#### **BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

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IN THE MATTER OF:

AMENDMENTS TO 35 Ill. Adm. Code Parts 212 and 215

R 23-18(A)

(Rulemaking – Air)

#### **NOTICE OF FILING**

**To:** Attached Service List

**PLEASE TAKE NOTICE** that on this day, the 15th day of March, 2024, I caused to be filed with the Clerk of the Illinois Pollution Control Board **RAIN CII CARBON LLC'S SUPPLEMENTAL RESPONSE TO ILLINOIS EPA COMMENTS**, and supporting documents, copies of which are herewith served upon you.

/s/ Alexander Garel-Frantzen

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R 23-18(A) (Rulemaking – Air)

#### RAIN CII CARBON LLC'S SUPPLEMENTAL RESPONSE TO ILLINOIS EPA COMMENTS

Pursuant to the Hearing Officer Order dated March 6, 2024, Rain Carbon, by and through its attorneys, ArentFox Schiff LLP, submits this Supplemental Response to Illinois EPA's Comments, P.C. #5.<sup>1</sup>

1. On December 1, 2023, Rain Carbon submitted an Initial Response to Illinois EPA Comments (P.C. #11) ("Initial Response"). In that Initial Response, Rain Carbon informed the Board that it had been engaged in ongoing discussions with Illinois EPA to address the Agency's comments and requests for information pertaining to Rain Carbon's proposed AELs for opacity, PM, and VOM, but that additional time was needed to complete supplemental modeling. The supplemental modeling was developed to address and respond to Illinois EPA's Comments and bolster the initial modeling submitted with the Proposal of Regulations that demonstrated that the proposed AELs do not interfere with the attainment and maintenance of the applicable NAAQS. CAA, Section 110(1), 42 U.S.C. § 7410(1), of the CAA. As part of its discussions with the Agency, Rain Carbon presented Illinois EPA with information responsive to the requests contained in Illinois EPA's Comments, which formed the basis for Rain Carbon's supplemental

<sup>&</sup>lt;sup>1</sup> Capitalized terms have the same meaning as set forth in Rain Carbon's Proposal of Regulations, unless otherwise indicated herein.

modeling and the revisions to Rain Carbon's proposed AELs that are being proposed in this Supplemental Response.

2. Since submitting the Initial Response, Rain Carbon has further evaluated historical operational data and the results of the July 2023 engineering study to develop revised AELs to address comments raised in Illinois EPA's Comments (the "Revised Proposed AELs"). In addition, Rain Carbon, through its consultant, Trinity Consultants, has developed revised modeling for PM and VOM to both address Illinois EPA's concerns articulated in their Comments, as well as refine the modeling based on additional evaluation of the July 2023 engineering study and to account for the more stringent proposed PM and VOM standards in the Revised Proposed AELs.

3. In January 2024, Rain Carbon provided Illinois EPA with the supplemental modeling for the Agency's technical review. Illinois EPA did not identify any necessary revisions to that supplemental modeling or request that Rain Carbon conduct any additional modeling. Following Illinois EPA's review of Rain Carbon's supplemental modeling, Illinois EPA provided Rain Carbon with suggested revisions to its original proposed AELs. Illinois EPA's suggested revisions were consistent with previous discussions between Rain Carbon and Illinois EPA.

4. Accordingly, Rain Carbon is providing as <u>Attachment A</u> to this Supplemental Response, Revised Proposed AELs that incorporate Illinois EPA's suggested revisions.<sup>2</sup> The reasons for the Revised Proposed AELs, including how this proposal serves to address and resolve concerns raised in the Illinois EPA's Comments, are further detailed below.

<sup>&</sup>lt;sup>2</sup> The revised proposed AELs also incorporate various minor revisions previously proposed by both the Board in the Hearing Officer Order dated September 20, 2023, and JCAR in P.C. #2 dated September 7, 2023.

5. Concurrent with this Supplemental Response, Rain Carbon is filing the Second Pre-filed Testimony of Bryan Higgins of Trinity Consulting (the "Second Pre-filed Testimony"), which attaches a Supplemental Technical Support Document (the "Supplemental TSD") prepared by Trinity Consulting on behalf of Rain Carbon. The Supplemental TSD details the additional modeling and the additional evaluation of the July 2023 engineering study conducted to address the concerns raised in Illinois EPA's Comments and demonstrates that the Revised Proposed AELs—which are more stringent that the initial AELs proposed by Rain Carbon—will not interfere with the attainment and maintenance of the applicable NAAQS, in accordance with Section 110(1), 42 U.S.C. § 7410(1), of the CAA.<sup>3</sup>

6. Based on the forgoing, in advance of the Board's Third Hearing scheduled for April 15, 2024, Rain Carbon responds to Illinois EPA's Comments as follows.

#### I. Proposed AEL for Opacity (35 Ill. Adm. Code § 212.124)

7. Illinois EPA raised two concerns regarding Rain Carbon's proposed AEL for opacity. First, the Agency stated that "[t]he term 'non-consecutive' in the proposed revisions in 212.124(e)(1) is not necessary, as it was included to acknowledge that there may be rest time between opacity readings."<sup>4</sup> (Illinois EPA's Comments at p. 10). Rain Carbon agrees that the

<sup>&</sup>lt;sup>3</sup> Rain Carbon respectfully *disagrees* with statements in the Illinois EPA's Comments suggesting that Rain Carbon's original TSD and associated modeling did not reflect worst-case emissions for PM or VOM. Rain Carbon restates its position that the original TSD and associated modeling offer a valid approach to demonstrate that the original proposed AELs (as well as the more stringent Revised Proposed AELs) do not interfere with the NAAQS pursuant to Section 110(1) of the CAA. Nonetheless, because Rain Carbon and Illinois EPA have worked cooperatively on the supplemental modeling that supports the Proposed Revised AELs, it is not necessary to provide any further response to Illinois EPA's comments on this issue.

<sup>&</sup>lt;sup>4</sup> In Rain Carbon's initial proposed AELs, the proposed rule language was contained within Section 212.124(e). Illinois EPA requested that Rain Carbon's Revised Proposed AEL for opacity be located under Section 212.124(d).

phrase "non-consecutive" is unnecessary and has removed it from the Revised Proposed AEL for opacity.

8. Second, the Agency requested that Rain Carbon provide justification for why a "3-hour averaging period would be necessary to comply with the opacity standard." (*Id.* at 11). As previously explained in Rain Carbon's TSD, opacity levels reached a maximum of 50% during the first hour of the engineering study performed at Rain Carbon's facility on July 20, 2023. (*See* Exhibit 1 to Pre-filed Testimony of Bryan Higgins, Technical Support Document at Section 2 (Sept. 5, 2023) (the "TSD")). Opacity levels are highest shortly after green coke is first introduced into the kiln, when kiln temperature (and, thus, the inlet temperature to the pyroscrubber) is lowest.

9. Green coke is typically introduced into the kiln after the inlet temperature to the pyroscrubber reaches approximately 400 °F, which is attained using natural gas burners alone. (Rain Carbon, Statement of Reasons at p. 12). However, during the July 2023 engineering study, green coke was first introduced into the kiln when the inlet temperature to the kiln measured approximately 600 °F. (TSD at p. 2-1, Table 2-1, and Appendix F at PDF p. 214, Row "7/20/23 9:45"). This means that the July 2023 engineering study did not include opacity observations at the lower temperatures (*i.e.*, 400-600 °F) typically experienced during start-up. Had those observations occurred, even higher opacity readings for a longer duration would have been expected. The Agency acknowledges that fact in the Illinois EPA's Comments, noting that opacity readings from the July 2023 engineering study "declined sharply after the first 30 minutes of observations." (Illinois EPA's Comments at p. 11). Accordingly, while Illinois EPA is correct that opacity observations exceeding the 30 percent standard under Section 212.123(b) were not observed for a 3-hour average, the proposed averaging period remains necessary

because future start-up conditions will include periods when green coke is introduced into the kiln at temperatures far lower than those observed during the July 2023 engineering study.

 Rain Carbon discussed the above-reasoning for the proposed average of up to three, 1-hour averaging periods for opacity with Illinois EPA in November 2023, and Rain Carbon believes that Illinois EPA found the reasoning supported the original requested relief.
Illinois EPA did not suggest any changes to Rain Carbon's proposed AEL for opacity.
Accordingly, Rain Carbon has not proposed any substantive changes to Rain Carbon's proposed opacity AEL.

#### II. Proposed AEL for PM (35 Ill. Adm. Code § 212.322)

11. Illinois EPA requested that Rain Carbon justify the request for relief to exceed the PM emission limit standard under Section 212.322 for up to 720 hours per kiln per calendar year. (*See* Illinois EPA's Comments at p. 9). While Rain Carbon demonstrated through modeling that 720 hours per kiln per year would not interfere with the applicable PM NAAQS (*see* Pre-filed Testimony of Bryan Higgins at pp. 19-20 (Sept. 5, 2023)), Rain Carbon did not substantiate why it needed that amount of time to comply with the PM standard. As discussed below, in response to Illinois EPA's request, Rain Carbon is: (i) proposing a significantly more stringent AEL by reducing the requested relief from 720 hours to 300 hours per kiln per year; (ii) providing historic operational data that supports the requested relief; and (iii) providing justification for why the relief is needed for periods of start-up and malfunction/breakdown.

12. Rain Carbon is proposing a revised PM AEL that allows Kiln 1 or Kiln 2 to emit PM in excess of the allowable emission rates under Section 212.322(c) for up to 300 hours per kiln per year during periods of start-up, malfunction, and breakdown when the temperature at the inlet to the pyroscrubber servicing the kiln is below 1800 °F. In other words, the only

substantive change from Rain Carbon's initial PM proposed AEL is a reduction in hours that a kiln may exceed the PM standard from 720 hours to 300 hours per kiln per year.

13. Historic and future potential operations at the Facility justify the need for the requested relief. As detailed in the Statement of Reasons, the pyroscrubbers are operated at a minimum of 1800 °F, except when in start-up or during malfunction or breakdown events. (*See* Statement of Reasons at pp. 13-14). Rain Carbon used representative<sup>5</sup> years during the past 10 years to determine the total number of hours Kiln 1 and Kiln 2 operated at temperatures below 1800 °F with coke in the kiln (on a 3-hour average as measured at the inlet to the pyroscrubber), which includes periods of both start-up and malfunction/breakdown. Those actual historic SMB hours are listed in *Column B* of Table 1, below.

14. The actual historic SMB hours, however, are lower than the total potential number of SMB hours that could have physically and lawfully occurred during those years. This is because Rain Carbon is (and was historically) permitted under its CAAPP Permit to operate in violation of the applicable PM emission limits during the entirety of a malfunction or breakdown event, and up to 24 hours during a start-up event. (*See* Statement of Reasons at pp. 14-15).

15. Therefore, to properly assess the potential number of SMB hours per kiln per year that may occur in the future, Rain Carbon extrapolated actual historic SMB hours to account for the possibility of longer start-up events and longer malfunction/breakdown events. Specifically, Rain Carbon took the sum of the difference between 24 hours and the actual duration of each malfunction/breakdown event (*Column C*) or start-up (*Column D*) event for the year. *Column* E

<sup>&</sup>lt;sup>5</sup> *Column A* of Table 1 reflects "representative" years when Kiln 1 or Kiln 2 operated 50% or more of the year. Years where either Kiln 1 or Kiln 2 operated less than 50% of the calendar year are not considered to be "representative" years of operation and were excluded from this historical evaluation.

reflects the total potential SMB hours for the year (*Columns* B+C+D). Finally, to project what the potential SMB hours might have been had the kilns operated year-round, Rain Carbon normalized the values for a full year in *Column F*.

16. Table 1 demonstrates that based on historic operations, the average number of hours that Kiln 1 and Kiln 2 may experience start-up or malfunction/breakdown events if operated year-round in the future is approximately 300 hours per kiln per year. Rain Carbon used this projection as the basis for its the Revised Proposed AEL for PM.<sup>6</sup>

#### Table 1

	А	В	С	D	Е	F
Kiln 1						
	Operation (Hours)	Pyro 3-Hour AVG < 1800 (Hours)	Malfunction Remainder Hours	Start-up Remainder Hours	Total Hours	Normalized (1 Year Operation)
2014	7412	107	140	10	257	303
2015	7295	139	64	16	219	263
2016	6148	81	41	25	147	209
2017	7684	116	76	5	197	224
2018	8367	91	107	33	230	241
2019	7943	80	59	29	168	185
2020	7107	46	188	0	234	289
17.1 0						
Kiln 2		Dense AVC	Malfan dian	C to at an a		NT
	Operation	Pyro AVG < 1800	Remainder	Start-up Remainder		Normalized (1 Year
	(Hours)	(Hours)	Hours	Hours	Total Hours	Operation)
2014	7925	140	252	31	422	467
2016	4527	120	80	17	217	420
2017	8452	76	59	20	154	159
2019	6890	17	165	49	231	293
2020	4329	81	123	39	244	493
2021	5851	60	169	9	238	356

<sup>6</sup> Rain Carbon presented the historic SMB hours in Table 1 to Illinois EPA during discussions between the parties as support for the more narrowly tailored limit of 300 hours per kiln per year in the Revised Proposed AEL.

17. Lastly, during discussions with Illinois EPA, the Agency requested that Rain Carbon justify the inclusion of both periods of start-up and of malfunction/breakdown in the 300 hours of relief proposed in the Revised Proposed AEL for PM.<sup>7</sup> In short, PM emissions are generally greater at lower pyroscrubber inlet temperatures, which is more often experienced during start-up than during malfunction/breakdown events. As explained in section 4.2 of the Supplemental TSD, emissions during start-up events are generally greater than emissions during malfunction/breakdown events in both extent and duration for three reasons: first, on average, start-up events occur for longer durations; second, temperature increases during start-up are often more gradual (to preserve refractory at lower temperatures), meaning that start-up may last for a longer duration at lower pyroscrubber inlet temperatures; and, third, start-ups generally begin at lower temperatures and progress over a broader temperature range before reaching 1800 °F. Therefore, the inclusion of both start-up and malfunction/breakdown events does not reduce the overall stringency of the proposed AEL for PM.

18. Based on the above (as further discussed in the Supplemental TSD submitted concurrent with this Supplemental Response), Rain Carbon modeled the impact of 300 hours per kiln per year of start-up emissions to conservatively evaluate the impact of the proposed relief on the  $PM_{10}$  24-hour NAAQS, and the  $PM_{2.5}$  24-hour and Annual NAAQS. The modeling demonstrates that the Proposed Revised AEL for PM will not interfere with any NAAQS in accordance with CAA Section 110(1).

<sup>&</sup>lt;sup>7</sup> Illinois EPA requested that Rain Carbon provide the Agency and the Board with a comparison of sample pyroscrubber temperature data from start-up events and from malfunction/breakdown events. Rain Carbon is in the process of collecting that information and will submit it to the Board prior to the Third Hearing.

#### III. Proposed AEL for VOM (35 Ill. Adm. Code § 215.302)

19. In the Illinois EPA's Comments, the Agency observed that the maximum VOM emission rate measured during Rain Carbon's July 2023 engineering study was 2.41 pounds per hour. (*See* Illinois EPA's Comments at pp. 9-10). Illinois EPA requested that Rain Carbon substantiate the requested 24-hour VOM averaging period in its initial proposed AEL for VOM based on this test data. (*Id.* at p. 10). In response to Illinois EPA's Comments, Rain Carbon is proposing a more stringent AEL for VOM. Specifically, Rain Carbon is proposing that compliance with the VOM emission standard in Section 215.301 during any period of start-up at Kiln 1 or 2 may be determined over a 12-hour averaging period (reduced from the 24-hour averaging period initially proposed). As further explained below, the VOM test data from the 2023 engineering study supports the need for a 12-hour VOM averaging period.

20. As previously detailed in the initial TSD, Rain Carbon utilized EPA Method 25A to determine the concentration of total hydrocarbons (*i.e.*, VOM) during the Kiln 1 start-up period tested during the July 2023 engineering study. (*See* TSD at Section 3.1). Two conservative measures were employed during the evaluation of the VOM test data that underestimated the potential VOM concentrations during start-up. *First*, in order to convert the Method 25A sampling results to a VOM mass flow rate (*i.e.*, lb/hr), a calibration factor is applied to align the organic compounds in the gas stream and the gas used to calibrate the Method 25A analyzer. Section 12.1 of the Method 25A allows the determination of VOM concentration 'as propane' or 'as carbon.' The VOM results were initially reported 'as propane' in the initial TSD. However, the VOM results can be converted to an 'as carbon' basis to represent the upper end of the potential VOM emission rate from the kilns during start-up. (*See* Supplemental TSD at Section 3.1). Reporting the VOM results 'as carbon' entails an approximate three-fold increase

in measured VOM emissions during the July 2023 engineering study, with a maximum VOM concentration during the start-up period of 7.23 lb/hr.

21. Second, the July 2023 engineering study occurred during a start-up that had higher pyroscrubber inlet temperatures than typically experienced when green coke is introduced into the kiln. This had the effect of lowering the maximum measured VOM concentration during the study as compared to what potentially could have occurred (and will likely occur in the future). As noted above, during the July 2023 engineering study, green coke feed was not initiated until the pyroscrubber inlet temperature was in excess of 600 °F. Rain Carbon is permitted to initiate feed of green coke into the kiln when the pyroscrubber inlet temperature is as low as 400°F. A non-linear relationship exists between temperature and VOM concentrations. Specifically, VOM emissions tend to increase exponentially (not linearly) as temperature decreases. Therefore, VOM concentrations would likely have measured 2-3x higher (i.e., closer to 14-21 lb/hr using Method 25A 'as carbon') during the July 2023 engineering study had feed been introduced when the inlet pyroscrubber temperature was closer to 400 °F.

22. In order to demonstrate the anticipated exponential increase in VOM concentrations at low start-up temperatures, Trinity used the available Method 25A data from the July 2023 engineering study to extrapolate the exponential VOM emissions curve to cover the temperature range spanning from 400-600 °F. (*See* Supplemental TSD at Figure 3-2). The results are provided in Table 2, below. In short, at 400 °F, the maximum predicted VOM concentration was 14.47 lb/hr, nearly double the 8 lb/hr VOM standard under Section 215.301. (*See id.*).





23. Table 2 illustrates that VOM concentrations are predicted to drop below the 8 lb/hr regulatory limit once sufficient temperature at the pyroscrubber inlet is achieved. However, substantial time is needed for the average VOM concentrations during start-up to demonstrate compliance with the regulatory 8 lb/hr VOM limit. This is due to several factors. First, the extremely high VOM concentrations that are predicted to occur during the initial cooler period of start-up (*see* Table 1 above) means that multiple hours at higher pyroscrubber temperatures are needed to generate sufficiently low VOM concentrations for the average to demonstrate compliance with the 8 lb/hr regulatory limit. Second, kiln temperatures must be raised gradually during the start-up process to preserve the integrity of the kiln refractory. This means that the Facility cannot increase the rate by which temperature is increased as a means to reduce the duration of the start-up period that occurs at lower temperatures when VOM concentrations are the highest.

24. This is best evidenced by looking at an example start-up event at the Facility. Table 3, below, depicts an actual start-up event at the Facility in January 2022. Applying the

correlation curve derived from VOM testing during the July 2023 engineering study (Table 2, above) a reasonable representation of the likely worst-case VOM emissions during that start-up can be derived. The January 2022 startup is representative of a typical start-up insofar as it reflects the higher-expected VOM conditions that persist when coke is added with pyroscrubber inlet temperatures closer to 400°F. The last column of Table 3 illustrates that because of the high VOM concentrations experienced during the initial hours of start-up, a substantial number of additional hours during start-up were necessary before the average VOM emission rate came into compliance with the 8 lb/hr regulatory limit.

Hour	Pyroscrubber Inlet Temp (°F)	THC (VOM) "as carbon" (lbs/hr)	Rolling Average (lbs/hr)
1	456	12.212	12.212
2	682	6.157	9.185
3	450	12.436	10.269
4	400	14.470	11.319
5	682	6.157	10.287
6	852	3.679	9.185
7	827	3.968	8.440
8	927	2.931	7.751
9	1027	2.165	7.131

#### Table 3January 2022 Startup event

25. Accordingly, based on the measured 'as carbon' VOM concentrations during the July 2023 engineering study and the extrapolation of those concentrations during lower start-up temperatures, a 12-hour VOM averaging period is both necessary and supported by available data, and has been proposed as the Revised Proposed AEL for VOM. Rain Carbon modeled the impact of the Revised Proposed AEL utilizing the more conservative 'as carbon' VOM concentrations. As further discussed in the Supplemental TSD, the modeling continues to

demonstrate that the Proposed Revised AEL for VOM will not interfere with the Ozone NAAQS in accordance with CAA Section 110(1).

#### IV. Addressing Illinois EPA's Modeling Concerns

26. In the Illinois EPA's Comments, the Agency expressed its concern that Rain Carbon's modeling demonstration "does not adequately represent a 'worst-case' analysis, as the greatest hourly emission rates were not used as the basis for the modeling." (Illinois EPA's Comments at p. 9). As noted in Section I, above, over the past several months, Rain Carbon has engaged in substantive technical discussions with Illinois EPA in regard to the modeling and has completed supplemental modeling to address and respond to Illinois EPA's Comments. As further detailed in both the Second Pre-filed Testimony of Bryan Higgins and the Supplemental TSD submitted concurrently with this Supplemental Response, supplemental modeling was developed to provide further assurance that the modeling demonstration for the Revised Proposed AELs for PM and VOM adequately represented a "worst-case" analysis for SMB and start-up events, respectively. Since receiving the supplemental modeling in January 2024, Illinois EPA has not identified any necessary revisions to that modeling or asked that Rain Carbon conduct any additional modeling.

27. Thus, Rain Carbon submits that the modeling concerns articulated in the Illinois EPA's Comments have been addressed to the satisfaction of the Agency.

#### V. <u>Conclusion</u>

28. For the reasons discussed in this Supplemental Response, Rain Carbon hereby respectfully requests that the Board adopt these Revised Proposed AELs for the State of Illinois.

Respectfully submitted,

Rain CII Carbon LLC

By: <u>/s/ David M. Loring</u> David M. Loring

Dated: March 15, 2024

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## ATTACHMENT A

#### TITLE 35: ENVIRONMENTAL PROTECTION SUBTITLE B: AIR POLLUTION CHAPTER I: POLLUTION CONTROL BOARD SUBCHAPTER c: EMISSION STANDARDS AND LIMITATIONS FOR STATIONARY SOURCES

## PART 212 VISIBLE AND PARTICULATE MATTER EMISSIONS

#### SUBPART A: GENERAL

#### Section

- 212.100 Scope and Organization
- 212.107 Measurement Method for Visible Emissions
- 212.108 Measurement Methods for PM-10 Emissions and Condensible PM-10 Emissions
- 212.109 Measurement Methods for Opacity
- 212.110 Measurement Methods For Particulate Matter
- 212.111 Abbreviations and Units
- 212.112 Definitions
- 212.113 Incorporations by Reference

#### SUBPART B: VISIBLE EMISSIONS

#### Section

- 212.121 Opacity Standards (Repealed)
- 212.122 Visible Emissions Limitations for Certain Emission Units For Which
- Construction or Modification Commenced On or After April 14, 1972
- 212.123 Visible Emissions Limitations for All Other Emission Units
- 212.124 Exceptions
- 212.125 Determination of Violations
- 212.126 Adjusted Opacity Standards Procedures

#### SUBPART D: PARTICULATE MATTER EMISSIONS FROM INCINERATORS

#### Section

- 212.181 Limitations for Incinerators
- 212.182 Aqueous Waste Incinerators
- 212.183 Certain Wood Waste Incinerators
- 212.184 Explosive Waste Incinerators
- 212.185 Continuous Automatic Stoking Animal Pathological Waste Incinerators

## SUBPART E: PARTICULATE MATTER EMISSIONS FROM FUEL COMBUSTION EMISSION UNITS

#### Section 212.201 Emission Units For Which Construction or Modification Commenced Prior to April 14, 1972, Using Solid Fuel Exclusively Located in the Chicago Area 212.202 Emission Units For Which Construction or Modification Commenced Prior to April 14, 1972, Using Solid Fuel Exclusively Located Outside the Chicago Area Controlled Emission Units For Which Construction or Modification Commenced 212.203 Prior to April 14, 1972, Using Solid Fuel Exclusively 212.204 Emission Units For Which Construction or Modification Commenced On or After April 14, 1972, Using Solid Fuel Exclusively Coal-fired Industrial Boilers For Which Construction or Modification 212.205 Commenced Prior to April 14, 1972, Equipped with Flue Gas Desulfurization Systems **Emission Units Using Liquid Fuel Exclusively** 212.206 212.207 Emission Units Using More Than One Type of Fuel Aggregation of Emission Units For Which Construction or Modification 212.208 Commenced Prior to April 14, 1972 212.209 Village of Winnetka Generating Station (Repealed) Emissions Limitations for Certain Fuel Combustion Emission Units Located in 212.210 the Vicinity of Granite City

## SUBPART K: FUGITIVE PARTICULATE MATTER

#### Section

212.301	Fugitive Particulate Matter
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- 212.302 Geographical Areas of Application
- 212.304 Storage Piles
- 212.305 Conveyor Loading Operations
- 212.306 Traffic Areas
- 212.307 Materials Collected by Pollution Control Equipment
- 212.308 Spraying or Choke-Feeding Required
- 212.309 Operating Program
- 212.310 Minimum Operating Program
- 212.312 Amendment to Operating Program
- 212.313 Emission Standard for Particulate Collection Equipment
- 212.314 Exception for Excess Wind Speed
- 212.315 Covering for Vehicles
- 212.316 Emissions Limitations for Emission Units in Certain Areas

#### SUBPART L: PARTICULATE MATTER EMISSIONS FROM PROCESS EMISSION UNITS

- 212.321 Process Emission Units For Which Construction or Modification Commenced On or After April 14, 1972
- 212.322 Process Emission Units For Which Construction or Modification Commenced Prior to April 14, 1972

212.323	Stock Piles
212.324	Process Emission Units in Certain Areas

#### SUBPART N: FOOD MANUFACTURING

#### Section

212.361	Corn Wet Milling Processes
212.362	Emission Units in Certain Areas

# SUBPART O: PETROLEUM REFINING, PETROCHEMICAL AND CHEMICAL MANUFACTURING

#### Section

212.381	Catalyst Regenerator	rs of Fluidized Catalytic Converters	3
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#### SUBPART Q: STONE, CLAY, GLASS AND CONCRETE MANUFACTURING

#### Section

212.421	Portland Cement Processes For Which Construction or Modification Commenced
	On or After April 14, 1972
212.422	Portland Cement Manufacturing Processes
212.423	Emission Limits for the Portland Cement Manufacturing Plant Located in LaSalle
	County, South of the Illinois River
212.424	Fugitive Particulate Matter Control for the Portland Cement Manufacturing Plant

- 212.424 Fugitive Particulate Matter Control for the Portland Cement Manufacturing Plant and Associated Quarry Operations Located in LaSalle County, South of the Illinois River
- 212.425 Emission Units in Certain Areas

#### SUBPART R: PRIMARY AND FABRICATED METAL PRODUCTS AND MACHINERY MANUFACTURE

- 212.441 Steel Manufacturing Processes
- 212.442 Beehive Coke Ovens
- 212.443 Coke Plants
- 212.444 Sinter Processes
- 212.445 Blast Furnace Cast Houses
- 212.446 Basic Oxygen Furnaces
- 212.447 Hot Metal Desulfurization Not Located in the BOF
- 212.448 Electric Arc Furnaces
- 212.449 Argon-Oxygen Decarburization Vessels
- 212.450 Liquid Steel Charging
- 212.451 Hot Scarfing Machines
- 212.452 Measurement Methods
- 212.455 Highlines on Steel Mills
- 212.456 Certain Small Foundries

- 212.457 Certain Small Iron-Melting Air Furnaces
- 212.458 Emission Units in Certain Areas

#### **SUBPART S: AGRICULTURE**

#### Section

- 212.461 Grain-Handling and Drying in General
- 212.462 Grain-Handling Operations
- 212.463 Grain Drying Operations
- 212.464 Sources in Certain Areas

#### SUBPART T: CONSTRUCTION AND WOOD PRODUCTS

#### Section

212.681 Grinding, Woodworking, Sandblasting and Shotblasting

## SUBPART U: ADDITIONAL CONTROL MEASURES

#### Section

212.700	Applic	ability
212.701	Contir	gency Measure Plans, Submittal and Compliance Date
212.702	Deterr	nination of Contributing Sources
212.703	Contin	gency Measure Plan Elements
212.704	Implei	nentation
212.705	Altern	ative Implementation
212.Appendix	хA	Rule into Section Table
212.Appendix	ĸВ	Section into Rule Table
212.Appendix	ĸС	Past Compliance Dates
212.Illustratio	on A	Allowable Emissions From Solid Fuel Combustion Emission Sources
		Outside Chicago (Repealed)
212.Illustratio	n B	Limitations for all New Process Emission Sources (Repealed)
212.Illustratio	on C	Limitations for all Existing Process Emission Sources (Repealed)
212.Illustratio	on D	McCook Vicinity Map
212.Illustratio	n E	Lake Calumet Vicinity Map
212.Illustratio	n F	Granite City Vicinity Map

AUTHORITY: Implementing Section 10 and authorized by Section 27 and 28.5 of the Environmental Protection Act [415 ILCS 5/10, 27 and 28.5].

SOURCE: Adopted as Chapter 2: Air Pollution, Rules 202 and 203: Visual and Particulate Emission Standards and Limitations, R71-23, 4 PCB 191, filed and effective April 14, 1972; amended in R77-15, 32 PCB 403, at 3 Ill. Reg. 5, p. 798, effective February 3, 1979; amended in R78-10, 35 PCB 347, at 3 Ill. Reg. 39, p. 184, effective September 28, 1979; amended in R78-11, 35 PCB 505, at 3 Ill. Reg. 45, p. 100, effective October 26, 1979; amended in R78-9, 38 PCB 411, at 4 Ill. Reg. 24, p. 514, effective June 4, 1980; amended in R79-11, 43 PCB 481, at 5 Ill.

Reg. 11590, effective October 19, 1981; codified at 7 Ill. Reg. 13591; amended in R82-1 (Docket A), at 10 Ill. Reg. 12637, effective July 9, 1986; amended in R85-33 at 10 Ill. Reg. 18030, effective October 7, 1986; amended in R84-48 at 11 Ill. Reg. 691, effective December 18, 1986; amended in R84-42 at 11 Ill. Reg. 1410, effective December 30, 1986; amended in R82-1 (Docket B) at 12 Ill. Reg. 12492, effective July 13, 1988; amended in R91-6 at 15 Ill. Reg. 15708, effective October 4, 1991; amended in R89-7(B) at 15 Ill. Reg. 17710, effective November 26, 1991; amended in R91-22 at 16 Ill. Reg. 7880, effective May 11, 1992; amended in R91-35 at 16 Ill. Reg. 8204, effective May 15, 1992; amended in R93-30 at 18 Ill. Reg. 11587, effective July 11, 1994; amended in R96-5 at 20 Ill. Reg.7605, effective May 22, 1996; amended in R23-18 at 47 Ill. Reg. 12107, effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective July 25, 2023

BOARD NOTE: This Part implements the Illinois Environmental Protection Act as of July 1, 1994.

## **SUBPART B: VISIBLE EMISSIONS**

## Section 212.124 Exceptions

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- d) During any period of start-up at the emission unit designated Kiln 1 or Kiln 2 at the petroleum coke calcining facility located in Robinson, Illinois, when average opacity exceeds 30 percent for a six-minute period under Section 212.123(a), compliance with Section 212.123(a) may alternatively be determined:
  - Based on Test Method 9 opacity readings (40 C.F.R. Part 60, Appendix A-4, incorporated by reference in Section 212.113) averaged over a 1-hour period, provided that compliance may be based on the average of up to three 1-hour averaging periods, if compliance is not demonstrated during the preceding hour(s).
  - 2) For purposes of this subsection (d), "start-up" is defined as the time from when green coke feed is first introduced into the kiln until the temperature at the pyroscrubber inlet servicing the kiln achieves a minimum operating temperature of 1800 °F (based on a three-hour rolling average).

(Source: Amended at Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### SUBPART L: PARTICULATE MATTER EMISSIONS FROM PROCESS EMISSION UNITS

Section 212.322 Process Emission Units For Which Construction or Modification Commenced Prior to April 14, 1972 .....

- d) Alternative Standard
  - 1) The owner and operator of the petroleum coke calcining facility located in Robinson, Illinois, may emit particulate matter into the atmosphere from Kiln 1 or Kiln 2 in excess of the allowable emission rates specified in subsection (c) during any period of time that the temperature at the inlet to the pyroscrubber servicing Kiln 1 or Kiln 2 does not achieve a minimum operating temperature of 1800 °F during start-up, malfunction, or breakdown (based on a three-hour rolling average). During this period of time, the owner or operator must comply with subsection (d)(3). For purposes of this subsection, "start-up" is defined as the duration from when green coke feed is first introduced into the kiln until the temperature at the pyroscrubber inlet servicing the kiln achieves a minimum operating temperature of 1800°F (based on a three-hour rolling average).
  - 2) Use of the alternate standard in subsection (d)(1) may not exceed a total of 300 hours per kiln in a calendar year.
  - 3) During any time that Kiln 1 or Kiln 2 is operated while the pyroscrubber servicing that emission unit is not achieving the minimum operating temperature in subsection (d)(1), the owner and operator must:
    - A) Minimize emissions to the extent reasonably practicable;
    - B) Not introduce green coke into the kiln unless or until a minimum operating temperature of 400 °F measured at the inlet to the pyroscrubber is achieved; and
    - C) Operate the natural gas-fired burners to minimize the time that a kiln operates below 1800 °F, consistent with technological limitations, manufacturer specifications, and good air pollution control practices for minimizing emissions.
  - <u>4)</u> The owner and operator must keep and maintain all records necessary to demonstrate compliance with this subsection (d), including records of each hour that the pyroscrubber operated below 1800 °F. The owner or operator must provide such records to the Agency upon request.

(Source: Amended at Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_).

#### TITLE 35: ENVIRONMENTAL PROTECTION SUBTITLE B: AIR POLLUTION CHAPTER I: POLLUTION CONTROL BOARD SUBCHAPTER c: EMISSIONS STANDARDS AND LIMITATIONS FOR STATIONARY SOURCES

#### PART 215 ORGANIC MATERIAL EMISSION STANDARDS AND LIMITATIONS

#### SUBPART A: GENERAL PROVISIONS

#### Section

- 215.100 Introduction
- 215.101 Clean-up and Disposal Operations
- 215.102 Testing Methods
- 215.103 Abbreviations and Conversion Factors
- 215.104 Definitions
- 215.105 Incorporation by Reference
- 215.106 Afterburners
- 215.107 Determination of Applicability
- 215.108 Measurement of Vapor Pressures
- 215.109 Monitoring for Negligibly-Reactive Compounds

#### SUBPART B: ORGANIC EMISSIONS FROM STORAGE AND LOADING OPERATIONS

#### Section

- 215.121 Storage Containers
- 215.122 Loading Operations
- 215.123 Petroleum Liquid Storage Tanks
- 215.124 External Floating Roofs
- 215.125 Compliance Dates and Geographical Areas
- 215.126 Compliance Plan
- 215.127 Emissions Testing
- 215.128 Measurement of Seal Gaps

#### SUBPART C: ORGANIC EMISSIONS FROM MISCELLANEOUS EQUIPMENT

#### Section

- 215.141 Separation Operations
- 215.142 Pumps and Compressors
- 215.143 Vapor Blowdown
- 215.144 Safety Relief Valves

#### SUBPART E: SOLVENT CLEANING

#### Section

- 215.181 Solvent Cleaning in General
- 215.182 Cold Cleaning
- 215.183 Open Top Vapor Degreasing
- 215.184 Conveyorized Degreasing
- 215.185 Compliance Plan

## SUBPART F: COATING OPERATIONS

#### Section

- 215.202 Compliance Schedules
- 215.204 Emission Limitations for Manufacturing Plants
- 215.205 Alternative Emission Limitations
- 215.206 Exemptions from Emission Limitations
- 215.207 Compliance by Aggregation of Emission Units
- 215.208 Testing Methods for Volatile Organic Material Content
- 215.209 Exemption from General Rule on Use of Organic Material
- 215.210 Alternative Compliance Schedule
- 215.211 Compliance Dates and Geographical Areas
- 215.212 Compliance Plan
- 215.213 Special Requirements for Compliance Plan
- 215.214 Roadmaster Emissions Limitations (Repealed)
- 215.215 DMI Emissions Limitations

#### SUBPART H: SPECIAL LIMITATIONS FOR SOURCES IN MAJOR URBANIZED AREAS WHICH ARE NONATTAINMENT FOR OZONE

#### Section

- 215.240 Applicability
- 215.241 External Floating Roofs
- 215.245 Flexographic and Rotogravure Printing
- 215.249 Compliance Dates

#### SUBPART I: ADJUSTED RACT EMISSIONS LIMITATIONS

#### Section

- 215.260 Applicability
- 215.261 Petition
- 215.263 Public Hearing
- 215.264 Board Action
- 215.267 Agency Petition

## SUBPART K: USE OF ORGANIC MATERIAL

#### Section

- 215.301 Use of Organic Material
- 215.302 Alternative Standard
- 215.303 Fuel Combustion Emission Sources
- 215.304 Operations with Compliance Program
- 215.305 Viscose Exemption (Repealed)

## SUBPART N: VEGETABLE OIL PROCESSING

## Section

- 215.340 Hexane Extraction Soybean Crushing
- 215.342 Hexane Extraction Corn Oil Processing
- 215.344 Recordkeeping for Vegetable Oil Processes
- 215.345 Compliance Determination
- 215.346 Compliance Dates and Geographical Areas
- 215.347 Compliance Plan

## SUBPART P: PRINTING AND PUBLISHING

## Section

- 215.401 Flexographic and Rotogravure Printing
- 215.402 Exemptions
- 215.403 Applicability of Subpart K
- 215.404 Testing and Monitoring (Repealed)
- 215.405 Compliance Dates and Geographical Areas
- 215.406 Alternative Compliance Plan
- 215.407 Compliance Plan
- 215.408 Heatset Web Offset Lithographic Printing
- 215.409 Testing Methods for Volatile Organic Material Content
- 215.410 Emissions Testing

#### SUBPART Q: LEAKS FROM SYNTHETIC ORGANIC CHEMICAL AND POLYMER MANUFACTURING EQUIPMENT

- 215.420 Applicability
- 215.421 General Requirements
- 215.422 Inspection Program Plan for Leaks
- 215.423 Inspection Program for Leaks
- 215.424 Repairing Leaks
- 215.425 Recordkeeping for Leaks
- 215.426 Report for Leaks
- 215.427 Alternative Program for Leaks
- 215.428 Compliance Dates
- 215.429 Compliance Plan
- 215.430 General Requirements

- 215.431 Inspection Program Plan for Leaks
- 215.432 Inspection Program for Leaks
- 215.433 Repairing Leaks
- 215.434 Recordkeeping for Leaks
- 215.435 Report for Leaks
- 215.436 Alternative Program for Leaks
- 215.437 Open-Ended Valves
- 215.438 Standards for Control Devices
- 215.439 Compliance Plan

## SUBPART R: PETROLEUM REFINING AND RELATED INDUSTRIES; ASPHALT MATERIALS

## Section

- 215.441 Petroleum Refinery Waste Gas Disposal
- 215.442 Vacuum Producing Systems
- 215.443 Wastewater (Oil/Water) Separator
- 215.444 Process Unit Turnarounds
- 215.445 Leaks: General Requirements
- 215.446 Monitoring Program Plan for Leaks
- 215.447 Monitoring Program for Leaks
- 215.448 Recordkeeping for Leaks
- 215.449 Reporting for Leaks
- 215.450 Alternative Program for Leaks
- 215.451 Sealing Device Requirements
- 215.452 Compliance Schedule for Leaks
- 215.453 Compliance Dates and Geographical Areas

## SUBPART S: RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS

## Section

- 215.461 Manufacture of Pneumatic Rubber Tires
- 215.462 Green Tire Spraying Operations
- 215.463 Alternative Emission Reduction Systems
- 215.464 Emissions Testing
- 215.465 Compliance Dates and Geographical Areas
- 215.466 Compliance Plan
- 215.467 Testing Methods for Volatile Organic Material Content

## SUBPART T: PHARMACEUTICAL MANUFACTURING

- 215.480 Applicability of Subpart T
- 215.481 Control of Reactors, Distillation Units, Crystallizers, Centrifuges and Vacuum Dryers

- 215.482 Control of Air Dryers, Production Equipment Exhaust Systems and Filters
- 215.483 Material Storage and Transfer
- 215.484 In-Process Tanks
- 215.485 Leaks
- 215.486 Other Emission Sources
- 215.487 Testing
- 215.488 Monitors for Air Pollution Control Equipment
- 215.489 Recordkeeping (Renumbered)
- 215.490 Compliance Schedule (Renumbered)

## SUBPART U: COKE MANUFACTURING AND BY-PRODUCT RECOVERY

## Section

- 215.500 Exceptions
- 215.510 Coke By-Product Recovery Plants
- 215.512 Coke By-Product Recovery Plant Leaks
- 215.513 Inspection Program
- 215.514 Recordkeeping Requirements
- 215.515 Reporting Requirements
- 215.516 Compliance Dates
- 215.517 Compliance Plan

## SUBPART V: AIR OXIDATION PROCESSES

#### Section

- 215.520 Applicability
- 215.521 Definitions
- 215.525 Emission Limitations for Air Oxidation Processes
- 215.526 Testing and Monitoring
- 215.527 Compliance Date

## SUBPART W: AGRICULTURE

#### Section

215.541 Pesticide Exception

## SUBPART X: CONSTRUCTION

#### Section

- 215.561 Architectural Coatings
- 215.562 Paving Operations
- 215.563 Cutback Asphalt

## SUBPART Y: GASOLINE DISTRIBUTION

- 215.581 Bulk Gasoline Plants
- 215.582 Bulk Gasoline Terminals
- 215.583 Gasoline Dispensing Facilities Storage Tank Filling Operations
- 215.584 Gasoline Delivery Vessels
- 215.585 Gasoline Volatility Standards (Repealed)
- 215.586 Emissions Testing

## SUBPART Z: DRY CLEANERS

#### Section

- 215.601 Perchloroethylene Dry Cleaners (Repealed)
- 215.602 Exemptions\_(Repealed)
- 215.603Leaks (Repealed)
- 215.604 Compliance Dates and Geographical areas (Repealed)
- 215.605 Compliance Plan (Repealed)
- 215.606 Exception to Compliance Plan (Repealed)
- 215.607 Standards for Petroleum Solvent Dry Cleaners
- 215.608 Operating Practices for Petroleum Solvent Dry Cleaners
- 215.609 Program for Inspection and Repair of Leaks
- 215.610 Testing and Monitoring
- 215.611 Exemption for Petroleum Solvent Dry Cleaners
- 215.612 Compliance Dates and Geographical Areas
- 215.613 Compliance Plan
- 215.614 Testing Method for Volatile Organic Material Content of Wastes
- 215.615 Emissions Testing

## SUBPART AA: PAINT AND INK MANUFACTURING

#### Section

- 215.620 Applicability
- 215.621 Exemption for Waterbase Material and Heatset Offset Ink
- 215.623 Permit Conditions
- 215.624 Open-top Mills, Tanks, Vats or Vessels
- 215.625 Grinding Mills
- 215.628 Leaks
- 215.630 Clean Up
- 215.636 Compliance Date

## SUBPART BB: POLYSTYRENE PLANTS

- 215.875 Applicability of Subpart BB
- 215.877 Emissions Limitation at Polystyrene Plants
- 215.879 Compliance Date
- 215.881 Compliance Plan

- 215.883 Special Requirements for Compliance Plan
- 215.886 Emissions Testing

#### SUBPART PP: MISCELLANEOUS FABRICATED PRODUCT MANUFACTURING PROCESSES

#### Section

- 215.920 Applicability
- 215.923 Permit Conditions
- 215.926 Control Requirements

#### SUBPART QQ: MISCELLANEOUS FORMULATION MANUFACTURING PROCESSES

#### Section

- 215.940 Applicability
- 215.943 Permit Conditions
- 215.946 Control Requirements

#### SUBPART RR: MISCELLANEOUS ORGANIC CHEMICAL MANUFACTURING PROCESSES

#### Section

215.960	Applicability
215.963	Permit Conditions
215.966	Control Requirements

215.APPENDIX A	Rule into Section Table
215.APPENDIX B	Section into Rule Table
215.APPENDIX C	Past Compliance Dates
215.APPENDIX D	List of Chemicals Defining Synthetic Organic Chemical and Polymer
	Manufacturing
215.APPENDIX E	Reference Methods and Procedures
215.APPENDIX F	Coefficients for the Total Resource Effectiveness Index (TRE) Equation

AUTHORITY: Implementing Sections 9.1 and 10 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/9.1, 10 and 27].

SOURCE: Adopted as Chapter 2: Air Pollution, Rule 205: Organic Material Emission Standards and Limitations, R71-23, 4 PCB 191, filed and effective April 14, 1972; amended in R77-3, 33 PCB 357, at 3 Ill. Reg. 18, p. 41, effective May 3, 1979; amended in R78-3 and R78-4, 35 PCB 75, at 3 Ill. Reg. 30, p. 124, effective July 28, 1979; amended in R80-5 at 7 Ill. Reg. 1244, effective January 21, 1983; codified at 7 Ill. Reg. 13601 Corrected at 7 Ill. Reg. 14575; amended in R82-14 at 8 Ill. Reg. 13254, effective July 12, 1984; amended in R83-36 at 9 Ill. Reg. 9114, effective May 30, 1985; amended in R82-14 at 9 Ill. Reg. 13960, effective August 28, 1985; amended in R85-28 at 11 Ill. Reg. 3127, effective February 3, 1987; amended in R82-14 at

11 Ill. Reg. 7296, effective April 3, 1987; amended in R85-21(A) at 11 Ill. Reg. 11770, effective June 29, 1987; recodified in R86-39 at 11 Ill. Reg. 13541; amended in R82-14 and R86-12 at 11 Ill. Reg. 16706, effective September 30, 1987; amended in R85-21(B) at 11 Ill. Reg. 19117, effective November 9, 1987; amended in R86-36, R86-39, R86-40 at 11 Ill. Reg. 20829, effective December 14, 1987; amended in R82-14 and R86-37 at 12 Ill. Reg. 815, effective December 24, 1987; amended in R86-18 at 12 Ill. Reg. 7311, effective April 8, 1988; amended in R86-10 at 12 Ill. Reg. 7650, effective April 11, 1988; amended in R88-23 at 13 Ill. Reg. 10893, effective June 27, 1989; amended in R88-30(A) at 14 Ill. Reg. 3555, effective February 27, 1990; emergency amendments in R88-30A at 14 Ill. Reg. 6421, effective April 11, 1990, for a maximum of 150 days; amended in R88-19 at 14 Ill. Reg. 7596, effective May 8, 1990; amended in R89-16(A) at 14 Ill. Reg. 9173, effective May 23, 1990; amended in R88-30(B) at 15 Ill. Reg. 3309, effective February 15, 1991; amended in R88-14 at 15 Ill. Reg. 8018, effective May 14, 1991; amended in R91-7 at 15 Ill. Reg. 12217, effective August 19, 1991; amended in R91-10 at 15 Ill. Reg. 15595, effective October 11, 1991; amended in R89-7(B) at 15 Ill. Reg. 17687, effective November 26, 1991; amended in R91-9 at 16 Ill. Reg. 3132, effective February 18, 1992; amended in R91-24 at 16 Ill. Reg. 13555, effective August 24, 1992; amended in R91-30 at 16 Ill. Reg. 13849, effective August 24, 1992; amended in R98-15 at 22 Ill. Reg. 11427, effective June 19, 1998; amended in R12-24 at 37 Ill. Reg. 1683, effective January 28, 2013; expedited correction at 37 Ill. Reg. 16858, effective January 28, 2013; amended in R19-1 at 44 Ill. Reg.15032, effective September 4, 2020, effective July 25, 2023; amended in R 23-18(A) at Ill. Reg., effective

#### Article I. SUBPART K: USE OF ORGANIC MATERIAL

#### Section 215.302 Alternative Standard

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- b) Compliance with the emissions standard set forth in Section 215.301 during any period of start-up at the emission unit designated Kiln 1 or Kiln 2 at the petroleum coke calcining facility located in Robinson, Illinois, may be determined by the average of hourly emissions of organic material during start-up of Kiln 1 or Kiln 2 over an averaging period of no more than 12 hours. For purposes of the alternative standard in subsection (b), "start-up" is defined as the time from when green coke feed is first introduced into the kiln until the temperature at the pyroscrubber inlet servicing the kiln achieves a minimum operating temperature of 1800 °F (based on a 3-hour rolling average). During any period of start-up, the owner and operator must:
  - 1) Minimize emissions to the extent practicable;
  - 2) Not introduce green coke into the kiln until a minimum operating temperature of 400 °F measured at the inlet to the pyroscrubber is achieved;

- 3) Operate the natural gas-fired burners to minimize the duration of start-up, consistent with technological limitations, manufacturer specifications, and good air pollution control practices for minimizing emissions; and
- 4) Keep and maintain all records necessary to demonstrate compliance with this subsection (b), including records of the duration and frequency of each start-up period. The owner or operator must provide the records to the Agency upon request.

(Source: Amended at Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### **BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

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IN THE MATTER OF:

AMENDMENTS TO 35 Ill. Adm. Code Parts 212 and 215

R 23-18(A)

(Rulemaking – Air)

#### **CERTIFICATE OF SERVICE**

I, the undersigned, certify that on this 15th day of March, 2024, I have electronically served a true and correct copy of **Rain CII Carbon LLC's Supplemental Response to Illinois EPA Comments**, by electronically filing with the Clerk of the Illinois Pollution Control Board and by e-mail upon the persons identified on the attached Service List.

My e-mail address is Alex.Garel-Frantzen@afslaw.com.

The number of pages in the e-mail transmission is 34.

The e-mail transmission took place before 5:00 p.m.

/s/ Alexander J. Garel-Frantzen

Alexander J. Garel-Frantzen

Dated: March 15, 2024

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