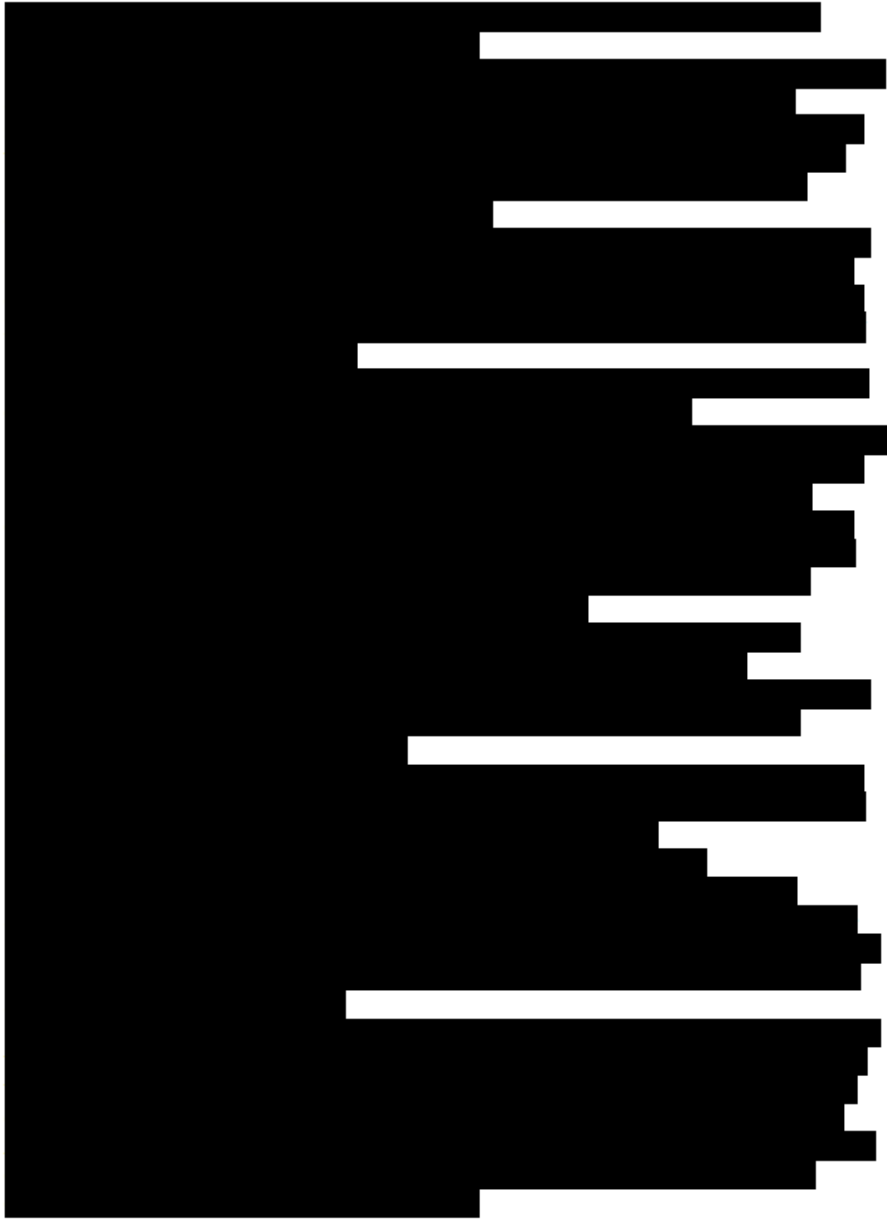
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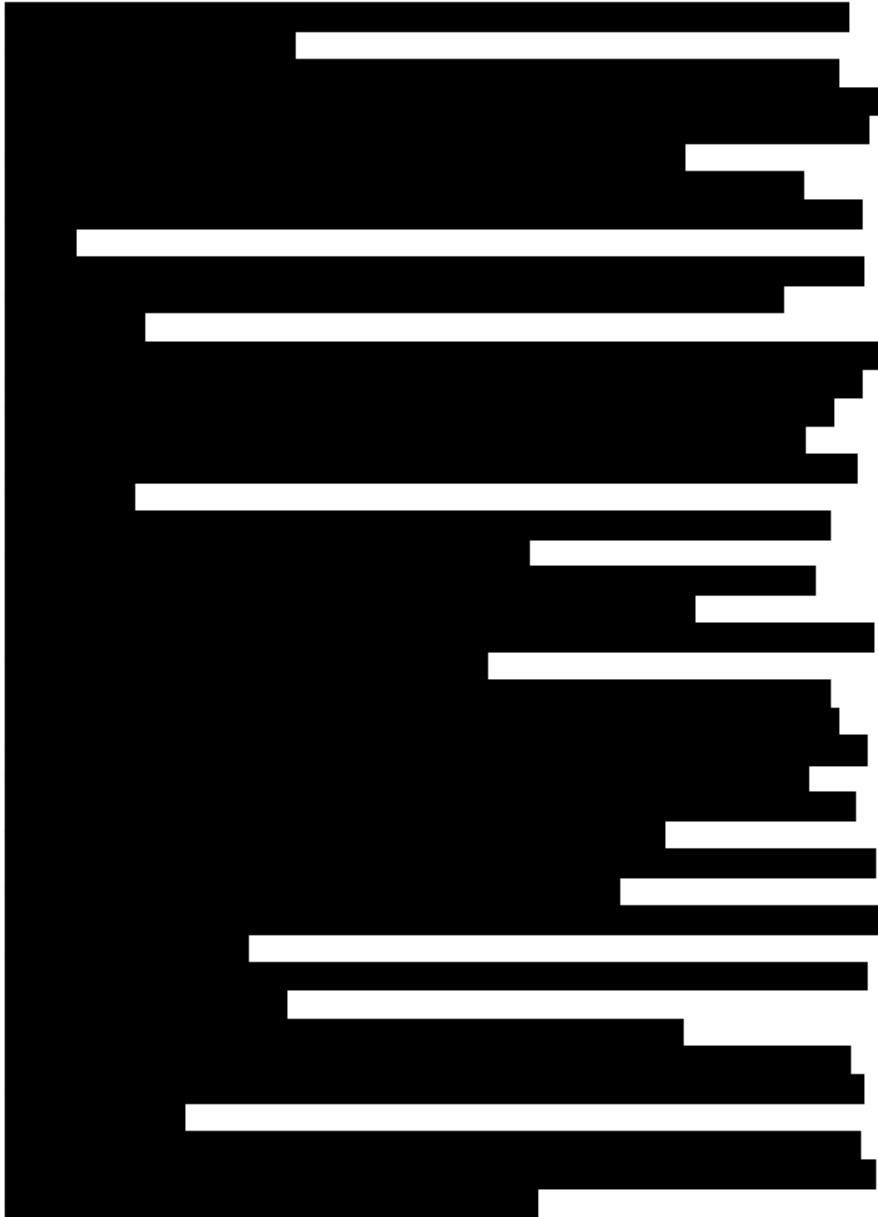
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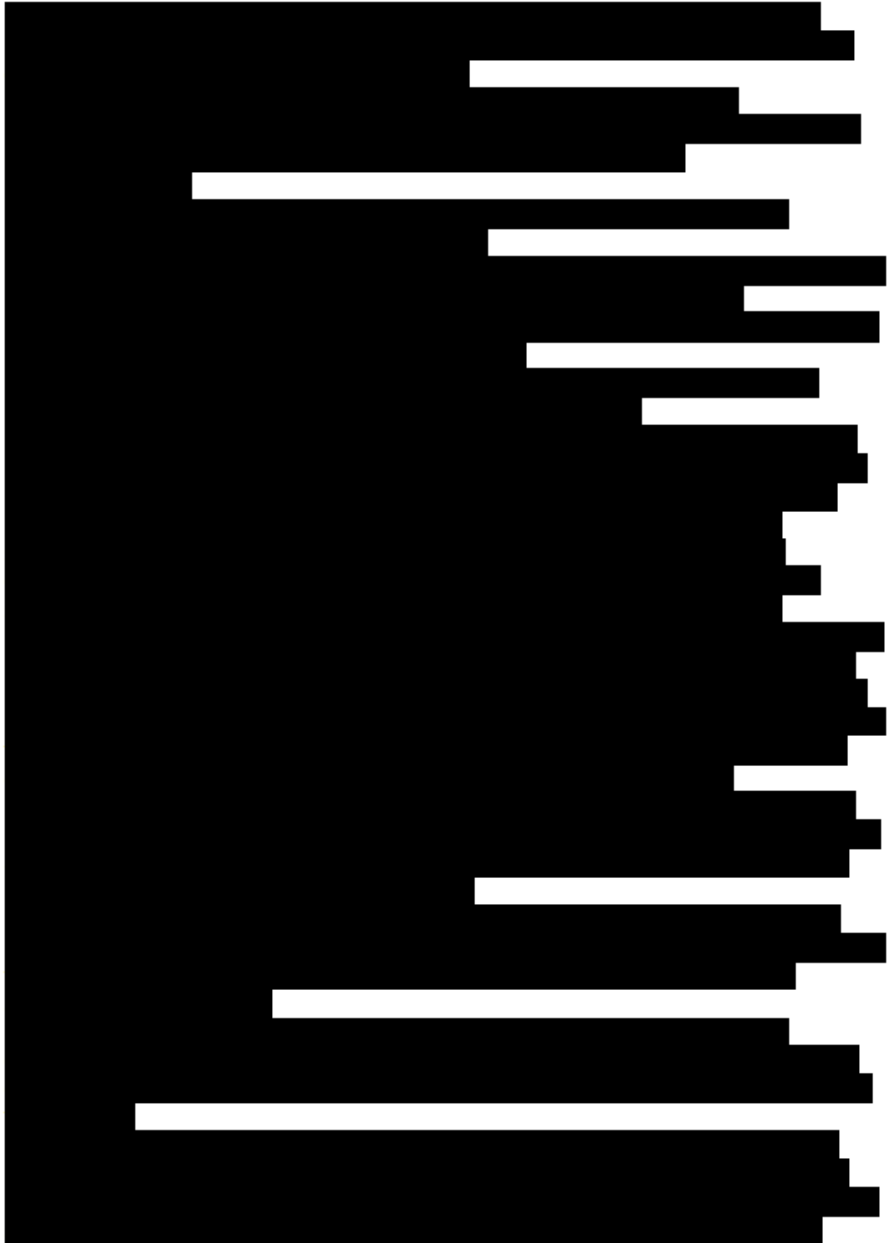
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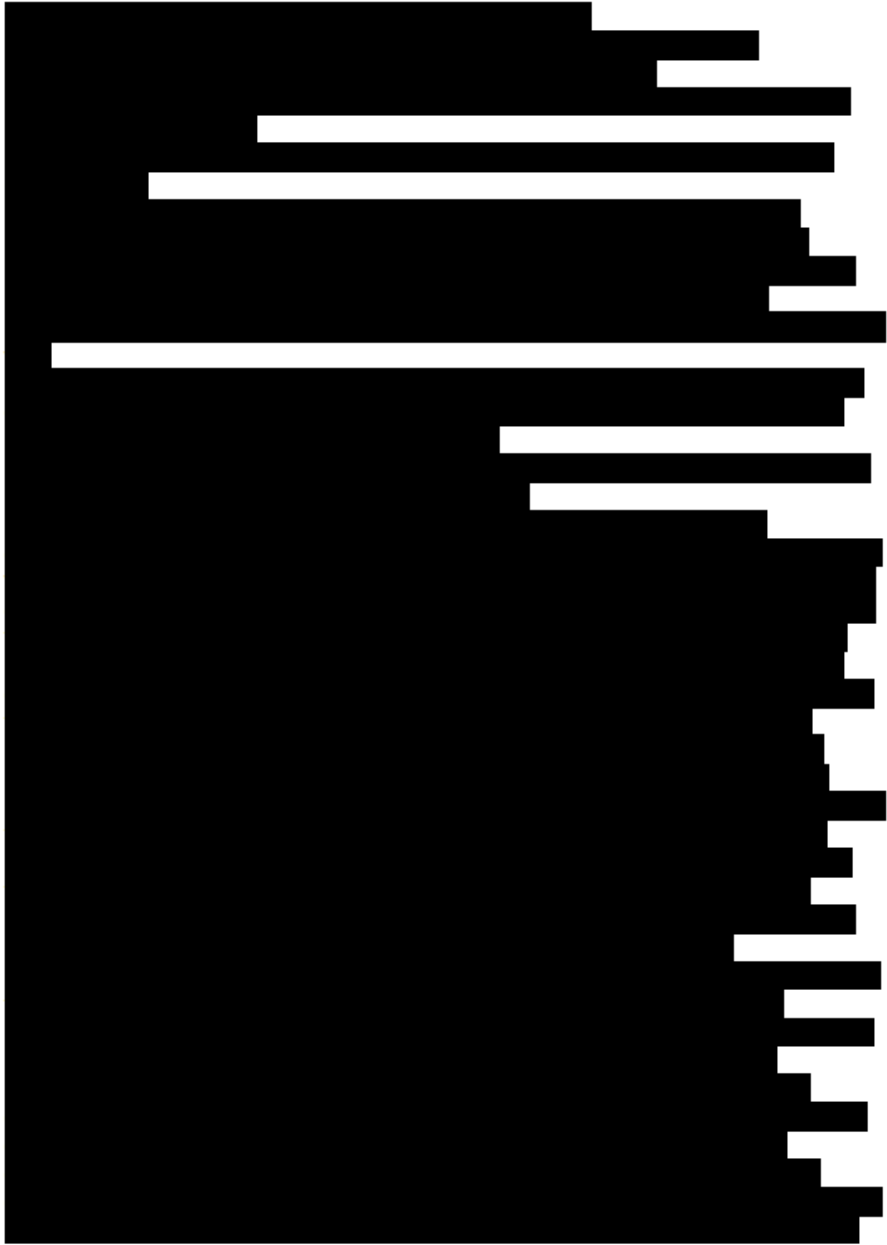
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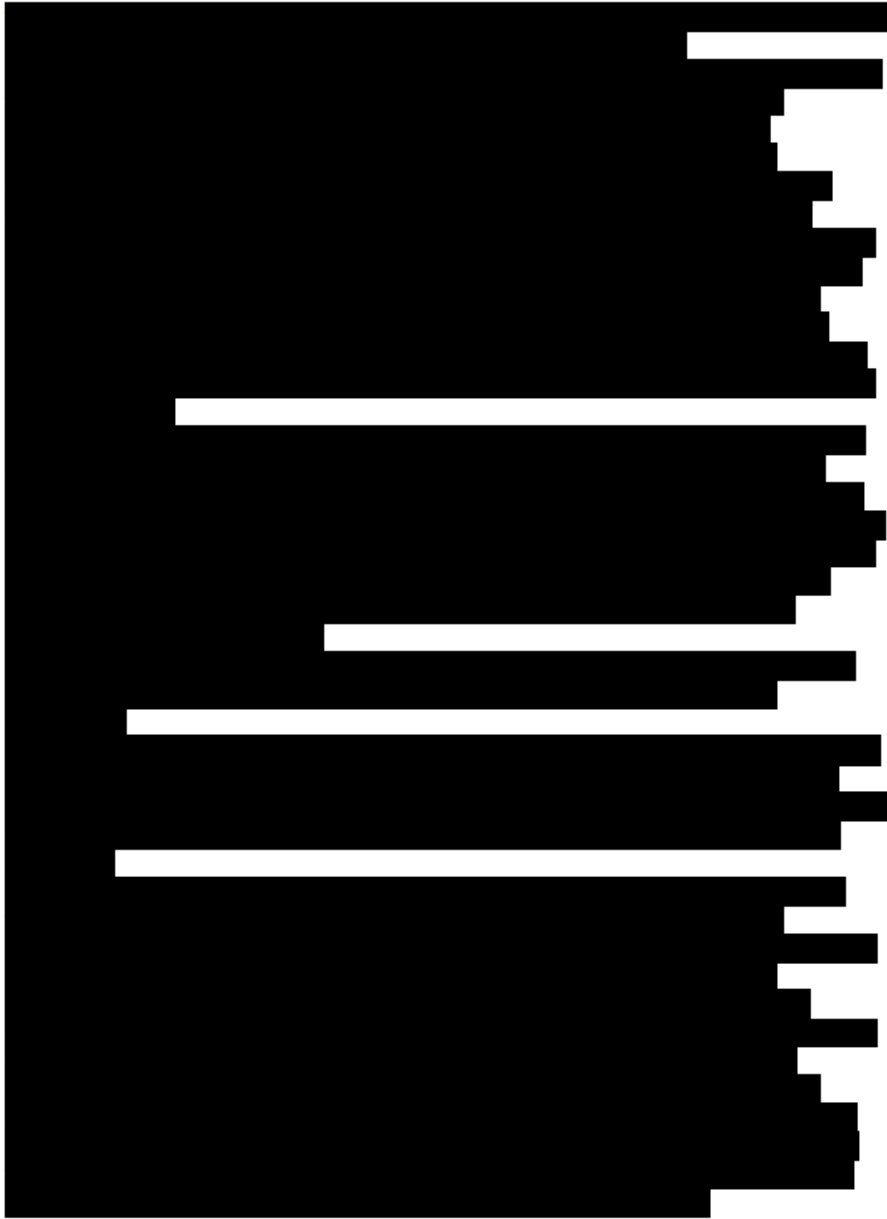
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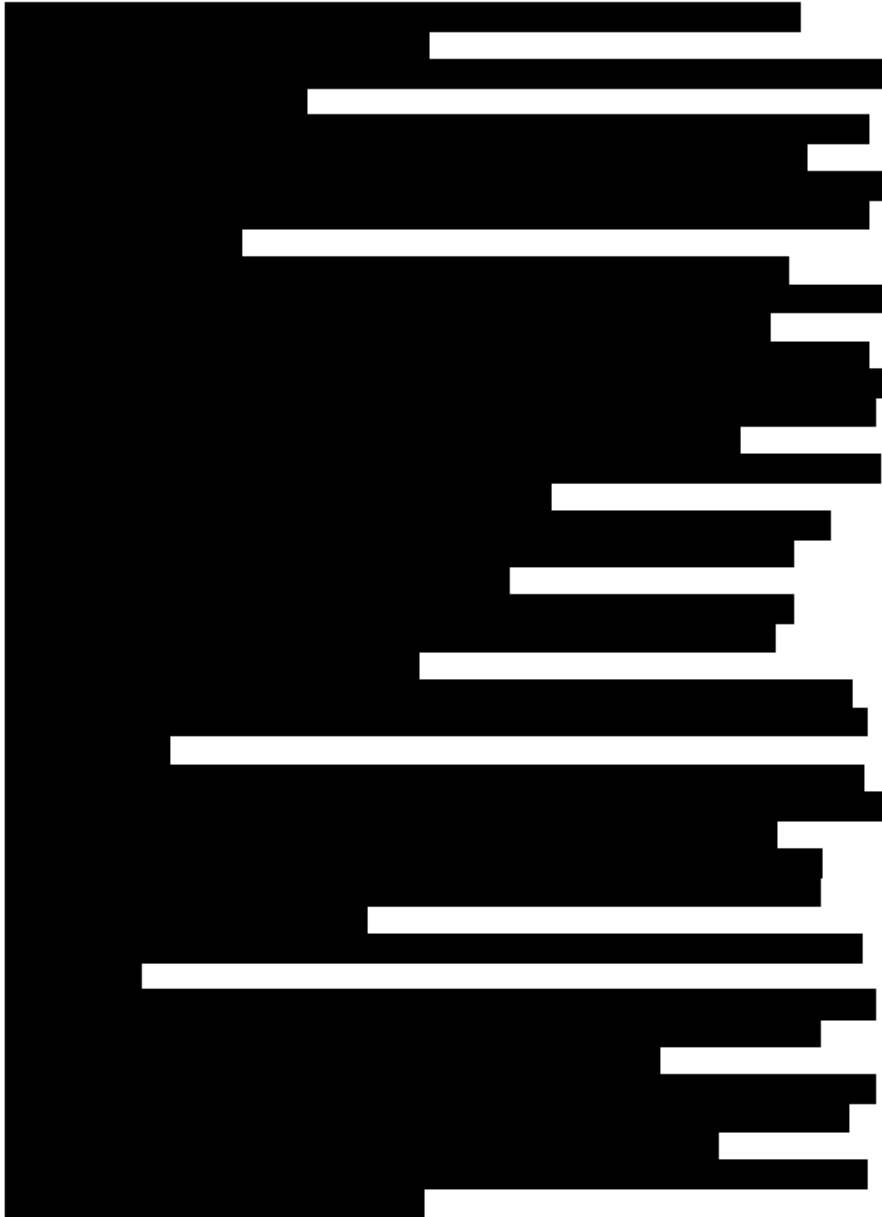
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- (3) The Permittee shall submit to the Department by April 1 of each year a certification of emissions for the previous calendar year. The certifications shall be prepared in accordance with requirements, as applicable, adopted under COMAR 26.11.01.05 – 1 and COMAR 26.11.02.19D.
 - (a) Certifications of emissions shall be submitted on forms obtained from the Department.
 - (b) A certification of emissions shall include mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each of the facility's registered sources of emissions.
 - (c) The person responsible for a certification of emissions shall certify the submittal to the Department in the following manner:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

